

## **2011 Flood Enquiry Submission.**

### **Background Information:**

- I have spent all my sixty years of life associated with nature, the land and rural pursuits, which has allowed me to have an in-depth and common sense practical understanding of the environment in its entirety.
- 1969 – 1963 primary schooling. Boarder at the Toowoomba Preparatory School.  
1964 – 1969 secondary schooling. Boarder at The Armidale School. Matriculated  
1970 – 1971 University of Queensland. Agricultural Science/Commerce.  
1972 – 1979 Worked for Australian Agricultural Company and worked and managed family property in central Queensland.  
1980 – 2011 Living and working/ managing “Cressbrook” Station on the banks of the upper Brisbane River.
- My family has since 1841 run a rural operation on “Cressbrook” continuously for 170 years. I am the fifth generation.
- The practical knowledge, experience and understanding of the past generations and my past has augured well for me to understand the broader local picture.
- I have experienced firsthand knowledge of the major floods of 1955, 1974, 1983, 1989, 1999 and 2011 in the upper Brisbane River and of the weather conditions, stream behaviour, etc. associated with these floods.
- My Great Grandfather, J.H. McConnel, along with Henry Somerset (his brother in law – who were in business together for a time) attempted to warn Brisbane of the impending 1893 floods, which caused so much disaster and destruction. These warnings went unheeded.
- Our family has managed to survive running a business at “Cressbrook” on the upper Brisbane River flood plain for 170 years which indicates to some degree that we are able to understand and respect Mother Nature.
- I have witnessed the construction of many public road and civil engineering structures in rural and urban areas of Queensland, in which the designing engineers have ignored the offers of information from long residing residents of the area regarding local topographical and historical knowledge. The result has been in most cases catastrophic to

the degree of excessive flooding of unnecessary areas, the destruction of the new infrastructure, and the blatant waste of public money, just because academic knowledge and theory took precedence over local practical knowledge and common sense.

- Our original predecessor – David McConnel, who settled here in 1841, did not heed the advice of the local aboriginals, who told him that “they had seen the waters of the river and the creek meet” (Brisbane River and Cressbrook Creek) where he proposed building his homestead. 1893 proved the aboriginals correct on three consecutive Fridays in February of that year. David was not alive to witness his mistake. The family has suffered the consequences of not listening to historical proven fact. *“Can we please learn from past experiences and include all available data and information into our management decisions?”*
- Past experience in 1989 and 1999 with the operators of both Wivenhoe and Somerset Dams with regard to lack of communication and unrealistic information during the flood events. For further material regarding the 2011 flood and my thoughts – refer to Attachment which include **1.** Front page of The Australian, Monday 21<sup>st</sup> February 2011; **2.** Article “*Foolish to Ignore the Lessons of History*” The Brisbane Valley Sun, Friday 18<sup>th</sup> February 2011; pages 3, 9, 10 & 11. **3.** Talk back radio interview with Greg Cary on 4BC Monday 21<sup>st</sup> February 2011. By way of this link <http://www.4bc.com.au/blogs/4bc-blog/call-back--tomorrow/20110221-1b1y3.html>

## **Facts As I See Them.**

1. Somerset and Wivenhoe Dams were both primarily constructed for flood mitigation for Brisbane and downstream areas. It appears the focus has shifted to water supply for Brisbane and South East Queensland.
2. The proposed Wolffdene Dam was to be built for water supply for Brisbane and surrounds prior Wivenhoe. It was the most efficient and strategically located site for minimum resumption area and maximum water impoundment and its location to major population. Unfortunately the flood of 1974 in Brisbane refocused the attention of the then Government on flood mitigation for Brisbane as water was plentiful and flood damage was very fresh in their minds. Therefore public money was channelled into the construction of Wivenhoe Dam. Had Wolffdene been constructed Wivenhoe – presumably along with Somerset would have been used primarily for their intended flood mitigation purpose.
3. Nature has not basically changed its pattern of behaviour over the past 170 plus years and continues to present events similar to previous occurrences with similar outcomes.
4. Man with all his expertise and knowledge and supposed superiority has not been able to humble himself to learn by past experiences and mistakes and plan for the future accordingly.
5. Coordination between associated public organizations accountable for management of these extreme situations is far from adequate and there is too much evidence of lack of primary information sharing and communication. E.g. Land owners → SEQ Water → local councils → SES → Police → other organizations. In spite of our intricate IT communication system, which is able to put massive amounts of information into the air in a very short time, frequently this information is inaccurate or misunderstood or not in touch with the real situation, because our transient society today does not have an holistic understanding of the events or their consequences. Hence there is more room for people to experience disaster.
6. The construction and management of both Somerset and Wivenhoe Dams has caused more frequent flooding in the lower reaches of the upper Brisbane River above Wivenhoe Dam particularly since 1983. Major floods over 40' at Cressbrook from 1841 to 1983 (142 years) were five in total – three in 1893, one in 1955 and one in 1974. This equates to one major flood every 28.5 years. Since the Wivenhoe Dam's completion in 1983 we

have experienced **four** major floods up to 2011 (**28 years**). This equates to one every 7 years up to 2011.

Given the fact that drought to below average rainfall was relevant during 1990 to 2010 with the exception of the 1999 flood; this fact does not auger well for flooding frequency in a run of wet seasons.

Since the completion of Wivenhoe Dam in 1983, we have experienced here at Cressbrook a massive change to the environment in the following areas:

a). The loss of fauna in respect of mullet and eels that can no longer travel to salt water to breed because of the absence of a fish ladder on Wivenhoe Dam..

b). Increased deposition of silt and gravel into our water holes. No doubt this would also be a very real factor in the upper reaches of Wivenhoe Dam, that would over time cause a greatly reduced storage area for water. Given the fact that the Dam has already altered the environment and denied the natural transport of eroded material down the full length of the watercourse; it would be a sensible progression to allow extraction of this material in the upper reaches of the Dam impoundment, as it would not destroy the already destroyed natural environment and would help in some form to maintain the desired water storage capabilities of the Dam and in turn help with flood mitigation.

c). The erosion of our natural gravel bars between the ever shallowing water holes.

7. The Queensland Government spent a massive amount of money from 2006 onwards to build a recycled water grid and desalination plant to augment dwindling water supplies in SE Queensland. I was led to understand that this infrastructure would have been able to provide sufficient water under the drought conditions at the time. Why then focus Dam management attention at 100% water supply capacity in an obvious "wet season" when the infrastructure is in place to provide adequate water supply at 50% or below water supply levels in drought conditions? Management for water supply does not make sense in this "wet" environment.

