



September 1st 2006
P O Box 49
Toogoolawah Qld 4313

1 SUBMISSION TO THE DRAFT WATER RESOURCE (MORETON) PLAN.

Issues of Concern regarding the Moreton Water Plan from the Cressbrook Creek Water Advisory Committee and members.

1.1 Allocation Amount and Hydrology Report

1.1.1 ALLOCATION AMOUNT

The Committee challenges the accuracy of the "Review Of Cressbrook Project" (prepared by the Department of Natural Resources, April 1996) which is referenced in the Moreton Draft Water Resource Plan. For example the following statement "*Underground water is recharged through direct rainfall infiltration and stream flow in Cressbrook Creek.*" is incorrect in that direct rainfall infiltration only occurs when the creeks flow into the Cressbrook Creek watercourse. This has occurred only 3 to 4 times since the dam was built in 1982. Currently the aquifer is only ever recharged from the yearly release of our allocation and is never completely recharged.

In John Oxenford's report of 1980, he stated "*These aquifers rely entirely on creek run-off for recharging*". Also the 1996 Report states on page 21 **9.0 Conclusions** that the release should be at least 2750 megalitres. This equates to approximately 12% of the inflows as stated by John Oxenford and Associates Ltd Consulting Engineers in his "*Analysis of Observations*" of May 2005. This document recommends that this flow be increased to 28% of total inflows as per the rehabilitation of the Snowy River. This 28% equates to 6416 megalitres. In John Oxenford's report of 1980 (before the dam was built) he stated "*that two-thirds of the flow is to be directed elsewhere (Toowoomba City Council) and only one-third will be available for irrigation and/or recharging local aquifer. It is my experience that this would not be sufficient to saturate such aquifers.*" He then observes that the water table would be lowered and salinity would increase. John has been quite prophetic. The "*Order In Council*" of 1981 recommended a release up to 142 litres per second which equates to 4481 megalitres. We therefore maintain that the figure of 2750 megalitres is completely inadequate.

1.1.2 HYDROLOGY REPORT

The Committee would like to see an independent hydrology report of Cressbrook Creek as stated by John Oxenford in his 2005 report quote, *“I recommend that a review be undertaken to compare pre- and post-disturbance conditions along Cressbrook Creek to determine what other degradations may (or may not) have occurred as a result of the construction of Cressbrook Dam.”* In John Oxenford’s 1980 Report he states *“That an Environmental Impact Statement which should normally be prepared for a project of this magnitude”* The Committee has no knowledge of any Environmental Impact Statement being completed.

1.1.3 ATTACHMENTS

JOxenfordAssocCressbrookCreek_30thMay2005.doc
Order In Council.doc
JOxenford1980Letter.doc

1.2 Release Strategy

The Committee asserts that it should have input into the actual release strategy of water from Cressbrook Dam due to the haphazard release mechanism used in the past.

1.3 Accurate Pumping Figures

The Committee would like Toowoomba City Council to make the pumping figures from Cressbrook and Perseverance Dams available and be required to keep accurate figures of the water volumes used for Toowoomba City Council and the surrounding areas including any on-sale of water to Oakey or other towns’ users.

1.4 Urban Water Users Preference

The Committee rejects outright any suggestion that urban water users, either industrial or domestic, should be given any preference by the Government Moreton Water Plan over primary producers in the allocation of available water.

1.5 Businesses and Livelihoods

The Committee asserts that riparian users are completely reliant on water flows down the creek to maintain their businesses and livelihoods. They have considerable funds invested in their water infrastructure and according to the SEQ Regional Plan farming areas are to be maintained.

1.6 Negative Financial Impact

If riparian users aren't given sufficient water with the change to volume-metric licences, their productivity will fall causing a negative financial impact on their farming business and surrounding town. Local concern is noted by the attached petition and covering letter by the Toogoolawah Chamber of Commerce.

1.7 Required Megalitres per Hectare

With regard to the conversion to volumetric licences the Committee maintains that the 4.2 megalitre per hectare is insufficient and attaches accurate farm records supplied by a local irrigator on Cressbrook Creek and a report on "Water use on Crops and Pastures" from the Mutdapilly Research Station. These reports show that around 10 megalitres per hectare is required for most crops.

1.7.1 ATTACHMENTS

MutdapillyResearchWaterUse.jpg
HendersonMeteredWaterUseGraphs.doc
HendersonMeteredWaterUse.xls

1.8 Water Trading

The Committee is not in favour of water trading on Cressbrook Creek. There is not enough surface or aquifer water to justify any trading of water. If water trading was allowed then a case could be stated that some users could monopolise the available water to the detriment of the many small farms that rely on what water is available for stock and domestic uses. One could say that Toowoomba City council is already doing this.

1.9 Toowoomba City Council's Allocation

The committee agrees that Toowoomba City Council's allocation of water will be reduced from 18 636 mega litres to 10 000 mega litres in the proposed time frame.

1.10 Underground Aquifer Recharge

The Committee believes the creek system should have a wet stream bed for the environmental and riparian users. As the top half of the creek has no underground aquifer and land holders in this area would benefit from having a slow stream release to ensure stock and domestic water supply. The lower section of the creek would benefit as the alluvial aquifer would be recharged. To achieve a wet stream bed 28% of the inflows needs to be returned to the Creek system. This is reinforced by the numerous submissions made to Department Ministers highlighting that the 2750 megalitre allocation for the creek is insufficient for riparian and environmental needs.

1.11 Future Water Restrictions

The Committee would like the Moreton Water Plan to include provision for urban water restrictions to be continued permanently even when there is an abundance of water.

1.12 Ecology and Rehabilitation Officer

As the Creek has not had a full flush of water since the Cressbrook Dam was built there has been a prolific build-up of weeds and noxious trees in the stream bed itself. This needs to be addressed as there will be much environmental damage to the stream banks and infrastructure (i.e. bridges) whenever the Creek next floods. Since the Cressbrook Dam was built the environmental damage has been extensive as noted by John Oxenford in his Report of 1980. *"The effect on flora and fauna will be quite marked. A new group of flora and fauna will evolve along the watercourse which would be more suited to the new environment – i.e. one which rarely floods and will occasionally dry up completely."* The report states: *"For the most part it will be a series of water holes"*. This has eventuated to the extent that now the creek for large sections is completely dry.

With regard to the rehabilitation of the Snowy River in NSW the NSW State Government has appointed a Rehabilitation Officer. The Committee asserts that the Qld Government should follow suit.

1.12.1 ATTACHMENTS

JOxenford1980Letter.doc
SnowyGoesWithTheFlowArticle.pdf

1.13 Time To Lodge Submissions

The Committee believes that the time given to lodge submissions for the Moreton Draft Resource Plan is inadequate for gathering and preparing of details for this submission.

