



Dam the Mary River? Save the Mary River!

Save the Mary River Coordinating Group

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The Secretary

Senate Standing Committee on Environment

Communications and the Arts

PO Box 6100

Parliament House

CANBERRA ACT 2600

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RE: Submission to the Senate Inquiry into the operation of the Environment Protection and Biodiversity Conservation Act 1999

Dear Sir/Madam

The Save the Mary River Coordinating Group Inc (STMRCG) is a community-based group formed two days after the Queensland Government's surprise announcement in April 2006, that it intended to dam the Mary River at Traveston Crossing. It has a committee comprised of landholders that live in the Mary River catchment, a membership of over 300 members and has attracted very substantial community support for its legitimacy and its actions. It has members from a wide range of professional backgrounds possessing expertise relevant to this submission.

We welcome the opportunity to provide our views to the Senate Inquiry into the operation of the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) based on our experience with the approvals process of the Northern Pipeline Inter connector (NPI) stage 1 and 2, Traveston Crossing dam, sand and gravel extraction in the Mary Valley, and the auditing of EPBC mitigation conditions of Paradise Dam.

Our contribution concerns the operation of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and other natural resource protection programmes, with particular reference to:

- lessons learnt from the first 10 years of operation of the EPBC Act in relation to the protection of critical habitats of threatened species and ecological communities, and potential for measures to improve their recovery;
- the cumulative impacts of EPBC Act approvals on threatened species and ecological communities, for example by the Paradise Dam;
- the effectiveness of responses to key threats identified within the EPBC Act, including land-clearing, climate change and invasive species, and potential for future measures to build environmental resilience and facilitate adaptation within a changing climate; and
- the impact of programme changes and cuts in funding on the decline or extinction of flora and fauna.

Shortcomings in the assessment of the EPBC Act process we have experienced include:

1. Lack of confidence in the bilateral agreement being an appropriate assessment method when the State is trying to undertake an independent environmental assessment on the Traveston Crossing dam project where the proponent QWIPL has advised us that it has only one \$1 shareholder (a State Government employee – the Premier of Queensland) and five of the six Directors are Queensland Government employees. Further, QWIPL has been granted State Government powers to progress the proposal and is therefore not an independent company.

2. Lack of standard methodology in assessing impacts on species and risk of extinction. Although there is an appalling lack of data about the endangered flora and fauna and the QWI admitting in the supplementary EIS: “We do not have basic population and life history information for most species, and this is certainly the case for the suite of threatened species recorded from the study area”, the mitigation strategies proposed are largely untried , unproven or unsuccessful (eg. artificial breeding – husbandry, turtle ramp, fishways for lung-fish, relocating turtle nesting banks).

There are no Population Viability Analyses(PVA) or Population and Habitat Viability Assessments for endemic and/or threatened species or habitats– the excuse given is the lack of data and problems with reliability of some PVAs, but these are not valid excuses providing sufficient time and effort are made to adequately assess risks to threatened species. Such time and effort are actually required in the Terms of Reference.

3. Lack of enforcement of EPBC approval conditions:

The delay in auditing (over 6 months between auditing date and final report release) and lack of enforcement of EPBC approval conditions is of concern at Paradise Dam. This is the last dam built in Qld and which was audited under the EPBC act to be partially compliant for the fishway and showing a number of other shortcomings in meeting EPBC conditions. Appendix A lists some of our comments about the lack of rigor in the Audit of Burnett Water Pty Ltd, QLD, Burnett River Dam, EPBC 2001/422. In particular there has been **no prosecution by the Federal government** of the Queensland government for its breach of EPBC conditions on the Paradise Dam even though the downstream fishlock has never worked. and the upstream fishlift has operated insufficient times to gather enough monitoring data to

assess its effectiveness. There also has to be suitable habitat on either side of the fishway for the fish to survive, thrive and reproduce... a surface covered in the aquatic weed salvinia in the dam, and lack of suitable spawning grounds (for lungfish) and very little water released downstream could hardly constitute to be suitable habitat. Similarly there has to be suitable water quality. Fish kills in Paradise dam during 2006 and 2007 are evidence that water quality has been a problem that would have put more of the fish population at risk.

