



Aerial photo of dam 2007

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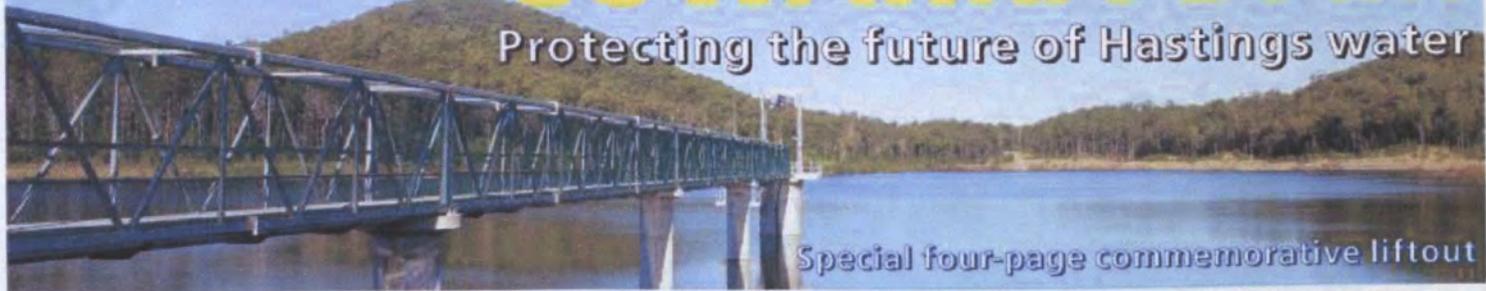
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Cowarra Dam- 38



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# COWARRA DAM

Protecting the future of Hastings water



Special four-page commemorative liftout

## Twenty-year vision realised

### Cowarra Dam officially opens

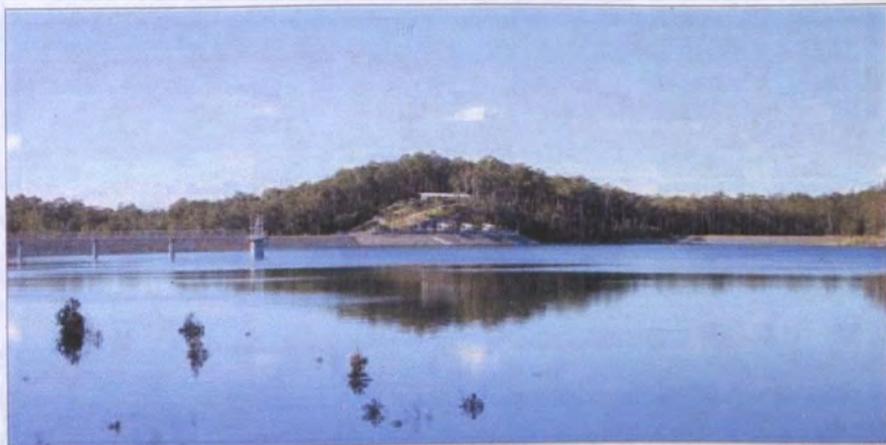
October 14 marks a significant milestone in the long-term strategy of Port Macquarie-Hastings Council to secure the future of the district's water supply. This Friday, the new 10,000 megalitre Cowarra Off-Creek Storage Dam, five kilometres south-east of Wauchope, will be officially opened.

The dam is the critical link in council's overall Water Supply Augmentation Scheme which aims to progressively cater for the region's high growth rate while more significantly, recognising the importance of the aquatic environment and long-term health of the Hastings River.

Port Macquarie-Hastings Mayor Rob Drew will officiate the invitation-only ceremony on Friday before Cowarra Dam is open to the public for inspection on Saturday, October 15.

A community celebration will be held on-site between noon and 4pm with free guided dam tours, entertainment, refreshments and the premiere screening of locally produced video on the history of the Cowarra Dam.

Port Macquarie-Hastings Mayor, Rob Drew believes the dam is an important element of the united approach between council and the



The new 10,000 megalitre Cowarra Off-Creek Storage Dam near Wauchope

community that has allowed the Hastings to become recognised nationally for providing a sustainable water resource that will meet the needs of the population now and in the future.

"In recent years we have undertaken a long-term strategy for raising awareness and educating Hastings

residents about the importance of water to our environment and the need to reduce consumption. The large majority of the community has embraced this message positively. The community open day at the Dam will recognise that support," said Mayor Drew. The Cowarra Off-Creek Storage

Dam will ensure the Hastings a more drought-secure future. The dam, together with a council and community commitment to reduce water wastage and household consumption, will assist in providing a reliable and sustainable approach to water management issues well into the next century.

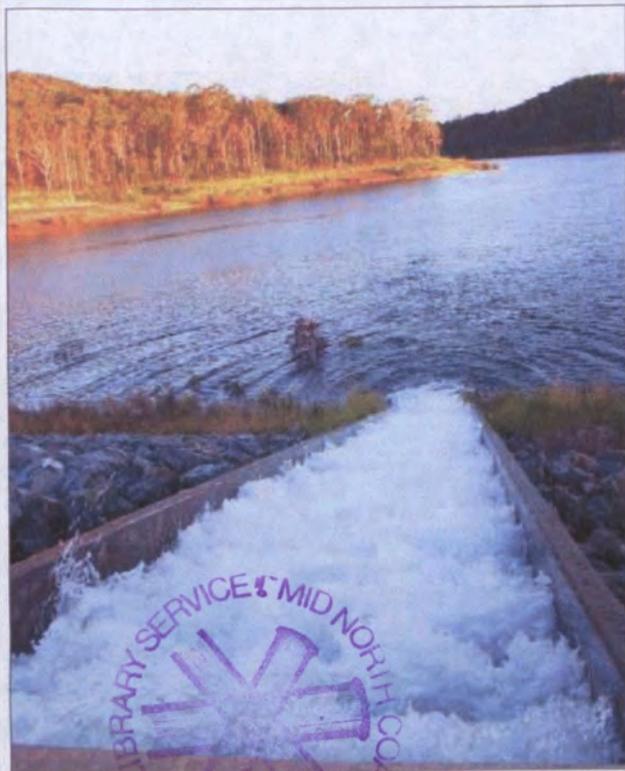
**PUBLIC OPEN DAY**  
You're invited to celebrate!

Cowarra Off-Creek Storage Dam will officially be open to the public from 12 noon to 4pm on Saturday, October 15.

The open day will feature guided dam tours, entertainment and audio-visual displays.

You can access Cowarra Dam from the Oxley Highway. Turn into King Creek Road, turn left into Sarah's Crescent and then right on to the sign-posted road to the dam.

◆ Following the official opening, the picnic area will then be accessible to the public between 9am and 5pm from October 24.



## Dam secures the future of Hastings water supply

It is four times bigger than the Port Macquarie storage dam, has enough water to fill 10,000 Olympic swimming pools and is the end result of a 20-year vision to secure the future of the Hastings district water supply.

The Cowarra Off-Creek Storage Dam is a state-of-the-art facility that has combined clever engineering with the latest technology to ensure the region is drought-secure, the local water supply is sustainable and the Hastings River and its ecosystems remain protected.

The need for a second off-creek storage dam to meet the predicted long term urban growth demands on the local water supply was recognised by Port Macquarie-Hastings Council back in 1985. With the population expected to top 120,000 by 2020, the 2500 megalitre Port Macquarie Dam alone could not sufficiently cater to this level of regional expansion.

Council devised and implemented a long-term management strategy identifying increased demands on the water supply in a particularly sensitive environment.

"During this process the local area experienced a period of serious drought conditions and very low river flows. This strongly focused the attention of both urban and rural communities on water supply issues," Port Macquarie-Hastings Council's Director, Water and Natural Resources, Geoff Freeman said.

"This ultimately assisted Council in the community consultation process ensuring strong local support for the proposed augmentation scheme.

"Simply building infrastructure to solve resource supply problems was no longer acceptable to the general community which has and continues to embrace the water conservation message."

The completion of the Cowarra Off-Creek Storage Dam is a significant milestone in the long-term objective of council to create an integrated water supply network that is responsive to the ongoing environmental, social and economic concerns of the community.

"The Cowarra Dam, together with council's ongoing water supply demand management strategy to reduce water wastage and household consumption and the community's commitment to this cause, will assist in providing a reliable and sustainable approach to water conservation well into the next century," Mr Thompson added. Port Macquarie-Hastings Council has made a significant investment in the future of the region's water supply.

The Cowarra Dam was constructed, on time and under budget, at a cost of \$32 million while the Hastings District Water Supply Scheme represents an investment of \$105 million. The next phase of the project will include the construction of a new trunk main from Cowarra Dam to Bonny Hills.

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■ The stunning carved and decorated sculptural poles created from reclaimed timber found on site.



■ Design artist Lois Davis with one of the indigenous mosaic designs representative of cultural links to the environment.



■ A boomerang seat with mosaic design overlooks Cowarra Dam from the public picnic area.

# Building dams and lasting cultural partnerships

Cowarra Off-Creek Storage Dam sits on land steeped in cultural history.

Located in the coastal ranges, five kilometres south-east of Wauchope on the upper catchment of a small unnamed tributary of King Creek, the dam site is under the guardianship of the Bunyah Local Aboriginal Land Council and Birpai people. When Port Macquarie-Hastings Council realised the need for a long term strategy to secure the future of the local water supply, research showed the Cowarra State Forest offered the most desirable conditions for the construction of a second off-creek storage dam.

Before planning began, council and the Department of Public Works and Services (now Department of Commerce) approached Bunyah LALC to ask for their support and assistance in the development of the project. The Bunyah people, knowing the importance of water to all life, accepted that Cowarra Dam would ultimately benefit everyone living in the Hastings, and formed a partnership with council that continues today.

Bunyah LALC chairperson Amos Donovan said the respect and recognition of the cultural history of the land from the outset was appreciated.

"The thing that impressed us from the start was being approached by the Department of Public Works and having them ask us whether it



■ Bunyah artists and partners celebrate their involvement in the Cowarra Dam Public Art Project.

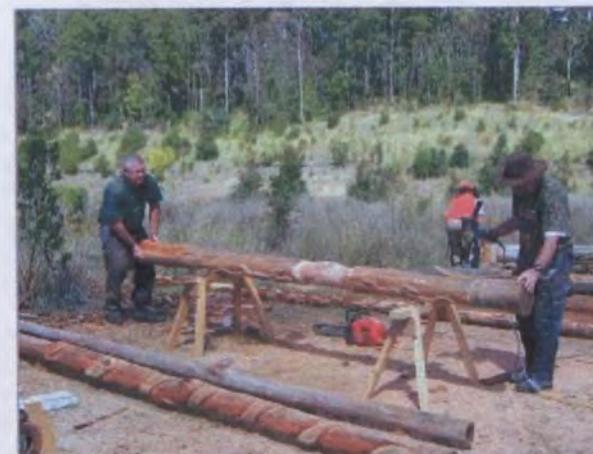
was alright from them to drill a test bore on the site," Mr Donovan said.

"This inspired our community to be a part of the project which has helped to build bridges with Port Macquarie-Hastings Council. The experience has been great for everyone involved." Bunyah LALC assisted in the extinguishing of native title on the site

to allow for construction of the dam to proceed. Bunyah people were contracted on works including the construction of the access road, water supply trunk mains, dam embankment and Korea #3 pumping station. A workforce managed site clearing and erosion control, catchment weed management and extensive grass and tree planting while

"The thing that impressed us from the start was being approached by the Department of Public Works and having them ask us whether it was alright from them to drill a test bore on the site. This inspired our community to be a part of the project which has helped to build bridges with Port Macquarie-Hastings Council. The experience has been great for everyone involved."

**Amos Donovan**



■ The timber used to create the Sculptural Poles was recycled from the dam site.

Cooks Construction provided employment in administration and field work during the construction of the dam embankment. Today, Bunyah people still play an important role in the regular sampling of water downstream and upstream of the dam in the Hastings River.

In recognition of the partnerships formed over the last 20 years, an art project was commissioned to enhance the dam's public access area.

The project was initiated with the support of Port Macquarie-Hastings Council's cultural division and a collaboration of partners including Bunyah LALC, WaterWise NSW and the North Coast Institute of TAFE's Wauchope campus.

"While this project was essentially about public art, it more impor-

tantly is a lasting reminder of the important partnership that has developed between Bunyah LALC and Port Macquarie-Hastings Council," council's cultural officer Kim Freeman said.

"The experience was incredibly empowering for everyone involved and on a wider scale, is public recognition of the indigenous links to this project."

The 20 carved and decorated Sculptural Poles, created from reclaimed timber found on the site, and ceramic mosaic panels and boomerang viewing benches were completed by TAFE Fine Arts students and a team of local indigenous artists including Lois Davis, Isabell Moran, Frank Dargin, Maria Ritchie, Des Chapman, Olga Davis, Elaine Morris, Brett Ritchie, Gary Chapman, Amos Donovan, Kylie Dyson and Shane Shields. Project mentors were Stephen Killick, Guy Crosley and Jacky Beckhurst.

A stainless steel sculpture – The Drip – by Wauchope artist Peter Allison, was also an opportunity for Aboriginal artists and students to work together. The stunning sculpture is located at the dam's inlet chute. The artworks, inspected in 2004 by NSW Premier Bob Carr, recognise the site's cultural significance and heritage; remind us of the importance of water to life and reflect a sense of community ownership and local identity. The importance and success of the project was recognised when it was named the winner of the 2005 LGSA NSW Cultural Award.

■ Artists Isabell Moran and Amos Donovan with the 2005 LGSA NSW Cultural Award recognising the outstanding Cowarra Art Project.



## An award winning team effort

Bunyah LALC members involved in the Cowarra Dam Project were:

Karen Baz, Rhonda Baxter, Warren Baxter, Cathy Chatfield, Stanley Chatfield, Tash Chatfield, Amos Donovan, Ray Donovan, Pat Donovan, Jamie Donovan, Chris Donovan, Luke Donovan, Troy Durose, Anthony Gray, Nicholas Gray, Michael Gee, Bill Lee, Will Lee, Fred Miller, Leanne Miller, Jennifer Morris, Sue Morris, Jodie Morris, Casey Roberts, Trevor Roberts and Trevor Roberts Jnr.

## Significant site

Bunyah representatives worked closely with archaeologist Jacqueline Collins, during the initial surveying of the dam site. Ten Aboriginal sites including an open camp area were discovered with evidence of tool making.

The 39 artefacts found on the site are discards from stone tool making. They were removed before the dam was built and given to Bunyah LALC for safe-keeping.

# An amazing facility - see it for yourself

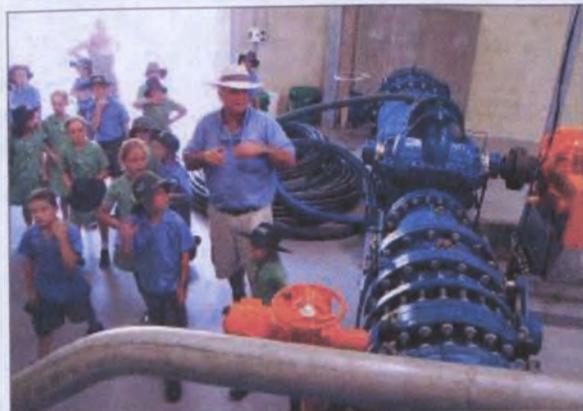
The Hastings community has developed a sense of ownership and pride in the new Cowarra Off-Creek Storage Dam over the past five years. Since its completion in 2001, more than 6000 people have visited the 10,000 megalitre facility on free tours run through Port Macquarie-Hastings Council's WaterWise Program. Public tours run on scheduled weekdays and Saturdays. Special tours for schools and community groups are also available. The tours not only allow residents to look at the dam 'up close', but they are an important part of council's WaterWise education program, which promotes water conservation through a better understanding of how the water supply works and how much water we all use. The tour includes a bird's eye view of the 70-hectare dam and platform which stands 43 metres above the dam floor. Participants



■ Dam visitors overlook the facility from the outlet tower.

look at the saddle dam, the spillway and pump station, which is usually off-limits. Over the years, individuals, school children and community groups have taken advantage of the tours that combine both the technical aspect of the dam's construction as

well as the important cultural links created throughout the project. "The tours are an important part of the Port Macquarie-Hastings Council WaterWise education program," WaterWise promotions manager Bill Hunter said. "It provides the community the opportunity to see first hand this state-of-the-art facility and the result of a long-term vision of council to ensure our water supply is secure and sustainable. "It also allows people to see where their water comes from, the journey it takes to reach their home and how it is managed and monitored along the way. "They can also see how funds are being spent by council and ask questions on the dam's design and operation. People can walk away from a tour well informed and with a better appreciation of where their water comes from. "The more educated and informed, the more likely people are to value water." After the official opening the tours will be expanded to include the Korea Island Pumping Stations and the Aqua Lab.