8. Many road, recreational and building structures have been added inside the banks of the Brisbane River within the urban landscape of Brisbane since the 1974 flood which would have impeded the passage of any flood water and cause river levels to rise in excess of previous heights in localized areas – assuming the same volume flows. Therefore to reduce increased flooding within urban limits further construction of impeding installations within

the river confines should not be considered. Restriction of the flow of water by any means causes increased height, increased velocity, change in direction and in most cases more damage, greater siltation and erosion and in the worst case a total shifting of the watercourse to a line of least resistance. The proposals to construct more buildings and structures within the banks of the Brisbane River would be crazy — we have changed the environment enough already to create grief like January, without creating further grief in the future.

9. The cessation of dredging within the city area of the Brisbane River will eventually lead to siltation and shallowing of the river which will increase the frequency and possibility of local flooding; especially given the suspension of soil in the recent flood caused largely by the massive short release of water from Wivenhoe.

## **Areas of Concern for Investigation.**

I refer here particularly to the events leading up to the almost catastrophic event surrounding the massive, almost uncontrolled release of water from Wivenhoe Dam, which undoubtedly largely contributed the majority of the extensive flooding in Brisbane. The whole management process leading up to, during and after the event should be thoroughly examined in an open fashion to gain an understanding of possibly improving management in the future.

This should include the following examinations of the relevance of the "Operations Manual" and its association with the handling of this event in relativity to the following:

- a). The weather predictions and forecasts both long and short term and the respective management strategies. Were alternative management models mooted for simulated differing weather events?
- b). The relevance of past similar weather events factored into projected management models. Was there any referral or correlation done in this regard?
- c). The role that the automatic gauging stations of rainfall and river heights played in the management process and who was responsible for interpreting and modelling a plan of action round this information. How was this information used to manage the release of water from the Dams?
- d). An enquiry into the seniority of staffing and decision making particularly on and around the period 1<sup>st</sup>. to 10<sup>th</sup>. January and more specifically on the weekend of the 8<sup>th</sup>. and 9<sup>th</sup>. January. What was the relationship and communication between the management of Wivenhoe and Somerset at this time and were all decisions shared in the process? In 1989 there was a severe lack of communication between the two Dams and in 1999 the recommended

release to me of water from Somerset Dam during the height of the flood in the upper Brisbane River was far from what actually happened.

Last January it appears to a degree that the operators went to sleep in the bathroom with the tap on over this period and omitted to adjust the plug until the pressure pump had attained maximum volume.

e). During weekends, public holidays and critical times is their senior management available at all times to make instant decisions with changing events or is the process technical and rigid?

f). What processes were in place to pass critical information on to Councils, Police, SES and the general community regarding the impending flooding and danger? Was a proactive and early warning approach attempted or was the event notification after the event had happened? I feel that there could have been more pre-emptive planning.

g). Does the "Operations Manual" focus too much on hydrological fact of actual water release management rather than pre-empting a critical event and taking precautions to minimize the danger?

h). Does the manual allow adjustment of management for each different event according to the characteristics, or is it an inflexible theoretical bible? Nature does not work by a manual and in most cases does not duplicate its actions, but in almost all cases it works in repetitive cycles of wet and dry, which can be forecast to a large extent. We should take advantage of this facet and model into our management system steps to minimize dangerous and damaging events.

i). How safe is the Wivenhoe Dam wall? I have some fairly reputable information from an engineering source, which explained that the wall was constructed on a geological fault and that there had been some movement

detected over time. Did this have anything to do with the construction of the additional spillway in 2005?

There was some discussion recently on the radio of raising the wall height by 8 metres. Would this suggestion be for increased flood control or for water storage or both? Is this a possibility and if so what would the safety factor be?!!

I have noticed that full water supply appeared to be the management priority for Dam management, yet Lake Manchester used to be a big player in Brisbane's water supply prior Wivenhoe. Lake Manchester has been at 100% supply level for a considerable time and would be a valuable reserve in both wet and dry years, but particularly wet years. Is this still operationally connected to the grid and if so is it contributing actively to the water supply?



## **My Opinions and Recommendations.**

1. Both Somerset and Wivenhoe Dams should be managed for their primary purpose; flood mitigation. Management for both water supply and flood mitigation oppose and compromise one another. Achievement for both is factually impossible.
2. The "Dam Operation Manual" should be flexible and more in touch with pre-empting the actions of nature, which would in turn enhance the safety of the Dam wall and infrastructure below, including the environment; by allowing room to move away from "knee jerk panic releases" as has happened in 1989, 1999 and 2011.
3. The management should coordinate a more holistic and practical approach of monitoring long range weather, rainfall, river heights and flows. Included along side of the academic management of this infrastructure should be competent advisors within the catchment area who have a practical understanding of this information and are not itinerants but have permanent residency.
4. At no time should the management be governed by political expediency or general public sentiment, where the real and true informed management decisions are deliberately ignored for short term advantage and contrary to the underlying purpose or for economic advantage.
5. There should be a completely open, accountable, interactive and holistic management approach across all water impoundments in the catchment area along with the stream and town management as well. This includes Somerset, Wivenhoe, Perseverance and Cressbrook Creek Dams and all associated streams in the catchments.
6. Given the long range Bureau Weather Forecast in 2010 – 2011 and the warnings issued by nature in 2010 (termite and insect activity, tree

growth patterns, adverse animal behaviour) and the fact that the South East region and we here at Cressbrook had experienced below average rainfall and drought conditions continuously from 1990 to 2010 (with the exception of a “one of” flood in 1999) ; coupled to **unseasonal heavy rainfall from August to November 2010**; it was obvious that we were entering a “wet cycle” again as nature frequently repeats in a cyclical pattern.

7. Furthermore, given the fact that the traditional “wet season” for the catchment is January to April and that all major floods since 1841 for the upper Brisbane River have occurred from January to June; I would have reduced the water levels of both Somerset and Wivenhoe to between 60% - 70% of water level capacity in November – December to cater for exceptional events over the wet season. The situation could then have been reviewed at the end of March – near the end of the “wet season”.