The following link provides additional information and images of Paradise Dam -

<http://picasaweb.google.com.au/glendap5/Paradise?authkey=fcnPkxsYv6Q>

We would recommend that this auditing process at Paradise Dam be compared to the process that would be carried out on a non-governmental corporation.

4. Lack of aquatic macro invertebrate listings: It is well known that the scientific task to describe, name and map Australia's invertebrate fauna is still in its infancy, and that the identification of all significant species (high biodiversity value) is even further down the track, as is the designation process of a much needed conservation status under the EPBC Act (1999) and the IUCN (Red List) for many species (e.g. Clarke & Spier- Ashcroft 2001. Aquatic macro invertebrates are practically absent from the EPBC list (www.environment.gov.au/epbc/index.html). (www.ento.csiro.au/conservation/actionplan.html).

Our current lack of knowledge must not be mistaken as a license to destroy ecosystems that cannot go back to their former state (should we become wiser one day and try to rehabilitate) and will be forever lost. The Mary River catchment in its current (though impacted) state is one of SEQ's most valuable stream ecosystems with its unique pool, riffle and sandbar sequence.

5. Lack of application of the Principles of Ecological Sustainable Development: Within Australian State and Commonwealth legislation and policy, **Ecological Sustainable Development** (ESD) is specifically defined with reference to five principles as outlined, for example, in Section 3A of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999:

1. Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.
2. 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.
3. The principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
4. The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.
5. Improved valuation, pricing and incentive mechanisms should be promoted.

The EIS for stage 1 of the proposed Traveston Crossing and the NPI has failed at the most basic level to consider impacts and alternatives within the ESD framework. Taking water from the Mary catchment (plans to take 5 times more water than currently taken and that's not including evaporation losses from the proposed dam) is not equitable or sustainable when there is far more water that falls on the Moreton catchment than is used. Social impacts have been devastating on our community and poorly recorded in the EIS. No value has been assigned to environmental services or social impact costs in the decision-making process. No consideration made to look at the costs to future generations for decommissioning costs, high risk of irreversible environmental damage through erosion, salinity or health risks. Inadequate involvement of downstream stakeholders who will be impacted through lack of water security, water quality, lack of flushing flows, impacts on tourism or fisheries. Poor documentation and detail when comparing alternatives makes it difficult to evaluate costs and risk of various options.

6. Lack of appropriate assessment of cumulative impacts is another shortfall of the EIS process under the EPBC Act for the proposed NPI stage 1, stage 2, the Traveston crossing dam, and increasing number of sand and gravel extraction on the Mary River floodplain and the risks posed to matters of national significance..

The lack of fresh water flows to Hervey Bay and the Great Sandy Straits Ramsar wetlands from the cumulative impacts from extensive dams, weirs and barrages in the Burnett and Mary River systems is now showing up as hyper salinity in Hervey Bay. Yet the EIS continues to use average stream flows to justify that there will be no impact on fresh water flows downstream.

A significant body of newly published research on the links between freshwater flows from the Mary River and the hydrography of Hervey Bay and the Great Sandy Strait. A brief description of this work can be found at <http://www.bmrg.org.au/information.php/2/55/237>. The abstract and an e-print copy of the report by Principal researcher and oceanographer Associate Professor Joachim Ribbe can be downloaded from <http://eprints.usq.edu.au/4351/>

Another example of cumulative impact not being adequately addressed concerns water quality and excessive sediment. Fine sediment most likely contributed to death of seagrass and impacted on fisheries, dugong and marine turtles in the Great Sandy Straits after the 1992 floods (McLeod 1996). The extent of the Mary River flood plume of the smaller flood of 1999 flood (Feb 12th 1999) is illustrated in Map 1 (McKenzine et.al.2000). CSIRO research (De Rose et. al, 2002) has already showed that riverbank erosion can contribute upwards of 87% of end-of-valley sediments in the Mary River Catchment.

