

# Kayak 4 Earth

*Talking Sustainability in the Face of Global Warming*

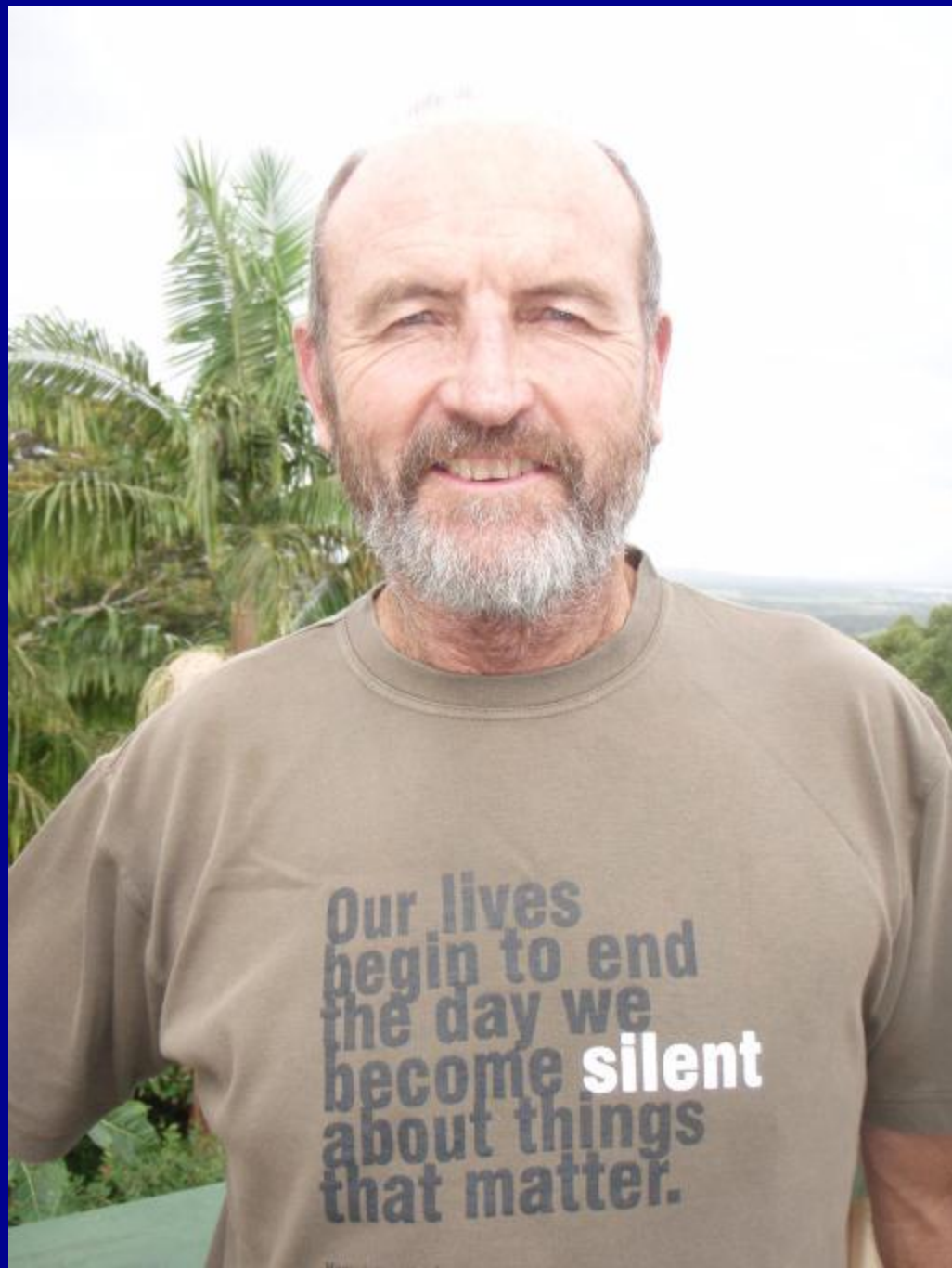


## Wild Rivers

It is not just the Rivers

Martin Luther King Jr:

**Our lives  
begin to  
end the day  
we become  
silent about  
the things  
that matter**





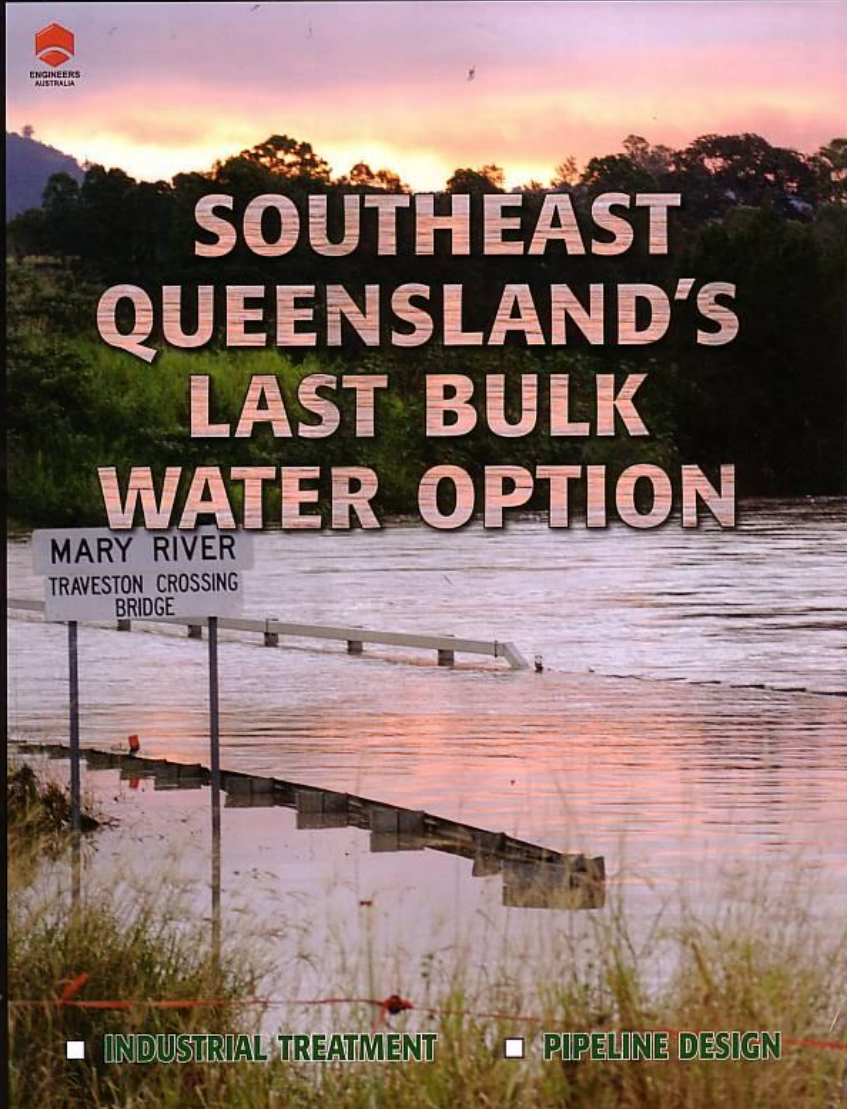
# How to make blood boil

www.waterengineeringaustralia.com.au

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## WATER ENGINEERING AUSTRALIA