8. Had this been done and more prudent and informed releases been made over the period 6<sup>th</sup> – 13<sup>th</sup> January 2011; I believe that:

a. The major flooding of Lowood, Fernvale and particularly Brisbane would not have occurred to the major extent experienced.

b. Destruction of rural property and businesses would have been minimal as the releases would have been more controlled and smaller.

c. The absolute environmental destruction of riverine land and infrastructure below the Dam, which was caused totally by the bad management of released water that was out of character with the actions of a normal natural flood. This environmental damage is a culture of the operations manual and management as this destruction has occurred with every major release from Wivenhoe Dam since its completion. i.e. 1989, 1999 and 2011 and could have been avoided. The destruction is totally

contrary to normal flood events and contradicts "world's best practice" from an environmentalist point of view.

d. The quantity of silt and mud and debris that descended on Brisbane etc was a direct result of this panic release management, which could have been avoided to a large degree.

e. The massive threat to the integrity of the Dam wall and of the consequences of an uncontrolled release of water with catastrophic consequences would not have been an issue.

f. The extent of flooding in the lower reaches of the upper Brisbane River above Wivenhoe Dam, because of high water levels in both Somerset and Wivenhoe Dams would have been less. Had Wivenhoe and Somerset Dams been held at 60%-70% water supply levels over the summer period; I am certain that the purpose for the construction of both Somerset and Wivenhoe Dams for flood mitigation would have been vindicated.

9. The total management of Somerset and Wivenhoe over the summer of 2010 and 2011 for potential flood mitigation was totally questionable, and lacking foresight and common sense. Greater than 80% of the total 100% water supply capacity of Wivenhoe from January February until September October 2010 was attained by inflows of water from Somerset Dam and the Stanley River, which is the principal supply of water into the catchment because of its source location of high rainfall in the coastal ranges around Peachester and Maleny. The Stanley catchment over the past year has received much more total rainfall than the upper Brisbane (and historically has – have a look at 1893 for instance) ; yet there has not been any attempt to reduce Somerset Dam's total supply level below 100% water supply. It would be fair to say Somerset is the first and safest line of defence in the flood mitigation area and that pre-empted management should be given in this area.

Whilst I welcomed the reduction of Wivenhoe to 75% of water supply storage capacity after the "horse had bolted"; what about considering some reduction from Somerset Dam as well? This would also reduce the flooding round Kilcoy during wet periods and improve access to the township.

**10.** We are hearing that the January flood in the Brisbane river was unprecedented and that the additional "by-wash" spill way on Wivenhoe Dam constructed in 2005 was to cope with 1 in 1000 year event; then I put these facts to you for your diagnosis:

**Fact:** Both Somerset and Wivenhoe Dams were at 100% water capacity and above from February to the end of December 2010 with some spikes to some 120%+ in the period October till the end of December 2010. The catchments were all saturated and further continuing heavy rain was predicted and did occur.

Over the days 7<sup>th</sup> and 8<sup>th</sup> of January we had experienced at "Cressbrook" a moderate flood of approximately 22 feet in the upper Brisbane River reducing to 12 feet at 0800 hours on the 09/01/11, but the heavy rain started in earnest on this morning. We received 10 inches in 24 hours to 0900 hours on Monday 10/01/11 and a further 4 inches for the 24 hour period to 0900 hours on Tuesday 11<sup>th</sup>. This rainfall was predicted by the Bureau and was to continue through for several days. The rain was pretty general over the upper Brisbane River catchment.

On Sunday morning 09/01/11 dam level figures on the internet were only available as at 0600 hours on Friday 7<sup>th</sup> with Somerset at 107.2% and Wivenhoe at 106.3%. Obviously only a skeleton staff works weekends, but nature was working overtime! I tried to access current information from SEQ Water on their 1800 number round 1000 hours 09/01/11 (there was no other access contact listed) regarding dam levels and release volumes and to advise that a major flood threat was imminent and that I

had considerable knowledge of this area. I was not able to speak to any person in authority or access any current relative information other than that a release of 110,000ML per day through one gate had begun the afternoon before – totally inadequate to reduce or even maintain the present overfull level of the Dam considering the immediate past and present inflows from the upper Brisbane River alone. I again asked whether I could possibly speak to some senior official dealing with flood mitigation, but I was told to ring back during office hours Monday to Friday, and when I explained that tomorrow was too late and that prevention was better than cure; I was informed of the “SES contact number or to contact the police and to have a nice day”!!

In desperation I contacted my cousin – a landowner fronting Wivenhoe Dam just below Somerset Dam and he told me that Wivenhoe was about the same level as it was just after Christmas, which by cross reference on the internet was about 123.5% . I informed my cousin of the impending flood situation and asked him to try and contact somebody in authority at SEQ Water. This he did to no avail.

We had our first flood peak here of 49 feet at 0030 hours on 10/01/11 and our second flood peak of 47 feet 36 hours later at 1245 hours on the 11/01/11.

At 0900 hours on Monday 10/01/11 Wivenhoe was 154.7% and Somerset 148.4%.

At 0900 hours on Tuesday 11/01/11 Wivenhoe was 175.9% and Somerset was 160.8%.

At 0900 hours on Wednesday 12/01/11 Wivenhoe was 188.5% and Somerset was 189.7% slightly down on the near disaster level reached on the Tuesday night before massive panic dam releases began.

Over the period 6<sup>th</sup> – 12<sup>th</sup> January on average the general catchment of the upper Brisbane River would have received round 20 – 25 inches of rain with the Stanley catchment receiving more (say 25 – 30 inches – the Bureau could give accurate figures). This rainfall and associated runoff, which did not include large overflows from Cressbrook Creek Dam until Monday 10<sup>th</sup> caused Wivenhoe to rocket to catastrophic trigger point capacity.

In 1893 the first significant flood in the Brisbane River catchment was caused by a cyclone dumping 77 inches of rain in 4 days at Crohamhurst at the head of the Stanley River. The catchment was already saturated. This was the first flood that affected us here at Cressbrook on the 03/02/1893 (Brisbane on the 05/02/1893) and was followed by more significant rain to cause major floods again at Cressbrook on the 10/02/1893 and 17/02/1893 (Brisbane second flood 19/02/1893). The largest here at Cressbrook in 1893 was on the 17<sup>th</sup> at 51 feet; two feet above the 2011 first flood peak.

Nature has a habit of repeating itself and given the fact that in 1893 roughly 300% more rainfall fell than in 2011 in the catchment over the same period and there had been a run of wet years from 1890 to 1893 as opposed to drought for 20 years up to 2010; how would have Wivenhoe and Somerset Dams fared under the “management-manual plan” should have an 1893 event happened in January 2011?! I would probably hesitate to say that even with both dams nearly empty, management would have had to have been paramountly prudent to cope with this type or worse event; and the frightening fact is that it will happen! How would

have Wivenhoe coped had the heavy rainfall, as predicted in January by the BOM, continued for another 24 hours? Disaster!!

