Submission to the National Competition Council's 2002 NCP Assessment Framework for Water Reform

A submission from
Burnett Water For All

1 April 2002

Burnett Water For All (BWFA) is a broad base of community and industry groups that joined together when it became clear that the Queensland Government was going to forge ahead with approval for Paradise Dam *(*Burnett River Dam*)* without fully considering the social, economic and environmental outcomes.

BWFA opposes Paradise Dam because it is **not** environmentally, socially, or economically viable.

The group's mission statement is "…to seek more equitable and less damaging water solutions for the whole of the Burnett catchment".

The following groups/ organisations have joined together under the aims and objectives of BWFA to voice their common objection to the proposed construction of Paradise Dam on the Burnett River, Queensland.

- Gayndah, Kingaroy, Murgon, Wondai, Nanango Shire Councils
- Burnett Catchment Care Association
- Sunfish – Fraser Coast Branch
- Queensland Seafood Industry Association
- Freshwater Fishing & Stocking Association of Queensland
- Wakka Wakka Jinda Indigenous Group
- Wide Bay Burnett Conservation Council
- Coalstoun Lakes Farming Group
- Monto Landcare Group
- Biggenden chamber of tourism and development
- Group of affected landholders- grazing and citrus
- Concerned citizens

There are a number of other groups who share Burnett Water For All's views but fear the political ramifications of publicly opposing the Dam.

Using the issues from the 2002 NCP Assessment Framework for Water Reform this submission will demonstrate the inadequacies of the proposed development on the Burnett River system known as Paradise Dam.

The main issues discussed are:

1. The Approval Process
2. New Rural Water Developments must be Economically Viable and Ecologically Sustainable
3. National Action Plan for Salinity and Water Quality
4. Provision for the Environment
5. Devolution of Irrigation Scheme Management
6. Water Allocations and Property Rights
7. Integrated Catchment Management
8. Assessment of Alternatives
9. Failure to Meet Water Quality Targets for the Great Barrier Reef

Background

The Paradise Dam Development

The development is a 300 000 ML structure proposed for the Burnett River at Paradise, 131.2 km upstream from the mouth, which will capture 130 000 ML of water annually. Paradise Dam will flood 45 km of the Lower Burnett River which, combined with the existing Walla Weir, Bingera Weir, and Ben Anderson Barrage impoundments, will result in 70% of the freshwater Lower Burnett being contained as a lake system. However, unlike a natural lake, the Lower Burnett will be subject to frequent fluctuation in water levels as water is released for irrigation purposes.

The dam has been put up as part of an infrastructure package, which also includes Eidsvold Weir, Barlil Weir and the raising of Walla and Jones Weirs. The combination of these Weirs and Dams will extract an additional annual volume of water totaling 196 000 ML.

Issue 1.

The Approval Process

- Up until the Queensland Government announced Paradise Dam would be built, all of the mainstream studies showed that it is not an environmentally, economically, or socially viable proposition.

- Scientific studies, including the Draft Water Allocation Management Plan (Burnett Basin) June 2000 (WAMP), showed that the river is already almost fully allocated. In order to "fit in" Paradise Dam, the level of extraction from the Burnett River will be stretched by 9% of the Mean Annual Flow level that was recommended by the Burnett WAMP. This study suggested that the Mean Annual Flow could be reduced to 81% before major to very major ecological impacts are predicted to occur.

- The State Government signed off on extraction of an additional 130 000 ML as part of the Water Resource Plan of the Water Act 2000 (Qld) to accommodate Paradise Dam. In realizing that additional infrastructure would also be needed in the Burnett to get Paradise through, the government has now legislated that the mean annual flow can be reduced to 72% of natural flows or 9% less than the 81% recommended by the WAMP. This legislation was changed without following the procedures set out in the Water Act 2000.

- The Water infrastructure Development (Burnett Basin) Act 2001 was set up to fast track the process and allow for a new Government owned company, Burnett Water Pty Ltd, to be established to oversee the Environmental Impact Assessment for the dam.
- The Minister for State Development, the Hon. Tom Barton, is the sole shareholder of Burnett Water Pty Ltd, which is claimed to be an independent body in this issue. The Department of State Development has been charged with progressing water infrastructure in the State, and is over-seeing this project.
- The position of Burnett Water Pty Ltd is summarized well in an article appearing in the Isis Town and Country – October 11 edition, "Burnett Water Pty Ltd is the company established by the State Government to obtain all the approvals necessary for a set of water development projects in the Burnett region."

- The EIS study, which was undertaken over approximately 6 weeks, is now over-riding many years of previous scientific studies and community consultation.

- Burnett Water For All considers the EIS to be inaccurate, biased, and largely unsubstantiated - "quantity without the quality". This view was supported by three of the State Governments own departments whose responses to the EIS reported that many major impacts had not been adequately addressed, and that further investigation was required. These departments are Natural Resources and Mines, Primary Industries-Fisheries and the Environment Protection Agency. The State Government has ignored the reports and recommendations of these Departments and the WAMP studies by signing off on the EIS reports recently.

- It is our understanding that Officers from these departments have been told not to publicly comment on Paradise Dam due to the political nature of this issue. In most cases it is these government officers' own research that shows the dam to be unsustainable.

- The environment in which the EIS was released and approved was extremely difficult and highly political. Burnett Water For All found itself amidst an environment of anomalies, cover-ups, threats, and slander. A notable but less memorable example was the use of parliamentary privilege to slander the elected spokesperson for Burnett Water For All, and the group as a whole (2nd Reading – Water Infrastructure Development (Burnett Basin) Amendment Bill). Many constituent groups and "silent supporters" felt threatened, and were fearful of losing funding and other opportunites through their stance on the issue. Pro-dam propaganda has been overwhelming. A typical example is a large billboard situated outside Bundaberg (photograph in attached powerpoint file – Burnett River Photos.ppt). Media coverage on the full range of issues surrounding Paradise Dam has been well sensored. Against this political framework, the EIS process could never operate as it should.

- In addition, Burnett Water Pty Ltd, continued to release new information and finalise new reports on a frequent basis following the finalization of the EIS, to support the pro-dam case. Burnett Water For All considers this to be highly inappropriate. All serious analyses should be considered as part the Environmental Impact Assessment process.

