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Wide Bay Burnett
ENVIRONMENT COUNCIL



15th January 2013
Sophie Dunstone
Committee Secretary
Senate Standing Committees on Environment and Communications
PO Box 6100
Parliament House
Canberra ACT 2600

RE: The effectiveness of threatened species and ecological communities' protection in Australia.

Dear Ms Dunstone,

Thank you for the opportunity to comment on the Senate Inquiry into "The effectiveness of threatened species and ecological communities' protection in Australia".

WBBEC is a NFP community advocacy group with members who have played a decadal role in advocating for the protection of and highlighting the inadequate protection of *Neoceratodus forsterii* (Queensland Lungfish), in the Burnett and Mary catchments.

Many of our members were former members of Wide Bay Burnett Conservation Council, the NFP community group who launched the Federal court action, [Wide Bay Conservation Council Inc v Burnett Water Pty Ltd \(No 8\) \[2011\] FCA 175¹](#), the decision to proceed to case application, was not taken lightly, the membership of WBBCCI were made aware of the risk associated with 3rd party litigation under the *EPBC ACT 1999*, however the membership made a decision to 'draw a line in the sand of the Burnett River'.

The court decision to find in favour of the respondent resulted in a costs order and the de- incorporation of WBBCCI, a NFP volunteer regional community conservation group, with a proud 30 year history of advocating for the MNES of the Wide Bay Burnett Region.

The *EPBC ACT 1999* has failed to protect the species and this volunteer institution with 30 years of legal standing recognised and acknowledged by the Federal Court, under the Act.

¹ <http://www.envlaw.com.au/paradise.html>



Image taken on the steps of the Brisbane Federal Court, after the case application was filed by Mr Roger Currie WBBCC President and Senator Larissa Waters (Qld EDO duty solicitor).

Left to right Mr Currie , Dr Tanzi Smith (President Greater Mary Association) , Senator Waters (EDO QLD Solicitor) , Ms Glenda Pickersgill (President Save the Mary River Group) , Ms Kate Noble ACF sustainability project officer .

As key technical community advocates intimately involved with the application of the *EPBC ACT 1999* to this species, WBBEC offer the following pertinent comments:

(a) Management of key threats to listed species and ecological communities;

The recognised key high status threats to this species are² :

1. Tall water storage infrastructure:
2. Inappropriate flow regime regulation (spawning habitat stability)
3. Destruction of viable spawning habitats (impounding) ;
4. Species mortality from spill events and;
5. Inadequate biopassage.

Irrespective of the court finding by Logan J , that the \$23M fish transfer device, designed and constructed on Paradise Dam on the Burnett River , was deemed to meet its *EPBC ACT 1999* approval condition 3 , in respect of being 'suitable for Lungfish' , it is not 'working' , and in fact has been found to be 'inadequate' by Key Lungfish specialists.

Monitoring data required as part of the Qld State fisheries barrier approval , indicates³that only juvenile (non breeding) lungfish have been recorded as successfully utilising the up stream fishway and that no Lungfish have successfully utilised the downstream fishway since its operational commencement⁴.

This has resulted in the deaths of lungfish as no suitable downstream passage can occur , other than flows over the 37 metre high , 67 stepped design of the concrete spillway , which is colloquially known as the 'fish shredder'. This design was considered to be capable of creating a 'skimming flow' to protect fish passage , however this design has failed.

These reports conclude that "*The cumulative affect of mortalities of fish passing over the spillway is likely to have a major impact on populations of fish over the longer term.*"⁵

WBBEC concludes that this statement is a clear scientific indication that a 'significant impact' as defined under the *EPBC ACT 1999*⁶ will occur to the Burnett River population, unless adequate mitigation and or new approval conditions, are forthcoming.

The available data indicates that less than 5% of lungfish attempting to move upstream or downstream of the dam wall have been able to use the fishways since the dam was constructed in 2003-2005. Please refer to figures 1 and 2 below.

⁴ DEEDI, Fisheries Queensland, *Paradise Dam Upstream Fishway Monitoring Program Final Report* (June 2011),
http://www.sunwater.com.au/_data/assets/pdf_file/0019/9226/Paradise_Dam_Upstream_Fishway_Monitoring_Program.pdf

¹⁵ DEEDI, Fisheries Queensland, *Paradise Dam Downstream Fishway Monitoring Program Final Report* (February 2012),
http://www.sunwater.com.au/_data/assets/pdf_file/0018/9225/Paradise_Dam_Downstream_Fishway_Monitoring_Program.pdf

⁵ DEEDI, n 15, p 9.