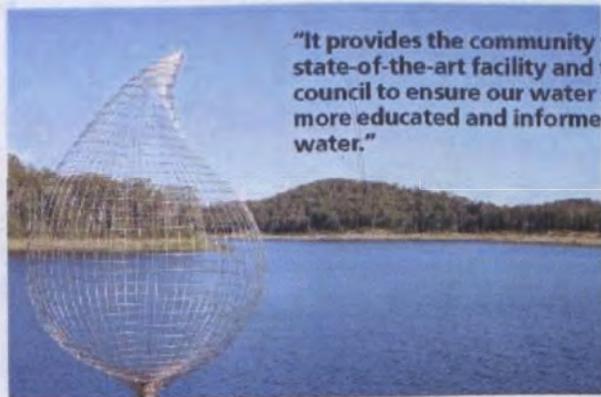
■ Alan Stuck takes students on a guided tour of the facility as a part of the Port Macquarie-Hastings WaterWise program.

## Dam is the key component in plan to protect our water supply

The 10,000 megalitre Cowarra Off-Creek Storage Dam is located 5 kilometres south east of Wauchope in the Cowarra State Forest. Water needed to fill the dam is pumped from the Hastings River at Korea Island, just west of Wauchope. The dam supplies water to the Wauchope, Camden Haven and Port Macquarie areas, and is a key component of the Council's plan to provide the Hastings with a drought secure future. In 1985, planning commenced for a long-term water supply strategy, following closely on the completion of the 2,500 megalitre Port Macquarie off-creek storage dam in 1978. These investigations quickly recognised the continuing high growth rate of the area and the need to cater for increased water demands in a very sensitive environment. The purpose of both the Cowarra and Port Macquarie Dams is to store sufficient water so that:

- During periods of high river flow, both dams are filled from the Hastings River.
- In times of drought, or when there is low flow in the river, pumping will be stopped and water will be supplied to Hastings residents from the dams. This system avoids further straining water resources at the source and protects the aquatic environment.

□ During periods of heavy rainfall or flooding, when the river's water becomes 'dirty', water will not be pumped. Water will be supplied from the dams until water quality in the river returns to acceptable levels. The Cowarra Dam will fill the Bonny Hills and Camden Haven reservoirs and can transfer water into Port Macquarie Dam when required.

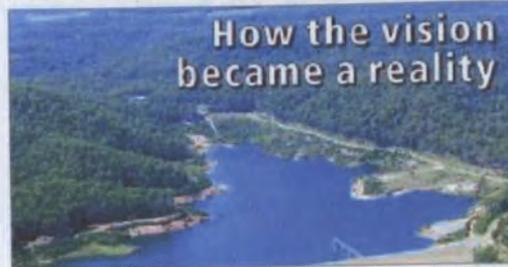


"It provides the community the opportunity to see first hand this state-of-the-art facility and the result of a long-term vision of council to ensure our water supply is secure and sustainable.... The more educated and informed, the more likely people are to value water."

Bill Hunter, Waterwise Port Macquarie-Hastings

■ A stainless steel sculptural piece - The Drip - by Wauchope artist Peter Allison is located at the dam's inlet chute.

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How the vision became a reality

There are three main features of the Port Macquarie-Hastings District Water Supply Scheme.

- A 10,000 megalitre off-creek storage dam and associated works at Cowarra
- The Korea Island intake works and pumping station on the Hastings River.
- A 911mm diameter pipeline between the Rosewood Road Reservoir and Cowarra Dam.

- 1985** Investigations commenced into Long Term Water Supply Strategy
- 1987** Strategy Study Report
- 1988** Various technical studies to refine strategy 1988-90
- 1991** Review of environmental factors. Comparison of 24 preferred dam sites
- 1992** Additional technical studies including river flows, water demands and population predictions
- 1994** Concept design Cowarra Dam and Korea Island pump station
- 1995** Environmental Impact Statement Cowarra Dam, Korea Island Intake and pipeline.
- 1998** Detailed design phase. Preparation of Environmental Management Plans (EMPs). Tendering and construction of Cowarra Dam. Augmentation of Korea Island Intake works. Rosewood Water Conditioning Plant and Wauchope Water Treatment Plant.
- 2002** Augmentation of Korea Island pump station. Augmentation of Cowarra Dam pump station. Ongoing environmental assessments in accordance with EMPs.
- 2005** Official opening of Cowarra Off-Creek Storage Dam, October 14, 2005.

# Value water from the catchment to the tap



■ The beautiful Hastings River - it's from here your water begins its wonderful journey.

## Safe-guarding river's biodiversity

Port Macquarie-Hastings Council has taken an environmentally sustainable approach toward securing the future of the region's water supply. In all aspects of planning the Cowarra Dam, the environment and health of the Hastings River was paramount.

The dam is filled by the Koree #3 pumping station when river flows are good. However, in drought, or when the river flows fall below acceptable environmental targets for water extraction, the pump is shutdown and council relies on stored water in Port Macquarie, and now Cowarra off-creek storage facilities to meet usage demands.

This system safeguards the biodiversity of the Hastings River from the platypus to aquatic plants, all of

which are monitored by scientists employed to research how much water can be taken without causing additional stress on the aquatic environment.

During the initial stages of construction, the dam site was cleared in stages over a number of years. Trees were left along creek beds and at the top of the dam to minimise erosion and run-off.

Habitat trees were protected until the fauna living in them were safely relocated.



■ Port Macquarie-Hastings Council water supply manager Murray Thompson with awards received for the Cowarra Dam project.

## Council recognised nationally for innovation

Port Macquarie-Hastings Council's water supply division is at the forefront of innovation and technology. The Cowarra Off-Creek Storage Dam is a testament to the team's foresight and engineering ingenuity.

The project has been economically viable and environmentally sustainable with long-term benefits for the entire Hastings community. The facility, which includes the Koree #3 pumping station, AquaLab—a fully integrated automatic water quality analyser and advanced river flow monitoring system, has been honoured nationally by peak engineering and environmental organisations.

### Port Macquarie-Hastings Council Water Supply Division Awards

**1993 Royal Australian Planning Institute – NSW Division**  
Commended for Excellence in Planning – Hastings Section 94 Study and Contributions Plans

**1995 Royal Australian Planning Institute – NSW Division**  
Award for Excellence in Planning - Hastings District Water Supply Augmentation

**1998 IMEA Engineering Excellence Awards**  
Highly Commended – Hastings District Water Supply – Koree Island Real-Time River Monitoring System

**1998 Engineers Australia Excellence Awards – Newcastle Division**  
Finalist – Hastings District Water Supply – Koree Island Real-Time River Monitoring System

Winner – Engineering in Regional Communities Award

**2002 CASE Earth Awards**

Finalist – Cowarra Off-Creek Storage Dam

**2002 IPWEA Excellence Awards**

Highly Commended – Hastings Water Supply Augmentation

When you turn on your tap, the water you receive has undergone an amazing journey.

It begins at Koree Island pump station where water from the Hastings River is extracted.

Here, the water quality is tested by the AquaLab – a fully integrated automatic water quality analyser.

If the quality of the water is not good enough, the pumps are automatically stopped.

Water depths are checked by an under-water radar sensing system that calculates how much water is flowing down the river at any one time.

If the river falls below critical levels, the pumps are once again, shut down.

This constant stream of information is critical to the operation of the water supply scheme, monitoring of aquatic habitat and protection of long-term environmental flows.

When the flow is at an acceptable level, water is pumped to the Rosewood Road reservoirs where the required amount of chlorine is added to disinfect the water and protect against bacteria.

It then flows on to the Port Macquarie Dam where numerous reservoirs supply the surrounding region. Pipes connect Cowarra Dam and Port Macquarie and water can travel in either direction depending on the need.

Data from all water supply systems is sent via an advanced telemetry

system to council's computers that show just how much water is flowing down the river and pipes and the levels of each reservoir.

Pumps can be turned on and off and motorised valves open and closed automatically by remote control.

This state-of-the-art system, including the AquaLab and river flow monitoring, won Port Macquarie-Hastings Council a number of national environmental and engineering awards of excellence.



■ The Koree #3 pump station which extracts water from the Hastings River to fill Cowarra Dam.

### Did you know?

Over 1.2 million cubic metres of material was excavated, transported and compacted on site during construction.

Earth embankment, clay core and graded filter materials are the foundations of this \$32 million facility. Other features include an outlet tower, saddle dam and spillway.

A specialised cone dispersion valve can release up to 4000 litres of water every second.

There is a submerged aeration system and mechanical mixer units that stir the water column regularly to maintain the quality of stored water.

The dam covers a catchment area of 110 hectares and a water surface area at full supply level of 70 hectares.

### Did you know?

During construction, site clearing was carried out from September to February only to avoid disturbing the breeding season of the Glossy Black Cockatoo.

Tree seeds were collected on site for replanting to complement the existing flora in the area.

More than 5000 native trees have been replanted in the catchment area. One hundred rare Eucalyptus bancroftii (Orange Flower Gum) trees were planted to replace the 14 removed for the construction of the southern access road.

80 percent of timber cleared from the site was recycled and re-used.

# Value water from the catchment to the tap

## Water

The water supply is a vital part of the catchment...

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## State-guarding river's biodiversity

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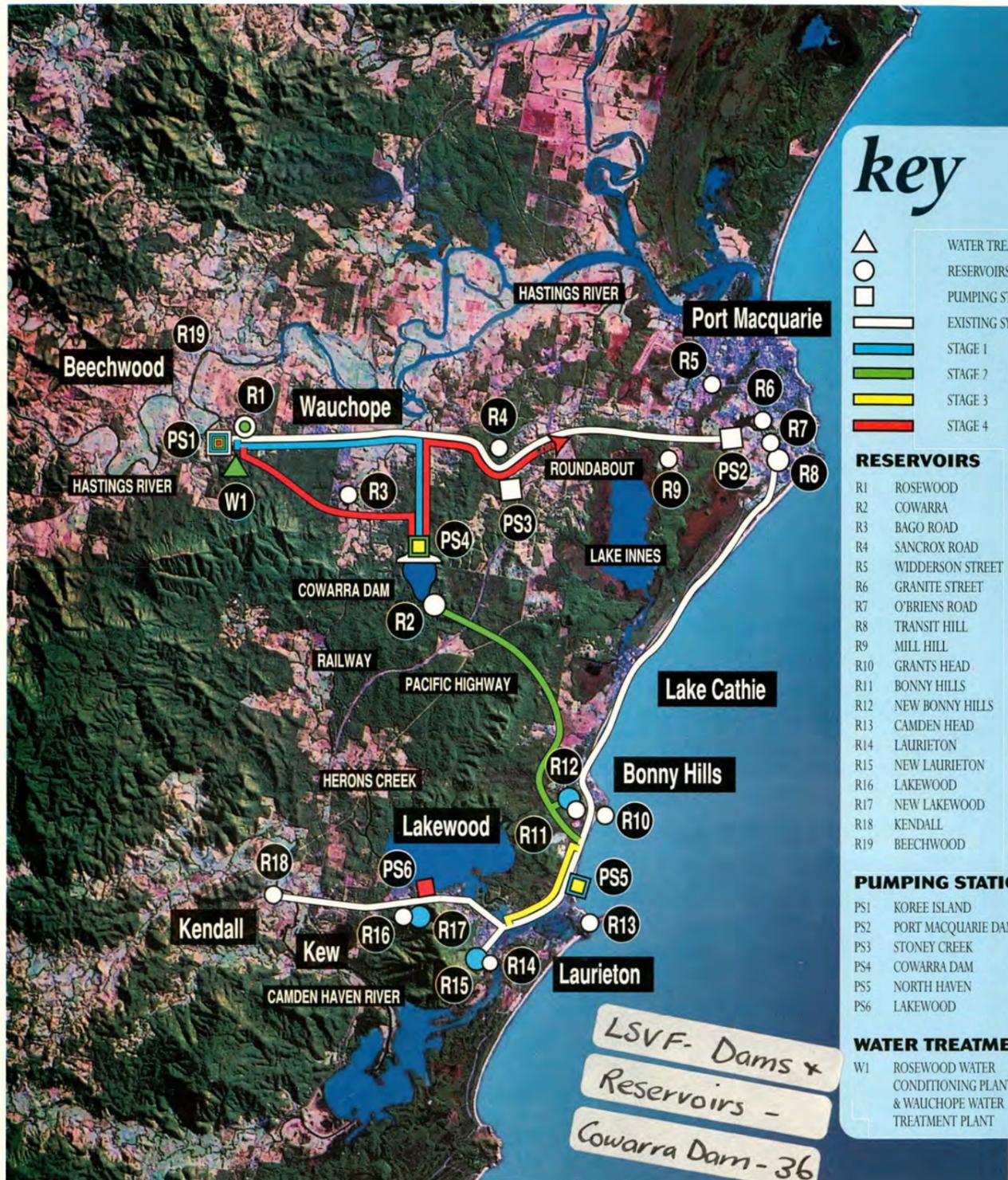
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LSVF-DAMS &  
RESERVOIRS -  
Cowarra Dam - 37



**key**

- △ WATER TREATMENT
- RESERVOIRS
- PUMPING STATIONS
- EXISTING SYSTEM
- STAGE 1
- STAGE 2
- STAGE 3
- STAGE 4

**RESERVOIRS**

- R1 ROSEWOOD
- R2 COWARRA
- R3 BAGO ROAD
- R4 SANCROX ROAD
- R5 WIDDERSON STREET
- R6 GRANITE STREET
- R7 O'BRIENS ROAD
- R8 TRANSIT HILL
- R9 MILL HILL
- R10 GRANTS HEAD
- R11 BONNY HILLS
- R12 NEW BONNY HILLS
- R13 CAMDEN HEAD
- R14 LAURIETON
- R15 NEW LAURIETON
- R16 LAKEWOOD
- R17 NEW LAKEWOOD
- R18 KENDALL
- R19 BEECHWOOD

**PUMPING STATIONS**

- PS1 KOREE ISLAND
- PS2 PORT MACQUARIE DAM
- PS3 STONEY CREEK
- PS4 COWARRA DAM
- PS5 NORTH HAVEN
- PS6 LAKEWOOD

**WATER TREATMENT**

- W1 ROSEWOOD WATER CONDITIONING PLANT & WAUCHOPE WATER TREATMENT PLANT

**Stage 1 (complete)**

|                 |   |
|-----------------|---|
| Reservoirs      | Bonny Hills<br>Laurieton<br>Lakewood Village          |
| Pumping Station | North Haven Booster                                   |
| Pipelines       | Rosewood Road to King Creek<br>West Haven to Lakewood |

**Stage 2**

|                  |  |
|------------------|--|
| New Dam          | Cowarra State Forest   |
| Reservoirs       | Dam site<br>Rosewood Road                                      |
| Pumping Stations | Dam site<br>Koree Island                                       |
| Pipelines        | Connection to new dam site<br>Southern Arm Link to Bonny Hills |
| Water Treatment  | Rosewood Water Conditioning Plant<br>Wauchope Treatment Plant  |