- **The whole EIS process for Paradise Dam has been inadequate and appears to have been conducted with a predetermined outcome in mind.**

The remainder of this submission will deal with issues as they arise in the 2002 NCC Assessment Framework.

Issue 2.

Rural water services

Full cost recovery, consumption based pricing, CSOs and cross-subsidies

The National Competition Council will next assess rural pricing and cost recovery in detail in 2004.
However, there are a number of issues specifically identified in the 2001 assessment that will be assessed in 2002.

New rural schemes

Governments have agreed that all investments in new rural water schemes or extensions to existing schemes should only be undertaken after appraisal indicates that it is ***economically viable*** *and* ***ecologically sustainable****. (clause 3d(iii))*
The NCC will assess any new developments annually to ensure that all new developments are economically viable and ecologically sustainable where a government decides to proceed with an investment.

These 2 issues, *economic viability and ecological sustainability*, will be addressed separately and form the bulk of this submission. They also relate to issues in regard to water allocations, particularly provision for the environment on page 19 of the Assessment Framework.

Economic Viability

- Cost of the water from Paradise Dam reportedly will be in the order of $1300 -1500/ML to cover the capital expenditure, with annual water charges for the delivery to be around $50/ML. This cost does not however incorporate the many mitigation strategies proposed to "handle" environmental damage. The environmental compliance costs for Walla Weir on the Burnett have been reported as enormous, compared to what was originally budgeted for.
- Bundaberg Irrigators have already made it known that this cost will be too high and are requesting subsidisation by the State Government. There is much talk at public meetings of "government-industry" partnerships. Frequent press releases are claiming that the water is "the last straw" for the Bundaberg sugar industry.
- In an article from Bundaberg Newsmail 22/3/02, Noel Balwin, Canegrowers Bundaberg chairman was quoted as saying "Our attitude is that there is an obligation (on the part of the government) to provide a community service because of the flow-ons, on the basis that the scheme is unfinished." In the same article, Suncorp Metway south-east Queensland agribusiness area manager, Jeff Budden said many farmers could only just afford to put food on the table, let alone buy more water for the $1000/ML suggested in some reports. There's not too many who can afford to buy it at the moment. He suggested Bundaberg follow a Maryborough proposal and lease the new allocation. A figure put forward at Maryborough of about $70/ML was more feasible for local growers," he suggested.
- Burnett Water director Mr Mike Montefiore was quoted on the front page of the Bundaberg Newsmail 13/3/02 as saying "It was likely growers in the region would be asked to contribute to the construction of the project. I would be surprised if the total cost of the capital expenditure is supplied by government."

- Northern Queensland canegrowers withheld millions of dollars of payments to Sunwater in 2001 to protest against rises in annual water charges by $17, which would bring the annual total to just under $50. Annual water charges for Paradise Dam have been reported at approximately $50. Cane-growing at Bundaberg is considered to be of higher risk and less profitable than in North Queensland.
- Nathan Dam is yet to proceed due to the failure of Sudaw to source adequate private sector financing. Paradise Dam is also unlikely to proceed without government subsidies.
- In its response to the Environmental Impact Statement the Queensland treasury seriously questions the claimed economic benefits, stating that they are optimistic.
    - They point out that the $650 Million of additional vegetable production represents a 120% increase over the existing vegetable production of Queensland ($540 million). Queensland Treasury then questions whether markets been identified for this level of vegetable production.
    - They also question the 484 full time jobs (during construction phase) used in the economic analysis when the EIS states that a construction force of 40 would be needed.

The economic analyses in the Paradise dam EIS haven't taken into account the economic costs to the region from:

- Losses from reduced water harvesting
- Losses from reduced water reliability
- Costs of increased salinity
- Loss of future opportunities for inland Burnett communities
- Costs associated with algal blooms
- Losses to Fishing and Tourism
- Costs associated with loss of ecosystem services
- Costs of complying with mitigation strategies

- Burnett Water Pty. Ltd. has stated that the estimated capital cost of the proposed Burnett River Dam of 300,000ML is $168 million, this is in contrast to the Initial Engineering Appraisal figure of $183.1 million previously provided by DNR Regional Infrastructure Development Group. Figures reported in the media on the costings vary between $165 and $215 million, depending on the audience. DNR's figure did not include additional costs for construction in an earthquake zone, and did not include environmental or social costs associated with dam construction and operation. Nor did the original costing factor in completed construction of fish migration structures on the dam wall.
- When the Water Resource Plan for the Burnett is reviewed in 8 years time, given the environmental flow limits have been exceeded by far, it is likely that allocations will have to be reduced. This has been the case in the Condamine Balonne system. According to Felicity Coffey's (2001) paper, this will make the Department of Natural Resources liable for compensation.
- **"Treasury Comments on Economic Viability of Water Allocation Scenarios for the Burnett Basin"**. - The Queensland government's refusal to release this document would appear to indicate(s) that Treasury has determined that additional water allocations from the proposed Paradise Dam (available) in the Burnett Basin are not economically viable.
- **The regions historical record for acting on repayment of similar financial commitments, as Paradise Dam entails, is poor**. Funding arrangements for user contributions to the capital cost of Walla Weir, a smaller structure recently built on the Burnett system are detailed:
    - Irrigators agreed to a total contribution of $1.50 per ML each year for a period of 20 years on the basis of nominal surface and river water allocation.

- Bundaberg City Council apparently agreed to a contribution of $32,000 per annum for 20 years
- Burnett Shire Council .....$28,000 p.a. for 20 years .....
- Isis Shire Council .....$15,000 .....
- Kolan Shire Council .....$ 7,500 .....

- The weir was completed in September 1998. **To date, no payments have been made**

References:
Assessment of Water Resource Plans under the Water Act 2000 (Qld) with Consideration of Ecological Flow Objectives in the Context of the Precautionary Principle and Sustainable Management; Felicity C. Coffey; 18 Environmental and Planning Law Journal 410 (2001).

Ecological Sustainability

The State Government is required to meet various environmental obligations. The following details the legislation and policies that will be breached with the development of Paradise Dam.