There is also a high risk of dispersive clays being removed from siltation ponds during flood plain flooding of gravel extraction pits which are expanding rapidly since the announcement to dam the Mary River at Traveston Crossing. Numerous potential sand and gravel borrow pits have been identified in the EIS. Photo 1 and 2 illustrate the highly dispersive nature of the clays within the sand and gravels in the Mary river catchment at a sand and gravel quarry at Traveston crossing..

This poses a risk in the floodplain during high flood events which is highly likely increase the river's turbidity downstream and directly affect the health of the Mary River Cod, Queensland Lungfish and Mary River Turtle, through decreased water quality, decreased native submerged aquatic plant growth and infilling of habitat pools. Mary River Cod is at the top of the food chain of the Mary River system. Any adverse impacts on fisheries directly affect the recovery plan of this species (Simpson & Jackson, 1996, The Mary River Cod Research and Recovery Plan).

Also increases in the volume and frequency of sediment load (and particularly dispersive clays) within the river is also likely to impact on the seagrass beds within the Great Sandy Straits. Migratory marine mammals, Dugong dugong (dugong), Caretta caretta (loggerhead turtle), and Chelonia mydas (green turtle) are all known to feed on these seagrass beds. Studies have shown sea grass death and impacts on dugong in Hervey Bay from sediment blocking the light for sea grasses after the 1992 flood (Preen et al 1995). Lenthalls dam was just built on the Burrum River and inundation of highly dispersive soils and subsequent dispersion would have contributed to the pattern of death shown in sea grass around the mouth of the Burrum River (P Dutton pers com).

Therefore dispersive clays from sand and gravel extraction will likely have significant impacts on the habitat and populations of Dugong by:

- Decreasing breeding areas
- Decreasing habitat areas for occupancy
- Decreasing population levels and
- Isolating the population leading to reduced genetic integrity and possible genetic depression



Photo 1: Sand and Gravel extraction at Traveston Crossing Aug 2008



Photo 2: Closer view of highly dispersive silts in settling ponds in the flood plain at Traveston Crossing. There exists a high risk that these will be breached during a high flood event. Aug 2008.

There is a high risk of increasing erosion of riverbanks in an area already known to show instability of river channel below the proposed Traveston crossing dam wall location. This again would be a cumulative impact in increase turbidity of downstream waters that is not being seriously considered in the EIS process.

There is documented evidence of river bank instability having adverse impacts on Great Sandy Strait Ramsar Wetlands. After the 1992 floods, many properties had bad stream bank erosion on the Mary River around the Conondale area. This type of bank slippages, slip circle bank failures, and undercut banks were extensive in the catchment and particularly bad when the banks became saturated. Photo 3 shows an example of stream bank erosion below Kandanga ck junction with the Mary River and Photo 4 shows its regeneration after 9 years when protected from grazing and native species enhanced planted amongst the native regeneration of sheoak and bottle brush. Photos 5 and 6 shows more examples of similar regeneration after the 92 flood where banks were badly eroded.. Poor regeneration occurs if stock are not excluded (Photo 7). Extensive restoration work has been carried out in the Mary catchment by landholders over the last 15 years and much more is required.



Photo 3: Badly eroded Mary River Banks after the 1992 flood



Photo 4: Riverbanks in 2001 (9 years later - and a big flood in 1999) recovering after fencing off and some enhancement planting/seeding



Photo 5: Riverbanks fenced off for 14 years along the Mary River– over a kilometer of well vegetated, stable riverbank downstream of the junction of Kandanga Ck and the Mary River.