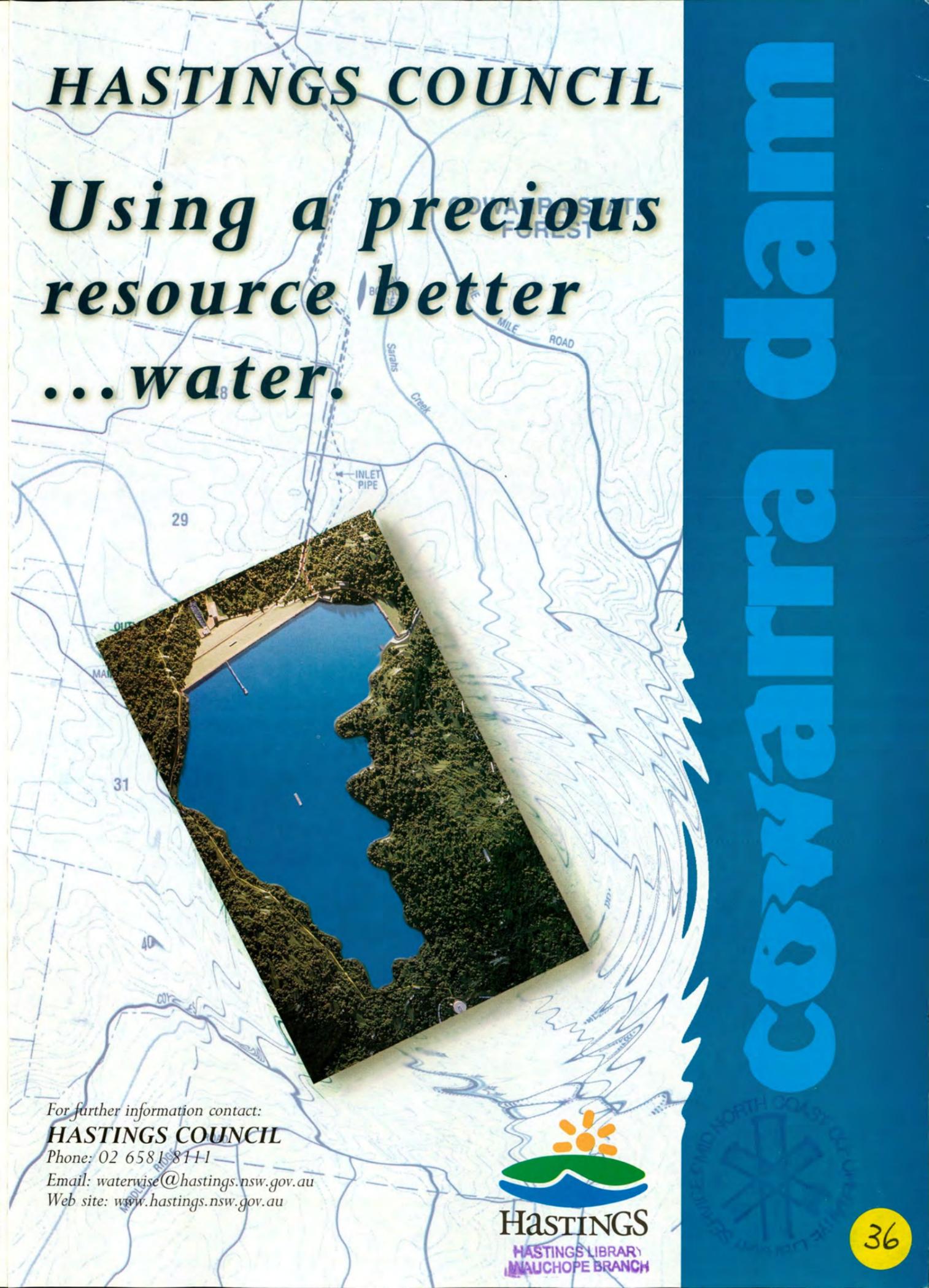
**Stage 3**

|                              |  |
|------------------------------|--|
| Pipelines                    | Bonny Hills to Laurieton                         |
| Pumping Stations (Upgrading) | Dam sites<br>Koree Island<br>North Haven Booster |

**Stage 4**

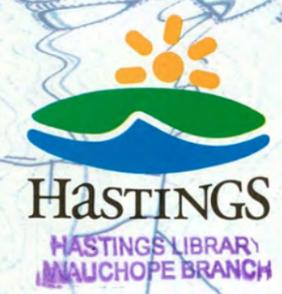
|                  |   |
|------------------|---|
| Pipeline         | Rosewood to Cowarra Dam                       |
| Pumping Stations | Koree Upgrade<br>Lakewood Booster             |
| Dams             | Increase storage at Port Macquarie Dam to 4GL |
| Water Treatment  | Port & Cowarra Dam sites                      |

**HASTINGS COUNCIL**  
*Using a precious resource better ... water.*

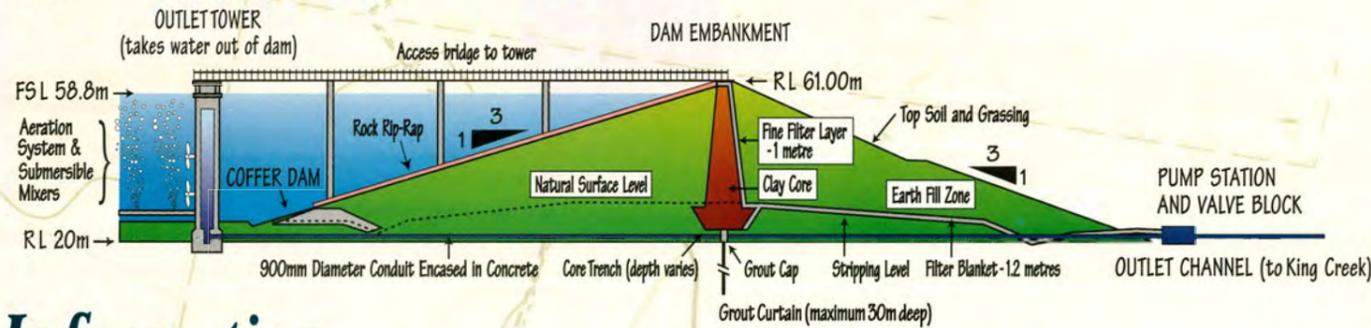


**cowarra dam**

For further information contact:  
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 Web site: [www.hastings.nsw.gov.au](http://www.hastings.nsw.gov.au)



# Typical Section Through Dam Wall



## Information

The Cowarra Off-Creek Storage Dam is located 5 kilometres south east of Wauchope and is part of the Hastings District Water Supply Augmentation Scheme. The Scheme has been designed to progressively cater for the districts water supply needs over the next 20 years.

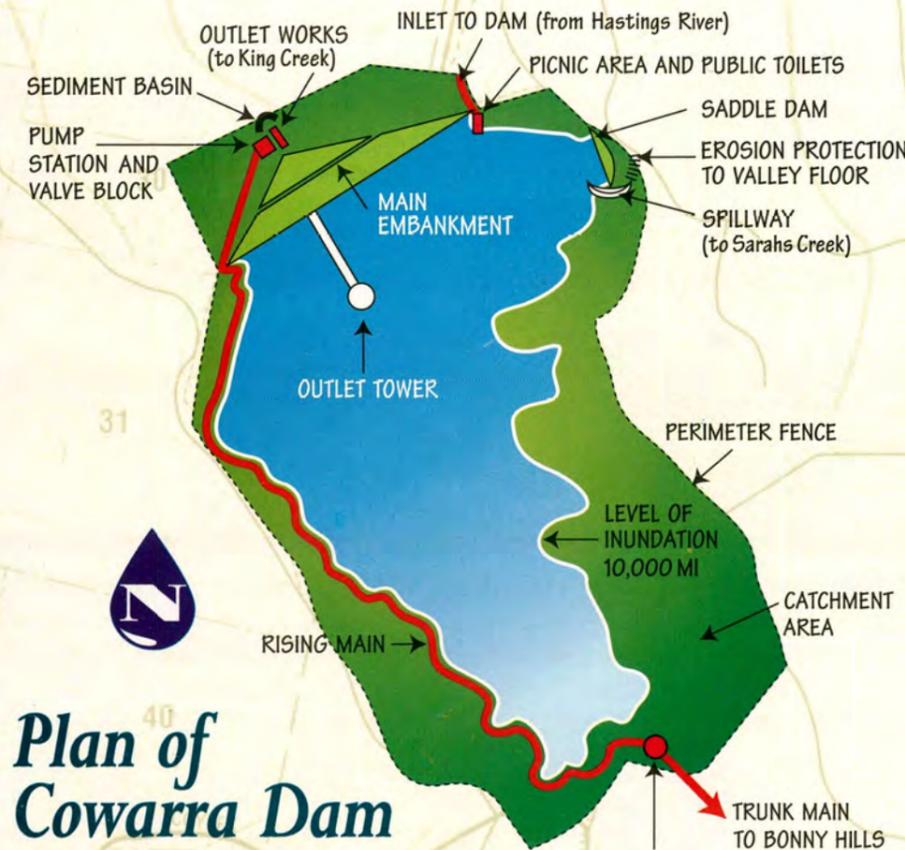
The construction of the Cowarra Dam is scheduled for completion by the end of 2001. This 10,000 million litre water storage dam is required to meet the current and future needs of the Port Macquarie, Wauchope and Camden Haven areas and protect the environment in the Hastings River. The Cowarra Dam will supplement the existing 2,500 million litre water storage dam in Port Macquarie which was constructed in 1978.

This water storage dam will allow Council to protect and enhance the environment and flow in the Hastings River, particularly during periods of drought. During the drought conditions, Council will stop pumping from the Hastings River and rely upon water stored in the dam to meet consumer needs.

The Cowarra Dam, together with Council's ongoing water supply demand management strategy to reduce water wastage and household consumption, will assist in providing a reliable and sustainable approach to water management issues well into the next century.

The Dam is an Off-Creek Storage being filled by pumping from the Hastings River at Koree Island approximately 5 kilometres west of Wauchope. A 12.5 kilometre long 750mm diameter trunk main from the Rosewood Reservoirs transfers water into the Dam.

A submerged aeration system and mechanical mixer units will be installed in the Dam to assist in maintaining the quality of water stored in the dam. The catchment area will be controlled as a special area to protect water quality.



## Plan of Cowarra Dam

The purpose of both the Cowarra and Port Macquarie Dams is to store sufficient water so that:

1. During periods of high river flow the dams are filled from the Hastings River.
  2. In drought conditions when there is low flow in the Hastings River, water will be supplied to consumers from both dams. This is to maintain river flows and protect the river's aquatic environment.
  3. When the Hastings River water becomes dirty during periods of rainfall and flooding, water need not be pumped. Water supply demands can be supplied from the dams until water quality in the river returns to normal.
- A pumping station, rising main, 8 million litre balance tank and trunk main will supply water from the Dam to the Camden Haven area. Filling the Port Macquarie Dam using this transfer system will also be possible.

# Details of Dam

1. **Gross Capacity** 10,000 megalitres (equivalent to 6,700 olympic swimming pools)
2. **Full Supply Level (FSL)** 58.8 metres (AHD)
3. **Catchment Area** 110 hectares
4. **Surface Area @ FSL** 70 hectares
5. **Main Embankment**
  - Type Earthfill with clay core and sand filters
  - Volume of Material 1,200,000 cubic metres
  - Height 43 metres
  - Length 545 metres
  - Width at Top 6 metres
  - Width at Base 250 metres
6. **Outlet Tower**
  - Type Circular concrete tower (3.6 metres in diameter) with vertical openings for selective withdrawal of water
  - Access Steel walkway from main embankment
  - Outlet Pipe Steel pipe 911 mm diameter encased in concrete under dam embankment
7. **Saddle Dam**
  - Type Earthfill, similar to main embankment
  - Volume of Material ~ 28,000 cubic metres
  - Height 17 metres
  - Length 130 metres
  - Width at Top 6 metres
  - Width at Base 160 metres
8. **Spillway**
  - Type Concrete chute with crest weir
  - Width 6 metres
  - Outlet Channel Gabion rock filled mattress channel discharging into upper tributary of Sarahs Creek through Cowarra State Forest
9. **Cost Estimate**
  - Foundations & Establishment 1997/1999 ~ \$8.6M
  - Main Embankment, etc. 1999/2000 ~ \$17M
  - Pump Station, Balance Tank, etc. 2000/2001 ~ \$8M



## features

There are three main features of the Hastings District Water Supply Scheme. These are:

A 10,000ML off-river water storage dam and associated works at the Cowarra site. (For completion 2001)

The Koree Island Intake Works and Pumping Station on the Hastings River. Rosewood Water Treatment Facilities. (For completion 2001)

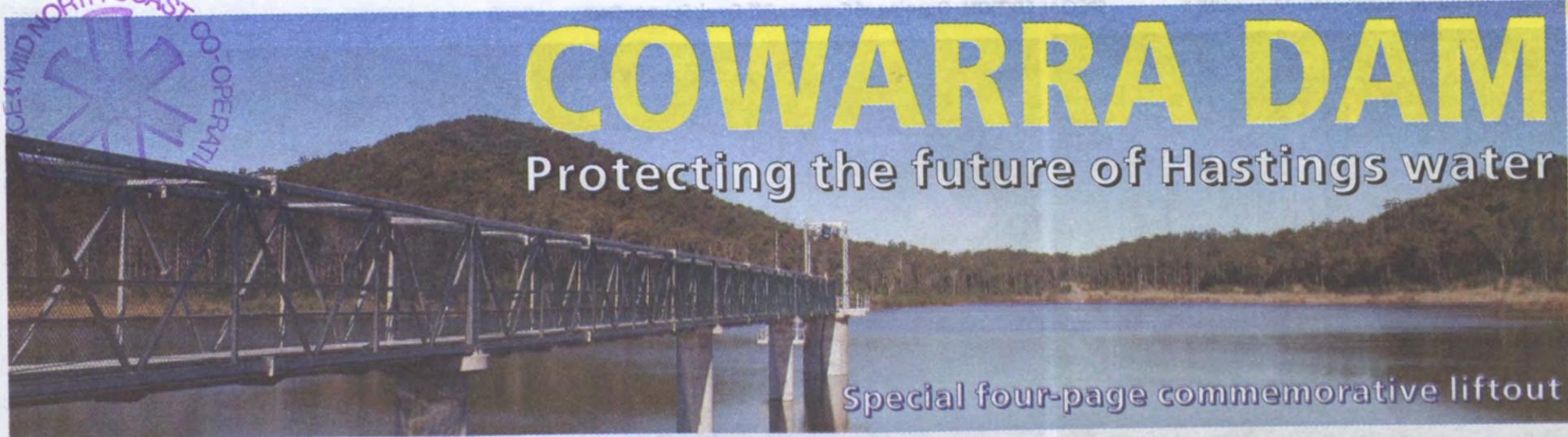
The 911 mm diameter pipeline between the Rosewood Road Reservoir and the Cowarra Dam. (For completion after 2011)

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|--|
| Investigations commenced into Long Term Water Supply Strategy  |
| Strategy Study Report  |
| Various technical studies to refine strategy   |
| Review of Environmental Factors Comparison of 24 identified preferred dam sites  |
| Additional technical studies including river flows, water demands and population predictions   |
| Concept design Cowarra Dam and Koree Island Pump Station   |
| Environmental Impact Statement Cowarra Dam, Koree Island Intake and Pipeline Public Submissions E.I.S. Determination Report E.I.S. Assessment Report   |
| Detail design phase Preparation of Environmental Management Plans (EMP's) Tendering and construction of Cowarra Dam Augmentation of Koree Island Intake Works Rosewood Water Conditioning Plant and Wauchope Water Treatment Plant |
| Augmentation of Koree Island Pump Station  |
| Augmentation of Cowarra Dam Pump Station   |
| Ongoing environmental assessment in accordance with EMP's  |
| Construction of new pipeline Rosewood Road Reservoir to Cowarra Dam (This stage could be delayed depending upon the success of demand management measures)   |
| Ongoing environmental assessment in accordance with EMP's  |

# COWARRA DAM

Protecting the future of Hastings water



Special four-page commemorative liftout

## Twenty-year vision realised

### Cowarra Dam officially opens

October 14 marks a significant milestone in the long-term strategy of Port Macquarie-Hastings Council to secure the future of the district's water supply.

This Friday, the new 10,000 megalitre Cowarra Off-Creek Storage Dam, five kilometres south-east of Wauchope, will be officially opened.

The dam is the critical link in council's overall Water Supply Augmentation Scheme which aims to progressively cater for the region's high growth rate while more significantly, recognising the importance of the aquatic environment and long-term health of the Hastings River.

Port Macquarie-Hastings Mayor Rob Drew will officiate the invitation-only ceremony on Friday before Cowarra Dam is open to the public for inspection on Saturday, October 15.

A community celebration will be held on-site between noon and 4pm with free guided dam tours, entertainment, refreshments and the premiere screening of locally produced video on the history of the Cowarra Dam. Port Macquarie-Hastings Mayor, Rob Drew believes the dam is an important element of the united approach between council and the



■ The new 10,000 megalitre Cowarra Off-Creek Storage Dam near Wauchope

community that has allowed the Hastings to become recognised nationally for providing a sustainable water resource that will meet the needs of the population now and in the future.

"In recent years we have undertaken a long-term strategy for raising awareness and educating Hastings

residents about the importance of water to our environment and the need to reduce consumption. The large majority of the community has embraced this message positively. The community open day at the Dam will recognise that support," said Mayor Drew. The Cowarra Off-Creek Storage

Dam will ensure the Hastings a more drought-secure future. The dam, together with a council and community commitment to reduce water wastage and household consumption, will assist in providing a reliable and sustainable approach to water management issues well into the next century.