1. Water Resource Plan of the Water Act 2000 (Qld) and the Burnett Basin WAMP

- Water development proposal by Burnett Water Pty Ltd fails to meet (and by far) environmental flow limits recommended in the Burnett Water Allocation Management Plan (WAMP) - legislated in the Burnett Water Resource Plan (WRP) of the Water Act 2000 (Qld). This was noted strongly by the Departments of Natural Resources and Mines and the Environmental Protection Agency in their responses to the EIS.
  - The risk assessment diagrams produced by the Technical Advisory Panel (TAP) for the WAMP showed that increased levels of water allocation in the Burnett Basin are likely to further change the rivers flow regime and increase the likelihood of major impacts on riverine health and ecological conditions (Draft WAMP (Burnett Basin) 2000, p. 17)
  - In the Burnett Basin WAMP - Current Environmental Conditions and Impacts of Existing Water Resource Development, Volume II (a), p. A-10, the TAP commented further: "An important consideration in the assessment of geomorphological impacts of existing water resource development is the relatively short period of time that has elapsed since the completion of most of the major water infrastructure in the catchment. Geomorphological impacts frequently require time periods of decades to centuries to become manifest – hence, in the longer term, the impacts arising from existing levels of development can be expected to be greater than those currently apparent."
- The State Government in December passed a Water Infrastructure Development (Burnett Basin) Amendment Act 2001 which over-rode the Burnett Water Resource Plan of the Water Act 2000 (Qld). This new piece of legislation has changed significant environmental flow limits to "fit in" Paradise Dam. The original flow limits were developed through 4 years of scientific work and extensive community consultation during the WAMP process.

<u>Insufficient frequent flows</u>

- Paradise dam will capture a significant proportion of the small flows which occur every 1-2 years, substantially breaching WAMP recommendations.

- State Government signed off a 1.5 year ARI (Annual Recurrence Interval) of 74 % (of naturally occurring flows - pre-impoundments) at Figtree gauging station just downstream of the proposed Paradise Dam wall. The 196 000 ML development which includes Paradise Dam will reduce the 1.5 ARI to below 40%. This figure was not changed in the new legislation.
- It is this severe reduction in small flows that will have a profound impact on the entire ecology of the Burnett River system affecting:
    - Water quality, in particular salinity, concentration of nutrients, pesticides and heavy metals
    - Fish populations - both fresh and estuarine
    - Aquatic fauna habitats
    - Algal blooms – Blue Green Algae – already a problem in Burnett storages
    - Aquatic Weeds – Salvinia which choke the river and deprive fish of oxygen
    - Siltation - River channel shape and form

Average Yearly Flows too low

- It was recommended by the WAMP, not to exceed a mean annual flows level of 81% (ie. 81% of what they would have been pre-development) downstream from the proposed Paradise Dam.
- The State Government signed off in the Burnett Water Resource Plan of the Water Act (2000), on a Mean annual flow of 75% ie. A total extraction of 130 000 ML.
- The infrastructure development plan incorporating Paradise Dam will extract an annual flow of 196 000 ML taking the Mean Annual Flow down to 72%. The Water Infrastructure Development (Burnett Basin) Amendment Act 2001 reduced the requirement for the mean annual flow at the mouth of the river, down to this 72% in order to fit Paradise Dam in.
    - There is a process for reviewing the Water Resource Plan set out in the Water Act yet the Queensland Government has by-passed this process. This process requires significant community consultation of which there was none.
    - The WRP was amended solely on the modeling done by Burnett Water Pty Ltd for the Paradise dam EIS. This modeling was done without input from the Dept. of Natural Resources and Mines, who have the expertise and experience with the Burnett's IQQM model.
    - At no time during the EIS process did Burnett Water Pty Ltd mention that the EIS results would be used to amend the WRP.
    - This is a vote of no confidence in the Water Resource Planning process, which was hailed as a break through in sustainable water management, when it was introduced 1 year ago.
    - WAMP recommendations are based on hydrological modeling which excludes data from the last four very dry years. Inclusion of these recent figures will further exacerbate the breach of environmental flow limits.

Integrity of the WAMP Process

- Several years work and a great deal of community consultation went into developing the WAMP

- WAMP based on the best science currently available (not inconclusive or unsubstantiated as often stated), and is backed by the State Government, and supported by the Precautionary Principle of the Water Act 2000 (Qld) (refer to Breaches of Legislation below).
- The Cooperative Research Center for Freshwater Ecology has reviewed the ecological assessment methodologies used in the WAMP and found that they were a good model for undertaking the assessment of environmental flow conditions and requirements (Technical Review of Elements of the WAMP process of the Queensland DNR (February 2000)
- "Precautionary Principle (one of six principles of the Water Act 2000) has been ignored. The principle states - If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation." (Coffey, 2001)

With respect to the Burnett Basin WRP it is suggested, for some of the nodes in the plan area, the Precautionary Principle could not have been incorporated into the final decision assigning the environmental flow objectives under medium to high flows, since the environmental flow objectives have values that, in some cases are set beyond the draft plans proposed environmental flow limits (Coffey, 2001).

Major to very major ecological impacts are likely to occur with any reduction in flows below the environmental flow limits.

References:
Draft Water Allocation and Management Plan (Burnett Basin) June 2000; Department of Natural Resources 2000.

Water Act 2000 (Qld)

Fragile Future - downstream impacts of dams and flow regulation. Stuart Bunn and Angela Arthington. Centre for catchment and instream research, Griffith University; 1997.

Technical Review of Elements of the WAMP process of the Queensland DNR (February 2000), The Cooperative Centre for Freshwater Ecology.

Assessment of Water Resource Plans under the Water Act 2000 (Qld) with Consideration of Ecological Flow Objectives in the Context of the Precautionary Principle and Sustainable Management; Felicity C. Coffey; 18 Environmental and Planning Law Journal 410 (2001).

2. Contravening of the COAG- Council of Australian Governments Agreement.

- In 1995 COAG reviewed the Water Resource Policy and agreed to implement a strategic framework to achieve an efficient and sustainable water industry.
- COAG's goal - "To sustain and where necessary restore ecological processes and biodiversity of water dependent ecosystems."
- Principle 6 of the COAG agreement states - "Further allocation of water for any use should only be on the basis that natural ecological processes and biodiversity are sustained (i.e. ecological values are sustained)."

- Development of the Paradise Dam contradicts the goal and principle 6 of the COAG agreement by exceeding environmental flow limits.

Burnett is a stressed river – can it withstand further damage?