1.14 All Attachments

CCWAC_Submission.doc
HendersonMeteredWaterUse.xls
HendersonMeteredWaterUseGraphs.doc
JOxenford1980Letter.doc
JOxenfordAssocCressbrookCreek_30thMay2005.doc
MutdapillyResearchWaterUse.jpg
Order In Council.doc
ResidentsAndBusinessPetitionInSupport.doc
RiparianLandholdersSignatures.doc
SnowyGoesWithTheFlowArticle.pdf
ToogoolawahChamberOfCommerceLetter.doc



Cressbrook Creek Riparian Users

| Name | Surname | Address | Signature |
|---------|-------------|-----------------------------------|------------------|
| Greg | Antcliff | Biarra via Esk | G.G. Antcliff |
| Janice | Antcliff | Biarra via Esk | J.K. Antcliff |
| Jodie | Apel | Biarra via Esk | J. Apel |
| Paul | Apel | Biarra via Esk | P. Apel |
| Leanne | Barraclough | "SandyBend" Toogoolawah Qld | L. Barraclough |
| Stephen | Barraclough | "SandyBend" Toogoolawah Qld | S. Barraclough |
| John | Bettridge | Bellambi St Toogoolawah | J. Bettridge |
| Craig | Brough | Biarra via Esk | C. Brough |
| Gregg | Brough | Biarra via Esk | G. Brough |
| Mandy | Brough | Biarra via Esk | M. Brough |
| Max | Brough | Biarra via Esk | M. Brough |
| | Brough | Biarra via Esk | |
| Antony | Buchanan | Cooiembardi Rd Toogoolawah | A. Buchanan |
| David | Buchanan | Cooiembardi Rd Toogoolawah | D. Buchanan |
| | Buchanan | Cooiembardi Rd Toogoolawah | E.L. Buchanan |
| Bradley | Carroll | Granziens Lane Toogoolawah | B. Carroll |
| Don | Coleman | Golinski Lane Toogoolawah Qld | D. Coleman |
| Kelly | Coleman | Golinski Lane Toogoolawah Qld | K. Coleman |
| Lyn | Coleman | Toogoolawah Qld | L. Coleman |
| Tim | Coleman | Toogoolawah Qld | Tim Coleman |
| Tim | Collins | Biarra Rd Toogoolawah | T. Collins |
| Betty | Collins | Biarra Rd Toogoolawah | Betty E. Collins |
| Leanne | Collins | Biarra Rd Toogoolawah | |
| Mark | Collins | Biarra Rd Toogoolawah | |
| Ian | Cowley | Biarra Rd Toogoolawah | I. Cowley |
| Sharon | Cowley | PO Box 49 Toogoolawah Qld | S. Cowley |
| Terry | Cowley | PO Box 49 Toogoolawah Qld | T. Cowley |
| Clem | Devine | 811 Biarra Rd Toogoolawah Qld | C. Devine |
| Fran | Eggleston | Biarra Road Toogoolawah Qld | F. Eggleston |
| Peter | Eggleston | Biarra Road Toogoolawah Qld | P. Eggleston |
| Steve | Elliott | 417 Fulham Rd Toogoolawah Qld | S. Elliott |
| HEATHER | Elliott | 417 Fulham Rd Toogoolawah Qld | H. Elliott |
| Bob | Fogg | Rosentreters lane Toogoolawah Qld | B. Fogg |
| Trevor | Fredericks | Mt Beppo Rd Toogoolawah | T. Fredericks |
| Daryl | Golinski | Golinski Lane Toogoolawah Qld | D. Golinski |
| Jill | Golinski | Golinski Lane Toogoolawah Qld | J. Golinski |
| Daryl | Granzien | Granziens Lane Toogoolawah | D. Granzien |

| | | | |
|----------|------------|---------------------------------------|------------------|
| Sharon | Granzien | Granziens Lane Toogoolawah | Sharon Granzien |
| Rod | Henderson | Cooieimbardi Rd Toogoolawah | R.G. Henderson |
| Sharon | Henderson | Cooieimbardi Rd Toogoolawah | S.L. Henderson |
| Neil | Hobart | Biarra Rd Toogoolawah | N. Hobart |
| Lisa | Jurgens | Granziens Lane Toogoolawah | L. Jurgens |
| Bill | Lindstrom | PO Box 123 Toogoolawah Qld | Bill Lindstrom |
| Jo | Lindstrom | PO Box 123 Toogoolawah Qld | J.M. Lindstrom |
| Mac | Mackenzie | Cooieimbardi Rd Toogoolawah | Mac Mackenzie |
| John | Masters | Masters Lane Toogoolawah | John Masters |
| May | Masters | Masters Lane Toogoolawah | May Masters |
| Chris | McConnel | Cressbrook Station Toogoolawah | Chris McConnel |
| Suzanne | McConnel | Cressbrook Station Toogoolawah | |
| Daphne | McKee | Biarra Rd Toogoolawah | D. McKee |
| Kev | McKee | Biarra Rd Toogoolawah | K. McKee |
| Norrie | Norwood | Brisbane Valley Hwy Toogoolawah | N. Norwood |
| Stan | Norwood | Brisbane Valley Hwy Toogoolawah | S. Norwood |
| Andrea | Oxenford | Brisbane Valley Hwy Toogoolawah | A. Oxenford |
| Jamie | Oxenford | Brisbane Valley Hwy Toogoolawah | J. Oxenford |
| Ken | Oxenford | Brisbane Valley Hwy Toogoolawah | K. Oxenford |
| Wynn | Oxenford | Brisbane Valley Hwy Toogoolawah | W. Oxenford |
| Butch | Sipple | Cooieimbardi Rd Toogoolawah | |
| Danny | Skopp | Skopps Lane Toogoolawah Qld | D. Skopp |
| Sherie | Skopp | Skopps Lane Toogoolawah Qld | Sherie Skopp |
| Gaylene | Smith | Morden Lane Toogoolawah | |
| Peter | Smith | Morden Lane Toogoolawah | |
| Dot | Somerville | Dingyarra St Toogoolawah | Dot Somerville |
| Robert | Somerville | Dingyarra St Toogoolawah | R. Somerville |
| Luke | Thompson | Golinski Lane Toogoolawah Qld | L. Thompson |
| Melissa | Thompson | Golinski Lane Toogoolawah Qld | M. Thompson |
| Peter | Warren | Harch Lane Toogoolawah | P. Warren |
| Joanne | Whyatt | Skopps Lane Toogoolawah Qld | J. Whyatt |
| Steven | Whyatt | Skopps Lane Toogoolawah Qld | S. Whyatt |
| RICK | JURGENS | "YAMBLYN" COOIEIMBARDI RD TOOGOOLOWAH | R. Jurgens |
| PATRICIA | JURGENS | "YAMBLYN" COOIEIMBARDI RD TOOGOOLOWAH | P. Jurgens |
| D.E. | PRATTEN | 4 FULHAM RD TOOGOOLOWAH | D.E. Pratten |
| MATTHEW | POLSFORD | 542 CRESSBROOK-CABOODNAN T/WAY | M. Polsford |
| ARNOLD | GLOVER | 7194 BRISBANE VALLEY HWY T/WAY | A. Glover |
| MARGARET | GLOVER | 7194 BRISBANE VALLEY HWY T/WAY | M. Glover |
| PETER | SOMERVILLE | 13 CHAIRS CROFT ST. TOOGOOLOWAH | P. Somerville |
| GARY | SIEDOFSKY | 174 MORDEN RD TOOGOOLOWAH | Gary Siedofsky |
| TRACEY | SIEDOFSKY | 174 MORDEN RD TOOGOOLOWAH | Tracey Siedofsky |