⁶ Nes guidelines ,pp 10 .

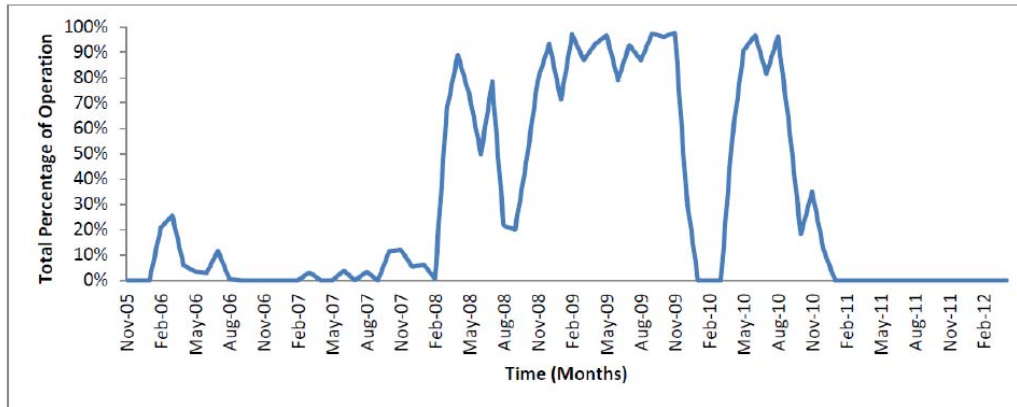


Figure 1: The percentage of time that the upstream fishway on Paradise Dam was operational each month from November 2005-April 2012 (data from Caitlyn Draper (unpublished) based on fishway logs provided by SunWater).

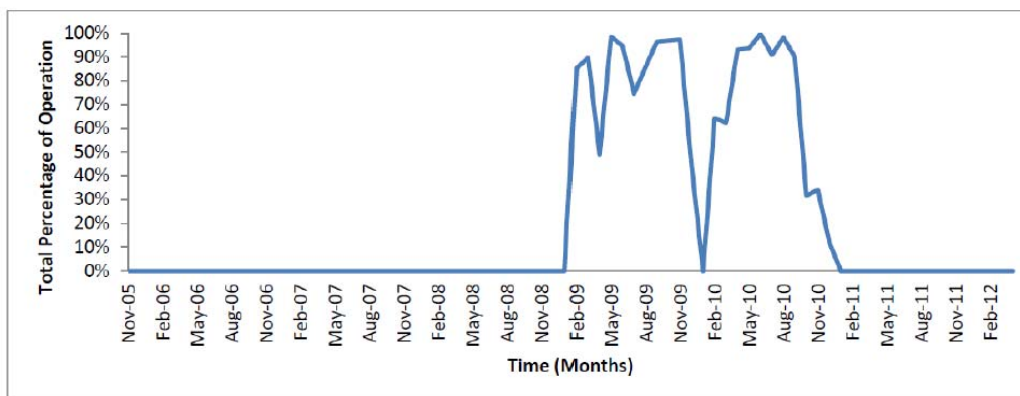


Figure 2: The percentage of time that the downstream fishway on Paradise Dam was operational each month from November 2005-April 2012 (data from Caitlyn Draper (unpublished) based on fishway logs provided by SunWater).

In addition to severely restricting lungfish movement, during flood events large numbers of lungfish have been killed or injured on the stepped spillway installed on the dam.¹⁶ Adult lungfish grow to 1.5m in length and have no natural predators. They are long-lived and reproduce infrequently. The large number of lungfish being killed on the spillway during flood events is a major new source of mortality for the population.

These State government reports clearly indicate that attempting to apply 'suitable/effective /satisfactory' approval conditions under the *EPBC ACT 1999*, to a major State water infrastructure project, which has failed to manifest any cogent predicted economic benefits and was acknowledged as to likely result in impacts to the species, has clearly not worked.

Paradise Dam was designed and constructed on a flawed assumption that the modelled HNFY (Historical No Failure Yield) of 144,000 megalitres per year, would meet a 'modelled' market demand⁷ of 144,000 megalitres per year, a market demand which has failed to manifest itself.