- The Burnett River is already severely degraded. Paradise Dam will further degrade the river environment, as it exceeds a number of identified ecological thresholds (Draft WAMP 2000) and it is known worldwide that dams degrade the ecology of river systems (Bunn and Arthington, 1997).
- The State of the Rivers study for the Burnett catchment reported that the Burnett River was generally in a poor state of health. Specifically the following conclusions were made:
  - Moderate to high disturbance of some environs
  - Diversity of the channel habitats is generally low
  - Riparian vegetation in poor condition
  - Majority of the area has restricted passage for aquatic organisms due to barriers such as weirs, log jams
  - Instream aquatic habitats moderate to poor, exhibiting few features in streams to provide habitat for aquatic organisms.
- The State of the Rivers Report recommended "the need to implement measures that will prevent riparian and instream environments being further degraded." The development of a large dam which will flood 45 km of some of the most pristine section of the river and have dire consequences for downstream environment is in **direct opposition** to these recommendations.
- A recent study of the Estuarine area of the Burnett River found low fish and crustacean recruitment levels, which indicate a highly regulated river with degraded fish habitats. The Burnett also contained many fewer fish and crustaceans than in much smaller and more pristine regional river systems. (C.J. Lupton, and M.J. Heidenreich, 1999)
- 31 major impoundments exist already in the Burnett catchment. As a result it is one of most impounded rivers in Australia.
- Once the damage from the development of this large dam is done, it cannot be repaired. Reducing or reversing flow regime change will not reduce or reverse the extent and magnitude of ecological and geo-morphological impacts (Burnett Basin WAMP, Dr S.O, Brizga, 2000).
- Is the community willing to accept permanent degradation of the Burnett River – which underpins much of our economic and social existence, in order to benefit from short term gains?

References:
State of the Rivers –Burnett River and Major Tributaries, Natasha Van Manen, Department of Natural Resources, August 1999.

Draft Water Allocation and Management Plan (Burnett Basin) June 2000; Department of Natural Resources 2000.

Fragile Future - downstream impacts of dams and flow regulation. Stuart Bunn and Angela Arthington. Centre for catchment and instream research, Griffith University; 1997.

A Fisheries Resource Assessment of the Estuarine Reaches of the Burnett River in the Wide Bay-Burnett Region of Queensland.

Rare Species

The Burnett River system is gifted with two rare inhabitants, one of which - the lung fish, Neoceratodus forsteri, is native to the Burnett and Mary Rivers of South East Queensland, and the as yet undescribed Elseya sp. freshwater turtle. Both these aquatic animals are threatened by the construction of Paradise Dam.

Elseya Turtle *(Elseya sp.)*

- The Elseya Turtle, is a recently discovered rare freshwater turtle which breathes through its backside. It is known only as *Elseya sp*. It is yet to be decided whether the species is endemic to the Burnett River system, or whether the same species also occurs in the Mary and Fitzroy Rivers. The turtles breeding habitat will be severely affected by the development of Paradise dam.
- Elseya turtle is so new that it has not been yet classified, and therefore cannot be protected under the Commonwealth Government's Environmental Protection and Biodiversity Conservation Act 1999.
- According to turtle experts it is likely to be listed as a Vulnerable species, if the dam goes ahead it could then become listed as Endangered. (and could be upgraded to Endangered with the development of the dam)
- The turtle is thought to be found in the Burnett, Mary and Fitzroy, although further work is needed to determine whether each river contains a separate species.

Lung Fish *(Neoceratodus forsteri)*

- Environment Australia is currently reviewing the Queensland Lungfish for classification under the Environment Protection Biodiversity Conservation Act (EPBC). It is highly likely that it will be classified as "Vulnerable" under this federal legislation. If this decision had been made before the Federal approval of the dam then it may have made a significant difference to the outcome of the decision. Being an aquatic species the impact on the Lungfish would require an assessment of the breaches to environmental flows and the changes to legislation which have been made. These were not officially considered at a federal level due to this "bureaucratic" loophole.
- Studies by Stephen Brooks, DPI Fisheries have shown that the lungfish, an internationally recognised species (only found) known to occur naturally in only the Burnett and Mary Rivers, although many years ago some were translocated to the Brisbane River system where the species is still surviving, cannot spawn successfully in dams and weirs.
- The Lungfish is a long lived species, which is generally regarded within the community as being abundant even in impoundment areas. To the contrary however, Stephen Brooks' most recent report recommends *that due to the affect of impoundments in the Burnett and Mary Rivers the lungfish should be given "Vulnerable" status*. It also states that this species will be put at considerable risk with the Paradise Dam development, raising the question of a change in classification to "Endangered".
- A review of the environmental impacts of Walla Weir by N. Keith Boardman (September, 2001) recommended that several baseline studies be carried out over a number of years ***before any further proposals for weirs and dams are considered on the Burnett River.*** This

report was commissioned by the then Federal Environment Minister Senator Robert Hill and was concerned with the cumulative impacts of present and future weirs and dams destroying the breeding habitat of the lungfish. We understand that all of the recommended studies have not been completed, and that the report by Stephen Brooks summarises some of the most recent work, confirming concerns expressed by Mr Boardman. This report was not made publicly available until after the EIS process had closed.

- The lungfish is long-lived – up to 60 years of age, so that impacts on this species may not be visible for many decades. By the time we notice changes in numbers, it will be too late.
- Serious population declines of this important icon species could occur with the development of Paradise Dam.
- Stephen Brooks most recent report is pending release, *but may not be available to the general public*. This important public document should have been made publicly available prior to completion of the EIS process.
- Modifications to the Burnett Catchment Water Resources Plan (WRP) just prior to Christmas by the Queensland Govt (introduced by passing of the *Water Infrastructure Development Burnett Basin Amendment Act*) took away the requirement in the WRP to 'maintain' the lungfish spawning sites and weakened several environmental flow(s) requirements in the WRP. No public consultation into these changes to the WRP was undertaken as they were introduced by passage of the abovementioned amendment.

Issue 3.

National Action Plan on Salinity and Water Quality

In November 2000, COAG endorsed the Commonwealth's proposal for an action plan to address salinity and deteriorating water quality issues. The Action Plan builds on the achievements of the Natural Heritage Trust, individual State and Territory government initiatives, the COAG water reforms, and the work of the Murray-Darling Basin Commission. The action plan involves new expenditure by Commonwealth, State and Territory governments of $1.4 billion over the next six years. The Commonwealth will contribute $700 million for implementation of regional action plans to be matched by new State and Territory financial contributions.