Please only sign this petition once



We the undersigned residents and business people of Toogoolawah support the Cressbrook Creek Water Advisory Committee submission to the Draft Moreton Water Plan.

| Name | Address | Signature |
|-------------------|----------------------------------------|-----------------|
| DON DUNCOMBE | 685 CRESSBROOK CAROONRAH RD TOOGOO LAH | [Signature] |
| CHRIS TRAMER | 666 CRESSBROOK CAROONRAH | [Signature] |
| Shayne Richter | 624 Cressbrook-Caroonrah Twaah | S. Richter |
| JENNY WARREN | 119 HARCH RD TWAAH | Jenny Warren |
| Cassie Adam | Fulham Rd Twah | [Signature] |
| R H ANGTON | TOOGOO LAH H | [Signature] |
| LORT KRUGER | Dead horse Ln Toogoolawah | [Signature] |
| William Capleton | 283 Biarra Rd Toogoolawah | W. Capleton |
| Annette Eggleston | 80 Eskdale Rd Twah | A. Eggleston |
| FRANCES EGG | | |
| Tom Shady | c/o Toogoolawah Friedo. | [Signature] |
| Jay Rivers | 1548 Environment Rd | J. Rivers |
| K.P. Sanginathi | 106 Wellington Rd | [Signature] |
| Vinessa Masters | 143 Masters Lane | V.P. Masters |
| TANIA WATSON | Fairways Toogoolawah | J.M. Watson |
| Bab Sektu | TOOGOO LAH | [Signature] |
| KEITH McVEIGH | 75 FULHAM ST TOOGOO LAH | [Signature] |
| BOB McDOUGALL | 46 ESKDALE RD TOOGOO LAH | [Signature] |
| L.J. LI YOU | 6657 B/Vally H/WAY | [Signature] |
| P.T. HOUSTON | 25 ABBOTSFORD ST TWAAH | [Signature] |
| M.J. HOUSTON | 25 ABBOTSFORD ST TWAAH 4313 | [Signature] |
| GORDON GRANZIEN | 32 ABBOTSFORD ST TWAAH 4313 | Gordon Granzien |
| ELLEN GRANZIEN | 32 ABBOTSFORD ST TWAAH 4313 | Ellen Granzien |
| K.H. SEYMOUR | 37 ABBOTSFORD ST TWAAH 4313 | K.H. Seymour |
| JOHN GARDNER | 1 MANGERTON TOOGOO LAH | [Signature] |
| SHEILA GARDNER | 1 MANGERTON ST TOOGOO LAH | [Signature] |
| IAN LODGE | 35 CAIRNSCROFT ST TOOGOO LAH | [Signature] |
| FRANCES LODGE | 35 CAIRNSCROFT ST TOOGOO LAH | [Signature] |
| Raymond Kleis | 6 Dingyrra St Toogoolawah | [Signature] |
| [Signature] | 27 WELLS ST | [Signature] |
| STEVE DANIELLS | 115 HAMPTON RD ESK | [Signature] |
| CRIS DANIELLS | 59 HIGHLAND ST ESK | [Signature] |
| CARL SEYMOUR | 7 DREM ST TOOGOO LAH | [Signature] |
| JULIE SEYMOUR | 15 MANGERTON ST TOOGOO LAH | [Signature] |
| DEMANDS | " | [Signature] |

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We the undersigned residents and business people of Toogoolawah support the Cressbrook Creek Water Advisory Committee submission to the Draft Moreton Water Plan.

| Name | Address | Signature |
|---------------------|--------------------------------|-------------|
| C. STEER | 22 BUNYAH ST. TWAH. | [Signature] |
| D. Wotton | 669 OLD MT BEPPO RD TWAH | [Signature] |
| David Hutchison | 714 OLD MT BEPPO 4313 | [Signature] |
| Lachlan Mathews | 1223 Mt Beppo Rd Twah 4313 | [Signature] |
| M. Sankay | 714 Old Mt Beppo Rd Mt Beppo | [Signature] |
| F. Langley | 550 Old Mt Beppo Rd, Mt Beppo | [Signature] |
| J. Rawlins | 24 Factory Rd Toogoolawah | [Signature] |
| D. Duncan | 90 ESTABLISH RD TWAH | [Signature] |
| B. HOBBS | 14 DREN ST TWAH | [Signature] |
| Ron Brewster | 30 Annells & Leah | [Signature] |
| S. Russell | LINKS LANE TOOGOLAWAH | [Signature] |
| G. COETZ | 11 CRESSBROOK ST. TWAH | [Signature] |
| D. WOTTON | BUNDEBENG | [Signature] |
| D. PETERING | 13 DOUGLAS ST KARLEE | [Signature] |
| C. Wotton, Campbell | 4 COLINTON ST TWAH. | [Signature] |
| RON GRANZIER | 52 RICHAM ST TWAH | [Signature] |
| W. Wotton | MOORE | [Signature] |
| P. J. Limbani | 179 DEAN HOUSE LANE TOOGOLAWAH | [Signature] |
| P. J. COLLIS | MOTEL TOOGOLAWAH | [Signature] |
| DAVID ANDERSON | 4011 BILBO | [Signature] |
| SUSAN LORD | 13 AKKIRAVILLE TOOGOLAWAH | [Signature] |
| I. MASTERS | 145 MASTERS LANE TWAH | [Signature] |
| Michelle Schlyter | 21 Dingyara St. | [Signature] |
| D. W. Deane | 148 Silburn Road Mt Beppo | [Signature] |
| NGALEN-ANKUS | 34 Garden CV St Toogoolawah | [Signature] |
| [Signature] | 74 Tulken St Twah | [Signature] |
| D. CHAPMAN | 44 ESTABLISH RD TWAH | [Signature] |
| ROD KEILEN | 11 ABBOTS FORD ST | [Signature] |
| RAY HAYES | 153 LOWER CRESSBROOK RD | [Signature] |
| Bill Amos | 22 WOKY W ROAD | [Signature] |
| BOB HOWE | 11 HIMSTEDTS RD MOORE | [Signature] |
| LINDA HOWE | 11 HIMSTEDTS RD MOORE | [Signature] |
| [Signature] | 436 BOX INSH DAMM | [Signature] |
| Catherine Vellacott | 15 McConnel St, Twah | [Signature] |