A "1 in 1000 year event" would be absolutely catastrophic and the additional spillway by-wash at Wivenhoe would in my opinion not be adequate.

The engineers predicted that Wivenhoe would take 7 years to fill after construction was completed. It actually filled in just over 24 hours (2 nights) in 1983 before the spillway was completed – the first test and major flood. So much for theoretical calculations; there has to be some factual practical and historical information factored into all management.

**11.** Future urban planning and development controlled by any level of Government and particularly in high density areas like Brisbane should adhere to past flood level history and not allow any development approvals in the flood plain known to flooding, unless the applicants wish to wear the total risk and consequences themselves. Accurate and relevant information should be made readily available to all people that may be affected and the information should be accurate and easily available.

**12.** Government bodies should not be allowed to build public infrastructure in positions subjected to severe flooding (or any other organization for that matter). This is blatant stupidity and a waste of public monies. An example of this behaviour is the water recreation facilities at Colleges Crossing.

**13.** It has been my observation over a lifetime that more severe flooding is caused by obstructions in streams and waterways irrespective of whether they are natural or artificially constructed. These obstructions cause greater erosion, waterways to change course, greater flooding and more stream velocity. Some examples of these are:

a). Increased vegetation in waterways, particularly trees and bushes, due to lack of regular stream flows from drought or damming and natural control by regular fires as occur in nature. There was great evidence of this in the Lockyer Creek, Brisbane River and Cressbrook Creek before the floods to name a few.

b). Erection of structures, obstacles and roadways in or adjacent to waterways. Some examples of this relating to the recent disasters are the railway line at Grantham which would have exacerbated the height and velocity of the water, West and East Creeks in Toowoomba, Redbank Creek at Esk and the Boardwalk and Pontoons in Brisbane to name just a few.

c). Alteration of the environment. An example is that the Brisbane River was in the early days fresh water above the Hamilton Rocks Bar and then above 17 Mile Rocks before they were removed, but now it is salt water right up to Colleges Crossing. This has caused the upstream spread of the mangroves, which were not original vegetation, and which impede the flow of water in a high flow situation. The mangroves, however, are better at cleaning up dirty and polluted water than the fresh water vegetation that would have naturally occurred; had not man altered the environment.

14. Brisbane is not immune from future serious flooding even with prudent management of Somerset and Wivenhoe Dams as there is not any flood mitigation on the Bremer catchment, which has been the cause of major floods before. Therefore it is imperative that sensible and informed urban and industrial development only be allowed, unless we wish to burden ourselves in the future with social and economic grief and hardship.

15. There should be a representation of adequately credentialed and informed long standing permanent residential land and business owners



above and below the Dam walls selected to be on an advisory panel to the operators of the Dams. Their input should be sought at regular and potentially critical times in an attempt to maybe impart some proven practical knowledge and understanding to supplement the academic and theoretical modelling and conditions. They should preferably have good long standing experience and knowledge of the area and conditions and perhaps even some good academic qualifications.

**16.** Should Wivenhoe and Somerset Dam continue to be managed predominately for water storage and not for flood mitigation; then I believe that some smaller flood mitigation dams should be constructed on some of the larger tributaries of the upper Brisbane River and used maybe for water supplement and irrigation in dry times. Possible sites would be Cooyar Creek, Emu Creek and the Upper Brisbane above Moore.

**17.** There should be more automatic river height and rainfall recording stations added across the whole catchment area and in particular the eastern side stream tributaries, which although mainly short in length rise in the higher rainfall areas and contribute large amounts of water quickly into the system. In threatening weather situations, these recording stations should preferably be backed up by a reliable on the ground person who understands the area to interpret the information. This process should also be adopted throughout the other stations if not already the current procedure.

**18.** During the drought and the urgency to supplement SE Queensland's water supplies, I recall in a radio talk back show that the then Maroochy Shire Council made an offer to the Brisbane area for their treated waste water to be piped as a supplement instead of being discharged into the ocean. The amount of water was quite considerable and was not accepted. However, with very little infrastructure this water could be recycled over the range and

dropped into Somerset and then Wivenhoe and on to Brisbane thus letting nature do much of the recycling as it does and reducing the amount of outflows into the ocean. I would imagine a much cheaper option to the pipeline previously constructed. This addition would be an option in dry or shortfall periods.

# Foolish to ignore the lessons of history

Cressbrook Homestead stands over half a kilometre away from the Brisbane River. This photograph was taken on Tuesday January 11 at 11.30am. At 12.30 the water entered the homestead for the second time in 36 hours. In the two flood peaks, Chris McConnel estimates the river would have been in the vicinity of 2.5 to 3 kilometres wide at 'Cressbrook'.



by WENDY CREIGHTON

ONLY a fool ignores the lessons of the past.

But we do not suggest that the government and the regulators of the Wivenhoe and Somerset Dams are fools.

There would be none among our politicians who would have willingly wished for the disaster that befell the farms, towns and outlying settlements along the Brisbane and Stanley Rivers during the January 2011 flood crisis.

Nor would there be any wanton 'engineers of disaster' among the public servants and consultants who designed the operations manuals which guided the water releases from the dams.

Similarly, there were no 'masterminds of disaster' among the operators

on the ground who could feel the rumble of the wall and the shake of overburdened, straining machinery when Wivenhoe Dam reached a mark beyond 190 percent on Tuesday evening, January 11.

None of them are fools.

Yet the cumulative actions of the many appear foolish in the extreme.

Were the lessons offered up by history forgotten or even worse, were they ignored?

Were the decision makers so disconnected from nature that they no longer feared it?

Somerset and Wivenhoe Dams were built originally with one express priority purpose - flood mitigation.

Grazier, Chris McConnel from Cressbrook Station sums up the problem succinctly: "A dam can't serve the dual purpose of flood mitigation and water supply. One purpose demands water levels remain low in case of a flood, the other demands water levels remain high in case of a drought. One compromises the other".

Mr McConnel, whose property is bounded by Cressbrook Creek and the Brisbane River, can put a valuable historic perspective on the 2011 flood disaster.

Cressbrook Station was settled by his great great grandfather in 1841.