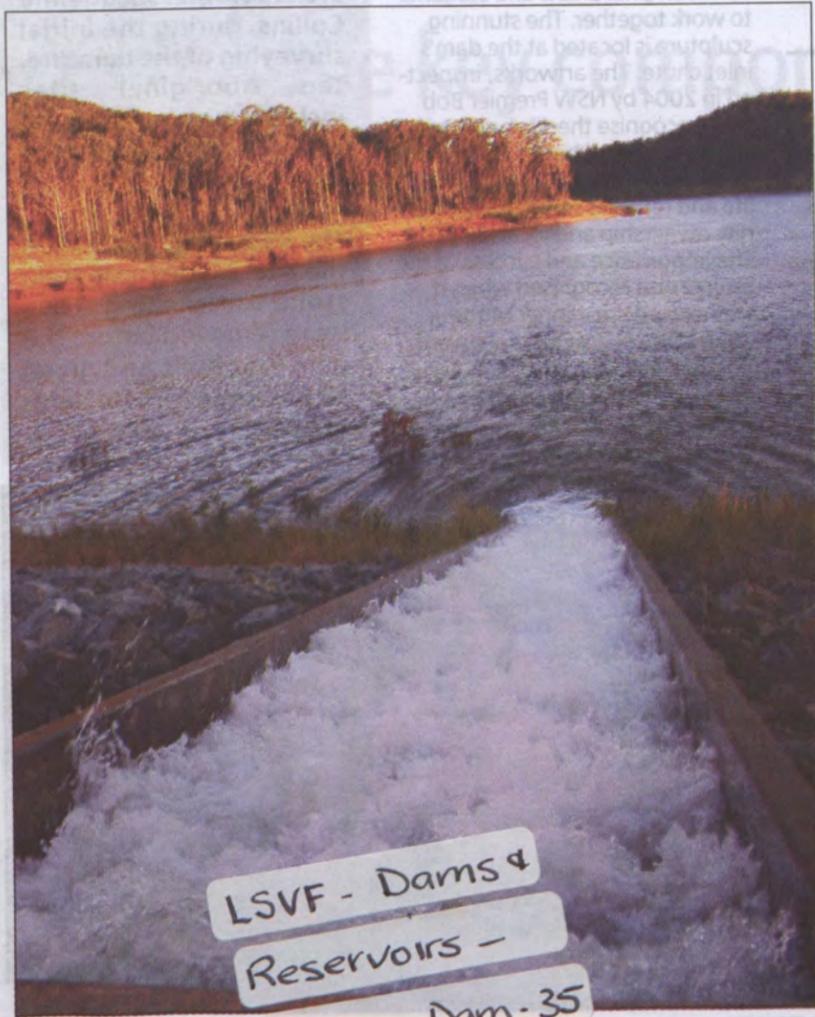
#### PUBLIC OPEN DAY You're invited to celebrate!

Cowarra Off-Creek Storage Dam will officially be open to the public from 12 noon to 4pm on Saturday, October 15.

The open day will feature guided dam tours, entertainment and audio-visual displays.

You can access Cowarra Dam from the Oxley Highway. Turn into King Creek Road, turn left into Sarah's Crescent and then right on to the sign-posted road to the dam.

◆ Following the official opening, the picnic area will then be accessible to the public between 9am and 5pm from October 24.



LSVF - Dams & Reservoirs - Cowarra Dam - 35

## Dam secures the future of Hastings water supply

It is four times bigger than the Port Macquarie storage dam, has enough water to fill 10,000 Olympic swimming pools and is the end result of a 20-year vision to secure the future of the Hastings district water supply.

The Cowarra Off-Creek Storage Dam is a state-of-the-art facility that has combined clever engineering with the latest technology to ensure the region is drought-secure, the local water supply is sustainable and the Hastings River and its ecosystems remain protected.

The need for a second off-creek storage dam to meet the predicted long term urban growth demands on the local water supply was recognised by Port Macquarie-Hastings Council back in 1985. With the population expected to top 120,000 by 2020, the 2500 megalitre Port Macquarie Dam alone could not sufficiently cater to this level of regional expansion.

Council devised and implemented a long-term management strategy identifying increased demands on the water supply in a particularly sensitive environment.

"During this process the local area experienced a period of serious drought conditions and very low river flows. This strongly focused the attention of both urban and rural communities on water supply issues," Port Macquarie-Hastings Council's Director, Water and Natural Resources, Geoff Freeman said.

"This ultimately assisted Council in the community consultation process ensuring strong local support for the proposed augmentation scheme.

"Simply building infrastructure to solve resource supply problems was no longer acceptable to the general community which has and continues to embrace the water conservation message."

The completion of the Cowarra Off-Creek Storage Dam is a significant milestone in the long-term objective of council to create an integrated water supply network that is responsive to the ongoing environmental, social and economic concerns of the community.

"The Cowarra Dam, together with council's ongoing water supply demand management strategy to reduce water wastage and household consumption and the community's commitment to this cause, will assist in providing a reliable and sustainable approach to water conservation well into the next century," Mr Thompson added.

Port Macquarie-Hastings Council has made a significant investment in the future of the region's water supply.

The Cowarra Dam was constructed, on time and under budget, at a cost of \$32 million while the Hastings District Water Supply Scheme represents an investment of \$105 million. The next phase of the project will include the construction of a new trunk main from Cowarra Dam to Bonny Hills.



■ The stunning carved and decorated sculptural poles created from reclaimed timber found on site.



■ Design artist Lois Davis with one of the indigenous mosaic designs representative of cultural links to the environment.



■ A boomerang seat with mosaic design overlooks Cowarra Dam from the public picnic area.

# Building dams and lasting cultural partnerships

Cowarra Off-Creek Storage Dam sits on land steeped in cultural history.

Located in the coastal ranges, five kilometres south-east of Wauchope on the upper catchment of a small unnamed tributary of King Creek, the dam site is under the guardianship of the Bunyah Local Aboriginal Land Council and Birpai people. When Port Macquarie-Hastings Council realised the need for a long term strategy to secure the future of the local water supply, research showed the Cowarra State Forest offered the most desirable conditions for the construction of a second off-creek storage dam. Before planning began, council and the Department of Public Works and Services (now Department of Commerce) approached Bunyah LALC to ask for their support and assistance in the development of the project. The Bunyah people, knowing the importance of water to all life, accepted that Cowarra Dam would ultimately benefit everyone living in the Hastings, and formed a partnership with council that continues today.

Bunyah LALC chairperson Amos Donovan said the respect and recognition of the cultural history of the land from the outset was appreciated.

"The thing that impressed us from the start was being approached by the Department of Public Works and having them ask us whether it



■ Bunyah artists and partners celebrate their involvement in the Cowarra Dam Public Art Project.

was alright from them to drill a test bore on the site," Mr Donovan said.

"This inspired our community to be a part of the project which has helped to build bridges with Port Macquarie-Hastings Council. The experience has been great for everyone involved." Bunyah LALC assisted in the extinguishing of native title on the site

to allow for construction of the dam to proceed. Bunyah people were contracted on works including the construction of the access road, water supply trunk mains, dam embankment and Korea #3 pumping station. A workforce managed site clearing and erosion control, catchment weed management and extensive grass and tree planting while

"The thing that impressed us from the start was being approached by the Department of Public Works and having them ask us whether it was alright from them to drill a test bore on the site. This inspired our community to be a part of the project which has helped to build bridges with Port Macquarie-Hastings Council. The experience has been great for everyone involved."

**Amos Donovan**



■ The timber used to create the Sculptural Poles was recycled from the dam site.

Cooks Construction provided employment in administration and field work during the construction of the dam embankment. Today, Bunyah people still play an important role in the regular sampling of water downstream and upstream of the dam in the Hastings River.

In recognition of the partnerships formed over the last 20 years, an art project was commissioned to enhance the dam's public access area.

The project was initiated with the support of Port Macquarie-Hastings Council's cultural division and a collaboration of partners including Bunyah LALC, WaterWise NSW and the North Coast Institute of TAFE's Wauchope campus.

"While this project was essentially about public art, it more impor-

tantly is a lasting reminder of the important partnership that has developed between Bunyah LALC and Port Macquarie-Hastings Council," council's cultural officer Kim Freeman said.

"The experience was incredibly empowering for everyone involved and on a wider scale, is public recognition of the indigenous links to this project."

The 20 carved and decorated Sculptural Poles, created from reclaimed timber found on the site, and ceramic mosaic panels and boomerang viewing benches were completed by TAFE Fine Arts students and a team of local indigenous artists including Lois Davis, Isabell Moran, Frank Dargin, Maria Ritchie, Des Chapman, Olga Davis, Elaine Morris, Brett Ritchie, Gary Chapman, Amos Donovan, Kylie Dyson and Shane Shields. Project mentors were Stephen Killick, Guy Crosley and Jacky Beckhurst.

A stainless steel sculpture – The Drip – by Wauchope artist Peter Allison, was also an opportunity for Aboriginal artists and students to work together. The stunning sculpture is located at the dam's inlet chute. The artworks, inspected in 2004 by NSW Premier Bob Carr, recognise the site's cultural significance and heritage; remind us of the importance of water to life and reflect a sense of community ownership and local identity. The importance and success of the project was recognised when it was named the winner of the 2005 LGSA NSW Cultural Award.

■ Artists Isabell Moran and Amos Donovan with the 2005 LGSA NSW Cultural Award recognising the outstanding Cowarra Art Project.



## An award winning team effort

Bunyah LALC members involved in the Cowarra Dam Project were:

Karen Baz, Rhonda Baxter, Warren Baxter, Cathy Chatfield, Stanley Chatfield, Tash Chatfield, Amos Donovan, Ray Donovan, Pat Donovan, Jamie Donovan, Chris Donovan, Luke Donovan, Troy Durose, Anthony Gray, Nicholas Gray, Michael Gee, Bill Lee, Will Lee, Fred Miller, Leanne Miller, Jennifer Morris, Sue Morris, Jodie Morris, Casey Roberts, Trevor Roberts and Trevor Roberts Jr.

## Significant site

Bunyah representatives worked closely with archaeologist Jacqueline Collins, during the initial surveying of the dam site. Ten Aboriginal sites including an open camp area were discovered with evidence of tool making.

The 39 artefacts found on the site are discards from stone tool making. They were removed before the dam was built and given to Bunyah LALC for safe-keeping.

# An amazing facility - see it for yourself

The Hastings community has developed a sense of ownership and pride in the new Cowarra Off-Creek Storage Dam over the past five years.

Since its completion in 2001, more than 6000 people have visited the 10,000 megalitre facility on free tours run through Port Macquarie-Hastings Council's WaterWise Program.

Public tours run on scheduled weekdays and Saturdays. Special tours for schools and community groups are also available.

The tours not only allow residents to look at the dam 'up close', but they are an important part of council's WaterWise education program, which promotes water conservation through a better understanding of how the water supply works and how much water we all use.

The tour includes a bird's eye view of the 70-hectare dam and platform which stands 43 metres above the dam floor. Participants



■ Dam visitors overlook the facility from the outlet tower.

look at the saddle dam, the spillway and pump station, which is usually off-limits. Over the years, individuals, school children and community groups have taken advantage of the tours that combine both the technical aspect of the dam's construction as

well as the important cultural links created throughout the project.

"The tours are an important part of the Port Macquarie-Hastings Council WaterWise education program," WaterWise promotions manager Bill Hunter said.

"It provides the community the opportunity to see first hand this state-of-the-art facility and the result of a long-term vision of council to ensure our water supply is secure and sustainable.

"It also allows people to see where their water comes from, the journey it takes to reach their home and how it is managed and monitored along the way.

"They can also see how funds are being spent by council and ask questions on the dam's design and operation. People can walk away from a tour well informed and with a better appreciation of where their water comes from.

"The more educated and informed, the more likely people are to value water."

After the official opening the tours will be expanded to include the Koree Island Pumping Stations and the Aqua Lab.



■ Alan Stuck takes students on a guided tour of the facility as a part of the Port Macquarie-Hastings WaterWise program.

## Dam is the key component in plan to protect our water supply

The 10,000 megalitre Cowarra Off-Creek Storage Dam is located 5 kilometres south east of Wauchope in the Cowarra State Forrest.

Water needed to fill the dam is pumped from the Hastings River at Koree Island, just west of Wauchope.

The dam supplies water to the Wauchope, Camden Haven and Port Macquarie areas, and is a key component of the Council's plan to provide the Hastings with a drought secure future

In 1985, planning commenced for a long-term water supply strategy, following closely on the completion of the 2,500 megalitre Port Macquarie off-creek storage dam in 1978.

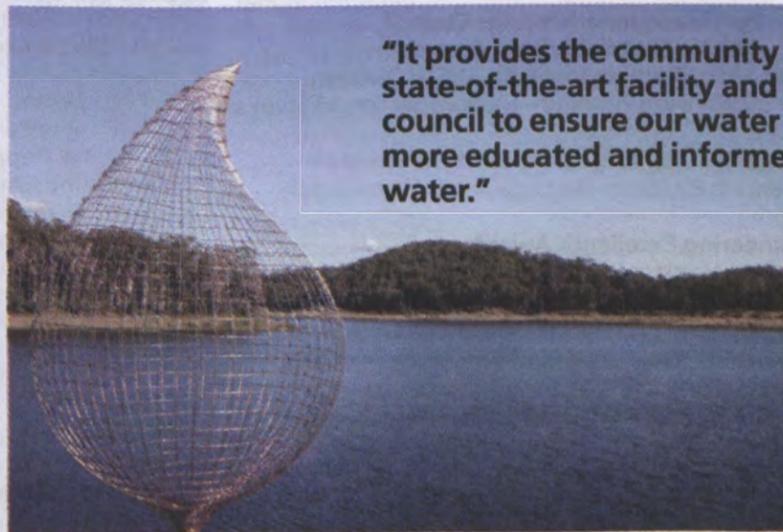
These investigations quickly recognised the continuing high growth rate of the area and the need to cater for increased water demands in a very sensitive environment.

The purpose of both the Cowarra and Port Macquarie Dams is to store sufficient water so that:

□ During periods of high river flow, both dams are filled from the Hastings River.

□ In times of drought, or when there is low flow in the river, pumping will be stopped and water will be supplied to Hastings residents from the dams. This system avoids further straining water resources at the source and protects the aquatic environment.

□ During periods of heavy rainfall or flooding, when the river's water becomes 'dirty', water will not be pumped. Water will be supplied from the dams until water quality in the river returns to acceptable levels. The Cowarra Dam will fill the Bonny Hills and Camden Haven reservoirs and can transfer water into Port Macquarie Dam when required.

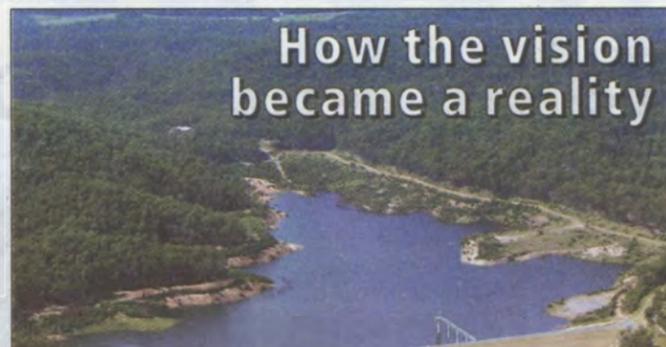


**"It provides the community the opportunity to see first hand this state-of-the-art facility and the result of a long-term vision of council to ensure our water supply is secure and sustainable....The more educated and informed, the more likely people are to value water."**

**Bill Hunter, Waterwise Port Macquarie-Hastings**

■ A stainless steel sculptural piece - *The Drip* - by Wauchope artist Peter Allison is located at the dam's inlet chute.

### How the vision became a reality



There are three main features of the Port Macquarie-Hastings District Water Supply Scheme.

□ A 10,000 megalitre off-creek storage dam and associated works at Cowarra

□ The Koree Island intake works and pumping station on the Hastings River.

□ A 911 mm diameter pipeline between the Rosewood Road Reservoir and Cowarra Dam.

**1985** Investigations commenced into Long Term Water Supply Strategy

**1987** Strategy Study Report

**1988** Various technical studies to refine strategy 1988-90

**1991** Review of environmental factors. Comparison of 24 preferred dam sites

**1992** Additional technical studies including river flows, water demands and population predictions

**1994** Concept design Cowarra Dam and Koree Island pump station

**1995** Environmental Impact Statement Cowarra Dam, Koree Island Intake and pipeline.

**1998** Detailed design phase. Preparation of Environmental Management Plans (EMPs). Tendering and construction of Cowarra Dam. Augmentation of Koree Island Intake works. Rosewood Water Conditioning Plant and Wauchope Water Treatment Plant.