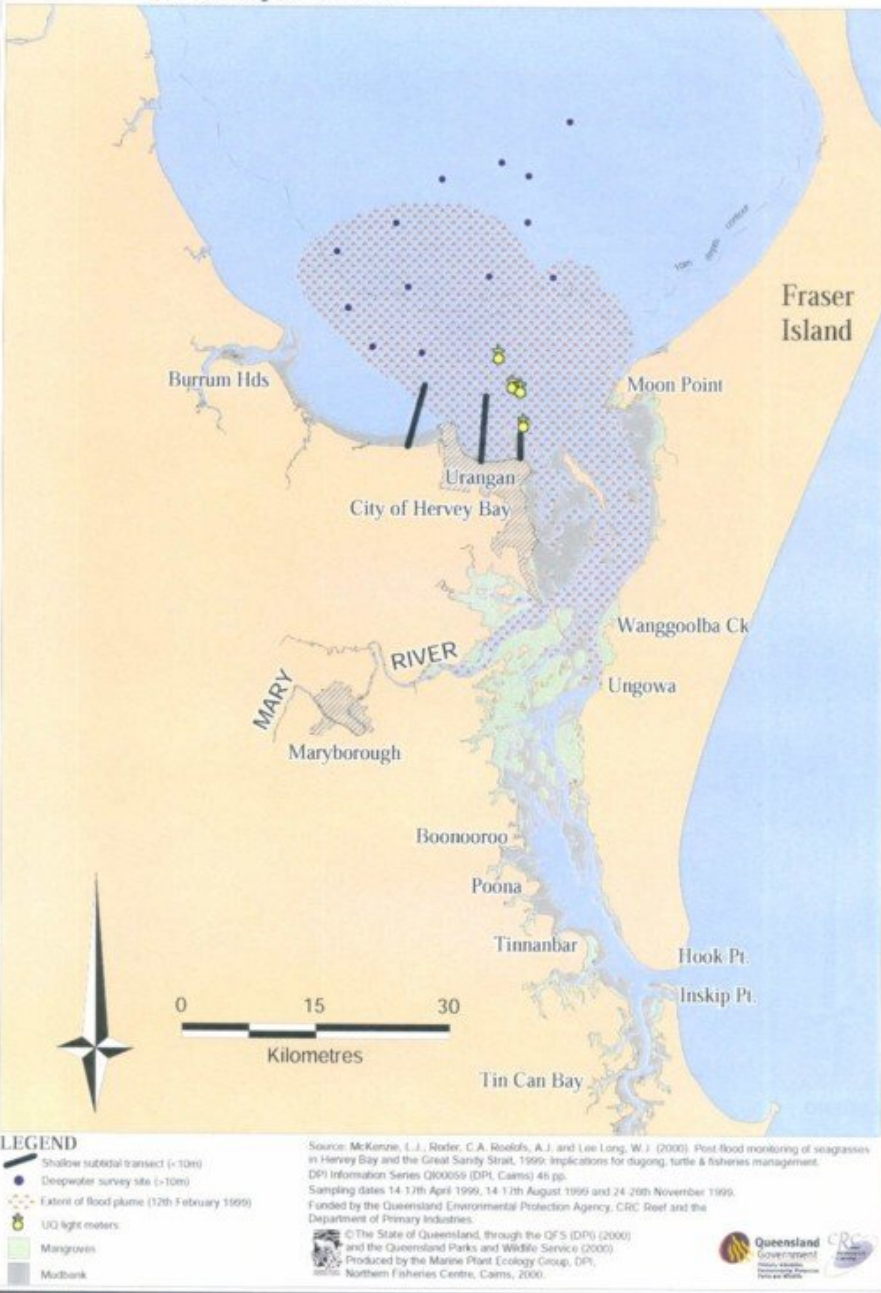


Photo 6: From bare eroding banks to this scene in 14 years – helping nature recover in the Mary River catchment



Photo 7: Riverbanks unfenced on the opposite side of the river.