□ Continues Page 9

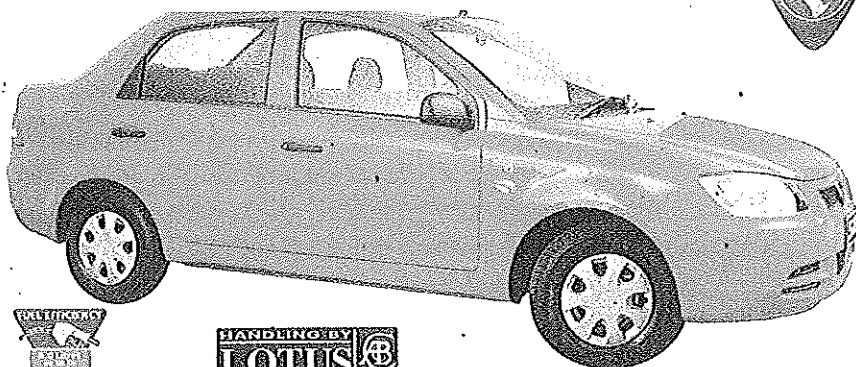
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# Foolish to ignore the lessons of history

□ Story continues from Page 3

He has rainfall records dating back to 1908, as well as inherited written and verbal knowledge of the actions of the Brisbane and Stanley Rivers in times of great floods.

"On the night of Sunday January 9, 2011, the Brisbane River peaked here at 12.30am at 49 feet.

"Two days later at lunchtime on January 11, the river peaked again at 47 ft - two major flood peaks in 36 hours."

This was the third largest flood recorded at 'Cressbrook'.

"In 1955, it peaked at 49 ft 3 inches and on February 17, 1893 it reached 50 ft 10.5 inches.

"There were three floods on three consecutive Fridays in February 1893 - all three floods entered the homestead building."

In a bid to establish a localised warning system, Mr McConnel's great grandfather staked the river bank and cultivation terraces with flood measuring posts.

"The final water height measure is a verandah post on the original wing of the homestead built in 1843.

"In the 1980s, my father restored that wing and had the levels re-measured to check they were still correct - they were."

Media coverage of the 1893 flood since this year's disaster, has made everyone aware of the havoc it caused in Brisbane but there's been little mention of the flood of 1955.

"At 'Cressbrook', 15 miles upstream of the junction of the Brisbane and Stanley Rivers; the flood in the Brisbane River surpassed that of 1974. But the flood in Cressbrook Creek was higher in 1974 at 'Cressbrook' than 1955 and 2011. Cressbrook Creek Dam had not been built at that stage."

But one of the main players in height of the peak of the flood in 1955 was Somerset Dam.

"They didn't have floodgates at the time and unavoidably released a huge amount of water. When the Stanley hit the Brisbane, the water backed up the Brisbane and pushed the water up here beyond what the rainfall would have indicated. The Brisbane River at 'Cressbrook' rose 40 ft in three hours on the night of March 28, 1955.

"At Toogoolawah, Cressbrook Creek was running backwards."

If you are sceptical about that report, Mr McConnel has proof positive of the phenomena.

"In 1893, there was a cedar log that had been



Chris McConnel stands under his house a week after the two flood peaks.

cut from a tree in the Byron Creek catchment. When it was felled, it was stamped with the owner's mark and location.

"That log made its way into the Stanley via Byron Creek and Reedy Creek. When the waters went down the log was found at Colinton Station. It had travelled backwards up the Brisbane River for about 30 miles. The Stanley torrent had caused the upper Brisbane River to run backwards for this distance."

The behaviour of these rivers in flood times is part of written and oral history in the Upper Brisbane Valley, but again it seems the lessons offered were ignored.

In the 2011 flood, Mr McConnel calls into question the management of water releases from Wivenhoe and its effect on rural towns and infrastructure below the dam walls.

"Wivenhoe and Somerset Dam should have been managed prudently for flood mitigation."

Back in 1893, there were no monitoring stations along the Brisbane and Stanley Rivers.

But the Weather Bureau office in Brisbane did receive some warning that it should be preparing for the worst.

In an article which appeared in *The Queenslander*, six days after the highest flood peak ever recorded at the Brisbane Port Office, the Bureau published telegrams it had received on February 3.

Two of those came from Mr McConnel's great grandfather.

**Cressbrook, 5.30pm: River now within 2 1/2 ft. of highest flood**

**mark: still rising at the rate of 6in an hour. Light rain falling. 8.10pm: River within 1ft of highest flood mark known, and still rising. It has been raining heavily since 6pm. If the same rain has been falling at the head of the Stanley, look out.**

Look out, indeed.

More rain had in fact been falling at the head of the Stanley. By the time the second telegram was sent from Cressbrook, the total rainfall recorded in the previous four days in the headwaters of the Stanley was over 77 inches.

Yet despite the increasingly frantic telegrams coming from people living all along the Brisbane River, the city authorities failed to heed the warnings - lives were lost and countless properties destroyed.

In fairness, they were hindered by a fragmented and primitive communications system, there was no one department or person collating the information that was making it through and the worst flood to that point, in 1890, had failed to reach heights that would make them frightened enough of what might be coming down the river.

But none of those excuses hold for the flood of January 2011.

Plus the authorities in 2011 had the advantage of two flood mitigation dams holding back three Sydney Harbour's worth of water.

So what went wrong?

Mr McConnel has some theories.

The Brisbane River at 'Cressbrook' rose 40 ft in three hours on the night of March 28, 1955 (the second highest flood ever recorded at the homestead).

In 2011 at 'Cressbrook' the rise was not so rapid, but still alarming at 28 ft in four hours on Sunday January 9.

Although general rainfall over the catchment was greater in 2011 than in 1955, flood heights were influenced once again by the 'back up factor' because of the high levels of water in Wivenhoe and Somerset Dams.

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# Foolish to ignore the lessons of history

□ Continued from page 9

"They ignored the lessons history had offered them.

"I keep reading that the dam operators were following the operations manual which defines how water will be released and when.

"Did the manual factor in the history of rainfall and water flow behaviour back beyond 1974?

"Did the experts who wrote the manual take into account local knowledge of the behaviour of the rivers, and the creeks which flow into them?

"Did they consider that weather events have been shown to be cyclical - we just came out of 20 years of drought and the wet seasons we used to have around here appeared to be back?

"The operators may work to a manual but nature doesn't. It never has.

"The information coming out of the weather bureau should have been warning enough that we had a lot more rain coming our way. In anticipation releases from those dams should have taken them down to 60 to 70 percent."

And Mr McConnell suggests the operations manuals may have underestimated the flow of water into the two rivers.

"There are no monitoring stations on the eastern branches of the Brisbane River. Those creeks drain the heaviest rainfall areas.

"In times of flood up here, creeks become rivers - how could

you make early assessments of what water is coming into the dam if you don't know what is happening in the creeks?"

