

Report on fishkills involving Australian Lungfish caused by the operation of the North Pine Dam spillway.

Save The Mary River Coordinating Group
June 2009

This report briefly describes the activities and observations of volunteers from the Save The Mary River Coordinating Group (STMRCG) in regard to lungfish deaths which accompanied the recent spillway releases made from the North Pine Dam.

Following recent heavy rainfall in the catchment of North Pine Dam, SEQwater was forced to make three releases of water from the spillway gates. These were widely reported in the media. Following the second release, it was reported that large numbers of Australian lungfish had been stranded and/or killed below the spillway, and a large effort mounted by local volunteers to relocate survivors back into the North Pine dam, and clean up the remaining bodies.

Some time after this second event, members of STMRCG visited the site and did find evidence of dead lungfish. We had some concerns that the event may not have been fully recorded and may not have been the subject of a proper investigation which documented numbers, sizes, mortality rates and types of injuries. We were also concerned about what sort of experience the volunteers may have had in handling and rehabilitating injured animals of this nature. Our members also noted turtle species in the vicinity, and wondered about what data had been collected regarding turtle mortality and injury.

When SEQwater announced they were going to make another spillway release, one of our members who is an experienced fisheries researcher went to the river downstream of the dam to observe the anticipated fish stranding that would accompany the release. He visited during the release on the 23rd June, and on the day after the gates shut on the 24th June. It is important to note that this stranding event was entirely predictable - the water release was planned and announced in advance, and the likely location of stranded, injured and killed individuals was known from the previous stranding events.

On the 23rd June, our member saw no officers from SEQWater on site, and STMRCG reported the incident to Qld EPA and to DEWHA when the extent of the stranding was known. The media also attended, which ensured that there was independent video evidence and eyewitness information. The intent of STMRCG was to ensure that a full scientific investigation was conducted on the kill, and that the report from such an investigation would be available to inform future decisions concerning the management of Queensland lungfish.

Our member reported finding more than 50 lungfish stranded, dead or injured in one short section of river bank downstream of dam wall. At least 23 of these were definitely dead at the time, 6 others had injuries so severe that he judged they had no chance of survival, and the fate of the others would have depended on the nature of the rescue and relocation effort to follow. In addition, he observed hundreds of carcasses of other large fish species such as Australian bass and yellowbelly in the vicinity, and countless hundreds of smaller species. All of this evidence was video-recorded by him at the time, and corroborated by video evidence from both the ABC and Channel 7 news teams.

Following the adverse media attention on the evening of the stranding, SEQWater mounted a comprehensive rescue and cleanup operation on the 25th June. This was reported in the media, with a focus on the rehabilitation activities. STMRCG was concerned about the techniques illustrated in the news footage, which including transporting individuals in the open back of a utility and tipping them out en-masse from a significant height over the tailgate. It was hard to believe that the rescue and cleanup operation had been scientifically supervised and that the kill and stranding event had been fully documented with the condition of all the injured individuals adequately assessed.

On the 26th June, following the clean-up operation, STMRCG members surveyed the river downstream by canoe. It had been hoped to survey the river bottom, but that was not possible because water was being released from the cone valves in the dam wall, possibly in an effort to

flush out the weir pool downstream of the dam. Even after the cleanup and flushout, in a short space of time we still observed 47 floating fin fish carcasses between 20 and 40cm in length, and 4 very large lungfish carcasses greater than 1m in length. These lungfish carcasses were photographed and measured.

In summary

- It is very clear that recent water release events have caused significant mortality of large adult lungfish in the North Pine river.
- From the injuries on the animals observed is most likely that most of this mortality resulted from severe trauma from passing over the spillway and turbulent conditions downstream of the dam wall.
- Lungfish were also stranded in isolated pools following the rapid fall in water levels when the gates were closed. The survival of these individuals depends on the promptness and efficacy of any rescue efforts.
- It is interesting to note that all the individual lungfish observed by members of STMRCG were large adults, with no evidence of small or juvenile lungfish. These large individuals are likely to have been in the river system prior to the construction of the dam.
- It is likely that the large numbers involved represent lungfish drawn from the wider population of lungfish throughout the entire North Pine river system, rather than just a sub-population inhabiting the impoundment itself. This would need to be confirmed by further scientific study.
- Based on the ratio of dead to live lungfish observed in this latest fishkill incident, it would be expected that very significant numbers of lungfish were killed in the previous releases, where reports of more than 100 survivors being relocated have been published. Only the rescues have been publicly reported, not the injuries or deaths.
- It is very important that these events are fully investigated and the scientific and legal findings of these investigations are published openly so that the lessons gained from these kill and stranding events can inform the future management of this species.