MAP 1. Extent of the Mary River flood plume (February 12, 1999) and location of post-flood monitoring sites in Hervey Bay and the Great Sandy Strait, 1999.



7. Unclear assessment of social and economic considerations: Under the current EPBC legislation it is unclear how the social and economic impacts of a project are included in the assessment. How does the risk to upstream landholders and 3 major towns which are proposed to be within the high water level of the dam wall if the spill way gates malfunction (Lenthall's dam spill way gates had a problem this year) get considered? How are the noise impacts on rural landholdings where roads are now realigned to be much closer to their properties assessed? How is the increase in flooding time and what impact that will have on businesses in Gympie downstream assessed? (a modelled scenario has shown if the dam was in place for the 1999 flood, the flood peak would have been reduced by 4 metres but doubled the flooding time.)

8. **Lack of assessment for climate change implications and greenhouse gas emissions:** Under the current EPBC legislation there is no requirement to consider impacts from climate change or greenhouse gas emissions with project proposals. Yet there is mounting evidence from overseas that dams and particularly shallow, warm dams will emit large amounts of greenhouse gases and particularly methane and nitrous oxides will be high from the nutrient rich soils that would be inundated in the Mary Valley. CSIRO predictions of climate change for the area include more variability in rainfall and up to 10% decline. This would result in up to 30% decline in stream flow and combined with the proposal to plant plantation timber over 2000-5000 ha of the catchment would substantially decrease the water yield expected. This has not been considered in the EIS.

8. EPBC Act assessment based on flawed water planning in the Mary Basin Water Resource Plan:

The community is particularly concerned with the process involved in the adoption of the Mary Basin Water Resource Plan (WRP). A WRP has been created for the river, and is used as the basis to justify the conclusion that there are no downstream impacts with the proposed extraction of water by the NPI and the proposed Traveston Crossing dam. However the plan is not endorsed by the community reference panel, it doesn't protect downstream estuarine sections of the river as it is only legally valid to the Mary River Barrage. Also the operation rules in the WRP do not address environmental flows required in the estuarine section of the river and protect the Matters of National Environmental Significance in that area.

- **The decision making process of the WRP has not incorporated the Precautionary Principle and advanced sustainable management.** According to s 10(1) of the *Water Act* 2000 (Qld) (the Act) the purpose of Ch 2 is “to advance sustainable management and efficient use of water and other resources by establishing a system for the planning, allocation and use of water”. The term “sustainable management” is defined in s 10(2) of the Act as management that:

(a) Allows for the allocation and use of water for the physical, economic and social well being of the people of Queensland and Australia within limits that can be sustained indefinitely; and

(b) Protects the biological diversity and health of natural ecosystems; and

(c) Contributes to the following:

(i) Improving planning confidence of water users now and in the future regarding availability and security of water entitlements;

(ii) The economic development of Queensland in accordance with the principles of ESD;¹

(iii) Maintaining or improving the quality of naturally occurring water and other resources that benefit the natural resources of the State;

¹ “Principles of ecologically sustainable development” (ESD) are defined in the *Water Act* 2000 (Qld), s 11

- (iv) Protecting water, watercourses, lakes, springs, aquifers, natural ecosystems and other resources from degradation and, if practicable, reversing degradation that has occurred;
- (v) Recognising the interests of Aboriginal people and Torres Strait Islanders and their connection with the landscape in water planning;
- (vi) Providing for the fair, orderly and efficient allocation of water to meet community needs.