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We the undersigned residents and business people of Toogoolawah support the Cressbrook Creek Water Advisory Committee submission to the Draft Moreton Water Plan.

| Name | Address | Signature |
|-----------------|-------------------------------|--------------|
| J. TREMBATH | 74 EAST ST. ESK | J. Trembath |
| S. Brady | 68 PINE CR ESK | S. Brady |
| M. MORGAN | 74 EAST ST. ESK | M. Morgan |
| E. PIPER | 55 PINE CRES ESK | E. Piper |
| K. HOWARTH | 21 Adelaide St ESK | K. Howarth |
| D. JACKSON | 302 OLD MT GIBBO RD. TWAH | D. Jackson |
| E. KUNDE | 155 LITTLES RD TWAH | E. Kunde |
| G. KUNDE | 155 LITTLES RD, TWAH | G. Kunde |
| G. Braccetto | 50 Bellambi St Twah | G. Braccetto |
| M. Andersen | B.V. Highway Twah | M. Andersen |
| K. STEINKE | 24 Abbotsford St Twah | K. Steinke |
| J. STEINKE | 24 Abbotsford St Twah | J. Steinke |
| P. LORR | 2222 St Twah | P. Lorr |
| L. KUNDE | 61 ABBOTSFORD ST TWAH | L. Kunde |
| B. Williams | 42 Bellambi St. | B. Williams |
| W. McLAREN | 78 ESKDALE RD. TWAH | W. McLaren |
| K. LUKRITZ | 13 ALEXANDRIA TWAH | K. Lukritz |
| J. Egg | PO Box 25 Twah | J. Egg |
| K. SWAN | 51018 LME TWAH | K. Swan |
| E. Smith | 44 Dingyarrast Twah | E. Smith |
| V. Knight | 5 Edward St Twah | V. Knight |
| J. LOWING | 47 FULHAM ST. TWAH | J. Lowing |
| T. TINNEY | 37 Gardner St Twah | T. Tinney |
| P. YOUNG | 28 KRUGERS LANE TWAH | P. Young |
| D. DEANE | 135 WOOLY CR ROAD TWAH | D. Deane |
| L. DENNENY | 5628 Kelong | L. Denny |
| P. MOORE | 219 HUSCROCK ST | P. Moore |
| ALLAN RICHTER | 456 SCRUB CK RD. TOOGOOLOOWAH | A. Richter |
| BRUCE PIERCE | 48 WOPZ LANE ESK | B. Pierce |
| KAY HAMILTON | 73 MONT WOOD RD | K. Hamilton |
| KEITH HAMILTON | " " " | K. Hamilton |
| BRENT HILL | 11 Brown Cr Sandstone Park | B. Hill |
| DAVE HARRIS | B.V. HIGHWAY TWAH | D. Harris |
| David Humphreys | M/3 550 TOOGOOLOOWAH | D. Humphreys |

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We the undersigned residents and business people of Toogoolawah support the Cressbrook Creek Water Advisory Committee submission to the Draft Moreton Water Plan.

| Name | Address | Signature |
|--------------------|------------------------------|-------------|
| M JOY R (20) | 743 Mt Beppo | [Signature] |
| Cathy Rhonda Wolff | 1170 Cooeeimbaridi Rd | [Signature] |
| Wendy D. Little | 16 Kitzliff Ave Toogoolawah | [Signature] |
| INERID HARRIS | 227 Linkes Ln, Mt Beppo | [Signature] |
| GAMMAN NUTTALL | 6478 BAIS VALLEY HWY | [Signature] |
| Julie Lipp | 743 Gardner St Toogoolawah | [Signature] |
| CAMERON LIPP | 43 GARDNER ST TOOGOLAWAH | [Signature] |
| LENDRE VOGLER | 64 DINGYARRA ST TOOGOLAWAH | [Signature] |
| ALAN ZERNIKE | 1555 ESK-CROWS NEST RD, ESK | [Signature] |
| Geoff Bentley | 25 CRESSBROOK ST TOOGOLAWAH | [Signature] |
| HEATHER CANNELL | 45 CAIRNSCROFT ST TOOGOLAWAH | [Signature] |
| PETER EDWARDS | 1049 MITCHELL RD TOOGOLAWAH | [Signature] |
| JEAN KIMLIN | 342 Mt Beppo Rd Toogoolawah | [Signature] |
| BILL DODD | 2 Toogoolawah BIARRA RD | [Signature] |
| Brad Robertson | 79 Cressbrook St T'wah | [Signature] |
| KARINA DUNN | 79 Cressbrook St T'wah | [Signature] |
| Felise Goodfich | 7805 Brisbane Valley Hwy | [Signature] |
| Phison Lee | 1104 BIARRA Rd T'wah | [Signature] |
| RUSSELL WEBB | 3 CHARLES ST TOOGOLAWAH | [Signature] |
| J. C. Gorman | George St T'wah | [Signature] |
| Craig Donald | 45 Colalar St Toogoolawah | [Signature] |
| Simone Morrison | 37 Charles St Toogoolawah | [Signature] |
| Dally Morrison | 37 Charles St Toogoolawah | [Signature] |
| Dale Harwood | 33 ABBOTSFORD ST TWAH | [Signature] |
| BOB. NEVILLU | 32 BELLA MBS, TWAH | [Signature] |
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**We the undersigned residents and business people of Toogoolawah support the
Cressbrook Creek Water Advisory Committee submission to the Draft Moreton Water Plan.**