Appendices (attached):

- A: DVD containing video footage from STMRCG on the 24/06/09, ABC news footage from 24/06/09 and Channel 9 news footage from the 25/06/09
- B CD rom containing this report, Channel 7 news footage from 24/06/09 and 25/06/09
- C: On line Google maps report of the post-cleanup canoe survey conducted by STMRCG on 26/06/09 - showing locations and photographs
- D: Example photographs
- E: Background information about North Pine River system, lungfish and water infrastructure in SEQ.
- F: Press statement about earlier stranding event
- G: SEQwater press statement announcing the release.
- H: Press statement from SEQwater confirming deaths and ratio of numbers of dead to numbers of survivors following the most recent release.

APPENDIX C:

Canoe Survey 26/6/09

The observations from the STMRCG canoe survey, including photographs are recorded as an interactive online map on google maps.

The full link address for this map is:

<http://maps.google.com/maps/ms?ie=UTF8&hl=en&msa=0&ll=-27.258807,152.950008&spn=0.010033,0.013797&t=k&z=16&msid=101721346047765239172.00046d5d452fc65a781f5>

APPENDIX D.
Example photographs

Evidence of general fish, lungfish and suspected turtle deaths from earlier stranding, observed 13/06/09



Deaths, injuries and strandings on 24/06/09



APPENDIX E.

Background Information

- The North Pine river system lies at the northern fringe of the greater Brisbane area. Lungfish were relocated to there from the Mary River system in the late 1890's, although the Pine River system is likely to have supported an existing population at the time.
- Lungfish have been totally protected under Queensland law since 1914 because of their scientific significance and limited distribution, accompanied by concerns about their survival as a species from the 1890's on. The lungfish is currently total protected by species under the Qld Fisheries Act 1994.
- There are two major dams on the Pine River system. These are Lake Kurwongba, built originally in the late 1950's, and the North Pine dam (Lake Samsonvale), built in the mid 1970's. Information about the North Pine dam can be found at <http://oldsite.seqwater.com.au/content/standard.asp?name=NorthPineDam> .
- There are significant reaches of natural in-stream habitat upstream of Lake Samsonvale which are similar in nature to stream reaches in the Burnett and Mary rivers which are known to support breeding populations of lungfish. The ability of lungfish to breed in the impounded area of the dam itself is still the subject of scientific study
- The ownership and operation of North Pine Dam passed from local government to the SEQ Bulk Water Authority (trading as SEQWater) in mid 2008. This company is a wholly state-government owned corporation created as part of the State Government's South East Queensland water reforms.
- The operation of this dam is legislated under the Queensland Water Act 2000, which includes license conditions requiring water infrastructure operators to accurately monitor and report all fish strandings which may have resulted from their operations.
- The lungfish is also listed as vulnerable under the Federal EPBC act, mainly due to threats caused by increasing water infrastructure development on loss of natural habit and the threats caused by the operation of water infrastructure itself. Under this legislation the Queensland government has the responsibility of preparing a lungfish recovery plan, a process which has been delayed by several years. To date the recovery plan is still in draft form and has not been released or implemented by the Qld Government.
- Provision of fish passage suitable for lungfish was one of the federal approval conditions placed on the Paradise Dam on the Burnett River under the EPBC act. The Paradise dam is currently the subject of a major federal court case on the issue of whether this approval condition has been met.
- The proposed dam at Traveston Crossing on the Mary River is currently being assessed by the Queensland Co-ordinator general under the EPBC assessment bilateral agreement with the federal government. The impact of this proposal on lungfish is one of the important aspects of this assessment.
- Based on the previous two points, the accurate and open reporting of all scientific data which documents and investigates lungfish mortality at spillways should be of great interest to both the State and Federal Governments. The fishkill events at North Pine represented an opportunity for the detailed study of population structure, cause of injury and death and the likely impact of such events on populations of this species. All of this information should be informing plans for future water infrastructure development on the few river systems on earth where this internationally significant species survives.