The principles of ecological sustainable development as defined in the Act include the precautionary principle.²

A draft Mary Basin Water Resource Plan (WRP) was released for public comment in November 2005. The final Mary Basin Water Resource Plan was legislated in September 2006. There were significant changes made between the draft and final versions of the plan. Notably, the inclusion of words “*to minimise the extent*” in lieu of “*must be adhered to*” will have a profound effect on the Mary River and the Great Sandy Strait. **This is akin to simply indicating what should happen, but “*if we can’t do it, we don’t have to*”.**

The Government’s own dam operator, Sunwater, in January 2006, seriously questioned the ability to achieve Environmental Flow Objectives (EFOs) contained in the draft WRP and questioned the impact of the ‘*strategic reserve*’ as further undermining EFOs in the draft WRP. Sunwater correspondence relating to the draft Mary Basin WRP as tabled by Noosa Shire Council (submission 89 in the Senate Inquiry to investigate additional water supplies for SEQ 2007) clearly states the inability to supply existing allocations before even considering an additional 150,000 ML as a “*strategic Reserve*”. The final WRP was even more restrictive.

By analysing historical river flows the extent of “*change from natural*” can be determined. It is then a question of how much change from natural condition is allowable before ecosystems cease to function properly. In particular how much freshwater flow does the estuary need for fish spawning? The proposed dam will have a dramatic effect on river flows, particularly in drier months of the year and particularly the drier years. It is irrelevant that the mean annual flow at the river mouth is maintained at 85% of pre-development flows because most of the flows that influence the mean average occur in times of moderate to heavy flooding over very short time periods and at very infrequent intervals. What is the point of providing for average flows over a 110 year period when the dam operator could legally provide no flow at all year after year if necessary? The number 85% has no documented empirical basis (Arthington *et al.*, 2006).

The draft WRP completed its public notification stage in February 2006. The intention of the dam was not part of the publicly notified WRP. As the dam represents a major departure from the policy intent of the draft Plan, the final Plan is open to the criticism that it unfairly represented the government’s ultimate intentions. The community is aware that the final WRP was created following mandatory inclusion of a

² *Water Act 2000 (Qld)*, s 11(b).

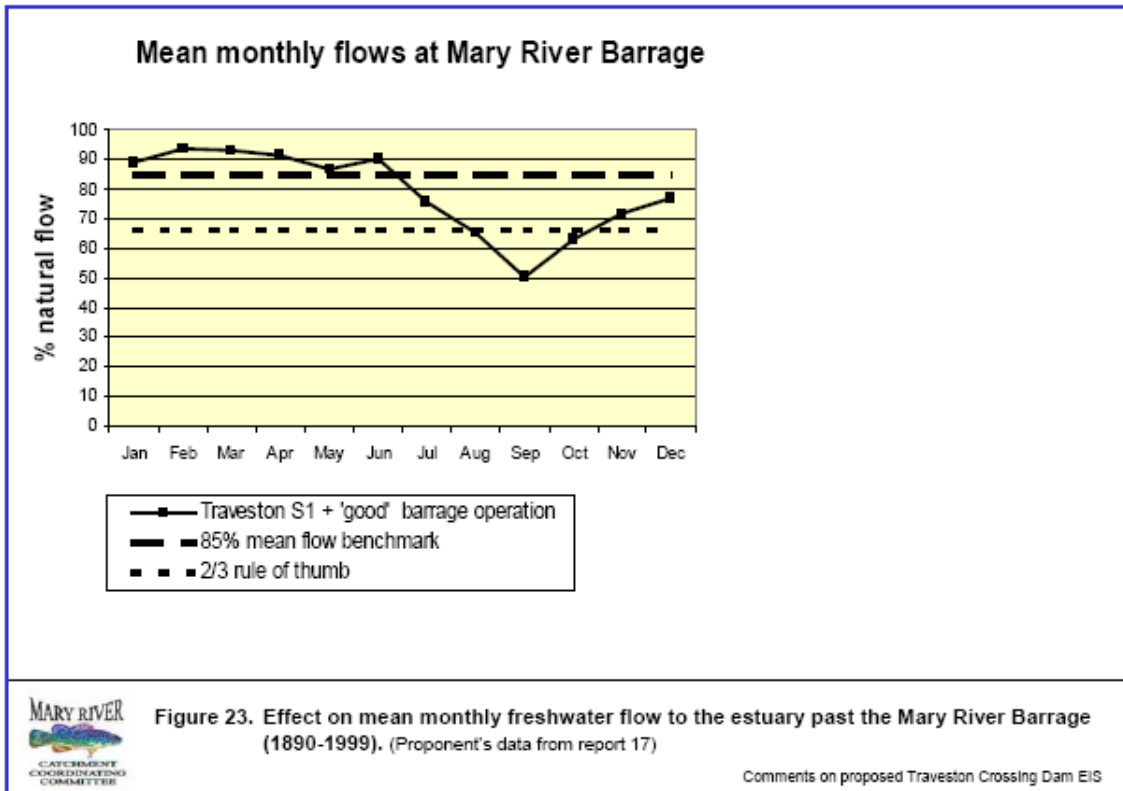
precondition that 150,000 ML per annum was to be available for extraction. Scientists have already provided the State Government with scientific data that shows the Mary River is already over-allocated and has water quality problems where increasingly salinity and dissolved oxygen are outside the EPA recommended guidelines (Brizga *et al.*, 2006).