⁷ NECC, 2001, Executive summary "*Indicative economic impacts of additional water storage infrastructure in the Burnett Region*", prepared for Burnett Water Pty Ltd.

The purported major expansion of industrial and agricultural productivity, likely to produce 8300 FTE positions⁸, and \$2B of annual regional economic stimulus has not occurred and is highly unlikely to occur.

The NEEG 2001 report was used to justify the construction of the dam.

The *Old Widebay Burnett Water Supply Strategy*, has detected that there is no demand for this allocation for the next 50 Years .

Projected 50 year regional rural water demand is 427GL per year , annual storage capability is 1504 GL per year. ⁹

Paradise Dam is full and will remain so for the next 2 decades, as Burnett Water Pty Ltd (BWPL) a wholly owned corporate entity of the Queensland government , holds an annual allocation of 120,000 megalitres , for which no foreseeable market demand can be identified.

This storage level presents a significant elevated risk for the species.

CURRENT THREATS

All operational capacity for fish biopassage and hydrological releases at Paradise Dam was destroyed during the Jan-Feb 2011 flood as the operational systems were constructed at a 1:2 year flood level , where the 2011 flood was a 1:100 year flood level .

As a result no up stream biopassage is available and the only downstream biopassage available for Lungfish is via the spillway in times of spillover , which is resulting in significant mortality from the 37 M high stepped spillway design ¹⁰.

The recent Jan 28th 2013 flood level (Images B & C) was higher than the 2011 level (Image A), resulting in the control tower being inundated and potentially further damaging any fishway control and flow release operations.

At 2.00pm 28th Feb 2013 , the spillway has 2.45M flowing over it and is expected to rise to 4.5M , this flow will result in more lungfish deaths. Figure B

The BOM 8 day rainfall model indicates falls of up to 300mm possible in the Burnett Catchment during 28/02/2013- 07/02/2013¹¹. This will result in further lungfish deaths, Please refer to Figure A.

This threat will remain until such time as the fishway operations are restored and or the dams stepped spillway is successfully redesigned to guarantee safe downstream biopassage. Even then it may be discovered that a fish biopassage channel will be the ultimate safe and effective biopassage methodology.

⁸ NEEG, 2001, Executive summary “*Indicative economic impacts of additional water storage infrastructure in the Burnett Region*”, prepared for Burnett Water Pty Ltd .

⁹ Psi-Delta Pty Ltd , 2008, “Wide Bay Burnett Regional Water Supply Strategy , Rural Demand Study.”

¹⁰ <http://www.frasercoastchronicle.com.au/news/lungfish-deaths-investigated/1497313/>

¹¹ <http://www.bom.gov.au/jsp/watl/rainfall/pme.jsp>

Contemporary fish passage science in America reinforces a view that large dams are fraught with unmitigatable risk for successful biopassage.¹²