# SOUTHEAST QUEENSLAND'S LAST BULK WATER OPTION

MARY RIVER TRAVESTON CROSSING BRIDGE

■ INDUSTRIAL TREATMENT ■ PIPELINE DESIGN

COVER STORY

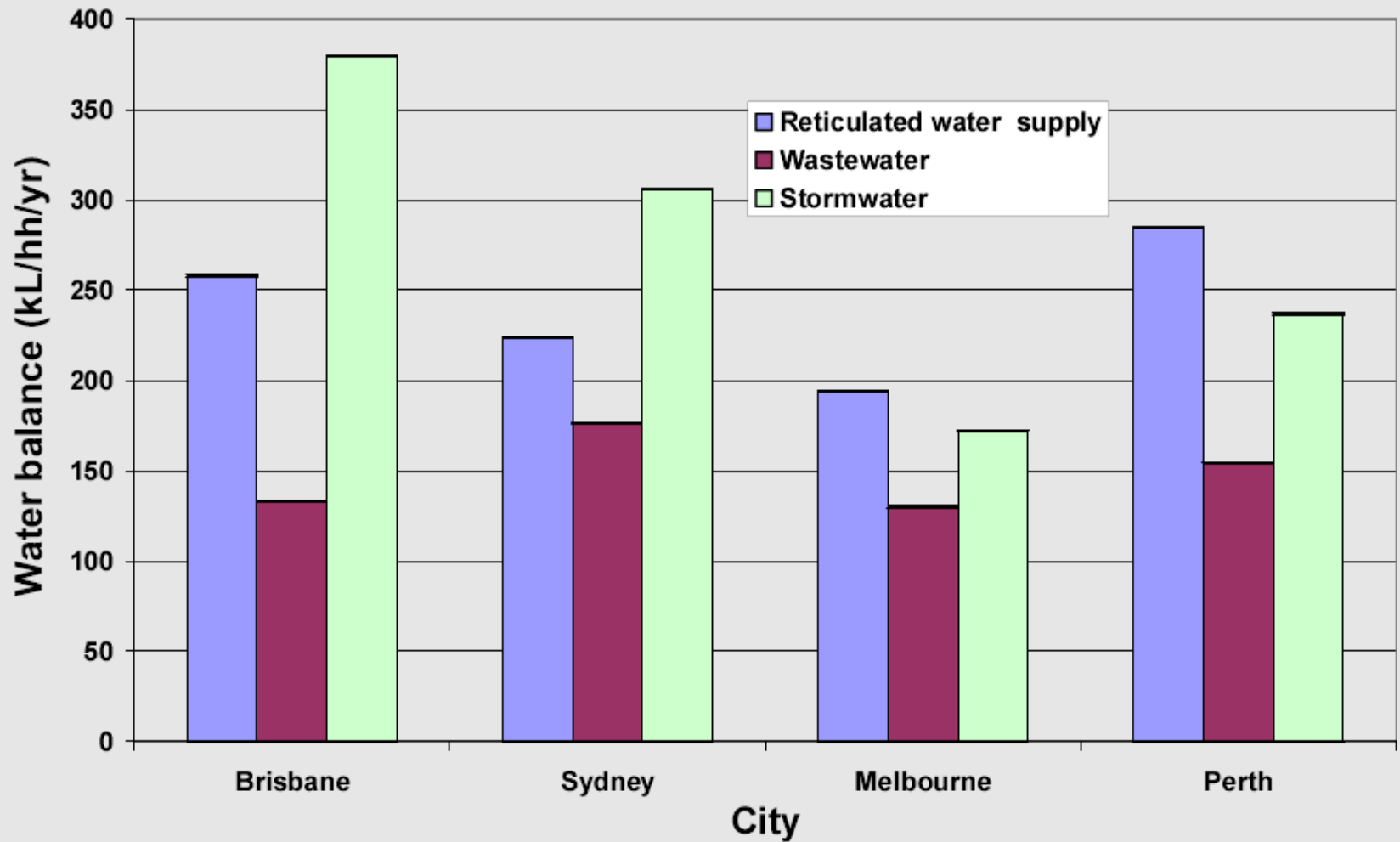
# Valley of potential

Preliminary design and environmental assessment processes continue toward the planning of the last undeveloped high-yield dam site available in southeast Queensland.

Floods filled part of the valley at the Traveston Crossing Bridge, just downstream of the dam site in June this year. The region receives so much rainfall that a dam at the proposed site would have filled eight times since 2002.

*This article is based on the presentation from the Engineers Australia Queensland Water Panel on 26 August 2008 and the Environmental Impact Statement by SRM and QWA released in October 2007. The video package of the presentation is available at [www.eldm.com.au](http://www.eldm.com.au). More information is available at [www.eldm.com.au](http://www.eldm.com.au).*

**Chart 8: Average annual water balances from households (Brisbane, Sydney, Melbourne, Perth)**





Brisbane - A city of opportunity

Bulk water supply right on its doorstep





# Brisbane River near Fernvale





# Lost on Lake Wivenhoe

Future methane





# Queensland lungfish

RH

Native to Burnett &  
Mary Rivers only

Introduced to urban rivers  
around Brisbane

Older than dinosaurs



**Nil recruitment to population on the Burnett  
since construction of Paradise Dam**



# How to create a river which will completely deoxygenate



- Most of the catchment was cleared before living memory > 90 years ago (N Stephens SCU Masters report)
- Farming intensity increased to the present
- Dept public works undertook major levee and drainage/floodgate work in late 60's & 70's permanently altering floodplain and creating massive acid sulfate soil problem



- Wetlands drained (Nasty Swamps)
  - Loss of flood tolerant vegetation
  - Growth of large areas of plants that are intolerant to inundation: and rot when flooded
  - Loss of TSS filtration and organic matter processing capacity (carbon capture & biofiltration)
  - Loss of long retention time for flood water (historically 100 days, now 4-5 days)
  - Created acid soils