In brief:
There is increasing evidence of salinity in the Bundaberg Irrigation Area. Doubling the availability of irrigation water (if Paradise Dam fills and rainfall maintains the level) is likely to hasten the dryland salinity process either from increased application of water, or from clearing of bushland to increase the irrigation area. Hotspots of salinity outbreaks have already been identified in the Bundaberg irrigation area

The millions of dollars to be spent on construction of additional water infrastructure to increase supply of surface water in the Bundaberg Irrigation Area (BIA) will make a mockery of the intent of the National Action Plan for Salinity and Water Quality (NAPSWQ)

The NAP for Salinity has identified the Burnett as a high priority area for salinity funding. Long term salinity levels in the river are already as high as in the Murray, where dams have been identified as a contributing process to salinity. Salinity was a key factor in limiting the size of Bjelke-Peterson Dam in the South Burnett, yet it hasn't even been considered in the EIS for Paradise. Water quality is at least as important as quantity to sustain long term irrigation viability.

The Burnett catchment has a high accumulation of salts in its soils, resulting in many of the tributaries and the rivers being rated as having medium to high salinity. Currently, crops with a low salinity tolerance cannot be grown during certain times of the year. The severe reduction in the regular 1-2 year flows by Paradise Dam necessary to flush the river, will worsen already high salinity levels.

Given that construction of the Paradise Dam, along with amendments to the Qld Water Resources Act will lead to a major reduction in environmental flows in the Burnett and a doubling of the amount of available irrigation water, on what basis did the Queensland Government decide that the Paradise Dam would not increase the severity of salinity in this priority catchment?.

The following details issues in regard to salinity and water quality:

- Burnett River has been identified as one of 20 top priority rivers in Australia in need of funding to address salinity problems.
- Millions of dollars are being actively sought by the Queensland Government to try to prevent the tragic situation that currently exists in the Murray Darling Basin.
- At same time the State Government is pushing forward the development of a large dam on the Burnett River which will significantly worsen the salinity problem. This is clearly outlined in a new discussion paper on the plight of the Murray River.

How bad is salinity in the Burnett River Catchment:

- Surface waters of the Burnett River Catchment have been rated as being of moderate-poor quality with salinity averaging approximately **800 - 900 uS/cm** (Concentration of salinity as indicated by the electrical conductivity of the water expressed as uS/cm). The rating is provided by Sinclair Knight Merz in an earlier report commissioned by the then Department of Natural Resources. This is based on 30 years of recordings taken from DNR's stream gauging stations.
- **For comparison the long term medium conductivity for the Murray River at Morgan SA is about 600 uS/cm (Arthington and Pullar).**
- At the medium salinity levels experienced in the Burnett, many fruit and vegetable crops are affected and there are limitations on crops that can be grown.
- Many of the Burnett's tributaries have been rated as having high salinity, further worsening the situation.
- In periods of low flow, conductivity readings often exceed 1000 uS/cm in the middle reaches of the Burnett, the threshold level above which undesirable levels can accumulate in some soil types (Arthington and Pullar, 1991). It is during these periods of low flow that local orchardists in the Central Burnett have experienced substantial crop damage.
- SKM's findings on salinity in the Burnett in the "Burnett River Catchment Study " (1998) which they prepared for the Queensland Government's Water Infrastructure Task Force, rated salinity in the Burnett as medium, with low flows suitable only for salt tolerant crops.

Salinity should be a major consideration when looking at the environmental feasibility of Paradise Dam. It was a major factor in the development of the Bjelke-Peterson Dam on one of the Burnett's tributaries.

  - The Bjelke-Peterson dam size was limited to 125 000 ML based largely on avoiding salinity problems. Preliminary analyses (Arthington and Pullar, 1991) suggested that storages < 125 000 ML would have sufficiently frequent overflows for the contents to exceed 1000 uS/cm only rarely. This is the threshold, above which Reid et al, (1979) concluded that long term usage could lead to a buildup of undesirable levels of soil salinity of some soil types. In large storages, the paper suggests conductivity could be unacceptably high for periods of up to several years.
  - Given the severe reduction of natural 1-2 year flows that will occur with Paradise Dam, the Burnett River system will not be able to flush regularly and the salinity situation is likely to worsen. A major strategy for reducing stream salinity outlined by Arthington and Pullar, 1991 is to increase fresh-water (surface) flow.

- Sinclair Knight Merz (SKM) in the EIS only briefly mention the effect on salinity levels stating that it is probably only small in comparison with already existing catchment wide natural and man made effects.

- Water Quality – not just quantity is essential to maintain economic and social viability in the Burnett. The evidence suggests that there is going to be a direct tradeoff in that more water will mean less quality.

Reference:
National Action Plan for Salinity and Water Quality

A Case Study in Integrated Management of a Catchment/Aquatic Ecosystem - Barker-Barambah Irrigation Project, Queensland, Australia; Angela H Arthington and Ian S. Pullar, Commission Internationale Des Grands Barrages; 1991

Burnett River Catchment Study – Catchment Overview- Sinclair Knight Mertz. Department of Natural Resources, June 1998.

Burnett River Dam EIS – Sinclair Knight Merz, 2001

Issue 4.

Provision for the Environment

The Water Infrastructure Development (Burnett Basin) Amendment Act, (December 2001) modified the environmental flow objectives contained in the Burnett Water Resource Plan that the Council assessed as complying with commitments in June 2001.

Burnett Water For All (BWFA) strongly disapproves of the State Government over-riding the Water Act 2000 (Qld) to amend the Burnett Water Resource Plan (WRP). If the government intended to change the Water Resource Plan it should have been through the correct process outlined in the Water Act 2000 (Qld),- with full scientific input and community consultation.

- Burnett Water For All is astounded that changes to the Water Resource Plan could be made without sound scientific backing and to "fit in" for political gain, the unsustainable Paradise Dam proposal.
- The changes to the WRP were based on new modeling undertaken by the Department of State Development rather than the Department of Natural Resources and Mines who have the expertise and charter for environmental care. The Department of Natural Resources and Mines objected strongly to these modeling figures in their response to the EIS.