| Name | Address | Signature |
|--------------------|-----------------------------|--------------------|
| SCOTT SEYMOUR | 25 FULHAM ST TOOGOLAWAH | <i>[Signature]</i> |
| ARTHUR WILLIAMS | 8 DINGYARA ST TOOGOLAWAH | <i>[Signature]</i> |
| Grant Meagher | 21 DINGYARA ST TOOGOLAWAH | <i>[Signature]</i> |
| JOHN SEYMOUR | 37 ABBOTSFORD ST TOOGOLAWAH | <i>[Signature]</i> |
| <i>[Signature]</i> | 17 CURTISCOFT ST TOOGOLAWAH | <i>[Signature]</i> |
| G. A. Vogler | 14 CAUNSCROFT ST TOOGOLAWAH | <i>[Signature]</i> |
| I. VAN VOGHER | 19 ABBOTSFORD ST TOOGOLAWAH | <i>[Signature]</i> |
| GABRIEL EVANS | 82 ESKDALE RD TOOGOLAWAH | <i>[Signature]</i> |
| JENNIFER JONES | 853 KINGS RD WOODHURST | <i>[Signature]</i> |
| FELICE EVANS | 87 ESPYDALE RD TOOGOLAWAH | <i>[Signature]</i> |
| Margaret Teske | 53 Eskdale Rd Toogoolawah | <i>[Signature]</i> |
| Heleen Teske | 53 Eskdale Rd Toogoolawah | <i>[Signature]</i> |
| A. B. BRIGHT | 19 ALEXANDRA ST TOOGOLAWAH | <i>[Signature]</i> |
| GLEN BAILEY | 9 ALEXANDRA ST TOOGOLAWAH | <i>[Signature]</i> |
| MERLE SINCLAIR | 50 ANNETTE ST TOOGOLAWAH | <i>[Signature]</i> |
| KEVIN TESKE | 5 ALEXANDRA ST TOOGOLAWAH | <i>[Signature]</i> |
| BETTY TESKE | 5 ALEXANDRA ST TOOGOLAWAH | <i>[Signature]</i> |
| GEOFF BROWN | 3 VICTORIA ST | <i>[Signature]</i> |
| W. KRAHENBRING | 32 DREM ST TOOGOLAWAH | <i>[Signature]</i> |
| JOANNE MCEWAN | 31 DREM ST TOOGOLAWAH | <i>[Signature]</i> |
| Alan Baisden | 81 FULHAM ST TWATH | <i>[Signature]</i> |
| Em Baisden | 81 FULHAM ST TWATH | <i>[Signature]</i> |
| MARGARET MORRALL | PO BOX 96 TOOGOLAWAH | <i>[Signature]</i> |
| ALLAN MORRALL | PO BOX 96 TOOGOLAWAH | <i>[Signature]</i> |
| BOB ROBERTSON | KRUGERS LANE | <i>[Signature]</i> |
| ROBERT ROBERTSON | KRUGERS LANE | <i>[Signature]</i> |
| BARBARA HARDING | 41 ABBOTSFORD ST TOOGOLAWAH | <i>[Signature]</i> |
| IRWIN GRANZEN | 38 BELLAMBI ST TWATH | <i>[Signature]</i> |
| JULIE GRANZEN | 38 BELLAMBI ST TWATH | <i>[Signature]</i> |
| Ross Kiehlberg | 32 DREM ST TWATH | <i>[Signature]</i> |

ORDER IN COUNCIL

At the Executive Building, Brisbane, the twenty-second day
January, 1981

Present:

His Excellency the Governor in Council

HIS Excellency the Governor, acting by and with the advice of the Executive Council and in pursuance of the provisions of the *Local Government Act 1936-1980*, doth hereby-

- (a) rescind the Order in Council made on 13th September, 1979 and published in the *Government Gazette* of the 15th September, 1979, which authorized the Council of the City of Toowoomba to take water from Perseverance and Cressbrook Creeks for the supply of water for the City of Toowoomba; and
- (b) grant the application made by the Council of the City of Toowoomba to take water from Perseverance and Cressbrook Creeks for the supply of water for the City of Toowoomba, and give consent to the Council of the City of Toowoomba taking water from the said Creeks for the said purpose subject to the following terms and conditions which are hereby fixed and imposed namely:-
 - (1) The locations of the intake shall be (a) Perseverance Creek-between portion 105v, parish of Crow's Nest and portion 81, parish of Ravensbourne, about half way along the Creek frontage of portion 105v and (b) Cressbrook Creek-about 200 metres upstream from the junction with Little Oakey Creek;
 - (2) The maximum quantity of water which the Council may take from the said Creeks in one year shall not exceed 18 636 megalitres;
 - (3) In the case of Perseverance Dam an outlet pipe and control valve of 300mm diameter be incorporated in the structure at bed level for regulation purposes in the structure at bed level for regulation purposes and in the case of Cressbrook Dam a 500mm outlet pipe and control valve of 250mm diameter be incorporated in the structure at bed level for the same purposes;

- (4) When in the opinion of the Commissioner for Water Resources water should be released from the dams to meet the needs of riparian landowners below the dams, then he may direct Council, through his nominee, to release water through the control valves in the following manner:-
- (a) To meet riparian entitlements between Perseverance and Cressbrook Dams the outflow from tile control valve at Perseverance Dam shall be equal to the inflow into Perseverance Dam up to a maximum release rate of 57 litres per second.
 - (b) To meet riparian entitlements below Cressbrook Dam the outflow from the control valve of Cressbrook Dam shall be equal to the sum of the, inflows into both storages less the amount being released through the control valve at Perseverance Dam up to a maximum of 142 litres per second.
- (5) The said Council shall forward to the office of the Commissioner in Brisbane, and to the Director, within fourteen days of the end of each calendar month, a statement showing the quantity of water diverted from the said Creeks during the month.

And the Honourable the Acting Minister for Local Government, Main Roads and Police is to give the necessary directions herein accordingly.

6

KEITH SPANN, Clerk of the Council.

NOTE: The Local Government Act was repealed in 1993.

John Oxenford and Associates Ltd. Consulting Engineers

Cressbrook Creek Water Advisory Committee
MS 484, Toogoolawah
Queensland
Australia 4313

Attention: Mr. Clem Devine
Secretary

Dear Mr. Devine:

Re: Cressbrook Creek Issues

This letter is in response to the request by your group for comments on the various issues around Cressbrook Creek that are raised in your recent communications. You have indicated that your group has observed a continued drop in aquifer levels and increases in salinity since Cressbrook Dam was constructed and you are concerned about this. You have good reason to be concerned. If those observations are correct and if salinity and aquifer levels were to continue to trend in those directions, they would have the potential to compromise the agricultural and pastoral activities along Cressbrook Creek with dire consequences for those engaged in those pursuits

Sources of Information

In offering the opinions contained in this letter, I have been guided by information gained as follows:

- Report..... Review – Cressbrook Creek Project, April 1996
- Various documents sent to me at the time of the conversion of the water supply to the Town of Toogoolawah
- Various documents sent to me for comment in May 1980 prior to the construction of Cressbrook Dam. My comments are contained in my letter of May 8, 1980 to the Advisory Committee.
- Visits to the area over the last 30 years
- Discussions with sundry landholders over that period

Understandings / Observations

From these sources, I understand the following:

- Cressbrook Dam was commissioned in 1983. Perseverance Dam was commissioned some time before 1983.