**The  
culprits**



# **Drains & Flap Gates**





**01/12/2008**

Photo: D Pont



# Ballina Quays 2008



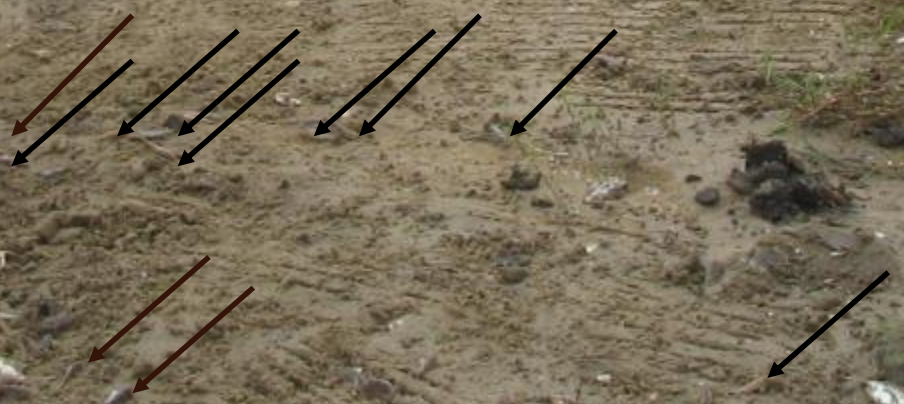
Photo courtesy of  
Northern Star





More than 30 / m<sup>2</sup> here  
(35t biomass at dump  
from Ballina quays  
alone)

1 fish per metre of beach  
for 15km + north of  
river.







- Acid sulfate soil exposure to air due to drainage lowering water table
  - Created huge amounts of acid through oxidation which is mobilised with rain
  - Created monosulfidic black ooze in drains which mobilises with rain
  - Created vast amounts of anoxic sediments driving deoxygenated acid ground water into river with array of toxic metals. Part of why the oyster industry has been decimated

# Juvenile oysters - Ballina (Richmond River Northern NSW)



The oyster was dead, its flesh exposed to the acid water



# Rain on the Toowoomba Ranges



Into the unknown



Now what?



Gradys Creek  
Upper Richmond



# Rain on the Toowoomba Ranges



Into the unknown



Still raining but water running out



Aquifer recharge area?



# Downstream of Conondale - Upper Mary River





# Darling Downs - Condamine tributary



100 years ago this was a proper river



## Uncle Bill at Oakey:

White man has ruined everthing,

cleared land,

pumped water,

nothing running into the rivers.

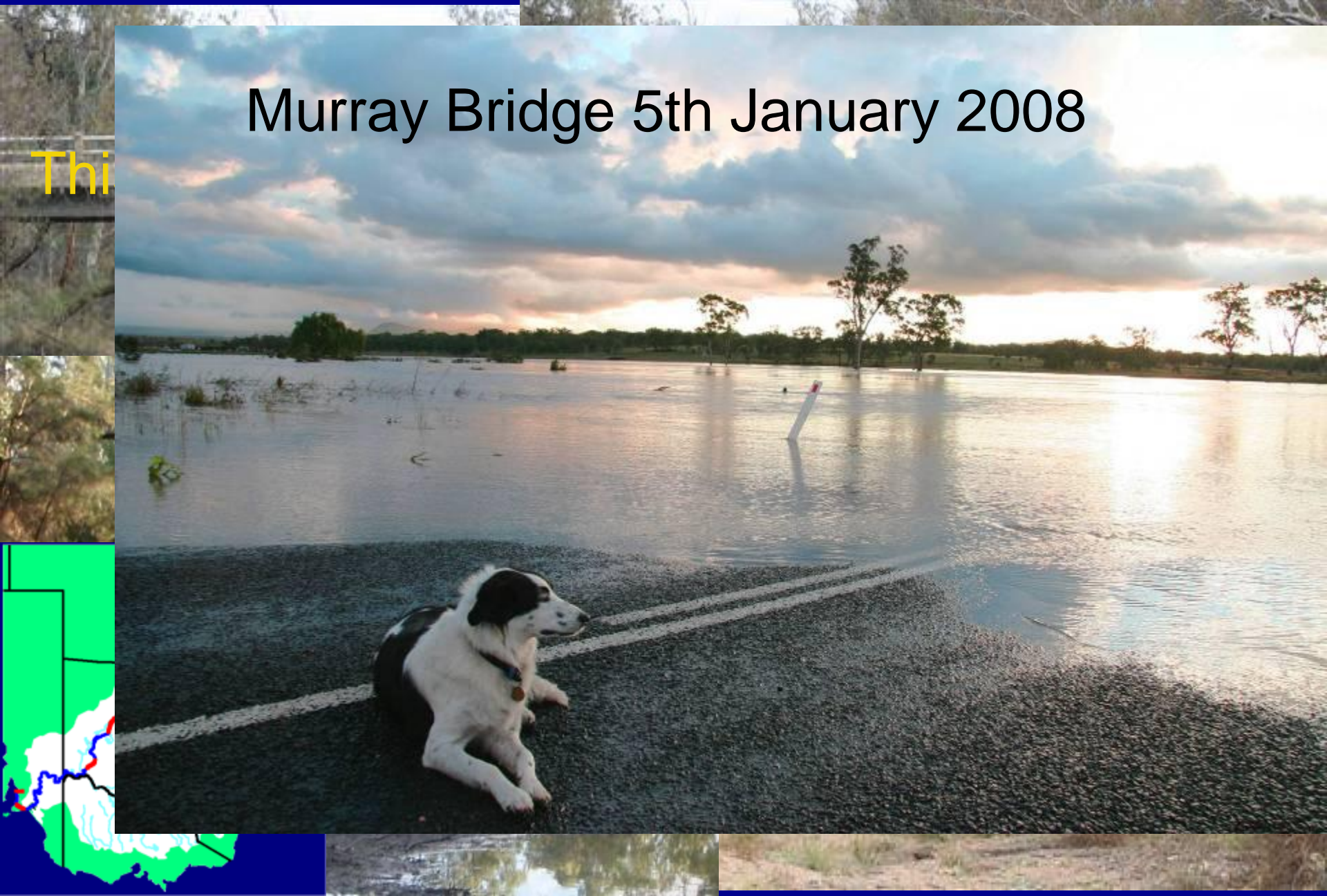
There was always water and fish, now no fish.