- **Over-riding legislation to change the Burnett WRP:**
  - **did not provide an opportunity for those affected to have input.** The Queensland Government regards the consultation as part of the EIS was sufficient to change the WRP. However as stated elsewhere Burnett Water For All regards the entire EIA for Paradise Dam as inadequate in both content and process.
  - is a clear **vote of no confidence in the community consultation** process that has gone into the WAMP (Water Allocation Management Plan) study that formed the basis of the WRP, and
  - **makes a mockery of the Water Resource Planning process** that has been hailed nationally as being a significant achievement in sustainable water management

- It has provided a clear message to the community involved in the National Action Plan for Salinity and the Vegetation Management Planning processes, that **the State Government does not value their contribution.**

- **Burnett Water For All believes that the Burnett WRP should not be altered for the following reasons:**
  - The Burnett WRP was only signed off 12 months ago and therefore isn't out of date. It isn't due to be reviewed until 2010.
  - The Environmental flow limits signed off in the Burnett WRP (130 000 ML or 75% of natural flow) allow for more than double the level of extraction than the Draft WAMP recommended (81% of natural flow). The Paradise Dam infrastructure package would extract (196 000 ML).
  - The limits recommended in the draft WAMP were set at the point above which the best science available predicts that major to very major ecological impacts will occur.
  - Changing the figures won't change the fact that these major impacts are likely to occur, with the level of extraction proposed with Paradise Dam.
  - Some of the impacts that will occur by extracting water beyond the environmental flow limits are:

- Worsening of Salinity,
- Increased aquatic weeds and algal blooms,
- Reduction of fish habitat and breeding triggers, reducing catches,
- Increase in nutrients flowing to Great Barrier Reef during flood events,

- The specific amendment of the Burnett Water Resource Plan effectively removed the Government's need to 'maintain' lungfish spawning habitat in the upstream reservoir. The Australian Lungfish is likely to be listed as a nationally threatened species under the *Environment Protection & Biodiversity Conservation Act 1999* in the next 12-18 months. A Department of Primary Industries-Fisheries report just released (Stephen Brooks) on lungfish highlights the negative impacts the dam will have on this potentially threatened species (talk to co-author Peter Kind, tel 07 3817 9540 or Peter Jackson, 0421 441 732).

- Good quality, reliable water supplies underpin the social and economic viability of our region. The WRP was done to provide the limit on extraction so that the reliability and quality of our water isn't compromised.

<u>Based on substantial mainstream evidence</u>, Burnett Water For All strongly believes that the changes to legislation to over-ride the WRP, is not sustainable, and therefore will seriously threaten the long term viability of the Burnett Region.

The issues listed above also apply to the issues raised in the *2002 NCP Assessment Framework* in the section headed:
Provision for the Environment (page 19) and particularly to the sections regarding the Burnett WRP and environment commitments under the CoAG water reform (page 21), and *Principle 5* (page 22), concerning reallocation of water to enable environmental water requirements to be met. In fact, Coffey (2001), shows that the State Government will be liable for not meeting environmental flow requirements (as referred to in Issue 2).

In regard to *Provision for the Environment:*
- Environmental Flow Objectives will not be met (as detailed in Issue 2)
- As a result, there will be insufficient water flows to allow fish spawning and prawn breeding in the tidal reaches of the Burnett River system. There will be severe economic losses to the commercial and recreational fisheries, and possibly, the loss of some fish species.
- Recommendations from the Burnett WAMP and research investigations have been ignored in this regard.
- The Burnett River is deemed to be a stressed river system
- By not meeting the Environmental Flow Limits recommended in the WAMP, the "Precautionary Approach" is being ignored and the State is at risk of being liable as referred to by Coffey (2001).

The NCC should consider all of the points raised in Issues 2 and 3 in relation to *The Water Infrastructure Development (Burnett Basin) Amendment Ac*t, (December 2001) which modified the environmental flow objectives contained in the Burnett Water Resource Plan.

Issue 5.

Devolution of irrigation scheme management

Constituents be given a greater degree of responsibility in the management of irrigation areas, for example, through operational responsibility being devolved to local bodies, subject to appropriate regulatory frameworks being established. (clause 6g).

The degree of community consultation in Water Planning has been reduced to almost nil with Burnett Water handling the information flow (a company with a vested interest in Paradise Dam being the outcome). The flow of information has been only 1 way with little option for community wishes to be considered. Nor is there likely to be further consideration of broader community views given the manner in which the Burnett WRP has been developed so far.

Lack of Consultation

- Many sectors of the community felt they weren't adequately consulted – including the local indigenous group – Wakka Wakka Jinda, landholders and the Inland Burnett community.
- The public was not given sufficient warning before the release of the Environmental Impact Statement (only a few days). Many of the interested parties did not have enough time to put together an adequate response. Prior to the release of the EIS, the community was not made aware that the "wheels were in motion" to push the dam through, and that studies were being undertaken.
- Information other than what has been offered by Burnett Water has been very difficult to find because all other Queensland Government Departments have been advised not to comment.
- This has resulted, until recently, in a short one sided debate designed to minimize opposition to the Burnett River Dam
- The public were not informed that the Burnett River Dam EIS was going to be used to amend the WRP for the Burnett.

Ignoring of the WAMP and community input

- The community, were consulted at length on the WAMP, and yet despite this level of input the government has chosen to ignore the findings.
- Ignoring of the WAMP has put a great deal of doubt in the mind of the community as to how their input into Vegetation Management and Salinity planning will be handled by the Government.
- The community wants to see that its input and commitment of time and energy is valued and not wasted – as it would appear has happened with the WAMP situation.
- The Government's stance thus far has shown little regard for the needs of many sectors of the community dependent on the Burnett River. These sectors would have no faith in some of the proposed allocations for the Upper Burnett, particularly as the amount of water required for extraction to meet these commitments would exceed the WAMP recommendations by far.

Mary Burnett Declaration

- Formed between 8 community and industry groups – Sunfish, Fraser Coast Branch Inc.; Queensland Seafood Industry Association; Wide Bay Burnett Conservation Council; Wondunna Aboriginal Corporation; Hervey Bay Dugong and Seagrass Program; Queensland

Conservation Council; Hervey Bay Tourism and Development Bureau and the Marine Teachers Association – Wide Bay

- The groups called "on the Queensland Government to ensure that any and all decisions that are being made, and will be made in the future, on the management of, and water flows in, the rivers of the Wide Bay Burnett Region adhere to the principles of Ecologically Sustainable Development (ESD)
- Almost each of the 10 requests made under the declaration have been breached including –
  - economically sustainable and equitable water use amongst all groups – including fishing and tourism.
  - Water allocation planning process in accordance with the CoAG framework
  - Environmental flows must be clearly identified and incorporate allocations of water specifically for environment purposes
  - Requirement for rigorous Environmental Impact Assessment for any increased water extraction or further impoundments
  - Full and independent economic impact assessment
  - Any structures built to be under a "user pays" system

Issue 6.