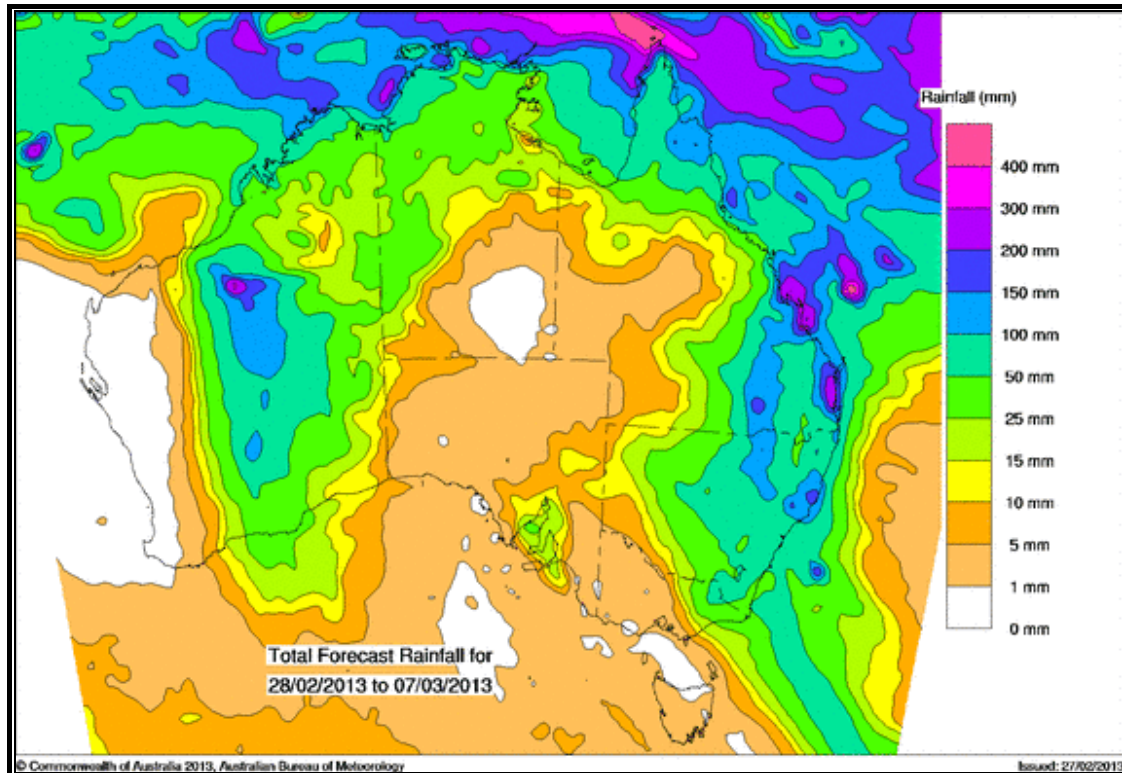


Figure A , 8 day modelled rainfall for Widebay Burnett indicating falls of up to 300mm.

¹² <https://www.scientificamerican.com/article.cfm?id=upstream-battle-fishes-shun-modern-dam-passages-population-declines>

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Image A of flood level December 30th 2010 indicating control system inundation, image courtesy of Hubert Chanson .



Image B taken 30th Feb 2013 indicating flood level staining on control tower .

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Image C taken on Feb 30th 2013 indicating flood level stain marking within 1 meter of overtopping the wall . Concrete blocks are 2.00 M in Height. BOM website indicates a peak level above the spillway of 8 M,



Latest River Heights for Burnett R at Paradise Dam

Issued at 7:12 am EST Wednesday 30 January 2013

[About river height plots](#) | [About this Plot](#)

Station details: Station Number: 039184 Name: Burnett R at Paradise Dam Owner: SUNWATER:136922
Flood levels: Minor: 69.10 Moderate: 70.10 Major: 71.10

Data from the previous 4 days

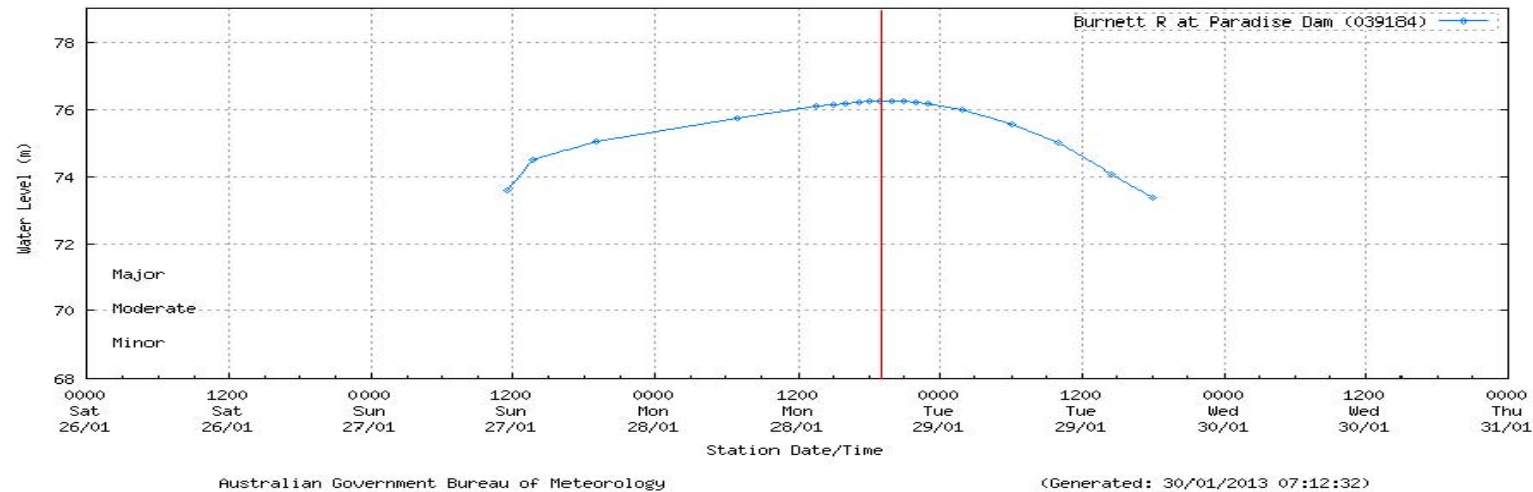


Figure A, BOM website graph for Paradise dam wall gauge indicates a peak level above the spillway(67.6M) of 8 M, at approximately 2000 Hrs 28/001/2013.