And it is gonna get worse.

# Condamine River - Near Dalby

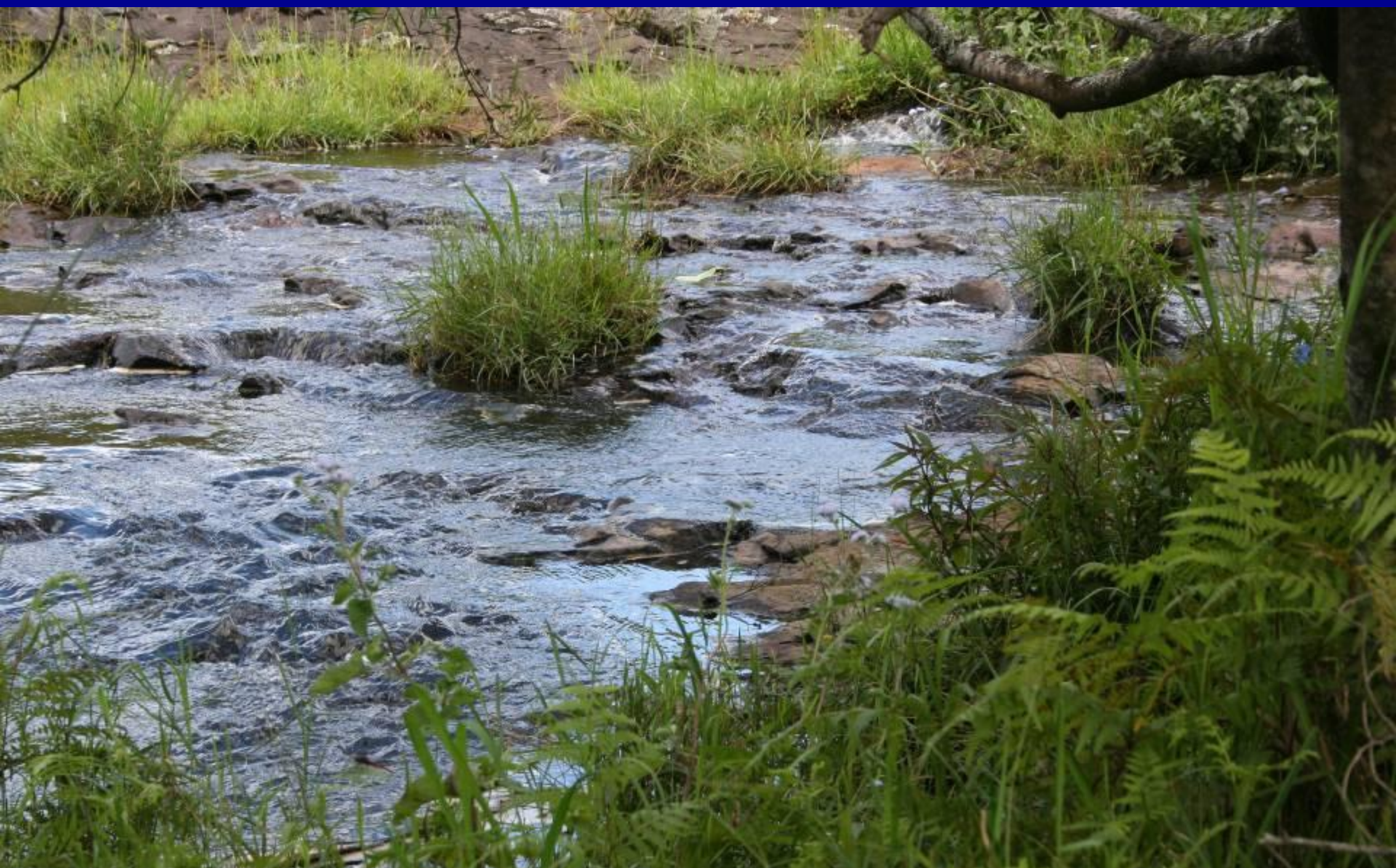
Murray Bridge 5th January 2008

Thi





This creek still flows weeks after rain



The land should function like a sponge



# Condamine River downstream of Condamine



Two log jams ahead



That's the bottom