Water allocations and property rights

There must be comprehensive systems of water entitlements backed by separation of water property rights from land title and clear specification of entitlements in terms of ownership, volume, reliability, transferability and, if appropriate, quality. Governments must have determined and specified property rights, including the review of dormant rights. (clause 4a) For the Council's 2001 assessment all states and territories were progressing implementation of water allocation and property rights reform. That assessment considered the determination of water allocations in water management plans, as well as key aspects of water property rights, such as security of ownership, reliability of entitlements, recognition of third party interests, licensing and registry systems.

The ease and manner in which the Water Act 2000 was over-ridden by the Queensland Government casts doubt over any security of tenure to water rights under this legislation. Other points for consideration include:

- Reliability of existing water allocations for all Burnett catchment irrigators will be reduced with the proposed Paradise Dam development. This is because the existing water will have to be shared amongst a substantial increase in irrigated area.
- Over the past 4-5 dry years, this would have meant a significant reduction in the already unreliable allocations.
- The Burnett Basin WAMP has shown that the river is very near being fully utilized, and yet a further 196,000 ML/year was signed off in the amended Water Resource Plan.

Apart from not providing sufficient water for the environment, which has been referred to above under Issues 2 and 3, there remains an inequitable distribution of water in the Burnett Catchment that will be further exaggerated should Paradise Dam go ahead. The following details those inequities.

Social Inequity

- The economic benefits of Paradise Dam will go predominantly to the Bundaberg area at the environmental, social and economic expense of the Inland Burnett and industries such as tourism and fishing.

No consideration across Catchment of Limited Water

- The Burnett Basin WAMP developed by DNR in consultation with the community recommended that only a further 2% of Mean Annual Flow could be extracted before major to very major impacts would occur.
- However the entire Burnett catchment community has not been given an opportunity to discuss the implications of this and to determine an equitable sharing of the water
- Instead the Burnett River Dam has been promised for the benefit of one area of the Burnett, without adequate consideration of the Inland Burnett region and other industries.
- Planning for water needs by the Burnett Water Development Group occurred before the WAMP had revealed how much water was available for further extraction. The WAMP findings did not indicate that there was sufficient water to meet the open-ended demands of the industry and community.

- In response to this perceived need the State Government signed off in the Water Resource Plan of the Water Act 2000 (Qld) on 130 000 ML of additional annual extractions. This is now extended to 196 000 ML with the new legislation.

Last infrastructure for the Burnett

- As the existing package of infrastructure breaches the amount legislated in the Water Act, these developments will certainly be the last for the Burnett – depriving the Inland areas of water development options.

Unfair water distribution

- Water allocations are inequitably distributed across the Burnett catchment, with the inland Burnett having 40% of the population but only 29% of total water allocations. Of the proposed 196 000 ML only 20% will be allocated to the inland and only 3% to the South Burnett.

Inland Burnett excluded from planning framework

- Present and future developments for the whole Burnett are being based on the WideBay2020 Region Growth Management Framework. However WideBay2020 covers only the coastal shires and not the inland Burnett.
  - Recommendation 1 of the WideBay2020 Framework is for guiding the management of population growth and development of the Wide Bay region.
  - Recommendation 6 is for long term planning for future water needs and states that sustainable management and allocation of water resources in the region should be on a Catchment basis.

- Construction of Paradise Dam will result in the loss of existing water harvesting rights or "Out of Allocation Water" for users in the Central and Upper Burnett:
  - This is because two criteria must be met on an irrigators licence before water harvesting can commence – the first being a starting flow level and the second crucial criteria is permission from the Department of Natural Resources and Mines to commence. This "go-ahead" is given only when there are sufficient flows in the system to fill the structures and to flow out to the ocean.
  - Starting flow heights, combined with particular sized pumps will be converted to a maximum megalitre water harvesting allocation under the Burnett Resource Operation Plan (ROP). However the second crucial criteria is intended to remain the same.
  - Irrigators were promised that their harvesting would not be affected by Walla Weir, but orchardists have testified that they have not been permitted to start until Walla Weir has been accounted for.
  - As Paradise Dam substantially exceeds the 1-2 year environmental flow limits set out in the WAMP, irrigators are likely to have their opportunities for harvesting severely reduced.
  - At stake is a total of 31,000 ML which on average is extracted through water harvesting in the Burnett catchment, with 27,000 ML of this being in the inland areas.
  - Many orchards rely heavily on water harvesting with a few solely relying on it as their water source.

Issue 7.

Integrated Catchment Management

Jurisdictions must have in place integrated resource management practices, including:
• demonstrated administrative arrangements and decision making processes to ensure an integrated approach to natural resource management and integrated catchment management;
• an integrated catchment approach to water resource management including consultation with local government and the wider community in individual catchments;
and
• consideration of landcare practices to protect rivers with high environmental values. (clauses 6a and 6b, 8b and 8c)

Lack of Consultation with Existing Community Groups

In formulating the amended Water Resource Plan, a the integrated catchment management group, who represent the Burnett Catchment, were ignored. The following outlines their plan, goals and mission

Burnett Catchment Care's Strategic Plan

- Given the scientific evidence available which shows that Paradise Dam is unsustainable, Burnett Catchment Care Association (BCCA)'s Strategic Plan could not support the dam's development.
- Commitments undertaken by the BCCA plan under "Water Access, Quantity and Environmental Flows – Overview of Issues" include:
  - "To ensure maintenance of current **and future** water supplies within the Burnett and associated rivers
  - Recognition and appreciation from community that the water supply of the Burnett and associated rivers is a **finite and valuable resource**
  - Need to **understand infrastructure and future developments** are an integral part of managing our water resources in the Catchment
  - Recognition of importance of water resources to **non-extractive industries – commercial and recreational fishing and tourism**
  - Recognition of importance of water resource to **survival of in-stream natural resources** for example fish and aquatic plants."