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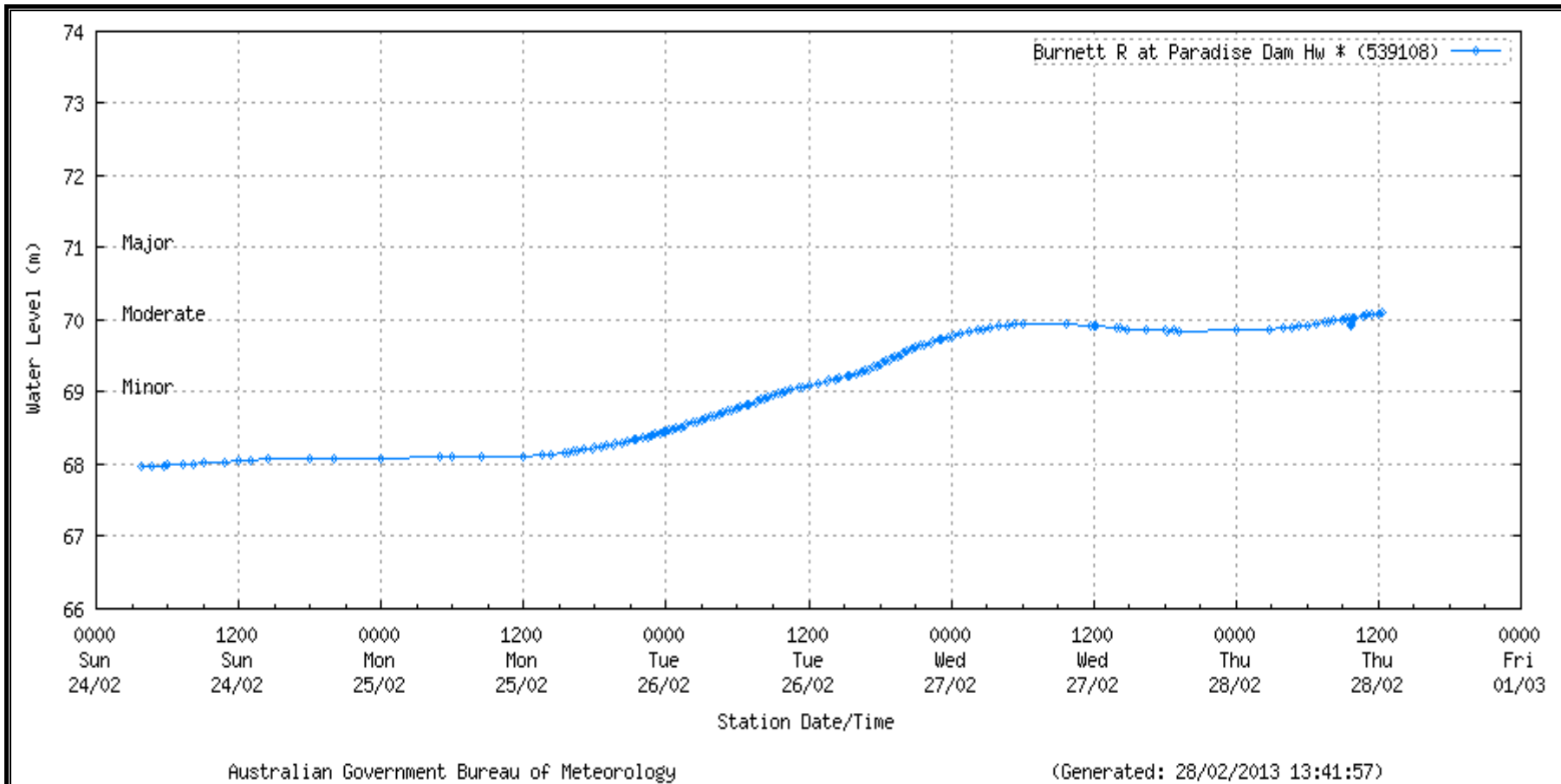


Figure B BOM website graph for Paradise dam wall gauge indicates a current level above the spillway (67.6M) of 2.45 M, 28/02/2013.