**2002** Augmentation of Koree Island pump station. Augmentation of Cowarra Dam pump station. Ongoing environmental assessments in accordance with EMPs.

**2005** Official opening of Cowarra Off-Creek Storage Dam, October 14, 2005.

# Value water from the catchment to the tap



■ The beautiful Hastings River - it's from here your water begins its wonderful journey.

## Safe-guarding river's biodiversity

Port Macquarie-Hastings Council has taken an environmentally sustainable approach toward securing the future of the region's water supply. In all aspects of planning the Cowarra Dam, the environment and health of the Hastings River was paramount.

The dam is filled by the Koree #3 pumping station when river flows are good.

However, in drought, or when the river flows fall below acceptable environmental targets for water extraction, the pump is shutdown and council relies on stored water in Port Macquarie, and now Cowarra off-creek storage facilities to meet usage demands.

This system safeguards the biodiversity of the Hastings River from the platypus to aquatic plants, all of

which are monitored by scientists employed to research how much water can be taken without causing additional stress on the aquatic environment.

During the initial stages of construction, the dam site was cleared in stages over a number of years. Trees were left along creek beds and at the top of the dam to minimise erosion and run-off.

Habitat trees were protected until the fauna living in them were safely relocated.



■ Port Macquarie-Hastings Council water supply manager Murray Thompson with awards received for the Cowarra Dam project.

## Council recognised nationally for innovation

Port Macquarie-Hastings Council's water supply division is at the forefront of innovation and technology. The Cowarra Off-Creek Storage Dam is a testament to the team's foresight and engineering ingenuity.

The project has been economically viable and environmentally sustainable with long-term benefits for the entire Hastings community. The facility, which includes the Koree #3 pumping station, AquaLab - a fully integrated automatic water quality analyser and advanced river flow monitoring system, has been honoured nationally by peak engineering and environmental organisations.

### Port Macquarie-Hastings Council Water Supply Division Awards

**1993 Royal Australian Planning Institute - NSW Division**  
Commended for Excellence in Planning - Hastings Section 94 Study and Contributions Plans

**1995 Royal Australian Planning Institute - NSW Division**  
Award for Excellence in Planning - Hastings District Water Supply Augmentation

**1998 IMEA Engineering Excellence Awards**  
Highly Commended - Hastings District Water Supply - Koree Island Real-Time River Monitoring System

**1998 Engineers Australia Excellence Awards - Newcastle Division**  
Finalist - Hastings District Water Supply - Koree Island Real-Time River Monitoring System

Winner - Engineering in Regional Communities Award

**2002 CASE Earth Awards**

Finalist - Cowarra Off-Creek Storage Dam

**2002 IPWEA Excellence Awards**

Highly Commended - Hastings Water Supply Augmentation

When you turn on your tap, the water you receive has undergone an amazing journey.

It begins at Koree Island pump station where water from the Hastings River is extracted.

Here, the water quality is tested by the AquaLab - a fully integrated automatic water quality analyser.

If the quality of the water is not good enough, the pumps are automatically stopped.

Water depths are checked by an under-water radar sensing system that calculates how much water is flowing down the river at any one time.

If the river falls below critical levels, the pumps are once again, shut down.

This constant stream of information is critical to the operation of the water supply scheme, monitoring of aquatic habitat and protection of long-term environmental flows.

When the flow is at an acceptable level, water is pumped to the Rosewood Road reservoirs where the required amount of chlorine is added to disinfect the water and protect against bacteria.

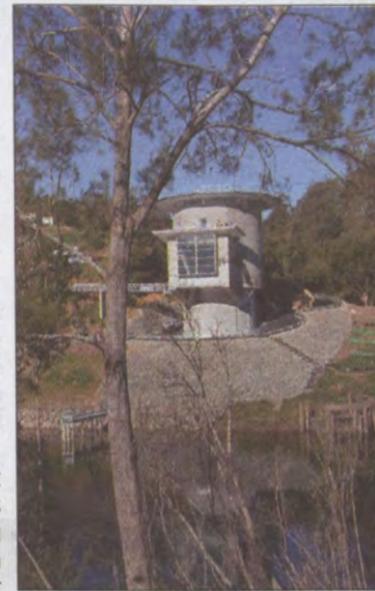
It then flows on to the Port Macquarie Dam where numerous reservoirs supply the surrounding region. Pipes connect Cowarra Dam and Port Macquarie and water can travel in either direction depending on the need.

Data from all water supply systems is sent via an advanced telemetry

system to council's computers that show just how much water is flowing down the river and pipes and the levels of each reservoir.

Pumps can be turned on and off and motorised valves open and closed automatically by remote control.

This state-of-the-art system, including the AquaLab and river flow monitoring, won Port Macquarie-Hastings Council a number of national environmental and engineering awards of excellence.



■ The Koree #3 pump station which extracts water from the Hastings River to fill Cowarra Dam.

### Did you know?

Over 1.2 million cubic metres of material was excavated, transported and compacted on site during construction.

Earth embankment, clay core and graded filter materials are the foundations of this \$32 million facility. Other features include an outlet tower, saddle dam and spillway.

A specialised cone dispersion valve can release up to 4000 litres of water every second.

There is a submerged aeration system and mechanical mixer units that stir the water column regularly to maintain the quality of stored water.

The dam covers a catchment area of 110 hectares and a water surface area at full supply level of 70 hectares.

### Did you know?

During construction, site clearing was carried out from September to February only to avoid disturbing the breeding season of the Glossy Black Cockatoo. Tree seeds were collected on site for replanting to complement the existing flora in the area.

More than 5000 native trees have been replanted in the catchment area. One hundred rare Eucalyptus bancrofti (Orange Flower Gum) trees were planted to replace the 14 removed for the construction of the southern access road. 80 percent of timber cleared from the site was recycled and re-used.

**2003 Engineers Australia Excellence Awards - Newcastle Division**

Winner - Cowarra Off-Creek Storage Dam Experience

**2004 Engineers Australia Excellence Awards - Newcastle Division**

Winner - Koree #3 Water Supply Pumping Station

Finalist - Re-design of Sodium Hypochlorite Dosing System

**2004 Engineers Australia National Excellence Awards**

Finalist - Koree #3 Water Supply Pumping Station

**2004 Australian Water Association Water Environment Merit Award**

Winner - Koree #3 Water Supply Pumping Station

**2004 CASE Earth Awards**

Finalist - Koree #3 Water Supply Pumping Station

**2004 IPWEA Excellence Awards**

Finalist - Koree #3 Water Supply Pumping Station Programmable Logic Control System

Finalist - Re-design of Sodium Hypochlorite Dosing System

**2004 NSW Department of Energy Utilities and Sustainability Green Globe Awards**

Finalist - Permanent Water Conservation Measures

**2005 IPWEA Excellence Awards**

Finalist - Permanent Water Conservation Measures

Finalist - Cowarra Dam Public Art Project

**2005 National PACE (Process and Control Engineering) Zenith Awards**

Koree #3 Water Supply Pumping Station Programmable Logic Control System

Winner - Water and Wastewater Category

Winner - Project of the Year - Best Overall Project

**2005 LGSA NSW Cultural Awards**

Winner - Cowarra Dam Public & Aboriginal Art Project

## AWARDS

### Art project wins Local Government Award

The Cowarra Dam Public Art Project, featuring art installations by Aboriginal art students from Wauchope Campus, has won the Local Government Award 2005 for Cultural Projects.

The Local Government Association of NSW selected the project for the award from a field of 68 entries.

Earlier the Hastings Council had staged a special award ceremony at the dam, near Wauchope, to recognise the students' contributions to the area's public space, with the mayor presenting certificates of appreciation to nine Institute students and three teachers.

A second on-site ceremony on 24 June will officially present the award to all the project partners and people involved in the development and completion of the artworks.

From:  
North Coast Institute  
"Northern Views"  
June 2005



Artists Kylie Dyson, Maria Ritchie, Amos Donovan & Shane Shields with sculptural poles



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WAUCHOPE BRANCH

## Scholarships to aid Indigenous students

Two types of scholarships aimed at disadvantaged Aboriginal and Torres Strait Islander students have been created. Premier and Deputy Premier have announced the Mary Street Regional Council and the LSVF.

The scholarships are aimed at students who are either a student in distance education, live in areas of social disadvantage (disadvantaged schools etc) and have not yet been successfully completed a VET NSW Certificate course or an apprenticeship and will be seeking to further study (undergraduate or post-graduate).

The Mary Street Regional Council Scholarships have been funded by Mary Street Regional Council and will be managed by the Institute of Aboriginal Education and Training Inc.

"Usually we don't have financial barriers to be the reason that members of the Indigenous community cannot continue their education" said Steve Hunter, the Chair of Mary Street Regional Council. "These scholarships will ensure eligible Aboriginal or Torres Strait Islander students have the financial support to attain completion of a course or a degree or even studying for a higher qualification."

Enquiries can be directed to Jo-Anne Kelly, Manager, Aboriginal Education and Training Unit on 4266 2477.



LSVF -

DAMS &

RESERVOIRS -

Cowarra Dam - 34

## MAMMAL TRAPPING - COWARRA STATE FOREST

### Methods

Mammal trapping was conducted over six nights (May 25-May 31 1994) within the catchment of the proposed dam site. Traps were set across the three main vegetation types of the study site. These include creekline vegetation, timbered slopes and ridgetop vegetation.

In total, trapping was undertaken over 330 trap nights. Within each vegetation type 55 traps were set over two nights giving a total of 110 trap nights. Of these 55 traps, 40 were 'A' Elliott traps, 10 were the larger 'B' Elliott traps and 5 were cage traps. The Elliott traps were baited with a mixture of rolled oats, honey and peanut butter. The cage traps were baited with a fish based cat food. Traps were arranged in two trap lines with 15 metres between each trap and 100 metres between the two lines. Traps were set to take advantage of potential habitat. The weather was fine over the six night period and temperatures generally ranged between minima and maxima of 10°-23°c.

### Results

From a total of 330 trap nights only two captures were recorded:

- One Black Rat (Rattus rattus an introduced species), was captured in a 'B' Elliott trap in the creekline vegetation Site.
- One Bush Rat, (Rattus fuscipes), was captured on the timbered slopes in an 'A' Elliott trap.

No captures were recorded in the ridgetop vegetation.

Incidental sightings included the Long-nosed Bandicoot, (Parameles nasuta), and the Eastern Grey Kangaroo (Macropus giganteus) on the timbered slopes and ridgetops.



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LSVF- Dams &  
Reservoirs .  
Cowanra Dam- 33

# The Bunyah Boys - A Dam fine team!

A year-long partnership project providing education and training in conservation and land management for five indigenous trainees at Cowarra Off-Creek Storage Dam has been praised as a complete success

Port Macquarie-Hastings Mayor Cr Rob Drew presented each trainee with a certificate to honour their achievements in a ceremony at the dam to mark the completion of their training and study program.

Amos Donovan, Warren Ahoy, Dean Jones, Gary Jones and Nicholas Gray have been restoring the vegetation within the catchment and contributing to the ongoing maintenance of a high quality water supply in the dam.

The Cowarra Dam Partnership Project offered the trainees the opportunity for training and employment through a partnership between Port Macquarie-Hastings Council, Bunyah Local Aboriginal Land Council, Mid Coast Group Training and Wesley Employment. Together with Council, the service providers contributed a total of \$200,000 in funding for the delivery of the program.

Booroongen Djugen College in Kempsey delivered the study component of the program (Certificate II Conservation and Land Management), providing the trainees with extensive knowledge in sustainable land management and restoration.



The 'Bunyah Team' - Amos Donovan, Warren Ahoy, Dean Jones, Gary Jones and Nicholas Gray with supervisor Jenny Stitt and Alfred Scott, Percival Ritchie and Raymond Donovan

The participants have been guided through the program by on-site supervisor and Booroongen trainer Jenny Stitt. For the past 12 months each trainee has completed 30 hours of weekly on-site work and six

hours of certificate-level study. The Bunyah Team has played an important role in the management of the environment surrounding Cowarra Dam including bush regeneration seed cultivation and

propagation and identifying plant and animal species. Most of the work has been done by hand or manual control due to the sensitivity of the area and the proximity to Cowarra Dam, a

drinking water source. The Bunyah Team has also taken an active role in community education and has included an overview of its work in presentations to local school groups.

Another five students studying towards the Certificate - Percival Ritchie, Nathan Riley, Raymond Donovan, Nathan Battese and Alfred Scott - also provided hands-on assistance at the dam as part of their training.

As a result of the project's success, Port Macquarie-Hastings Council is looking to implement a second stage - with the vision of maintaining the involvement of the local Aboriginal community in the future management of the catchment and preservation of the environment.

## COUNCIL CARES

### COUNCIL CARES for the business community -

To help businesses tender for contracts for the supply of goods and services, Council has just launched two new aids: one, *Tendering Made Easy*, is a free booklet covering the various regulations applying to local government contracts and is available from all Council offices. As well, a new online tendering system has been implemented: businesses register with Council and are advised by email instantly when a relevant tender call is issued. Tenders may also now be submitted electronically.

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LSVF - Dams &

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From: Hastings Gazette, 12/6/03, p10

**DAM AWARD:** The Cowarra Dam at Wauchope has picked up a major award for Hastings Council. Council's Murray Thompson, centre and front, holds the award.

# Major award for Cowarra Dam

A FINE example of a valuable contribution to the region, was how the judges described Hastings Council's Cowarra off-creek storage dam in naming it winner of a new regional engineering excellence award on Friday, May 16.

The Newcastle division of Engineers Australia recognises a range of engineering projects in its annual Engineering Excellence Awards, and in 2003 the judging panel decided a special award be made for Engineering in Regional Communities.

Chairman of the judging panel, Clive Cooper, said this award aims to recognise the contributions of engineers working in regional areas.

"To receive this award, the project or activity should demonstrate how engineers have by imagination and sound practice, provided clear benefits to the economy, environment, resource development or lifestyle of a particular community," Mr Cooper said.

"The judges decided that the Hastings Council project was a fine example of a valuable contribution to the region."

Hastings mayor Wayne Richards acknowledged council's pride in the

project and the successful ongoing community consultation which was a major feature of the investigation, planning and construction stages of the new water supply scheme.

Cr Richards also acknowledged the dedicated efforts of the project team. "The co-operative team approach, together with a strong focus on environmental issues and a number of innovative solutions, provided council and the local community with a sustainable water supply scheme," Cr Richards said.

The project team included council staff, the NSW Department of Commerce (project managers), NSW Department of Energy and Utilities (funding partner), Bunyah Local Aboriginal Land Council, Cooks Constructions (principal construction contractor) and several other construction contractors including the local Haire Civil Constructions.

The Cowarra Dam project also recently received an Institute of Public Works Engineering Australia excellence award.



MAINTENANCE  
SECTION  
MELBOURNE



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From: The Hastings Gazette  
19/2/04

## Cowarra Dam starts to fill

THE filling of the new 10,000 million litre Cowarra Dam has started at long last.

Water Supply Manager Murray Thompson today announced that filling of the Cowarra Dam started on Saturday after successful testing of the Koree Island Pumping Station.

Drought conditions and associated low river flows stopped the Hastings Council from testing and commissioning the telemetry system at Koree #3 Pumping Station.

"Unfortunately, river levels are still falling rapidly, despite recent rainfalls, showing the impact of over two years of drought conditions in the local catchment area," Mr Thompson said.

The current river level at Koree Island is 1.350m and pumping will stop once it drops to 1.10m to protect the pumps from sucking air, Mr. Thompson said.

"The river is currently dropping at approx 50mm per day, so we have only a few days before the river will fall to this level," he said.

The Hastings Council will not pump when the river is flowing at less than 347ML/day. This is the minimum environmental flow target for February.

The current river flow is 440ML/day and it is dropping at about 40ML/day. This means that pumping and filling of the Cowarra Dam will probably have to cease early next week.

Despite this situation, this pumping and dam filling will allow testing of the pump and other new facilities, such as

the Koree Island High Voltage 33/3.3kV Substation 750mm trunk main into the Cowarra Dam and the Dam inlet motorised valve.

"Hopefully more rainfall is on the way which will allow the river system to recover and provide sufficient flow to us to continue filling of both the Cowarra & Port Phillip Dam," Mr. Thompson said.

The Port Dam is currently at 73 percent and is being refilled, following the recent turbid episode on the Hastings River, which required the Wauchope Dam to be operated for over 2 weeks.

Mr. Thompson said that if it were possible to start filling the Cowarra Dam this year, the commissioning of the Cowarra Dam Intake Tower, Outlet Valve Bay and Pumping Station could be completed and the construction of the Cowarra Dam finalised.