Generally, denial of the opportunity for the community to comment on the proposed dam as a part of the draft Water Resource Plan is a denial of the rights intended by the legislation to accrue to the community and the final Plan ought to be seen as substantially flawed in its process.

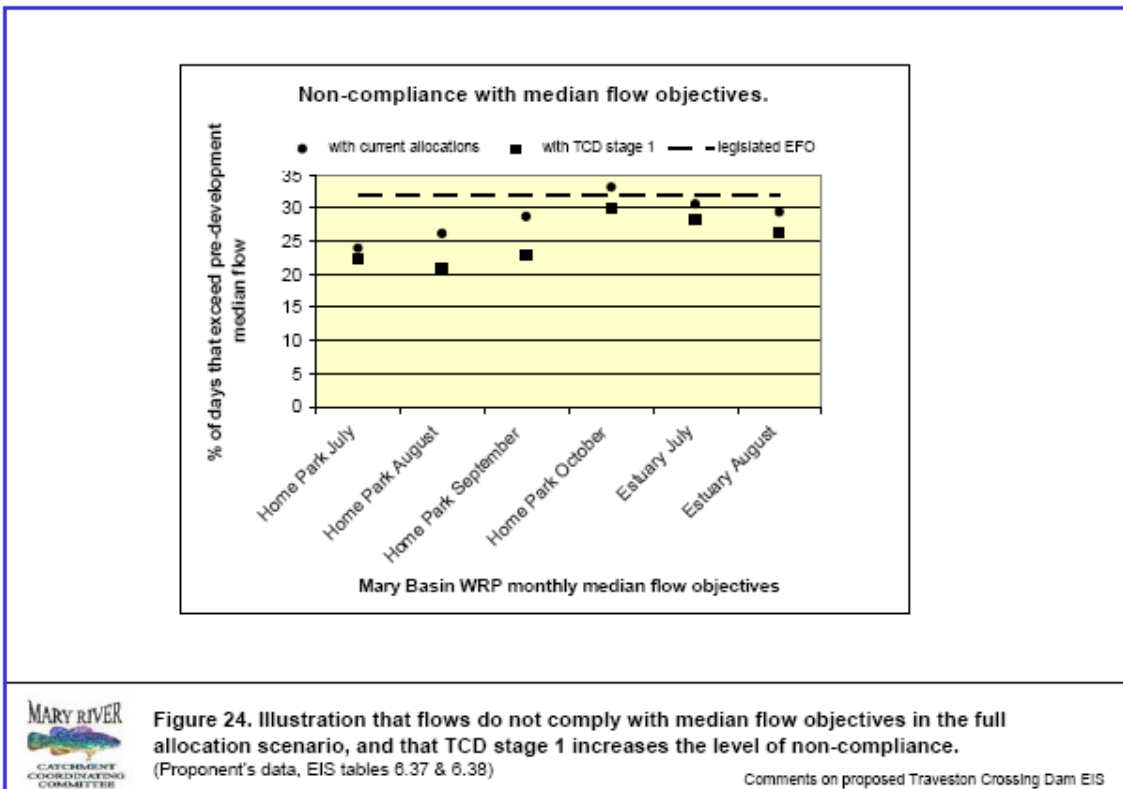
The Community Reference Panel, appointed by the State Government to provide input into the Water Resource Plan has publicly advised that it had been profoundly deceived by the State Government in relation to the proposed dam. A conference in Noosa on 24 April 2006 (two days prior to the TCD announcement) regarding water resource planning in the Mary Basin failed to highlight the proposal for a major dam on the Mary River. Any reasonable person would consider this type of conduct to be highly deceptive and grossly misleading. In essence, the EIS is based on a fundamentally flawed and deceptive water planning process.