Under S 4.2 of the Burnett Basin Water Resource Plan (BBWRP 2000) , Resource Operations Plan (ROP) , Sunwater Pty Ltd , the Resource Operations' License holder (ROL) , must notify the State Minister for Water Resources of any fish stranding within 24hrs of the incident . It is yet to be ascertained if this has happened. Please refer to Figure C below.

Burnett Basin	Resource Operations Plan
<ul style="list-style-type: none">o cumulative effect of successive storages on water quality; ando cyanobacteria population changes in response to stratification in each storage.	
4.2 Operational report	
<p>The ROL holder must notify the chief executive within 24 hours of becoming aware of the following operational incidents:</p> <ul style="list-style-type: none">• noncompliance by the ROL holder with the rules given in the ROP;• a decision relating to an initial announced allocation and/or its revision, plus details;• instances of fish stranding downstream of a storage;• instances when a waterhole is drawn down 0.5 m below cease to flow level;• instances where the release capacity of a storage is insufficient to meet downstream demand; and• activation of critical water supply arrangements.	
<p>The ROL holder must provide a report to the chief executive for an incident relating to noncompliance with the rules in the ROP. The report must include details of the incident, conditions under which the incident occurred and any responses or activities carried out as a result of the incident.</p>	
<p>The ROL holder must provide a report to the chief executive for an incident relating to the stranding of fish downstream of a storage. The report must include details of the incident, conditions under which the incident occurred and any responses or activities carried out as a result of the incident.</p>	
<p>The ROL holder must provide a report to the chief executive after notification of a decision relating to an initial announced allocation and/or its revision. The report must specify if subschemes have been implemented, the conditions under which subschemes have been determined, the date and value for announced allocations and the parameters applied for each announced allocation determination.</p>	
<p>The ROL holder must provide a report to the chief executive when the ROL holder wishes to activate critical water supply arrangements. The report must specify the circumstances under which the strategy has been activated, the schemes affected and the announced allocations for high priority users.</p>	
<p>The ROL holder must provide to the chief executive details of any arrangements for addressing circumstances when the release capacity of a storage is insufficient to meet downstream demand.</p>	
<p>The ROL holder must provide a report to the chief executive about the details of any seasonal water assignment approved by the ROL holder. NRW will determine if the seasonal water assignment triggers requirements for a Land and Water Management Plan (LWMP) under the provisions of the Water Act.</p>	
<p>The ROL holder must provide a report to the chief executive within 10 business days of supplemented water being taken through a NRW meter. The ROL holder must report the meter readings at the start and finish of the taking of the water and the approved quantities of supplemented water taken.</p>	

Figure C extract from Burnett Basin ROP .

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Image taken at the dam indicating the stepped design and shallow plunge pool .



Image taken from above the upstream fishway indicating the steep angle of attack for spilling and stepped design , with cable arrangement for hauling upstream fish cage over dam wall ,shown in left of image .

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450mm Downstream fish passage entrance slot
in irrigation release intake tower
Dam-wall is 600m in length

Image of downstream fish passage device attached to irrigation intake tower.



Images of upstream fish passage cage , ready to be lowered behind the dam wall



Lungfish mortality has also occurred at both North Pine and Wivenhoe Dams , where smooth spillway concepts was designed , in SEQ during the 2009-2011 wet seasons.

At the time of writing, this operational capacity at Paradise Dam has not been restored and the proponents Sunwater Pty Ltd are endeavouring to rectify the issue.

Following a meeting with all relevant stakeholders and the Queensland Water Supply Minister, seeking a solution to this clearly unacceptable situation , a working group consisting of the following stakeholders was convened;

- WBBEC
- QLD ENERGY AND WATER SUPPLY
- SUNWATER PL
- DEEDI (Qld Fisheries)
- QLD NRW(Natural Resources and Water)

The inaugural meeting to discuss rectifying the situation was held at DNRM offices Bundaberg during September 2012 , no further meetings have taken place at the time of writing .