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Cowarra Dam-23



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# Cowarra Dam project

From:  
Hastings  
Gazette  
p5 15/7/05

NSW Premier, Bob Carr, inspected the \$37.4 million Cowarra Dam, an important new water storage facility which will protect the Hastings River and help the district cope with booming population growth.

Mr Carr said the dam was a valuable addition to the district's essential infrastructure and would mean the region's future water supply would come from the dam rather than the Hastings River.

"This district, like the rest of NSW, has suffered under the drought and has increasingly had to dip into the Hastings River to ensure a secure water supply," Mr Carr said.

"At the height of the drought

last year, the Hastings River was desperately low yet there was no alternative but to pump from it into Port Macquarie dam.

"This has threatened fish stocks, platypus and environmental flows.

"This new dam adds 10,000 megalitre capacity to the 2500 megalitre capacity of Port Macquarie Dam.

"Once the rains fall, the value of this water supply to the Hastings will be abundantly clear."

The State Government contributed \$9.45 million to its construction under the Country Towns Water Supply and Sewerage Program.

The dam is currently at about

10 percent capacity and will not be fully commissioned until substantial rain falls.

The Cowarra Dam will play an important part in:

Ensuring an adequate water supply for the residential population which is expected to grow from 68,000 to 120,000 by 2025.

Catering for the needs of the almost 700,000 tourists who visit the district each year and,

Providing enhanced environmental flows for the Hastings River while still ensuring a secure water supply for the district.

Mayor of the Hastings, Cr Rob Drew, has praised the dam as a landmark project for the region



**DAM VISIT:** Hastings Council's Water Manager, Murray Thompson and Deputy Mayor of the Hastings, Cr Bob Sharpham discuss the Cowarra Dam with NSW Premier, Bob Carr.



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From: The Hastings Gazette, 31/3/05, p6

# Cowarra Dam Public Art and Booklet Launch

The gathering at the Cowarra Dam on Thursday was to celebrate the successful completion of the first Aboriginal Public Art project in the Hastings!!

The project involved Indigenous and non-Indigenous artist working together to create a series of colourful and unique artworks. The artists have transformed the visual appearance of the site with their work and provided the finishing touch in the construction of the Cowarra Dam. A dam, which was built to protect the environmental flows in the Hastings River and to help us secure a drought proof future for the area.

The artworks acknowledge and respect local Aboriginal cultural heritage and give recognition to

the long term and cooperative involvement of the Bunyah Land Council in the approval and development of the dam. They also reflect the site's natural values and the importance of water in our lives. And they have certainly enhanced the public access area here at the dam!

The project has been completed within twelve months and has included training, mentoring and employment in public and environmental arts, with fifteen artists employed. It has also increased community awareness about the areas Aboriginal cultural heritage and contemporary culture.

Along with the partnership between Hastings Council's Water Supply and Cultural Development sections and the Bunyah Local

Aboriginal Land Council, the Wauchope campus of Mid North Coast Institute of TAFE played a key role in the project.

The Mayor, Cr Rob Drew awarded certificates of appreciation to the artists whose hard work and creative dedication in designing, fabricating and installing the artworks made this project the success that it is.

Design Artists: Lois Davis, Isobell Moran, Maria Ritchie and Frank Dargin.

The sculptural poles were painted and carved from hardwood timber reclaimed from the site these were created by: Kylie Dyson, Maria Ritchie, Gary Chapman, Shane Shields and Amos Donovan

The mosaic installations including the entrance statement

of four mosaic panels & two Ceramic boomerang viewing benches were created by: Elaine Morris, Olga Davis, Des Chapman and Brett Ritchie.

Public artists and mentors on the project included Stephen Killick, Guy Crosley and Jacky Beckhurst and a commissioned sculpture in Stainless steel by local artist Peter Allison

Many of the artists employed on the project are or have been students at Wauchope TAFE, which provided studio space for fabrication of ceramics, assistance with project coordination and played a key role in artist mentoring.

The artists involved on this project are vitally important. They have created a unique place and a memorable, educational and cultural experience, which will be

enjoyed by residents and visitors for years to come.

As part of the Public Art Project, a booklet has been produced to tell the history of Aboriginal community on the site and to remind people how the dam came about.

The booklet also tells the story of the Bunyah Land Council's role in development of the dam and the strong and ongoing partnership between Bunyah people and Hastings Council through this project.

The many students who live on the site, as well as interested members of our community, use the booklet. Thank you all for your support of this project. I'm thrilled to officially launch the Cowarra Dam Public Art project and Booklet.



The Mayor, Rob Drew at the Art and Booklet Launch at Cowarra Dam, with local artists Kylie and Maria Ritchie



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**DAM AWARD:** Kim Freeman and Angela Donovan hold the award as artists Lois Davis, Karen Baz, Rhonda Baxter, Warren Baxter, Cathy Chatfield, Tash Chatfield, Stanley Chatfield, Amos Donovan, Luke Donovan, Pat Donovan, Jamie Donovan, Chris Donovan, Luke Donovan, Troy Durose, Anthony Gray, Nicholas Gray, Michael Gee, Bill Lee Will Lee, Fred Miller, Leanne Miller, Jennifer Morris, Sue Morris, Jodie Morris, Casey Roberts, Trevor Roberts and Trevor Roberts Jnr from Bunyah Land Council look on. *From: The Hastings Gazette,*

# Major award for dam art work

P10  
12/6/03

THE outstanding work of Hastings Council in the area of cultural development has been recognised at the 2005 NSW Local Government Cultural Awards.

The Hastings Council Cowarra Dam Public Art Project took out the Cultural Programs section at Friday night's award ceremony held at Parliament House in Sydney.

In 2004 Hastings Council commissioned local artists to create colourful and unique public artworks that would integrate with the visitor facilities at Cowarra Dam. The artworks were designed to

acknowledge and respect the aboriginal cultural heritage of the site, as well as reflecting the importance of water in our lives.

The artists, including twelve aboriginal trainee public artists studying at the Wauchope campus of the North Coast Institute of TAFE, created three ceramic mosaic entrance panels, 20 sculptural totems using recycled wood from the site, ceramic viewing benches and graphic designs for a series of entry panels.

Hastings Mayor Rob Drew, who attended the awards presentation on Friday along with other Council staff and Birpai Elder and artist Lois Davis, believes the project success is the partnerships it created.

"The aim of this project was to create a magnificent public art display that would

reflect the dam sites aboriginal heritage, its natural values and the importance of water to all," the Mayor said.

"In reality the project built a firm partnership between Council and the Bunyah Local Aboriginal Land Council (LALC). These friendships and the resulting artworks have created a real sense of community ownership of Cowarra Dam.

"It is a great tribute to everyone involved from Bunyah LALC, Hastings Council, Waterwise and Wauchope TAFE that the project has been recognised in these state cultural awards," said Mayor Drew.

Until the dam is officially opened in October the art can be viewed on a guided Dam Tour organised by calling Waterwise on 6581-4245.



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Cowarra Dam-20



**AM IMPRESSED:** Anne Beresford with her children Luke, Thomas and James, of Laurieton were impressed by what they saw and congratulate council on constructing such a wonderful facility.



**GREAT DAY:** Rachel, Corin, Natalie and Elissa Schmitzer of Wauchope enjoy the fun at the Cowarra Dam open day.

From:  
The Hastings  
Gazette,  
20/10/05,  
p3

# Thousands flock to Cowarra Dam opening



**AM GOOD DAY:** Waneita and Wayne Smith with their children Jesse, Jayden and Chloe, of Wendall, meet Meredith Robertson of the Port Macquarie-Hastings Council WaterWise team at the Cowarra Dam public open day on Saturday.

TWO thousand people inspected the new 10,000 megalitre Cowarra Off-Creek Storage Dam on Saturday after the facility was officially opened.

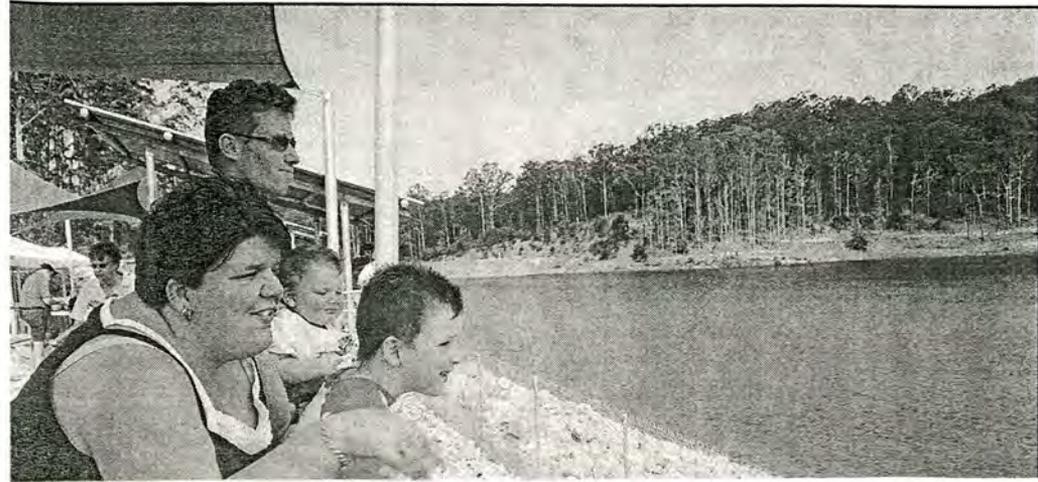
The two-day celebration, which began on Friday when Port-Macquarie-Hastings Mayor Rob Drew opened the facility, was a community event that has recognised the 20-year vision of council to achieve a more drought-secure future for the region.

Friday's night's opening, under a veil of heavy cloud and welcome rain, was attended by Minister for Fair Trading Diane Beamer, John Tingle MLC, Oxley MP Andrew Stoner, Port Macquarie MP Rob Oakeshott, Geoff Chenall from the Department of Commerce and representatives of Bunyah Local Aboriginal Land Council.

On Saturday morning, Mayor Drew and council's water supply manager Murray Thompson officially thanked those involved in making the 20-year project a reality before inviting guests to inspect the facility.

The dam was then open to the public from noon. Up to 2000 people visited the dam site, enjoying free guided tours of the facility, entertainment and a preview of a documentary on the history of the dam project from beginning to end.

"It has been a fantastic two days and we are very pleased by the number of people who have been out to see the dam this weekend," Murray Thompson said.





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From: The Hastings Gazette, 15/12/05, p5

# Cowarra Dam partnership launch

THE Cowarra Dam Partnership Project recognises council's ongoing commitment to the Bunyah Local Aboriginal Land Council and the cultural significance of the land on which the 10,000 megalitre dam has been built.

Port Macquarie-Hastings Council and

Bunyah LALC linked with Mid Coast Group Training, Wesley Employment and Booroongen Djugun College in Kempsey to create six full-time conservation and land management traineeships as part of a long-term employment program for indigenous people.

The trainees, aged between 19 and 29 years, Will Lee, Amos Donovan, Warren Ahoy, Dean Jones, Gary Jones and Nicholas Gray are 12 weeks into a 12-month traineeship that requires 30 hours of on-site vegetation management work at the multi-million dollar Cowarra Dam each

week and six hours of certificate level study.

They work primarily within the catchment area, maintaining and regenerating bushland, noxious weed removal, identifying plant and animal species and monitoring the environment around the dam embankment.

"It has been a wonderful opportunity for all of us," said Will Lee, group team leader.

"It feels good to have an important role and to be learning different skills. I have learned so much already from identifying flora and fauna to bush regeneration as well as new skills in mechanics and using different tools."

Direct supervisor to the trainees, Matt Giles of Mid Coast Training, said the project was a unique opportunity to unite with other agencies to create long-term indigenous employment and training strategies for young people.

"We are hoping that being a part of this project it will be self-perpetuating for this group of six who could later form their own business unit

and tender for projects with state forests or national parks," Mr. Giles said.

The Booroongen Djugun College is delivering the study component of the program (Certificate II Conservation and Land Management) providing the trainees with extensive knowledge in land conservation, sustainable land management and land restoration.

"The college listens to community needs and within its limited resources, continues to be innovative in its approach to course development and delivery," chairperson Gary Morris said.

Wesley Uniting Employment, the only job network member located in Wauchope, saw the Cowarra Dam project as an opportunity to provide their Bunyah CDEP clients, who worked on a contractual, casual basis previously, more sustainable employment opportunities with qualifications.

"This support includes employer and employee liaison, conflict resolution, assistance with researching and financing any necessary training or extra ticketing or licensing requirements," Kim Bramble from Wesley Uniting Employment said.



**DAM PARTNERSHIP:** Nicholas Gray, Dean Jones, William Lee, Gary Jones, Amos Donovan and Warren Ahoy ... six trainees involved in the new partnership deal launched on Thursday at Cowarra Dam.



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# Work continues on water

WORK on the Koree No3 water supply pumping will commence shortly.

Hastings Council's water supply manager, Murray Thompson, said the NSW Department of Public Works and Services will supervise the construction activities.

Precision Pipelines Pty Ltd has been awarded the contract for the construction of the pumping station and Kilpatrick Green Pty Ltd will be building a new high voltage electricity substation for Council to provide an adequate power supply to the new pumping

station.

Mr Thompson said the works will include the water supply pumping station, pipelines and electricity substation.

"The works will be completed in accordance with the Environmental Management Plan and Environmental Impact Statement produced and approved for the project," Mr Thompson said.

"Various contractors will undertake these construction works over the next 12 months. The works, including site rehabilitation, are anticipated to be completed by May 2003 at an estimated total cost of \$10.4 million.

"The construction works will include a large concrete well, housing three electrically driven pumps and a control building on the riverbank just upstream of the two existing water supply pumping stations.

"A submerged intake screen will be installed on the bed of the river to pipe water into the pump well. These works will also include the construction of a buried pipeline from the new pumping station to the Rosewood Reservoir site on Quarry Road."

Mr Thompson said the new pumping station will be used to pump water from the Hastings River in order to fill the recently completed Cowarra Dam.

He said it is intended to

only pump water from the river during periods of suitable water quality and when sufficient flow is available to maintain adequate flows for the protection of the aquatic environment.

In particular, water quality issues associated with nutrient levels such as nitrogen and phosphorus are becoming an important consideration in the management of the water supply scheme, as they can lead to undesirable algae growth occurring in Council's storage dams.

"During periods when it will not be possible to pump water directly from the river, the water stored in both the Cowarra and Port Macquarie Dams will be used to meet water supply demands," he said.

"In this way critical environmental river flows will be protected from over abstraction and on-going environmental monitoring program will help to develop improved knowledge of the aquatic environment and its long term flow requirements."

Preliminary site works are commencing and will be carried out over the next six weeks by the two major contractors.

These preliminary works will include site establishment and the construction of extensive erosion control facilities.



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# Cowarra dam tours are proving popular

IN THE past 24 months more than 2000 people have taken advantage of Hastings Council's Cowarra Dam tours.

Council has received very positive feedback about the tours with the

general consensus being that it was a very worthwhile experience. In just three and a half hours, tour participants learn all about the Hastings water supply system and Council staff are on hand to answer any questions.

The public observation and picnic area at the Cowarra Dam are expected to be open to the public in April this year.

However, the guided tours provide access to restricted areas - otherwise unavailable to the public for safety and security reasons. Council will continue to run tours while there is a demand - and from the length of the waiting list they should run for some time to come.

The tours commence at Council's Port Macquarie head office at 8.50 am on scheduled Saturday mornings. Tea and coffee are provided with a presentation and slide show outlining the development of the Cowarra Dam and Hastings District Water Supply augmentation projects. The informative presentation takes

around 45 minutes and is considered by many as a must see part of the tour.

Following the presentation, there is a short 20 minute bus ride to the Cowarra Dam site.

At the dam site participants enjoy a guided tour which explains the operational aspects of the facility. Participants go on an inspection of the entire dam complex including the main dam embankment wall, saddle dam and spillway, dam surrounds (weather permitting), outlet tower pump station and picnic area. Refreshments are served before departing for Port Macquarie at approximately 12 noon.

Group bookings are also welcome and can be easily arranged. There are midweek tours available occasionally for those who work weekends or have other weekend commitments.

To take advantage of one of these tours call Council on 6581 8111 or email: [waterwise@turboweb.net.au](mailto:waterwise@turboweb.net.au) and leave your name and phone number. You will be contacted as soon as there is a place available.

e-mail: [manager.hastgazette@ruralpress.com](mailto:manager.hastgazette@ruralpress.com)

From Hastings Gazette, 21/2/02, p5



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# Dam roadworks will continue

RESIDENTS of the King Creek area are advised that the NSW Department of Public Works and Services will be supervising the continuing construction of the intersection of the Cowarra Dam Access Roadway and Sarahs Crescent.