The Resource Operations Plan (ROP) has not been completed which would approve allocations from the strategic reserve for the proposed TCD to extract 70,000ML per year from the catchment. This process so far has not involved community consultation.

The following 2 examples from the EIS for the Traveston Crossing dam shows how at current full allocations, environmental flows can not meet the legislated environmental flow objectives of the Mary Basin Water Resource Plan now without any allowances for climate change or a future dam on the Mary River.



Example 1: The above graph shows the proponent's mean monthly flow data from the EIS (Oct 2007). Even as far downstream from the dam site as the entrance to the estuary at the Mary River barrage, the proposal is predicted to reduce September flows to about half of their natural state and generally significantly reduce flows during the JASON months (MRCCC 2008).



Example 2: The above graph from the data of the EIS (Oct 2007) illustrates the extent to which median ('typical') flows in the lower river would not comply with the environmental flow objectives in the Mary Basin Water Resource Plan if all existing water allocations were fully utilized. It also shows how much further outside compliance the flows would be if Stage 1 of the Traveston Crossing Dam came into operation. It is difficult to see how this intent to make matters worse than they currently are could be interpreted as 'minimizing' the extent to which flows don't meet the objectives, as required under the plan. It is also hard to see how current allocations can be supported and the operation of the dam optimized to bring these figures into compliance without reducing the stated yield of the dam by making specific environmental flow releases. (MRCCC 2008)

9. Limited opportunity to challenge the Ministers decision:

Under the current legislation the Minister's decision can only be challenged on process and there is concern that this may again be a political decision even though the facts and data does not support this high risk high cost proposal to dam the Mary compared to other alternatives for water supply.

10. Lack of commitment to species recovery plan development, revision and funding for implementation:

Of particular concern is that the lungfish recovery plan is still outstanding, the Mary River cod recovery plan is well overdue for revision and the Mary River turtle recovery plan has not been started. There is also a need for funding to support implementation of these plans. These are the 3 iconic species in the Mary River particularly at threat from the proposal to dam the Mary at Traveston Crossing and to transfer water out of the Mary catchment via the NPI stage 1 and stage 2.

11. Caring for our Country program: There is widespread concern in our community regarding funding for environmental projects dealing with decline and or extinction of flora and fauna by Landcare and Catchment groups or now even NRM groups. Short term funding makes long term projects more difficult to fund, employ skilled people and harder to build community networks and trust. Our Mary Catchment community has worked hard for almost 2 decades to improve our environment and in particular improving habitat for endangered flora and fauna.

11. References

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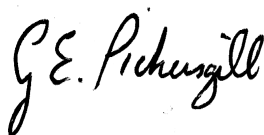
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12. Appendix A - STMRCG comments on Audit of Burnett Water Pty Ltd, QLD, Burnett River Dam, EPBC 2001/422 (attached).

If you wish to discuss any of the issues raised in this submission, please contact me on 07 54843150 mb 0411443589 or email pickerg@bigpond.com

Yours sincerely



Glenda Pickersgill *On behalf of the Research Section of the Save the Mary River Coordinating Group*