Mr McConnell said no early warning system can be complete without people reporting in with descriptions of what is happening on the ground.

"Water heights and rainfall recorded by the automatic monitoring stations only give you part of the story.

"Every flood acts differently. People can for example advise whether the rainfall fell over an extended period or within half-an-hour or which creeks are carrying the strongest flows."

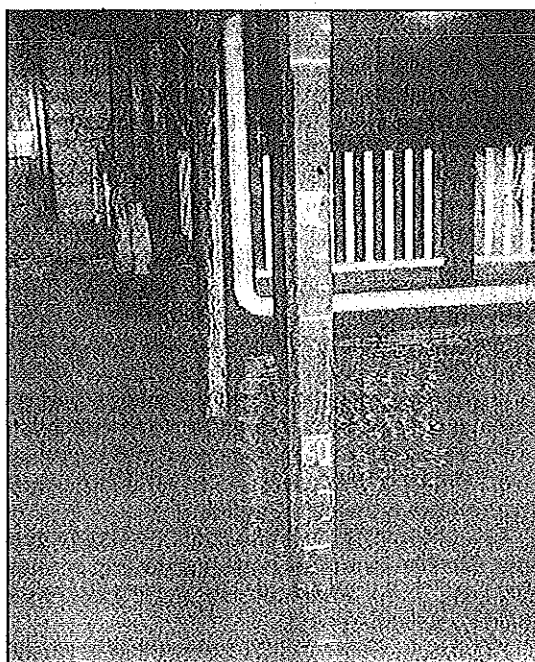
Local intelligence was Mr McConnell's only reference in the January 2011 floods and the smaller floods in 1989 and 1999.

"I contacted the Wivenhoe Dam people on the Sunday morning (January 9, 2011) - they could only tell me the dam height based on the levels taken the previous Thursday afternoon and the releases based on what had been released on the Saturday.

"The information I had received by making phone calls to property owners at Mt Brisbane and Mt Stanley was far more up-to-date.

"When I tried to warn people at SEQ Water that there was a lot of water on its way down, I was told to ring back during office hours on Monday.

"That night the river peaked at 49 ft and flooded our homestead."



The floodmarker on the verandah post - 10.1.2011.

And while the dam operations manuals may have dictated that releases be reduced as quickly as possible, the practise caused untold environmental damage.

"The river banks were sodden with water. If you reduce the water flow rapidly, then the banks slump into the river.

"In a general flooding event, nature doesn't cut the flow of the river suddenly, which allows gradual drainage of the soil and bank stabilisation.

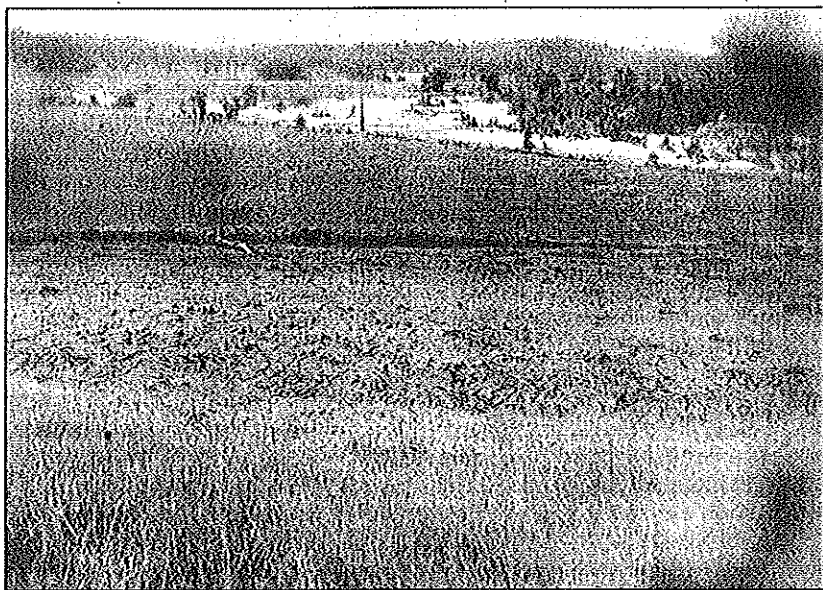
"The authorities did it in 1989 and 1999 and caused enormous environmental damage below the dam wall and again this time.

"Just one more lesson they didn't learn."

Mr McConnell concedes the release rates at that point were dictated by what was happening downstream of the dam.

"I realise the decision to reduce the release rate so rapidly was to reduce the impact of the king tides in Brisbane, but if they had dropped the water in both dams much earlier then the big release would not have had to be made.

□ Continued page 11



Looking west at Lower Terrace lucern cultivation and up river channels after the flood.

In a bid to establish a localised warning system, Chris McConnell's great grandfather staked his property with measuring posts.

"Two flood level posts were installed after the 1893 flood to record river heights. The first on the side of the lower cultivation terrace, which at its base indicated 25 ft and its top 30ft. The 30 ft level was also indicated by a second post at the bottom of the garden and in the second cultivation terrace about a half a mile away from the first. The top of this post indicated 35 ft.

"When the height reaches 42 ft above normal river level, water begins to enter the cellar.

"The final water height measure is a verandah post on the original wing of the homestead built in 1843."



# Foolish to ignore the lessons of history

□ Continued from page 10

"But we seem to be going around in circles, don't we?"

Mr McConnell warns that should flood rains come again this summer, there will be another dangerous factor in play.

"Toowoomba has two water storage dams on Cressbrook Creek - Perserverance Dam and Cressbrook Dam.

"In January, neither of those dams were full and no releases were made from Cressbrook Dam until after the first flood peak at Toogoolawah on Sunday night [January 9].

"Now both dams are at 100 percent so if we had similar climatic conditions, then it's likely water would have to be released much earlier.

"And these dams are managed by different authorities - I wonder if they would communicate with each other?"

To suggest otherwise would be foolish - or would it?

**END NOTE:** On Sunday evening, Mr McConnell welcomed the news that SEQ Water planned to reduce the height of Wivenhoe Dam for the remainder of the wet season to 75% of its capacity.

But he had some questions.

"Why wasn't the same decision made for Somerset Dam?"

The 2011 floods in the upper Brisbane and Stanley Rivers were characterised by the huge amounts of sand and silt carried downstream - much of which would have ended up in the dams.

"Have the dams been resurveyed since this and earlier flood events?"

"Do they really know the current carrying capacity of those Dams?"

And on a final note ...