This intersection will provide safe access to the future public access road to the Cowarra Dam following completion of the dam towards the end of 2001.

Construction of the intersection will provide turning lanes and signage for safe entry and exit into the future Cowarra Dam Access Road.

Residents are advised that site works are recommencing this week at this intersection and will be carried out over a two-week period. These works will include widening of Sarahs Crescent in the vicinity of the intersection, bitumen road surfacing and line marking.

Sarahs Crescent will be changed from an 80 kph zone to a 60 kph zone during the duration of the works.

The construction activities associated with the access roadway will also cause some minor disruption to traffic in Sarahs Crescent. Temporary traffic lights will be in use

and one lane of Sarahs Crescent will be closed at times during the construction work. Sarahs Crescent will revert to two lanes for after hours traffic without traffic lights.

In addition, council would advise residents to exercise caution while driving or riding horses in this area over the next few months, particularly during the major construction period. Residents should closely observe and adhere to all traffic warning signs, traffic lights and directions by site traffic controllers.

Any inquiries should be made directly to Barry Smith or Geoff Chenhall, NSW Department of Public Works and Services, on 6582 0563 during office hours. Any problems arising after hours should be directed to council's water duty officer on 6583 2225.

From: Hastings Gazette, 10/5/01 p7



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From: Hastings Gazette - 5/7/01, p 7

# Cowarra Dam water to be released into King Creek

HASTINGS Council will begin releasing safe but discoloured water from the Cowarra Dam site over a two week period from Monday.

The water will be gradually released in King Creek, which will then ultimately flow into the Hastings River.

"To meet the scheduled dam completion date in September, the water must be released from the site to allow rehabilitation of the ground areas and installation of the submerged aeration system to be completed," said Council's Water Supply Manager Murray Thompson.

The water to be released is discoloured due to the combination of heavy rain-fall periods and the exposure of dispersive soils during the excavation of the dam site. The water has been held on-site since March in keeping with erosion and sediment control plans.

Treatment with Gypsum has reduced the amount of suspended soil and clay particles in the water and it now meets the relevant guidelines set by the NSW Environment Protection Agency which issued Council with a Pollution Control Approval for the site.

Tests conducted by NSW Department of Public

Works & Services Water Testing Laboratory found that treating the water with other chemicals such as alum and lime to further reduce discolouration would create serious water quality problems. The addition of such chemicals would alter pH levels in King Creek which in turn would have a harmful effect on the creek's aquatic ecology.

During and after the release of the water, daily sampling and testing of water quality in King Creek will be carried out. It is anticipated that it will take at least two weeks to release the water currently stored in the dam.

Once the water has been

released from the Cowarra Dam site, the stored topsoil will be replaced in the disturbed areas.

These areas will also be grassed to encourage ground vegetation and prevent further erosion. Gypsum will be added to areas identified as having highly dispersive soils where it is not practical to provide topsoil coverage.

Prior to the filling of the Cowarra Dam, a detailed site erosion, sediment and water quality control management plan will be prepared, implemented and monitored on-site.

Construction of the Cowarra Dam will be completed in September this year.

The new Koree Island No 3 Pumping Station, required to fill the Dam will be completed by early 2003. Filling the Dam could take between six and twelve months depending on river flows in the Hastings.

Residents downstream of the release point have been contacted and all relevant government authorities including NSW Fisheries, National Parks and Wildlife, Waterways will also be informed of the water release.

Any enquiries should be directed to the NSW Department of Public Works & Services Project Engineer, Geoff Chenhall on 6582 0563.



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Cowarra Dam - 14

# Steady decrease in water storage capacity at dam

THE continuing dry weather and lack of rainfall in the area has seen a steady decrease in both the flow of water in the Hastings River and the water storage capacity in the Port Macquarie Dam.

The low river flows have reduced Council's ability to draw water from the river needed to supply Wauchope and fill the Port Macquarie Storage Dam.

This situation together with the increased water demands due to the holiday period has seen the Port Macquarie Storage Dam capacity fall to 66%.

Council is therefore urging everyone, including visitors, to closely observe the current water restrictions and to look at avoiding water wastage.

The water restrictions have been implemented to conserve the storage available in the Port Macquarie Dam,

so that a supply can be maintained should flow in the river reach a point when it is no longer possible to draw water.

Residents are therefore reminded that the Level 2 Water Restrictions remain in place, which allow a hand-held hose to only be used between 6 pm and 7 pm for garden watering.

The use of micro-irrigation systems is also permitted between 6 pm and 7 pm on Monday, Thursday and Saturday.

Commercial and business activities, which require the external use of water to operate their business, need to obtain an exemption license from Council, which will include restrictions to eliminate water wastage.

Council is currently removing many water taps in public areas and only providing a limited number of spring-loaded taps at locations such as beaches and boat ramps.

This, together with water restriction signs, has been implemented to reduce water wastage at these locations and to help ensure compliance with the current restriction levels.

Persons found by Council staff not to be observing the current Level 2 Water Restrictions will face \$220 on-the-spot fines from Council's Rangers. A number of fines have already been issued to people found breaching the current restrictions.

Should the dry conditions continue, it is likely that the dam storage capacity will continue to fall and could reach the 60% mark within the next two to three weeks, at which time Council would need to review and tighten the current water restrictions.

Should further restrictions be implemented, it is likely that garden watering would need to be reduced to 1/2 hour per day and current business exemptions would be reviewed.

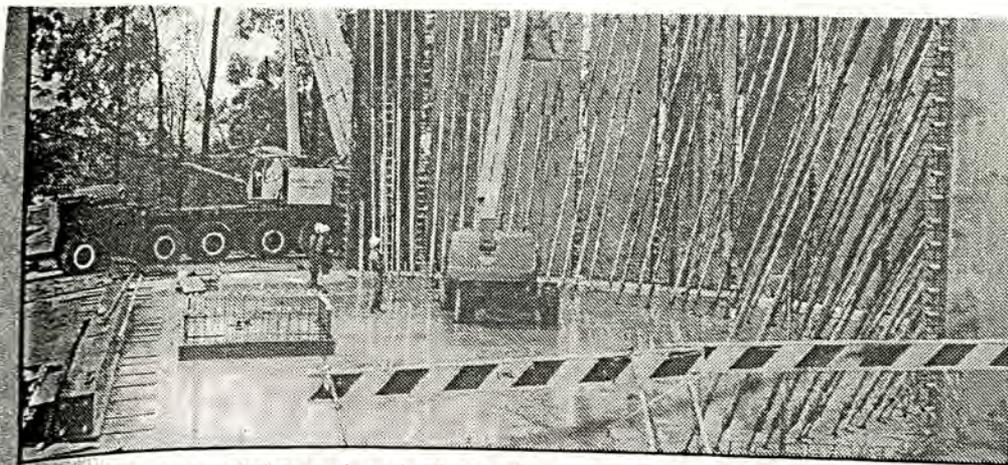


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Reservoirs -

Cowarra Dam-B



□ The giant crane (pictured on left) used to help construct the water reservoir.

## An innovative construction

A giant crane from Newcastle has been used during the construction of a new 10 million litre capacity water supply reservoir at Quarry Road, Wauchope, as part of the current \$3.85 million augmentation of the Hastings District Water Supply Scheme.

This new reservoir will provide additional storage capacity at the Quarry Road site with the existing two reservoirs which currently provide water to Wauchope and the Port Macquarie dam.

This work represents part of the ongoing water supply augmentation activities which includes construction of the new Cowarra Dam and will progressively provide adequate capacity to service existing and future residents in the Hastings area.

A contract has been awarded to Eire Constructions Pty Ltd from Taree, for the construction of this reservoir and this work is being supervised on council's behalf by the NSW Department of Public Works and Services. The total cost of this project is \$1.85 million.

The construction method being em-

ployed on this reservoir, includes an innovative approach using pre-cast stave concrete wall panels. This has provided significant cost savings over conventional construction methods.

The concrete wall panels are pre-cast horizontally on-site and then post tensioned before being lifted into position with a high capacity 140 tonne crane. The individual wall panels each weigh 29 tonne and the four buttress panels weigh 51 tonne. Once in position the gaps between the wall panels and buttresses are filled with cement grout and steel cables running horizontally through the inside of the wall panels are tensioned and anchored in the buttress panels.

It is anticipated that the reservoir will be completed and in operation in operation by August 1998. Once completed this reservoir will be used in the interim to increase the transfer capacity of water into the Port Macquarie Dam. Once the new Koree No 3 pumping station is completed in 2001/02 this reservoir will then be used to transfer water to the new Cowarra Dam.

30/4/98, P5

From: Hastings Gazette



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Reservoirs -

Cowarra Dam-12

# Apply now for dam grants

LOCAL farmers have been advised to apply as soon as possible for the livestock-related Water Storage Grants announced recently by the NSW Government.

John Hinton, Chairman of the Hastings Camden Haven Catchment Management Committee (CMC), said funding for the grants, to improve the drought preparedness of NSW farms, was limited and was being distributed on a first-come, first-served basis.

The NSW Government and the Commonwealth Government are sponsoring the grants.

The grant available is for 50 per cent of the first \$10,000 of expenditure and 10 per cent of subsequent expenditure on eligible works up to a total ceiling grant of \$10,000 per farm business enterprise.

Mr Hinton said application forms for the Water Storage Grants are available from the Kempsey office of the NSW Department of Land and Water Conservation (DLWC), phone (02) 6563 1212.

The completed forms should be sent as soon as possible to the Rural Assistance Authority.

From Hastings  
Gazette.

28/5/98

p 1



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Cowarra Dam - II



□ Council's water supply manager Murray Thompson points out features of the new Cowarra dam site to councillors during an inspection last week.

## Inspection of dam site

HASTINGS councillors have been given a tour of the site for the district's new 10,000 megalitre dam located five kilometres south-east of Wauchope.

Councillors were taken to the site which is about one third cleared in preparation for the start of work to the

dam foundations in about 12 months time. The new dam, due for completion in 2001, will have the capacity to service a population of 120,000.

The dam wall will be 500 metres long and 41 metres high with a base width of 250 metres.



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Reservoirs -

Cowarra Dam-10

# Work starts on new King Creek pipeline

RESIDENTS of the King Creek area are advised that the NSW Department of Public Works and Services will be supervising the construction of a large pipeline between King Creek and the Cowarra Dam site.

This pipeline is required as part of the current augmentation of the Hastings district water supply, which will improve the protection of environmental flows in the

Hastings River and cater for the water demands of residents in the Hastings district.

Residents are advised that preliminary site works are commencing and will be carried out over the next eight weeks. These preliminary works will include surveying and video recording of the pipeline route. The delivery of pipes and materials to the area may also commence during this period.

In January 1999 major construction work will commence on the pipeline. A further notification letter will be provided to residents prior to the commencement of major construction works.

The construction activities associated with the laying of this pipeline will cause some disturbance to the roadways and footpaths area along King Creek Road and Sarahs Crescent.

However, every attempt will be made to keep such disturbance to a minimum and restoration will be carried out to a condition as near as practicable to that which existed prior to the work.

It is envisaged that this major construction work along King Creek Road and Sarahs Crescent will take between six and 10 weeks and any inconvenience while this work is being carried out is regretted.

Council would request that residents exercise caution while driving or riding in this area over the next few months, particularly during the major construction period. Residents should closely observe and adhere to all traffic warning signs and directions by site traffic controllers.

Any inquiries should be made directly to Doug Scott or Geoff Chenhall, NSW Department of Public Works and Services, on 6582 056 during office hours. Any problems arising after hours should be directed to council's water duty officer on 6583 2225.



LSVF-Dams &

Reservoirs -

Cowarra Dam-9

# Assistance for pump station

HASTINGS Council will apply for financial assistance towards the cost of augmentation of the Hastings District Water Supply Scheme.

The financial assistance will help with construction associated with Cowarra Dam, Koree

Island Pump Station and other facilities associated with the works.

The decision was taken at council's meeting on Monday.

The four stages of works will conclude in 2001/02.

In a report tabled at

the meeting, the development of the water supply will form an important part of the future growth, environmental protection and sustainable development of the area.

Council has already accepted an \$8.6m grant

offer for construction works at Kings Creek to Cowarra dam trunkmain, foundation excavation and foundation grouting of Cowarra Dam, electricity supply and telephone lines to the dam site, further clearing and the inundation area and catchment management, and office/permanent residence at the dam site.

The program of works will have the Cowarra Dam completed by the end of 2001.

The report said it was unlikely that the Cowarra Dam will be filled and ready for operation till the end of 2002 which places the project slightly behind the adopted program of construction works.



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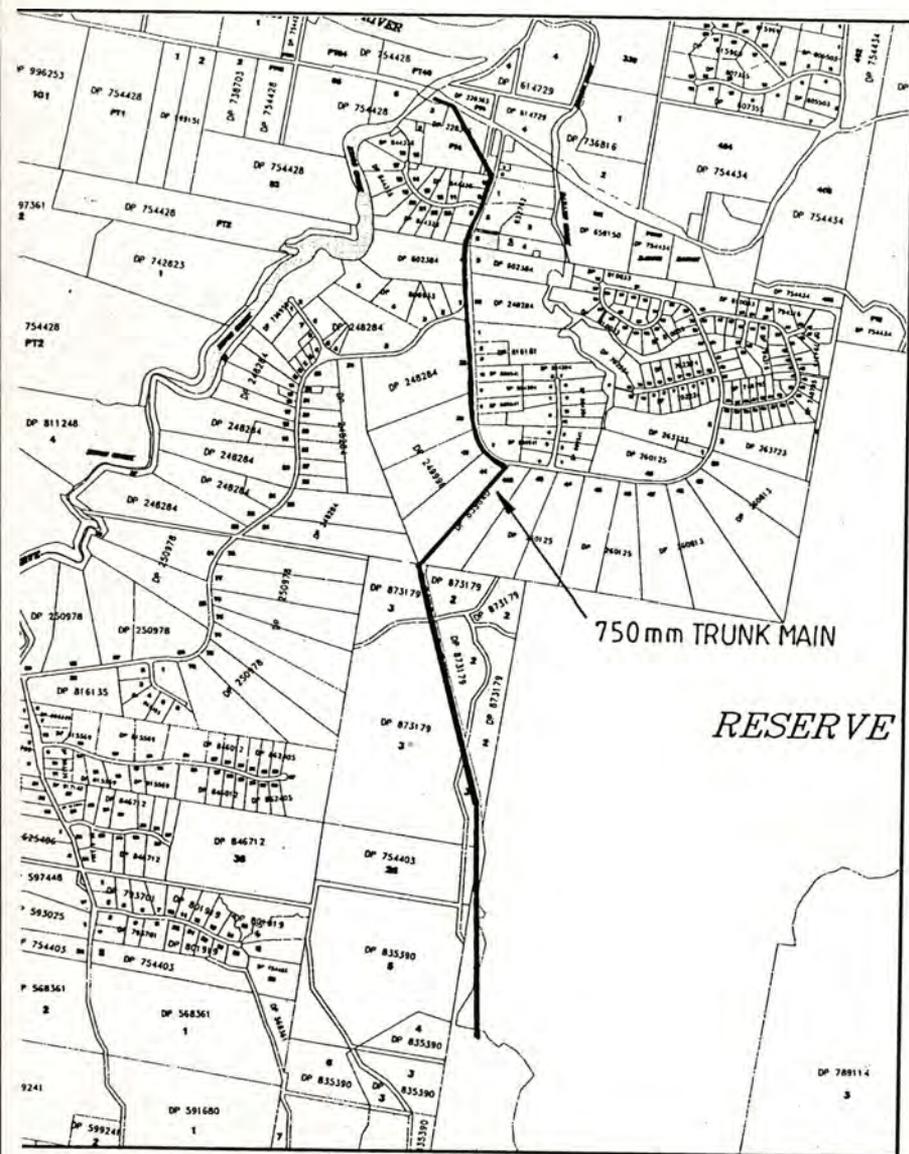


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Reservoirs -

Cowarra Dam - B

# Trunk main work to start



WORK on the Kings Creek to Cowarra Dam trunk main will commence next week.

The construction works will include the excavation of a trench and the laying of 750mm diameter pipes along the western side of King Creek Road and Sarahs Crescent.

Hastings Council's Water Supply Manager, Murray Thompson, said the work will involve some temporary road closures for trench road crossings at the King Creek Road and Sarahs Crescent intersection.