Discussion revolved around;

- investigating modifications to the intake tower for the downstream entrance, in a effort to enhance attraction flows for Lungfish ,
- Investigation of creating a suitable skimming flow to rectify the current skimming flow over the 67 concrete stepped design , which has so far failed.

- Investigation of a wall by-pass channel,

Since that meeting as a result of the Queensland Governments approach to public sector costs reductions, 2 key State government lungfish experts;

- Mr Andrew Berghuis and;
- Ms Clare Peterkin ,

have been offered redundancy packages .

All future modifications to the infrastructure aimed at meeting the DEO of the *EPBC ACT 1999* to protect the species, are constrained by the current fiscal imbalance in the State of Queensland.

(b) development and implementation of recovery plans;

WBBEC is a member of the Mary River *EPBC ACT 1999* recovery plan working group, and has contributed to the formulation of the Draft. WBBEC will be meeting with Queensland Environment Minister Andrew Powell to discuss the Newman government's position on endorsement of this plan.

Whilst this plan goes someway to ensuring protection of the species in the Mary catchment , as Lungfish are promoted as an 'umbrella' species , ultimate protection of the species in the Mary River will only occur if the possibility of a large dam utilising the 150GL Strategic Reserve in the Mary Basin Water Resource Plan ,¹³ is ruled out .

The approval process for the Northern Pipeline Interconnector¹⁴ has highlighted the likely impacts to MNES in respect of any further extraction of water in the Mary River.

Any allocation of this Strategic Reserve post 2016 , which is the review date for the 2006 MBWRP, will be exempt from the *EPBC ACT 1999*, as state water allocations are lawful entitlements.

The Traveston Dam proposal was clearly shown to not have the ability to protect Lungfish as it relied on the Paradise Dam fishway as the model , and SEWPAC advised Minister Garrett accordingly .

In conjunction with this issue, there is great risk to the species habitat viability down stream of the confluence of the Mary River and Munna Creek , as Coking coal extraction¹⁵ and CSG/SHALE GAS^{16 17} is currently being planned , while the State

¹³ S, 32, Mary WRP 2006.

¹⁴ http://www.environment.gov.au/cgi-bin/epbc/epbc_ap.pl?name=current_referral_detail&proposal_id=3686

¹⁵ <http://www.tiarocoal.com.au/Business-and-Project-Overview.htm>

¹⁶ <http://www.abc.net.au/news/2012-07-31/shale-gas-to-be-extracted-in-qld/4165244?section=qld>

¹⁷ <http://www.couriermail.com.au/business/coal-seam-gas-comes-to-maryborough/story-fnefl294-1226551412833>

government are investigating a coal loading facility¹⁸ at Port Bundaberg to deal with this extraction .

WQ issues from open cut mines in Queensland are well documented in the Fitzroy basin .

If ultimate decision making powers for projects likely to impact MNES under the *EPBC ACT 1999* are transferred to the State governments, it is predictable that threats and impacts to the species will occur in the Mary catchment.

Conclusion

An *EPBC ACT 1999* recovery plan which is endorsed by the Newman government in the Mary catchment, may or may not protect the species as it would be contingent to approval making powers for projects impacting MNES being given to the State government.

The absence of an *EPBC ACT 1999* recovery plan for the species in the Burnett and SEQ catchments, is impacting on the species and will continue to result in the species being impacted.

It is acknowledged that Paradise Dam and Traveston Dam were Beattie/Bligh government projects , the lesson to be learned is that State government's will be quick to propose and or approve projects which are likely to impact the species, and will attempt to utilise flawed economic and ecological reporting , to bias the economic benefits of the projects , whilst denying the obvious ecological costs to the species.

(c) management of critical habitat across all land tenures;

BURNETT RIVER SYSTEM

Given that critical spawning habitat for lungfish in reaches which have been impounded has not effectively been replaced¹⁹ in any form of biodiversity offset , the remaining viable spawning habitats are critical to the species survival and are located in reaches subjected to flow management rules which are primarily designed to supply irrigation releases.

2012 saw the first iteration of the Burnett Basin Water Resource Plan (BBWRP 2002) , WBBEC is a Cabinet appointed conservation delegate to this process , the critical situation with lungfish has resulted in the WRP assessing the likely impacts to 'flow related ecological assets', this scientific analysis has concluded that in an improved draft ROP (Resource Operations Plan) with a flow management regime designed to attempt to stabilise the spawning viability of these reaches , should be adopted.