"The Bureau of Meteorology has for some time predicted the La Nina event which we have experienced, why is it only now that Wivenhoe Dam operators are taking some steps to at least exercise some preventative flood mitigation management?"

"I personally believe from historical fact and knowledge of the area; that possibly more should be done in this area. The 'manual' should be flexible and readily changeable to reflect nature and the conditions at the time.

"If this is not done now our preventative infrastructure will again become an ally of nature and aid the destruction of the infrastructure which it was designed to protect."

## SEQ Water to take Wivenhoe down to 75%

SEQ Water is to begin releases to reduce the Wivenhoe Dam level for the remainder of the wet season, this weekend.

The Dam's carrying capacity will be temporarily reduced to 75 percent of its current Full Supply Level.

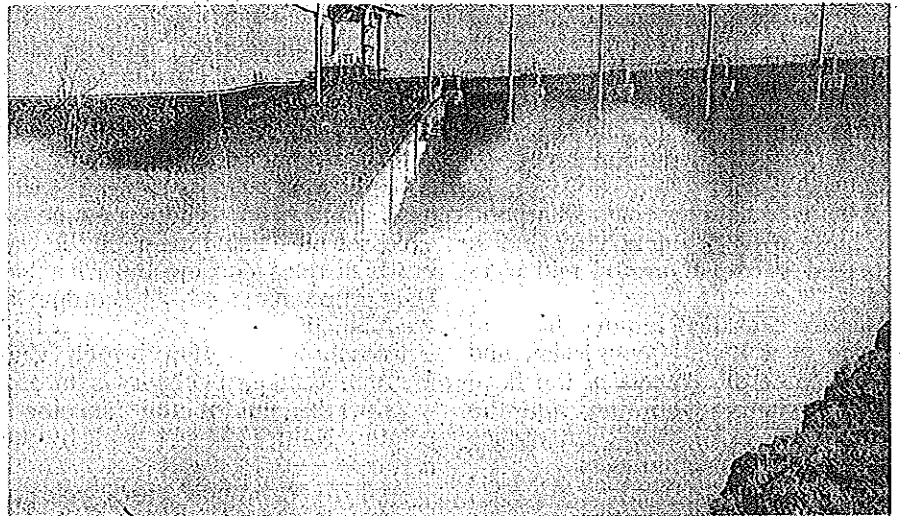
The Minister for Natural Resources, Stephen Robertson, said the release was recommended by SEQ Water after its recent hydrology analysis and was a precaution given the second strongest La Nina pattern in history continues to influence the current wet season.

"SEQ Water made its recommendation recognising the extreme January 2011 event that left the catchments soaked and the water tables full," Mr Robertson said.

"SEQ Water has advised that a reduction in Wivenhoe's Dam storage level to 75 per cent of its Full Supply Level provides appreciable flood mitigation benefits ahead of any major rain events in the remainder of the wet season."

SEQ Water Grid manager Chief Executive Officer Barry Dennien said he had advised SEQ Water a reduction to 75 per cent would be manageable from a water security perspective.

Mr Dennien said the January floods also transformed our long-term water storage capacity with the



recently completed Wyaralong Dam now full five years earlier than expected.

SEQ Water Chief Executive Peter Borrows said they expected to implement the release during the weekend.

"We will adjust the release to take into account any rainfall and tides as usual and this slow release will ensure no significant downstream impacts."

Mr Borrows said that like other low volume releases in the past, there will be a limited number of bridges immediately downstream of Wivenhoe (Twin Bridges, Colleges Crossing and Savages Crossing) which will be

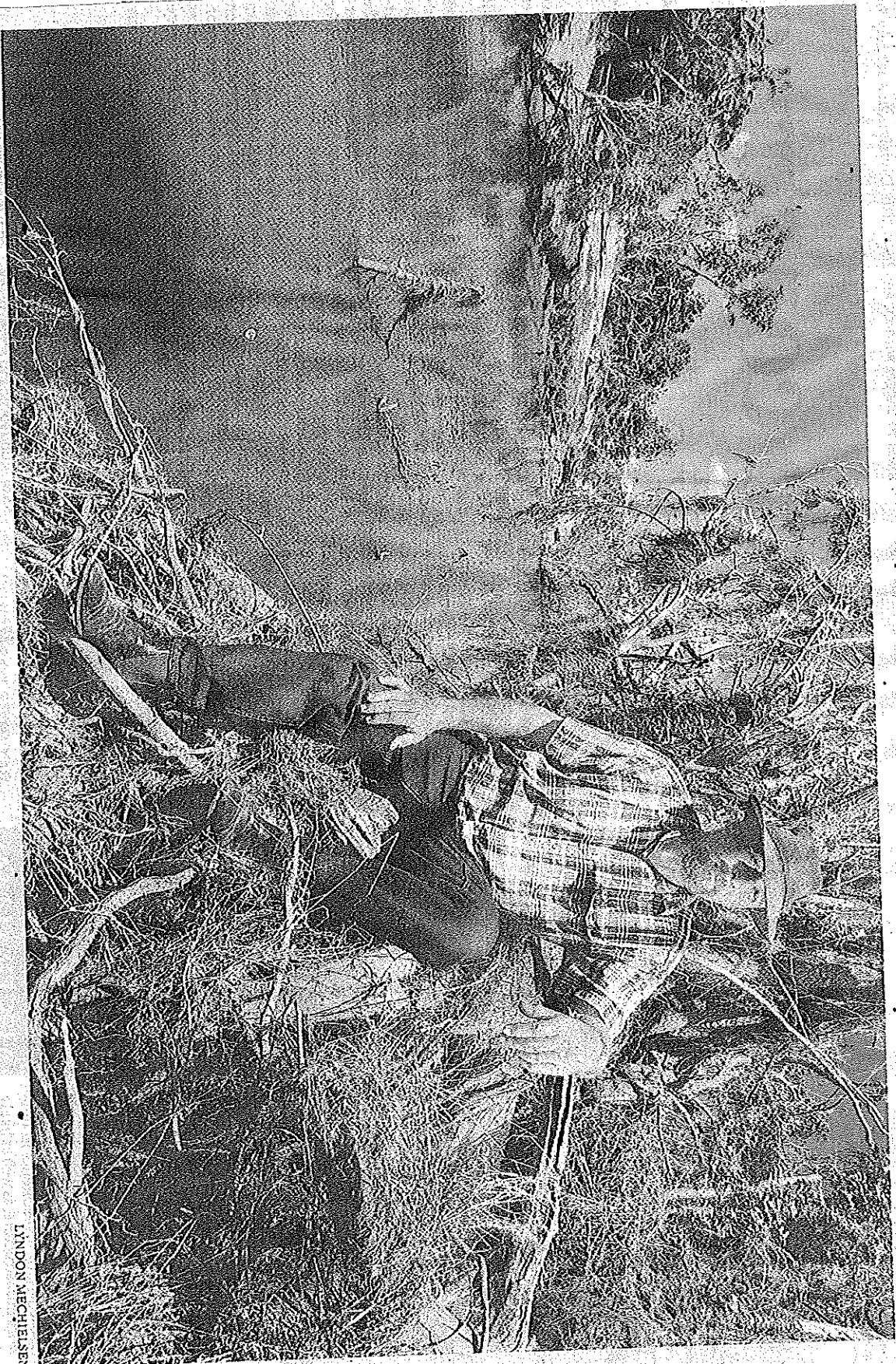
closed during the period.