"The construction works will commence at the Kings Creek Bridge on the Oxley Highway and generally proceed in a southern direction cross country to King Creek Road," Mr Thompson said.

"The works will continue along Sarahs Crescent to the recently cleared access corridor into the Cowarra Dam site.

"It is anticipated that this section of the construction works will take approximately 10 weeks to complete.

"Following this period, construction work will continue within the Cowarra State Forest, however construction traffic will be encountered on local roads."

The construction activities associated with the laying of this pipeline will cause some disturbances to the roadway and footpath areas along King Creek Road and Sarahs Crescent. Mr Thompson said every attempt will be made to keep such disturbances to a minimum and restoration will be carried out as near as practicable to that which existed prior to the work.

"Council requests that residents exercise caution while driving or riding in this area over the next few months, particularly during the major construction period. Residents should closely observe and adhere to all traffic warning signs and directions by site traffic controllers."

Mr Thompson said the pipeline is required as part of the current augmentation of the Hastings District Water Supply which will improve the protection of environmental flows in the Hastings River and cater for water demands of residents in the Hastings District.

**K TO START:** Work on the new trunk main linking Kings Creek and the Cowarra Dam site will commence next week.



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Reservoirs -

Cowarra Dam-7

# Contractor blacks out businesses in Wauchope

A BLACKOUT forced some Wauchope businesses to close their doors after a contractor working on the new King Creek pipeline brought down power lines on Monday.

Some businesses suffered a worse fate, if that were possible, with power fluctuating from around 10am till 2pm.

Several Hastings Street business operators, including the Gazette, were astonished to find some businesses were completely blacked out, while neighbouring businesses suffered only partial blackouts.

The blackout was caused when a contractor in an excavator made contact with overhead power lines on the southern side of the Oxley Highway and on the eastern side of the King Creek bridge.

The accident happened despite two on site meetings involving Hastings Council, NorthPower and the contractor with special emphasis given to stringent requirements for working under or near power lines.

Following the incident, NorthPower crews arranged power from an alternate supply route to minimise the blackout, and major repairs to the line were commenced immediately.

Hastings Council's water supply manager, Murray Thompson, said he believed the excavator driver experienced 'a brief lapse of concentration' and had lifted the boom making contact with the overhead line, snapping it.

"It was an embarrassing start for the contractor, but no-one was injured," he said.

Two fire brigade units from Wauchope Headquarters attended a small grass fire which resulted from the incident. However they were forced to wait for NorthPower to disconnect the power supply before they could safely enter the area.



**THINGS TO COME:** Workers on the trunk main prior to the electricity being cut for over 2 hours in Wauchope on Monday.



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PORT MACQUARIE NEWS  
Monday, February 6, 2006  
p. 11

## Monday Life

# Give a dam, take a WaterWise tour

EACH time you turn on your tap, do you appreciate the amazing journey just one glass of water takes to reach your home?

Hastings residents are being invited to follow the H<sub>2</sub>O on its journey to your kitchen sink by booking a place on a Port Macquarie-Hastings Council water supply/dam tour.

The tour incorporates a look at new water buildings and technology now under construction at the Port Macquarie Reclaimed Water Treatment Plant and the Wauchope Water Treatment Plant.

The informative, free public tours will also include an inspection of the 10,000 megalitre

Cowarra Off-Creek Storage Dam near Wauchope.

The council's WaterWise team transports groups to the dam by bus from Port Macquarie.

Tour participants are taken along the dam's main embankment wall, to the saddle dam and spillway, shown the dam surrounds and indigenous heritage, outlet tower, picnic and cultural area and pump station.

There is also a 45-minute presentation on the local water supply.

The Port Macquarie Reclaimed Water Treatment Plant, which will recycle treated waste-water for specific activities that do not

require drinkable water – such as watering parks, gardens and sporting fields – is expected to be completed by August.

The council plans to use the Hindman St treatment plant building and landscaped surrounds as a local showcase for sustainable urban design by incorporating water- and energy-efficiency principles.

This will become a part of council's ongoing WaterWise education program, with public viewing areas, a lecture theatre and tours for the use of local school and community groups.

The \$25 million Wauchope water

treatment plant is designed to improve drinking-water quality for all consumers in the Hastings and to better achieve the quality standards set by the Australian Drinking Water Guidelines.

The Wauchope facility is expected to be online by July.

The plant will also include educational facilities.

Water supply manager Murray Thompson said the tours were a wonderful opportunity for residents to fully appreciate the technology and science that goes into delivering high-quality drinking water to Hastings homes.

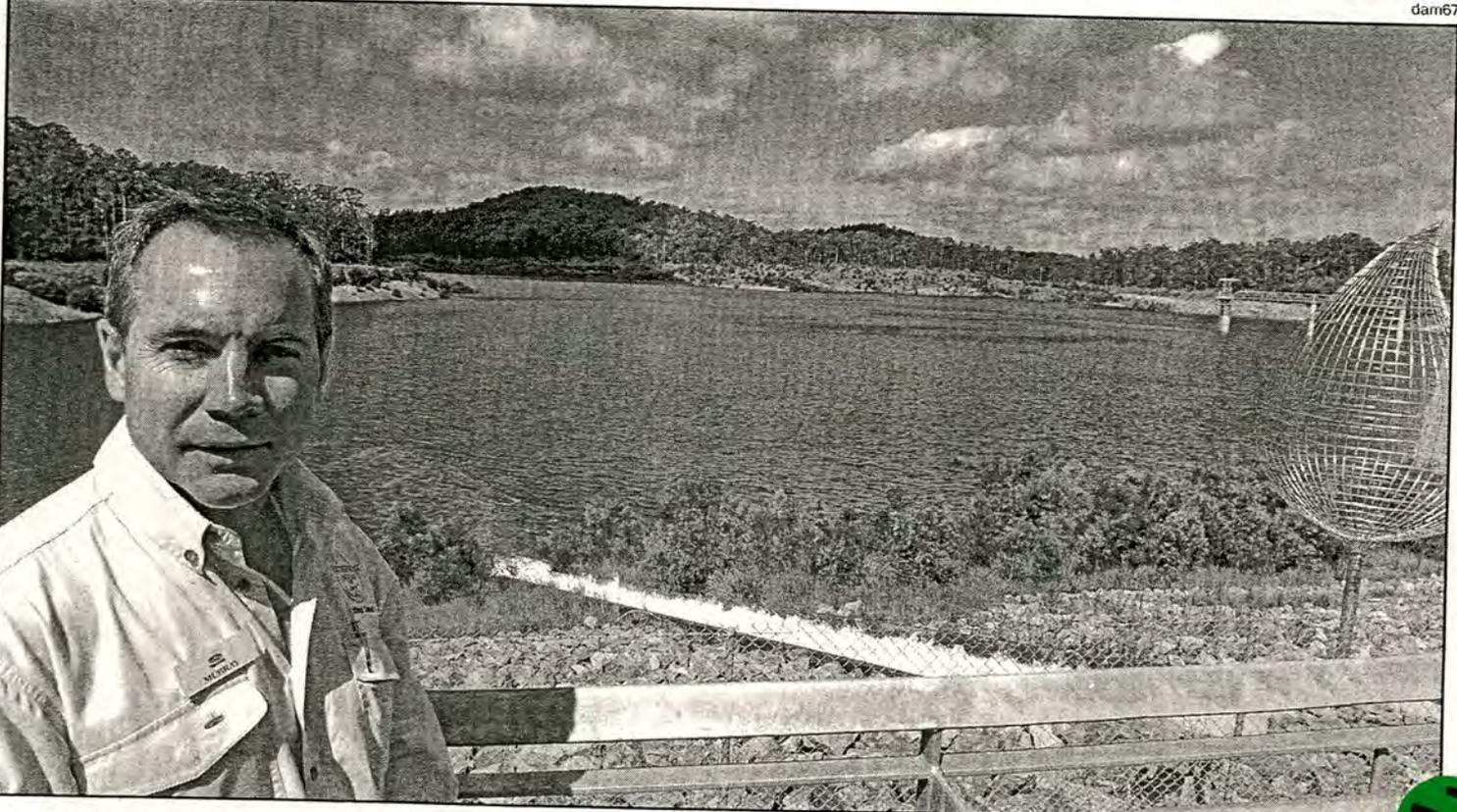
"Most people who

experience a tour of the water supply walk away with a greater appreciation of where our water comes from," Mr Thompson said.

"The more we can educate the community about the importance of water, and the need to use it wisely, then people are more likely to place a greater value on this resource."

The tours have been enjoyed by almost 7000 people since the completion of Cowarra Dam in 2001.

To secure a place on one of these popular, free tours, or book a group or school tour, contact Port Macquarie-Hastings Council on 6581 8111, or WaterWise on 6581 4245.



dam67

Crystal clear: Council's water supply manager Murray Thompson invites residents to discover the technology and science involved in delivering drinking water to Hastings homes.

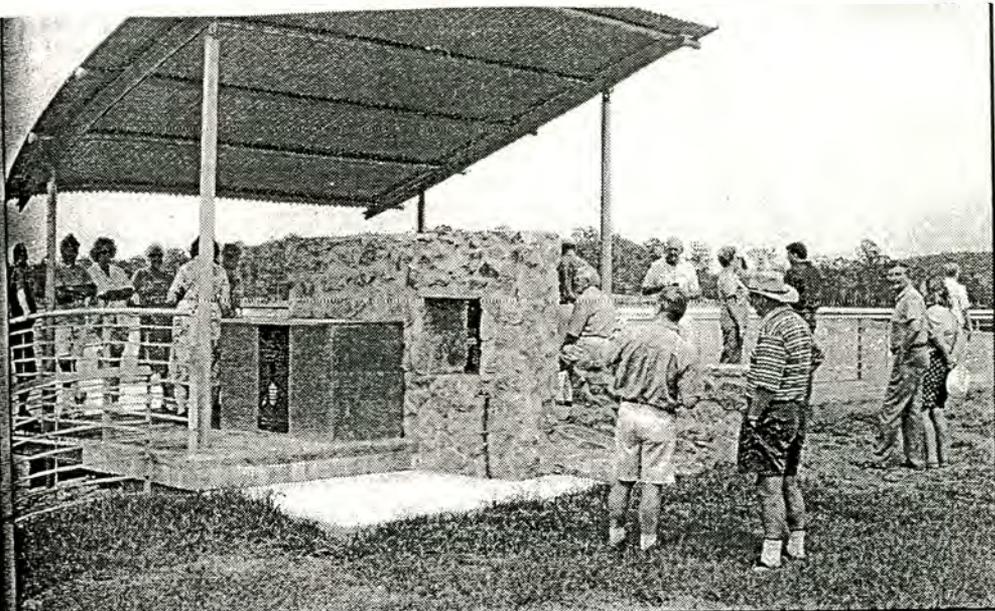


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Reservoirs -  
Cowarra Dam - 2

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WAUCHOPE BRANCH



**TAKE** SHAPING: Hastings Council's water manager Murray Thompson (foreground on left) taking residents on a tour of the dam site.  
*From Hastings Gazette, 9/5/02, p 5*

## Thousands visit dam

IN February 2000 Hastings Council began public tours of the Cowarra Dam construction site. Since that time more than 2000 people have taken advantage of this free Council service.

Council will this year be running some tours departing from the Wauchope Senior Citizens Hall at 9.30am on scheduled Saturday mornings.

Tea and coffee are provided with a presentation and slide show outlining the development of the Cowarra Dam and Hastings District Water Supply augmentation projects.

This informative presentation takes around 45 minutes and has been acclaimed as a must see part of the tour.

A short bus ride to the Cowarra site is the next part of the tour taking about 10 minutes, entering via the Sarah's Crescent access road.

On arrival, participants are provided with a guided tour that informs them about operational aspects of the dam, an inspection of the entire dam complex including the main dam bankment wall, saddle and spillway, dam surroundings (weather permitting), outlet tower, pump station and picnic area.

ly 12noon.

It is well worth making the effort to join one of these three and a half hour information packed tours.

Council staff will be on hand to answer any questions you may have about the operation of our water supply system.

Most people who have been fortunate enough to have taken part in one of these tours will tell you that it is very worthwhile and a real eye opener.

The public observation and picnic areas at the Cowarra Dam are expected to be open to the public later this year.

However, other most interesting areas of the dam will be restricted to organised Council tours only for obvious security reasons.

Council will continue to run tours while there is a demand and looking at the waiting list they should run for some time to come.

To take advantage of one of these tours, just give Council's WaterWise office a call to arrange a suitable tour date.

Group bookings are also welcome and can be easily arranged.

There are midweek tours available from time to time for those who work weekends or have other weekend commitments.

4245 or email [waterwise@turboweb.net.au](mailto:waterwise@turboweb.net.au).



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# Work starts on dam access road

RESIDENTS of the King Creek area are advised that the NSW Department of Public Works and Services will be supervising the construction of the Cowarra Dam access roadway from Sarahs Crescent to the Cowarra Dam site.

This roadway will provide the future operational access to the Cowarra Dam following completion of the dam toward the end of 2001.

Picnic area, barbecues, information display, toilets and viewing platform will be provided at this site for use by the general public after the completion of

the dam construction.

As part of this project council has acquired land from a number of property owners and the NSW State Forests to provide a service corridor from Sarahs Crescent to the dam site.

The access roadway will now be constructed along this service corridor following the route of the recently completed water supply trunk main.

Construction of the access roadway will include the upgrading of the existing unformed intersection with Sarahs Crescent to provide turning lanes, associated traffic facilities and signage.

Residents are advised that preliminary site works are commencing and will be carried out over the next two weeks.

These preliminary works will include surveying and video recording of the access road route.

In May/June 2000 major earthmoving construction works will commence upon the access roadway route.

Site safety rules and regulations will now prohibit any public access to this area and residents are advised to remain clear of the construction area.

The construction activi-

ties associated with the access roadway will also cause some minor disruption to traffic in Sarah's Crescent as shown on the attached plan of the access roadway route.

It is envisaged that this access roadway construction work will be completed by December 2000 dependent upon favourable weather conditions during this period.

In addition, council would advise residents to exercise caution while driving or riding in this area over the next few months, particularly during the major construction period.

Residents should closely observe and adhere to all traffic warning signs and directions by site traffic controllers.

Any inquiries should be made directly to Barry Smith or Geoff Chenhall, NSW Department of Public Works and Services, on 6582 0563 during office hours.

Any problems arising after hours should be directed to council's water duty officer on 6583 2225

LSYF - Dams &  
Reservoirs -  
Cobarra Dam-5

# Work starts to repair leaking local water supply pipeline

WORK will commence soon to trial a new method to repair the damaged leaking water supply pipeline between Rosewood Reservoirs and the King Creek Bridge.

The pipeline was constructed in 1994 and is required to increase the water transfer capacity from the Hastings River into the Port Macquarie Dam and to also supply water to the new Cowarra Dam.

However, testing of the pipeline revealed many leaking joints and the pipeline was unable to be placed into service said Hastings Council's water supply manager, Murray

Thompson.

"Various options have been considered to resolve this problem with the aim of achieving the work in the most efficient and cost effective way of repairing the pipeline," Mr Thompson said.

"Initially it is proposed that we will undertake a trial of a 1200 metre section of the seven kilometre pipeline to provide a better level of assurance make sure we are totally assured that this innovative way of repairing the pipeline works.

"The leaking joints will be repaired with an internal joint seal method which has been used extensively

in America and Europe over the past 20 years.

"This repair technology has been slow to come to Australia in the past, however with our country's infrastructure now aging, we believe that this new technology will be used more extensively."

The product is a rubber seal that spans the pipe joint and is pressed into place by two stainless steel bands using special tools.

During the installation of the seals, the project team which includes - funding partners Hastings Council and Department of Land and Water Conservation; project manager Department of Public

Works and Services and construction contractor, Earth Tech Engineering, a Tyco International Company - will closely monitor the work.

"Once the seals have been installed in this trial section, the pipe will be thoroughly pressure tested to ensure there is no leakage," Mr Thompson said.

"An assessment will then be made on the viability of this repair process, before work proceeds on the remainder of the pipeline.

"Installation of the internal seals will be carried out by staff entering inside the pipe at convenient locations which will be cut into the pipeline about 300 metres apart.

"The work teams will be looking at getting inside the pipeline this week to clear any water or debris before starting the process of installing the seals."

Mr Thompson said residents in the immediate area of the trial section and all along the pipeline route will be informed shortly of the works via a letter and information brochure being prepared.

Works associated with the repair of the pipeline at the King Creek Bridge crossing may cause some minor traffic delays for several days.

Mr Thompson predicted delays in traffic when the work reached the bridge.



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