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- When the Cressbrook Dam was commissioned, flow discharged into Cressbrook Creek was limited to about 2520 megalitres per year. This was subsequently increased to 2750 megalitres after the release of the 1996 Review. The 1996 Review estimates (p17) that the total flow in Cressbrook Creek / Perseverance Creek system is about 23,000 megalitres per year based on data collected from 1966 to 1978. The discharge is therefore about 12% of the total flow.
- The operating rules for Perseverance Creek Dam called for the release of between 500 and 1000 megalitres per year to Cressbrook Creek. These release requirements would seem to now form part of the allocation from Cressbrook Dam.
- There has been no significant increase in agricultural intensity in the Cressbrook alluvial area that might have increased agricultural consumption of water. This consumption is estimated in the Review (p18) at about 3600 megalitres per year from underground sources and 1000 megalitres from surface.
- Landholders comment that since Cressbrook Dam was commissioned, Cressbrook Creek does not flow except for very occasional short periods of maybe 24 hours or less and then only once or twice a year
- The supply of water to the Town of Toogoolawah was converted from bores along the Esk – Toogoolawah Road to a supply from Wivenhoe Dam
- There has been no major earthworks or other civil works that would divert runoff that would normally have flowed into Cressbrook Creek
- Landholders comment that aquifer levels have dropped over the period since Cressbrook Dam was commissioned. Especially in the sections AMTD 23 to AMTD 0. This is confirmed in the Review (p3).
- Landholders comment that salinity levels have also increased since Cressbrook Dam was commissioned. I cannot find any data to support or refute this in the Review
- There has been no profound change in precipitation levels during this period.

Analysis of Observations

Before offering an opinion on the cause of these conditions and suggesting some options that might remediate them, I have tried to determine from all the information I have been given what has changed in this period. I find no evidence that consumption has increased significantly. Agricultural intensity in the sections AMTD 23 to AMTD 0 is essentially unchanged. Admittedly, there has been some increase in population density, but this underground water is too saline for human consumption so that population increase will have had little impact. In fact, with the conversion of Toogoolawah to Wivenhoe Dam water, it could be argued that overall consumption may have even decreased. The information provided to me does not indicate that there has been any significant diversion of runoff away from Cressbrook Creek into dams or other uses. So recharge rates should be unaffected. And there has been no significant change in precipitation levels to affect recharge rates either.

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That leaves the only major change to impact the local aquifers as being the construction of Cressbrook Dam and the containment of discharge to about 12% of total flow. I can see no other changes that might have caused the observed aquifer rundown. The lowering of aquifer water levels and increases in salinity in sections AMTD 23 to AMTD 0 indicate that recharge rates to aquifers in those sections cannot support the current use patterns. Either usage has to decrease or recharge rates have to increase.

I note that the 1996 Review suggests that some of the Cressbrook Dam discharge is flowing into the Brisbane River before it can recharge the aquifers, and that construction of weirs in this area would reduce or eliminate that loss and would direct that water into the aquifers. The Review goes on to say though that this would only be a partial remedy to the problem. One of these weirs has actually been constructed. No data is given to verify this assumption of loss to the Brisbane River but this assumption of loss is contrary to various observations made to me by various landholders. They have indicated to me that Cressbrook Creek rarely flows these days and when it does, it is for periods of less than 24 hours and maybe only once or twice a year. Landholders have also indicated to me that the weir that has been constructed rarely fills. This indicates to me that its effect is marginal and confirms the comments in the Review (p3) that construction of such weirs can only be a partial solution.

Unless I could be provided with data that quantified this loss of water to the Brisbane River, I have to conclude that such weirs would have minimal effect in recharging these aquifers. There would appear to be little flow in Cressbrook Creek to capture and redirect.

I would also like to refer back to comments made in my letter of May 8, 1980. In that letter I commented that Cressbrook Creek would cease to flow if discharge rates were maintained at the proposed rates of about 15% of total flow. Landholders have indicated to me that this cessation of flow has essentially occurred. I also predicted that flora and fauna would be negatively impacted along the Creek if it ceased to flow and merely became a series of water holes. Landholders have indicated to me that this has occurred also. These general observations by landholders are confirmed in the Review on page 3 where it is commented..... *“Changes to the pattern in which water flows down Cressbrook Creek since the construction of Cressbrook Dam would seem to have been to the detriment of groundwater levels at the downstream end of the Cressbrook alluvium”*.

This negative impact on the environment and the groundwater levels is contrary to all understandings given prior to the construction of Cressbrook Dam. The undertakings made at that time included the assurance..... *“Given that the allocation rules are designed to maintain the alluvial system in a state which existed prior to the construction of the dam, it is important that the release strategy is not affected by the increasing demands on the stored water.”* Clearly, these rules are not being adhered to. Demands for the stored water are taking precedence over the riparian rights of the downstream landholders, and as a result, the allocation strategy that has been adopted has negatively impacted the Cressbrook alluvial area. That area is not being maintained in a state that existed prior to the construction of the Dam.

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So based on the information provided to me, I have to conclude that an increase in discharge rates is the only solution to this problem. More weirs are just a partial solution. Just what those release rates should be increased to is debateable. Clearly the current rate of 12% is too low to prevent negative impacts in the Cressbrook alluvium area. I have reviewed the calculations in the Review (p19 and Appendix B) that are used to justify the current release levels. These calculations include some factors which are introduced without any data to support them – namely losses between the Dam and the alluvial area of 9 megalitres per day and a recharge rate of 80%. The loss of 9 megalitres is attributed to a “*Toowoomba City Council Report*” but that data is not provided nor is any specific report cited that I could refer to in order to verify this number. The recharge rate of 80% is noted in Appendix B as being “*based on water balances carried out in other alluvial areas elsewhere in the state*”. Again, no data is provided and no reports are cited. These factors are most crucial in the calculation of discharge volumes and because I can find no data to support those assumptions I have no option but to place very little reliance on them. In addition, the loss of water to the Brisbane River would appear to have been ignored in these calculations. Because of these uncertainties and omissions, I have no option but to place very little reliance on the calculated discharge requirements. The Review makes the comment (p23) that..... “*the data available on which to base an assessment is less than ideal*”. I would certainly concur with that statement.

Elsewhere in Australia, I note that in their efforts to resolve the environmental degradation that has occurred in the Snowy River, the Australian, Victorian and New South Wales Governments have agreed on a discharge rate of 28% of total flow. Please see the attached article on the subject. That is probably a good starting point for the rehabilitation of Cressbrook Creek. I see no reason why that system should be considered to be any different to the Snowy River system.

I would therefore most strongly recommend to you and your group that you seek to have discharge rates increased to the Snowy River rates (ie a minimum of 28% of total flow) and that you ensure periodic measurements of salinity and aquifer levels are taken to see if that improves the situation. I would caution though, that these discharge rates need to be increased over an extended period to ensure the aquifers can rebuild. That rebuild process will not occur overnight.