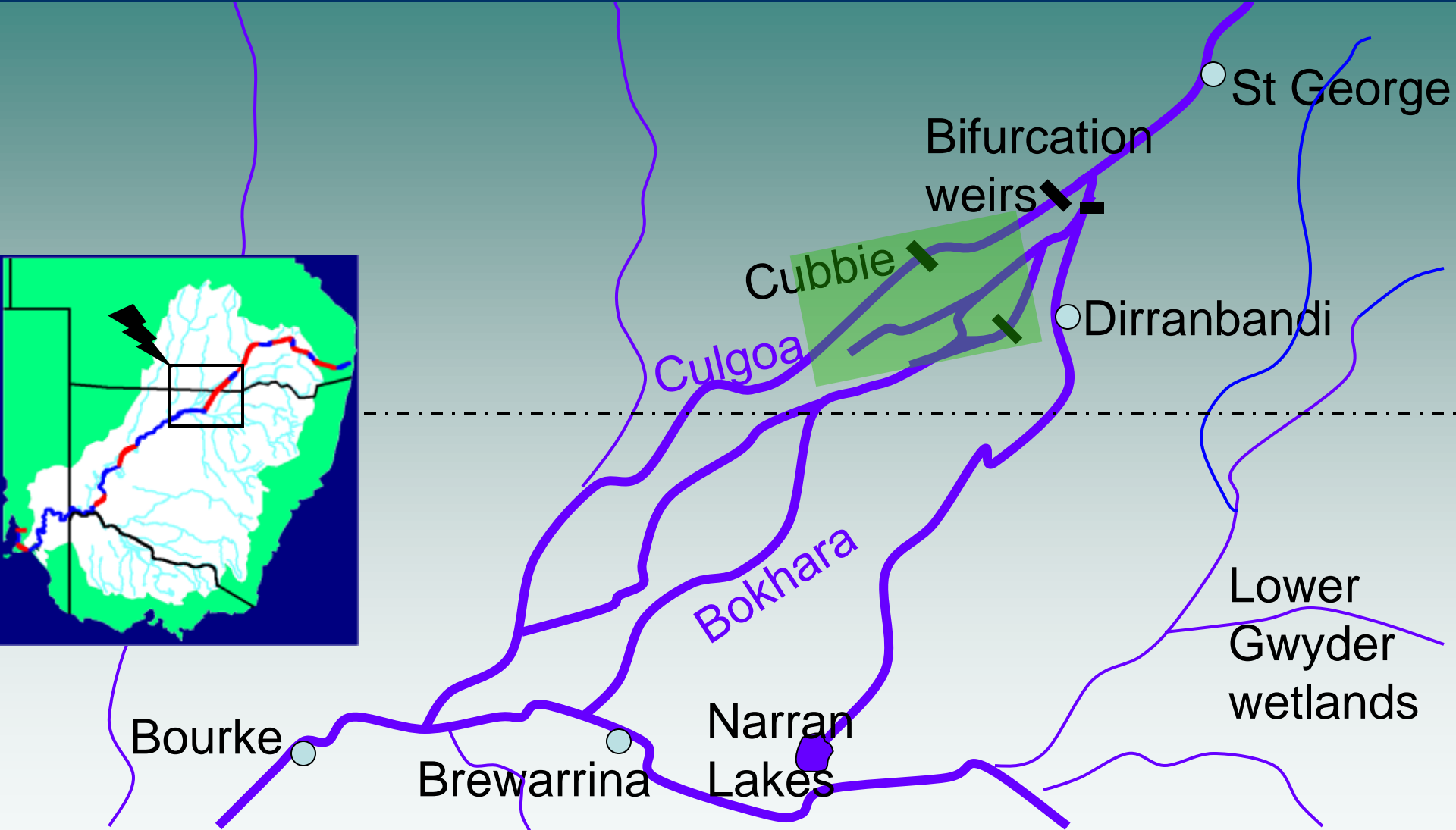
Auntie Mary

## Auntie Mary

We used that old boat there to get across the river to school. It was deep and clear with reeds along the sides. Kids swam in it and drank it. You tell them about our river because I don't want our children to have to live with it like this