¹⁸ <http://www.news-mail.com.au/news/bundy-port-expansion-discussion/1647116/>

¹⁹ EFFECTS OF WATER LEVEL FLUCTUATIONS ON *Vallisneria nana* IN THE BURNETT RIVER IN SOUTHEAST QUEENSLAND, AUSTRALIA, LEO J. DUIVENVOORDEN* 2008.

This Draft WRP is expected to be released for public comment in April 2013. If the Queensland Cabinet agrees to gazette this plan, some improvement in spawning habitat may occur, due to the application of an adequate flow regime regulation.

This will not of course replace the habitat already lost to a catchment with 38 storages.

Paradise Dam remaining at FSL, due to no market demand may act as a perverse habitat creation stabilising process, for areas within the storage that may provide suitable conditions for *Vallisneria nana* to establish. A recent survey by QDNRM riverine ecology management staff has detected some growth however, even if these areas become established, the viability of successful spawning is dependent on Water Quality with temperature and dissolved oxygen²⁰ being a key determinant for successful hatching.

MARY RIVER SYSTEM

If the Queensland Cabinet endorses the *EPBC ACT 1999* Draft Mary Species Recovery plan, and the decision making powers for protecting MNES, are not handed to the State, it is possible that critical spawning habitats within the currently not impacted reaches of the Mary River, may be protected into the future, however this is contingent to any mining approvals being subjected to transparent assessment, such as was demonstrated in the Traveston Dam proposal.

SEQ RIVERS SYSTEM

Lungfish spawning and successful recruitment does not appear to exist with the large impoundments of the SEQ region²¹. Water level fluctuations is the key threat, how this can be successfully mitigated is yet to be determined.

(d) regulatory and funding arrangements at all levels of government;

The regulatory arrangements for adequate protection of Lungfish in both the Federal and State legislation are not working, the information given above is testament to a complete failure for both levels of government.

²⁰ Comparison of embryological development in the threatened Australian lungfish *Neoceratodus forsteri* from two sites in a Queensland river system Anne Kemp*, 2009.

²¹ <http://www.annekempslungfish.com/no+spawning.pdf>

New and or rectified Federal approval conditions for Paradise Dam are required , and the implementation of *EPBC ACT 1999* Recovery plans in the Burnett and SEQ catchments , must occur and this must be supported by a suitable Federal/State funding program , to enable potentially massive engineering modifications to Paradise Dam , and the SEQ dams.

This funding must include arrangements for adequate transparent 'NFP community group' based monitoring.

This will result in removing the barrier of State water supply entities , claiming RTI (Right To Information) withholding powers , for the public release of scientific data.

(f) the historical record of state and territory governments on these matters

This submission and others clearly document the historical record of the State of Queensland in attempting to adequately manage this species. The record validates a conclusion that

- large water storage infrastructure in SEQ has failed to mitigate successfully for this species ,
- that the Paradise Dam project should have been rejected based on the application of the Precautionary Principal
- That it has dismally failed to meet the desired ecological outcomes of the *EPBC ACT 1999* , to protect a listed MNES,
- That despite the best intentions of fisheries experts in attempting to design a 'suitable' passage device,
- the 'device' has failed, further ,
- the dams stepped wall configuration has lived up to its nickname of the 'fish shredder',
- That the dam has lived up to its claim of being an engineering marvel and 'cutting edge' technology in fish passage.
- That the entire project was modelled on flawed economic projections and false CBA (Costs Benefit Analysis),
- That the Traveston Dam proposal was justifiably rejected based on sound science and the application of the Precautionary Principal in respect of *Neoceratodus forsterii*.

WBBEC has supplied this information in an endeavour to improve the management of this iconic species , WBBEC has not drafted this response as a 'blame game' of poor environmental duty of care on the part of the State of Queensland , rather , WBBEC has attempted to present to the Senate committee , the facts of what occurs when State governments make a determined effort to not engage openly and transparently²² with NFP community groups with demonstrated legal standing under *the EPBC ACT 1999* , and whose members have simply attempted to advocate for the protection and sustainable management of this species.

²² <http://www.abc.net.au/news/2003-11-28/researcher-questions-fishway-secret-document/1516168>

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WBBEC are prepared to attend the inquiry for cross examination if required.

Roger M Currie
President and Water Policy Officer
For and on behalf of WBBEC.