Finally, I would comment that all the discussions in the 1996 Review focus only on the maintenance of aquifer levels. If a project such as Cressbrook Dam were to be implemented here in Alberta, an Environmental Impact Assessment (EIA) would have to be prepared by the Applicant before any approval could be given by Alberta Environment and/or the Natural Resources Conservation Board. Among other things, an EIA would benchmark in some detail the conditions that existed prior to the disturbance. This would not be restricted just to aquifer levels but would include flora and fauna distribution, groundwater quality, potential social impacts, surface runoff levels, and so on. The Applicant would then be required to provide periodic compliance reports (generally every 5 years) to maintain their Licence-to-Operate. I assume a study equivalent to an EIA has been prepared for Cressbrook Dam and environs. I would therefore strongly recommend to your group that you access that document and ask for some comparison of pre- and

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post-disturbance conditions so that you can assess the impact of Cressbrook Dam on the local environment and not just its impact on aquifer levels.

Conclusions and Recommendations

So, in summary, my conclusions and recommendations are:

- The Cressbrook Creek alluvium area has been negatively impacted by the Cressbrook Dam release strategy that has been adopted. This area is not being maintained in a condition that existed prior to the construction of the Dam.
- The remediation action undertaken (namely the construction of a weir in the Toogoolawah Township area to assist in aquifer recharge) has not, and cannot, resolve the issue. At best this can only be a partial solution.
- I recommend that release rates be increased to those that have been agreed to for the rehabilitation of the Snowy River (ie 28% of total flow). That release level has been established by some of Australia's most eminent scientists, hydrologists, and conservationists and sets a benchmark that should be followed in other river systems.
- I recommend that a review be undertaken to compare pre- and post-disturbance conditions along Cressbrook Creek to determine what other degradations may (or may not) have occurred as a result of the construction of Cressbrook Dam.

I hope you find these comments of assistance. Please feel free to contact me at any time if I can be of further assistance.

Yours truly

John Oxenford P.Eng., FAusIMM
Principal
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8.5.80

Cressbrook Creek Water Advisory Board
c/- Annabranah
Toogoolawah

Dear Sir,

I refer to your letter of 6.5.80 on the matters outlined below. Outlined below are my opinions on the matters you have raised. I have not had access to any statistics or other technical information and my answers should be received with this in mind.

In answer to your queries:

1. Effect on water levels –

Most bores, that I am aware of, are shallow and penetrate only the creek-bed sands and gravels or Tertiary sediments to the flood plain adjacent to those gravels. These aquifers rely entirely on creek run-off for recharging.

When these aquifers are saturated, water will accumulate in the creek bed and stream run-off may occur.

I am not aware what proportion of Cressbrook Creek's normal flow discharges into the Brisbane River. I understand from your letter that two-thirds of the flow is to be directed elsewhere and only one-third will be available for irrigation and/or recharging local aquifer. It is my experience that this would not be sufficient to saturate such aquifers. Hence it is my opinion you would observe the following:

- I. a lowering of the water table
- II. an increase in salinity

2. Effect on ecology:

The most likely effect of a reduction of this magnitude in the stream discharge, will be that the stream will rarely "flow"! For the most part it will be a series of water holes.

The effect on the fauna will be quite marked. A new group of flora and fauna will evolve along the watercourse which would be more suited to the new environment – ie one which rarely floods and will occasionally dry up completely.

Your letter makes specific reference to platypus and fish. These fauna have little capacity to adapt and will be among the first to disappear.

3. Effect of Wivenhoe Dam

The raising of water levels in the Brisbane River due to Wivenhoe Dam will have an effect on the water tables in the immediate vicinity of the water body. The effect will be negligible on land whose height-above-sea level is above the top of the free-standing body of water backed up by Wivenhoe Dam.

Similarly the presence of the free-standing body of water in the proposed Cressbrook Creek Dam will have an enhancing effect on aquifer characteristics in the area adjacent to that dam.

I would stress that in both cases the effect would be very local.

4. Water rights and legalities

I am not a legal expert and the opinions below are those given by people who do not practise law in Queensland.

Owners of freehold land normally own all land within a stream which may flow across such land. In the case where a stream is a property boundary then the stream's centreline is the property boundary.

The water within this stream is not the landholders' property. It is the property of the Crown. Similarly underground water is legally the property of the Crown.

It is accepted practice that landholders can use water within their property's boundaries – either surface or underground. In many cases such usage is collated and monitored by the Crown.

It could be argued that such usage has occurred with the full knowledge of the Crown. It could be argued that such knowledge implies permission. And it could be argued that because the landholders have had such permission to draw water in the past, they have a right to compensation should such permission be withdrawn.

The question of consultation by Government bodies, Authorities or Departments with the landholders affected is more in the realm of politics than legalities. It would certainly seem improper if landholders' privileges of 100 years standing were withdrawn without consultation. This is perhaps better taken up with your local member.

In summary I would stress that, in my opinion, the Cressbrook Creek area would be greatly affected by the development you outline. Your letter makes no mention of any environmental impact statement which should normally be prepared for a project of this magnitude. If such a study has been made it should normally be available to the public and I would be grateful if you could forward a copy to me.

I hope my answers have been of benefit to you.

Yours faithfully

R J Oxenford

B Sc (Geology) Uni of Qld
M E Colorado School of Mines

Submission form

Office use only

Surname (Mr/Mrs/Ms/Dr) COWLEY Submission no.:

First Name TERRY Date received:

Address P.O. Box 49 Issue category:

TOOGOOCAWAH QLD

Postcode 4313 Fax

Organisation CRESSBROOK CREEK WATER ADVISORY COMMITTEE Position VICE CHAIRMAN

Phone No 5423 1178 Mobile No

Email clerwin@bigpond.com

Signature(s) SEE ATTACHED Date 11/9/06

Which interest group(s) do you represent? Number relevant boxes in ascending order where (1) represents your primary interest.

- | | | |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|
| <input type="checkbox"/> Riparian landholder | <input checked="" type="checkbox"/> Stock and domestic water user | <input type="checkbox"/> Horticultural interests |
| <input type="checkbox"/> User of overland flow | <input checked="" type="checkbox"/> Environmental interests | <input type="checkbox"/> State/Commonwealth dept. or agency |
| <input type="checkbox"/> Irrigator (supplemented surface water) | <input checked="" type="checkbox"/> Intensive stock industry | <input type="checkbox"/> Industry representative body |
| <input checked="" type="checkbox"/> Irrigator (un-supplemented surface water) | <input type="checkbox"/> Mining/petroleum industry | <input type="checkbox"/> Commercial fisher |
| <input checked="" type="checkbox"/> Irrigator (underground water) | <input type="checkbox"/> Urban water user | <input type="checkbox"/> Recreational fisher |
| <input type="checkbox"/> Dryland farmer | <input type="checkbox"/> General industry/business | <input type="checkbox"/> Local government |
| <input checked="" type="checkbox"/> Grazier | <input type="checkbox"/> Tourism industry | <input type="checkbox"/> Water service provider |
| | <input type="checkbox"/> Community group (please specify) | <input type="checkbox"/> Indigenous community |
| | | <input type="checkbox"/> Other (please specify) |

A) Draft Water Resource Plan

What features of the draft Moreton Water Resource Plan do you think are worthwhile?
 What issues concern you? How do you think the draft Moreton Water Resource Plan could be improved to address these issues?