Mr Robertson said the operational decision reflected current circumstances rather than issues which are likely to be considered by the Commission of Inquiry into the recent floods.

"As per its terms of reference, the Commission of Inquiry will continue to assess dam operations during the January flood event and whether any changes to the long term framework are required," Mr Robertson said.

Mr Borrows said the dam would be maintained at 75 percent of the current Full Supply Level until April, after the end of the wet season.

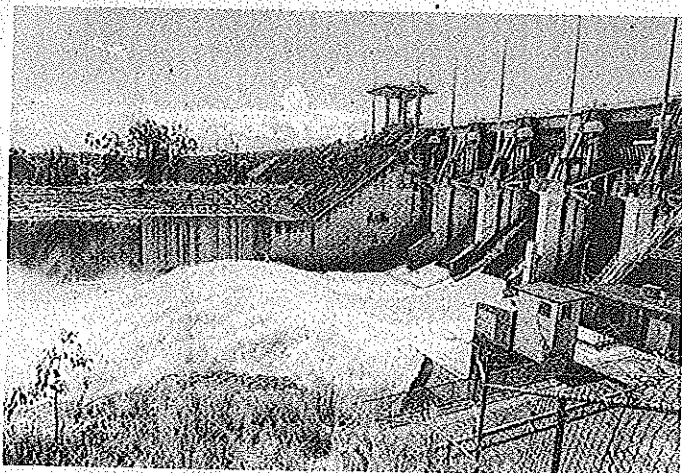
# The urgent plea dam operators ignored



LYNDON MECHIELSEN

Brisbane Valley farmer Chris McConnell, who attempted to warn SEQ Water of imminent flooding

# 6 DISASTER AFTERMATH



MARK CRANITCH

Wivenhoe Dam spillway yesterday, five weeks after the floods

## Urgent plea to dam operators ignored

Continued from Page 1

newspaper, the *Brisbane Valley Sun*, "to ensure this is not swept under the carpet".

Mr McConnell said that during previous floods he and other locals with extensive knowledge of conditions in the catchment area and its local creeks had found it impossible to reach the right people at SEQWater on weekends and public holidays to give them a warning.

"Nature does not stop on weekends, and it doesn't adhere to an operating manual for a dam," Mr McConnell said.

"I am very angry at the management of the dam and the operating manual. What has happened is just crazy."

SEQWater has strongly defended its operation of Wivenhoe Dam. But senior engineers and water experts have run calculations showing the flood in the Brisbane River would have been largely avoided if more water had been released sooner.

SEQWater is refusing to provide briefings or answer questions pending the public inquiry headed by Supreme Court judge Cate Holmes.

SEQWater emails leaked to *The Australian* show that on the morning of Friday, January 7, SEQWater knew from the Bureau of Meteorology to "expect heavy rainfall from Sunday to Tuesday".

The emails show that the strategy on Friday morning was to start releasing water from the dam's flood storage compartment at 3pm that day at a rate of 1200 cubic metres per second (cumecs) and to stay at that "for a couple of days and continue releasing until

the end of the week".

The next email on Saturday night, from an SEQWater engineering officer in contact with the flood operations centre in Brisbane, states: "Current releases from Wivenhoe Dam are 1250 cumecs. Forecast for the next four days is for significant rainfall across (southeast Queensland)."

The next email, which was sent about 24 hours later on Sunday night, states: "Current releases from Wivenhoe Dam are 1400 cumecs. However, please note that we are experiencing major flooding in our catchments. Inflows are approximately 5000 cumecs in the upper Brisbane River and 3000 cumecs in the Stanley River system, with rainfall continuing.

"The (bureau's) current severe weather warning predicts heavy rainfall until Tuesday. If these totals eventuate in the next 12 to 24 hours, higher releases from Wivenhoe Dam will be necessary."

By 6.50am on Tuesday — after heavy rain in the preceding 36 hours — the next email states: "We are entering conditions where dam safety overrides other concerns, although minimisation of urban flooding remains very important."

Senior engineers said SEQWater's strategy of making relatively small releases led to the dam's flood compartment almost filling up, and forced the operator to make huge releases late on Tuesday which led to most of the flooding in the Brisbane River. Residents near the dam agreed that dam policy and management were largely responsible for most of the flooding.

HEDLEY THOMAS

A PIONEER of the Brisbane Valley was asked to "call back tomorrow" when he made an urgent Sunday morning call to the Wivenhoe Dam's operator, SEQWater, to seek immediate action to mitigate a large flood he warned would soon occur from rainfall across the catchment.

Chris McConnell — whose family's history in recording and forecasting local flooding and rainfall goes back to the 1840s, when his great-grandfather settled the land — said yesterday he was "very angry" his warnings were not heeded by SEQWater on the crucial January weekend.

Mr McConnell wants the royal commission-style inquiry into the floods to examine the duty roster on the weekend of January 8 and 9 to establish the seniority and availability of staff making vital decisions on water releases as the dam filled with increasing inflows and rainfall.

He said that if asked to give evidence at the inquiry he would explain that at about 11am on Sunday, January 9, after measuring the river height and talking to local contacts about rainfall in their gauges, he rang SEQWater to warn of an imminent and "very large flood".

Mr McConnell said he knew then that it was imperative for the dam operator to immediately and significantly increase its rates of release of water to give the dam critical storage for floodwater. But he said after explaining the situation to SEQWater he was put on hold and then told he should "call back tomorrow" on the same 1800 telephone number to speak to the night people.

"I said to him: 'That's going to be too bloody late. We're going to get a big flood and the dam needs to be releasing a lot more water to cope,'" Mr McConnell told *The Australian* yesterday.

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