APPENDIX F.

Press information about previous stranding event

<http://pine-rivers-press.whereilive.com.au/news/story/lungfish-rescue-from-north-pine-dam/>

Lungfish rescue from North Pine Dam

- [NEWS](#)
- [ENVIRONMENT](#)

26 MAY 09 @ 09:32AM BY BERNIE DOWLING



Get wet ... Volunteer John Fitzgibbon saves a lungfish.

VOLUNTEERS have rescued more than 100 ``vulnerable'' lungfish swept from the North Pine Dam.

Twenty-nine volunteers from Pine Rivers Fish Management Association (PRFMA) worked for hours of Saturday with two SEQwater rangers and a telephone link to state fisheries.

It followed two historic days when on Thursday and Friday the dam's four giant gates were opened for the first time in eight years. Tonnes of water crashed through as the dam reached capacity for the first time since January-February 2001. The cascade also took the lungfish with it. PRFMA's Shayne Dumma described the work relocating the lungfish, some weighing more than 20kg, as ``back-breaking''.

``You have to rescue them from vegetation and take them up to the dam," Mr Dumma said.

``You have to stay with them at the water mark until they de-stress and release air trapped in their lungs."

After the volunteers carried the lungfish to the dam, they stayed with them in the shade along the dam's waterline for two hours.

Every one of the 103 rescued lungfish survived.

``It was just one of those days when everything went well," Mr Dumma said.

As well as the lungfish the volunteers saved more than 130 other native fish _ Australian bass, silver perch and golden perch.

Mr Dumma said the dam lungfish were descendants of eight released into the North Pine River in 1897 after concerns about the species' future in the Mary and Burnett rivers.

On Monday dam levels were North Pine 99.8 per cent, Somerset 91.24 per cent and Wivenhoe 63.14 per cent. Despite this, Premier Anna Bligh said last week water restrictions would not be further relaxed until December.

APPENDIX G.

Press announcement prior to the water release.

<http://www.abc.net.au/news/stories/2009/06/22/2604577.htm>

North Pine dam gates opened again

Posted Mon Jun 22, 2009 11:11am AEST

Updated Mon Jun 22, 2009 11:10am AEST

SEQ Water says recent rainfall has prompted it to reopen the gates at North Pine dam, north of Brisbane, in the third time the gates have been opened in the last two months.

• [Map: Brisbane 4000](#)

The combined level of the region's three major dams is just under 75 per cent.

North Pine is at 100 per cent of its capacity.

SEQ Water spokesman Mike Foster says Youngs Crossing Road at Lawnton is closed while the water is moving downstream.

"It's the nature of - even with the smaller controlled releases - from a safety perspective water will go over Youngs Crossing Road for the period of time while those releases are occurring," he said.

Mr Foster says the gates will be open for the next 24 hours.

"Over that period of time it's probably going to be something like 6,000 megalitres, 5,000 megalitres - it's a fairly small amount," he said.

"The gates will only be opened what they call their 'first notch' so it will only be fairly small releases over that period of time."

APPENDIX H.

Press statement from SEQwater following the rescue operation: mentioning ratio of dead to live lungfish.

Anthony Pratt
Herald/Sun 26.06.09

Rare fish die in dam spill

THE death of vulnerable lungfish at a southeast Queensland dam has been branded a national outrage by lobby groups, but authorities dispute their claims.

Water was released from North Pine Dam on Monday and Tuesday when heavy rain threatened to overflow it.

Conservationists say 50 rare lungfish were battered to death. Some were up to 1.5m-long, indicating they could be 100 years old.

Save the Mary River Coordinating Group secretary David Kreutz, who made the discovery, said the deaths were an indictment on the Queensland Government, which plans to build the Traveston Crossing Dam on the Mary River.

"Going on these North Pine Dam fish kills, there'll be absolute mayhem for lungfish when the (existing) Burnett River's Paradise Dam eventually overflows, with its far worse 'stepped' spillway," he said.

"To then lumber the Mary River with a Traveston Dam lungfish and turtle-killing device would be the last straw for this species, which is unique to only a couple of rivers in Queensland."

Dam manager SEQ Water said only 20 lungfish were killed and 25 to 30 rescued.

A spokesman said staff and the Pine Rivers Fish Management Association were present when dam gates were opened in case of fish kills. +