# Lower Balonne Floodplain



An inland delta

# Bifurcation weir



Balonne Minor River



# One of Cubbie's channels



It may be the biggest but it is 20% of extractions in the area

# Healthy coolibah trees





# Dying coolibah trees



They need overland flow (flood) periodically



# Brewarrina Fish Traps





# Creek????



HOSPITAL CREEK



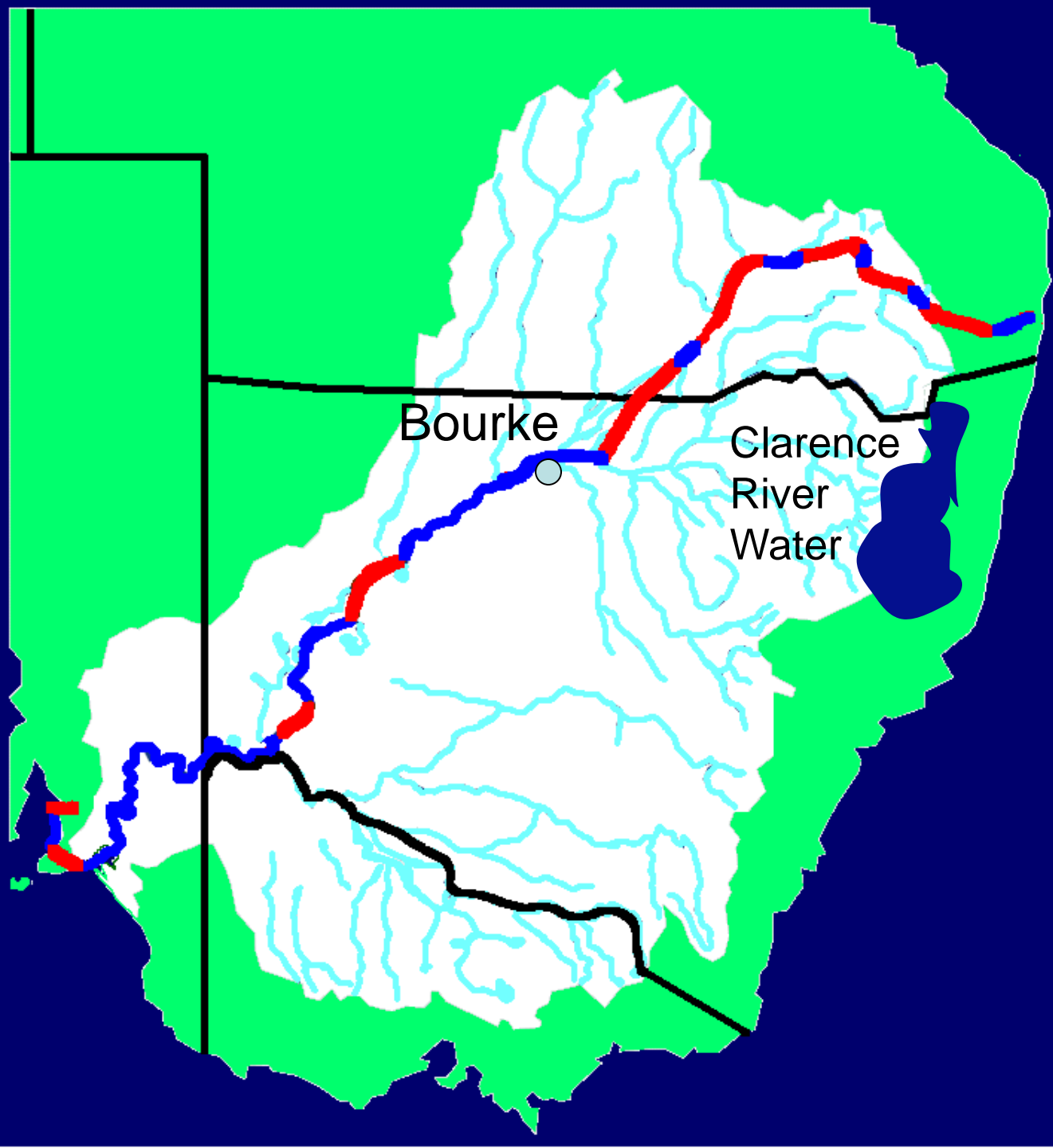
?