.....

.....

Detailed submission attached

B) Commencement of resource operations planning process

What suggestions do you have about how the draft Moreton Water Resource Plan might be implemented through the resource operations planning process?

.....

.....

Detailed submission attached

**TOOGOOLAWAH
CHAMBER OF COMMERCE AND INDUSTRY INC**

ABN: 56 772 769 302

PO Box 201
TOOGOOLAWAH 4313

Phone: 5423 1133

30/8/06

Mr. Terry Cowley
Cressbrook Creek Water Advisory Committee
TOOGOOLAWAH 4313

To Whom It May Concern:

The Toogoolawah Chamber of Commerce and Industry Inc strongly support the submission of the Cressbrook Creek Water Advisory Committee to the Draft Moreton Water Plan.

As business owners and employers in the area we can see the effects that the lack of water in Cressbrook Creek has on the economy of the area and the effect that it is having on the community by way of unemployment and families maybe having to leave the area because of the situation.

H. Cannell

H. Cannell
Secretary



Snowy goes with the flow

May 14, 2005

The mighty river is slowly regaining its strength after years of neglect, writes James Woodford.

APPROACHING the tangled banks of the Snowy River, deep in the Kosciuszko National Park's Byadbo Wilderness, there is a noise not easily forgotten.

It is the sound of rushing, clear water as it passes over cobblestoned rapids - music to the ears of those who have fought to save Australia's most famous inland waterway.

It is just under three years since the release of the first environmental flows into the river and experts say there are early signs of recovery.

Most significantly, the extra water is beginning to carve its way through the mountains of swampy, stagnant sediment that accumulated along almost the entire length of the river after four dams were built on it.

As the Snowy begins to flow colder, deeper and faster than it has for nearly four decades, the newly established Southern Rivers Catchment Management Authority is racing to bring the river back to life.

A Snowy River rehabilitation project officer with the authority, Danny Henderson, says the fact little floods are getting through means there is a more definite channel forming.

It was a fairly big, swampy, broad channel, Henderson says. "I suppose you could say the Snowy River is now looking like a pretty good little creek, and with more time and water it will be a healthy river - similar to what it was but on a smaller scale."

Since 1967, 99 per cent of the river's water has been diverted to the Snowy Mountains Hydro-Electric Scheme, regarded as the nation's greatest engineering feat but one which effectively killed a national icon.

Then in 2000, under immense political pressure, ecology joined technology at the negotiating table and the Victorian, NSW and Federal governments agreed to restore as much as 28 per cent of the Snowy's original flows.

On August 28, 2002, the Mowamba River Weir was spilled, releasing back into the Snowy the first environmental flow of 128 million litres.

In her book *Snowy River Story*, the *Age* reporter Claire Millar describes that historic moment: "It seemed to take forever, but slowly, slowly, the water behind the weir rose. A dribble tinkled over the wall at the far end. The dribble built up into a trickle. The trickle spread across the weir and became a murmuring veil. The veil thickened into a heavy curtain of water cascading over the edge. The politicians had to shout over the splendid splashing."

For the first three years the Snowy was given back 22-25 billion litres of water a year. Within a decade, environmental flows are expected to rise to 244 billion litres a year - or 21 per cent of its original flow.

A river, however, is much more than the water that flows down to the sea, and the Snowy is still in dire environmental health. Its native fish stocks have been decimated, replaced by swarms of feral species such as goldfish, which got into the river after being used as bait by anglers, and gambusia. The banks were covered in masses of weeds.

There is also a battle brewing over where the Snowy's water will come from. Snowy Hydro wants to

deliver the water from Jindabyne Dam, while scientists and conservationists believe the Snowy needs to have a wild source if it is to be a true river. The headwaters of the Mowamba, a major tributary, are the logical choice, say those who are fighting for the river.

Historically, the Snowy was treated like an irrigation ditch, says Brett Miners, landscape manager with the catchment management authority.

"The river's got a couple of decades of working out to do," he says. "It's changed so dramatically from what it used to be that it's going to take some time to re-establish its character. The willows have just eaten the sand beds."

Teams of workers are being flown into wild gorges by helicopter to undertake the biggest eradication of noxious willow trees ever attempted in NSW - and possibly in the nation.

The river was choked with innumerable willows - some estimates put the number as high as 10,000 stems per kilometre of river - growing out of an understorey of blackberry.

Of the 184 kilometres of Snowy River in NSW, 165 kilometres have already had a first sweep of poisoning. If the weather holds and conditions remain good, the last 19 kilometres may be finished this year.

Camping out for up to 10 days, chopping with tomahawks and poisoning from dawn until dusk, in the worst patches the bush regenerators are travelling downstream at a tortuous pace measured in kilometres per week. It is a backbreaking, wet, painful and relentless job, where serpent-sized eels and waist-deep mud are an occupational hazard.

The owner of Blackwood's River Restoration, Martin Blackwood, is contracted to guarantee a 98 per cent kill of willows.

"If you get frustrated by it you won't last long, especially when we are poisoning among the blackberry and you get poked in the eye by a dead stick," Blackwood says. "It doesn't pay to look up too often; you just keep your head down and continue from willow tree to willow tree, otherwise you just psych yourself out."

Other teams have been catching native fish from remote tributaries so they can be bred in captivity for release in their hundreds of thousands.

Miners says this work is crucial because, as flows increase, there will be a window of opportunity for native fish to elbow the feral ones out of the way - but only if sufficient stocks are available for release.

"We would like to put 50,000 Australian bass fingerlings per year for three years into the river below Snowy Falls," he says.

The vision is for the river to be restored to its former place as one of the nation's premier bass fishing waterways. Miners says Australian bass are a superior sport and table fish to the exotic trout, but notes that the two can coexist in rivers such as the Snowy. He hopes that over time people will realise the benefits of fishing for the native species.

Numerically the river is currently dominated by goldfish, he says.

A crew of Aboriginal contractors has been planting tens of thousands of native trees, grasses and shrubs on denuded riverbanks. Scientists have been studying the rate of return of river invertebrates and the slow scouring away of foul sediments.

A program offering incentives to farmers who fence off their river frontage is also under way - so far agreements have been reached on keeping stock away from 6.5 kilometres of the Snowy.

Miners says it is possible woody debris may also need to be placed back into the river to help create the turbulence required to scour out sediment and to provide habitat. He believes the job of returning the Snowy to ecological health will be finished when there are healthy populations of another native species - the river blackfish.

"They can't cope with sediment so they're like a canary in the coalmine," he says.

"If you can get blackfish reintroduced and successfully breeding it could be a seminal moment in indicating the river's got a long-term ecological viability. But that may be decades away."

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