- **Goal:**
  - Access to assured supplies of water for the Burnett Catchment **within the capabilities of the system and maintenance of environmental values**.

- **Burnett Catchment Care Association (BCCA) Mission Statement:**
  - "To coordinate and instigate community awareness and effort to maintain an ecologically and economically sustainable Burnett and associated river systems."

Building paradise Dam would be ignoring the strategies, goals and mission of the integrated catchment management organisation of the Burnett Catchment. Members of the BCCA are long standing representatives of many community industries.

Issue 8.

Assessment of alternatives

There are a number of cheaper, less damaging alternatives to Paradise Dam, which have not been fully assessed in the EIS process.

Water use efficiency as an alternative to infrastructure was much understated in the EIS. Up to 80 000ML per year could be saved by upgrading the channel system and improving water use efficiency in the Bundaberg Irrigation Area.

- Water use efficiency by irrigators over the whole catchment can generally be improved by 10-30% (DNRM, pers. comm.) with potential gains of up to 50% for some systems using a combination of:
  - water scheduling
  - trickle irrigation
  - water reticulation (water recycling) and
  - fixed bed systems.
- As the total allocation to the Burnett Catchment is 430 000 (WAMP, Burnett Basin, 2000), this could potentially provide 50 000 – 60 000 ML annually of water.
- In peak years 42 400 ML has been lost per year from seepage and evaporation from storages (DNR, 1998). Through lining and capping of open channels, and other improvements in supply efficiency, these losses could be recouped.

A Technical Experts Group organized by the Department of Natural Resouces in conjunction with the Burnett Development Reference Group, a community panel carried out an assessment of 30 of the infrastructure alternatives for the Burnett Catchment during 2000 (Use of MODSS – for Burnett River Catchment Study, DNR, 2000) . This process rated each proposal over a large range of environmental, social, and economic criteria. Members of this group have reported that Paradise Dam dropped out of the assessment at several stages, as a result of its poor performance, and yet somehow kept reappearing at the beginning of each subsequent stage, due to political reasons (C. Dalton Pers. Comm..; P. Soper, Pers. Comm..). Results for Paradise dam were:

- Economic criteria rated 13th out of 30,
- Environmental criteria it rated 26th out of 30.
- Social criteria it rated 27th out of 30,
- **Given all three above criteria equal weighting, Paradise Dam rated 29th out of 30.**

Other Infrastructure Alternatives that would have better met the needs of the Bundaberg Area across all aspects rated much higher: These and other alternatives such as desalinisation and improving water use efficiency were not adequately addressed in the Environmental Impact Assessment.

When Economic, Environmental and Social Issues were weighted equally:

- Raising Ben Anderson – 5th out of 30
- Raising Bucca Weir – 6th out of 30
- Raising Walla Weir – 7th out of 30
- Perry River Dam – 14th out of 30 (major storage)
- Degilbo Creek Dam – 15th out of 30 (likely major storage alternative)

Dams on the Degilbo Creek and the Perry River are two of the Alternatives that were not properly considered in the EIS, yet both rated much higher in the assessment criteria than Paradise. The Perry River Dam rated 14th overall while the Degilbo Creek Dam rated 15th overall. Either of

these alternatives could provide water at a much lower cost and with much less environmental damage than Paradise Dam.

Interestingly, Desalinisation rated 1st out of the 30 proposals when all criteria were weighed up. Results for desalinisation were:

- Economic – 16th out of 30
- Environmental – 1st out of 30
- Social – 2nd out of 30

Waste Water Reuse was rated 2nd out of 30 when all three above criteria were weighted equally.

The other smaller infrastructure proposals that have been approved for the Burnett were all rated in the top 10 and were the best for each of their geographic localities. The only anomaly was Paradise Dam.

- Raising of Jones Weir – 3rd out of 30
- Eidsvold Weir – 4th out of 30
- Barlil Weir – 8th out of 30

A combination of the other alternatives along with an increase in water use efficiency could provide all of the water needed and achieve all of the benefits to the economy that this will bring, with out breaching the WAMP recommendations and without taking water away from other users.

The anomaly in the decision making was and still is Paradise Dam.

References

Use of MODSS (Multi-Objective Decision Support System) for Burnett River Catchment Study. Department of Natural Resources, 2000

Issue 9.

Failure to Meet Water Quality Targets for the Great Barrier Reef

- Development of Paradise Dam will prevent the Burnett River reaching water quality targets set as part of the recently announced Great Barrier Reef Water Quality Action Plan.
- The Action Plan identifies the Burnett has having medium to high risk for sediment and nutrient export onto the reef.
- The targets set for the Burnett are to halve the sediment and nutrient export by 2011.
- The Plan identifies irrigation infrastructures such as dams, weirs as a threat to existing fisheries through siltation of the Burnett River below the barrage and specifically lists **dams** has having the capacity to modify water regimes and for significant downstream impact on the Great Barrier Reef World Heritage Listed Area. As the direction of water flow from the Burnett River mouth is predominantly north (Sue Sargent, Woongarra Marine Park Project, pers. comm.), Paradise Dam will have a negative impact on the Barrier Reef.
- Outlined in the plan as local river impacts of dams are alteration of flow regimes, loss of habitat and degraded water quality through reduced oxygen levels and release of toxicants, loss of breeding habitat and altered estuarine hydrological regimes.
- All of these above impacts on the Burnett River, the estuarine area and the reef will be significant with the development of Paradise Dam.
- Impact on the reef has been increased by the artificial redirection and deepening of the channel at the mouth of the Burnett River. The channel has been described by Bundaberg fishermen as having a similar effect to a cannon, shooting the water up to 18 kilometres and more offshore (observed in the form of sediment flows). The water is then carried in currents north onto the Great Barrier Reef.
- Also significant is the proximity to the mouth of the Burnett River of Mon Repos, the largest loggerhead turtle hatchery in Eastern Australia. Given the predicted impact of change in flows on the entire aquatic food chain, development of Paradise Dam poses a serious threat to the turtles' environment, and also to seagrass beds and dugong habitat.
- Woongarra Marine Park is home to some of Australia's best array of soft corals, which stand to be degraded through the effects of the development of Paradise Dam.

References:
Great Barrier Reef Catchment Water Quality Action Plan, 2001
Great Barrier Reef Catchment Water Quality Issues, David Hayes (ed.), Sept. 2001