# Bourke council meeting







If we have  
used all the  
water in our  
catchment...

Let's have  
someone  
else's

# Typical Darling River scene





# Algal bloom



Between Tilpa and Wilcannia

# Pelicans and shags





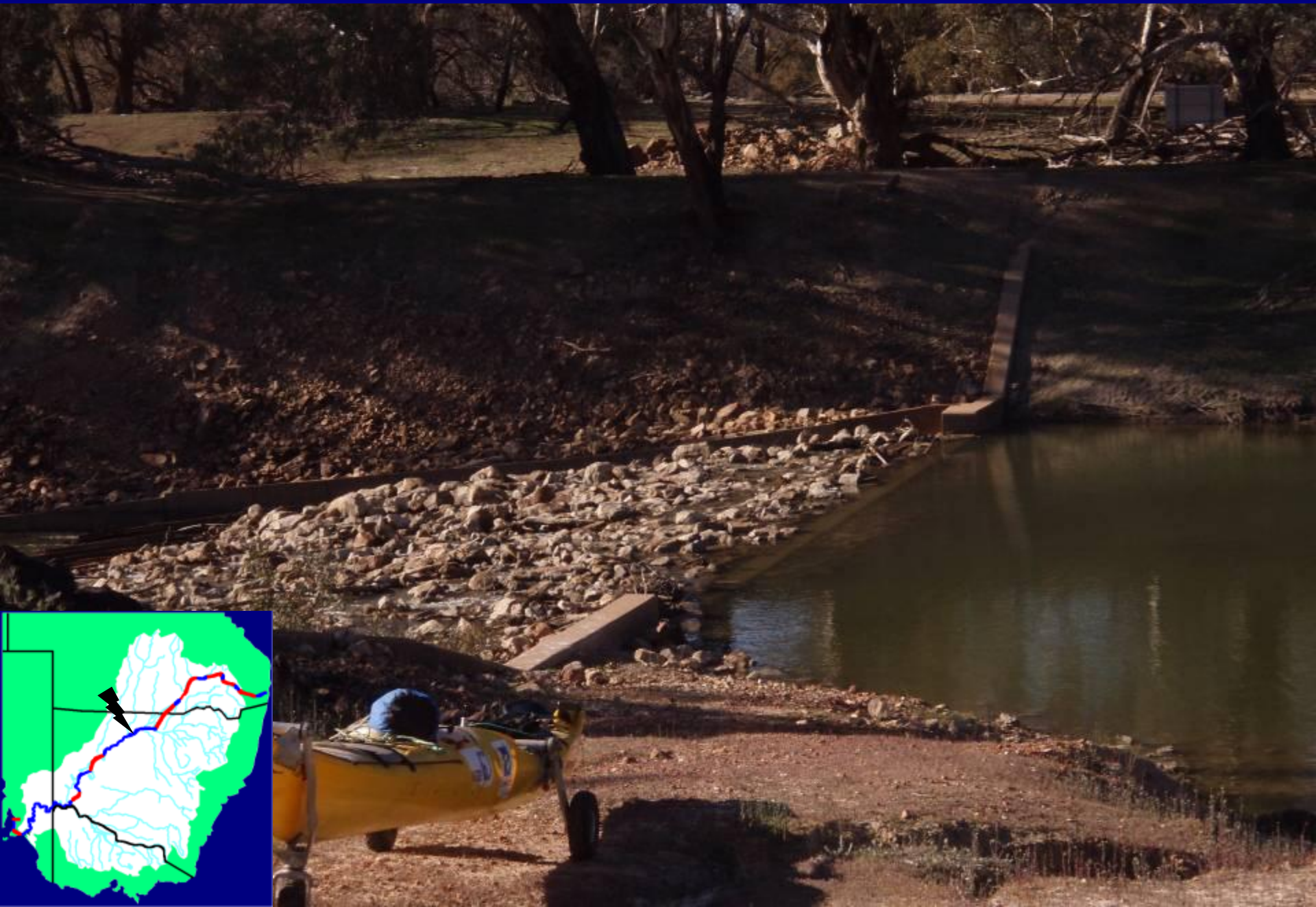
# Essential for fish



In the “models”? Yeah right.



# Weirs on the Darling are not big





Better to be going down than up



A fibreglass boat would never cope

It's fine for European carp





# Big suction pumps







One of the smaller suction pipes

500 dia





Can only pump when the water level reaches the suction pipes





Small but neat - St George





Big pumps upstream of Bourke





Screw pump



# More screw pumps





And some more







Big centrifugal pumps





Typical pumps for orchards Darling River but Murray water - above lock 10



# Murray River



# Darling River



Big pump station on the Murray

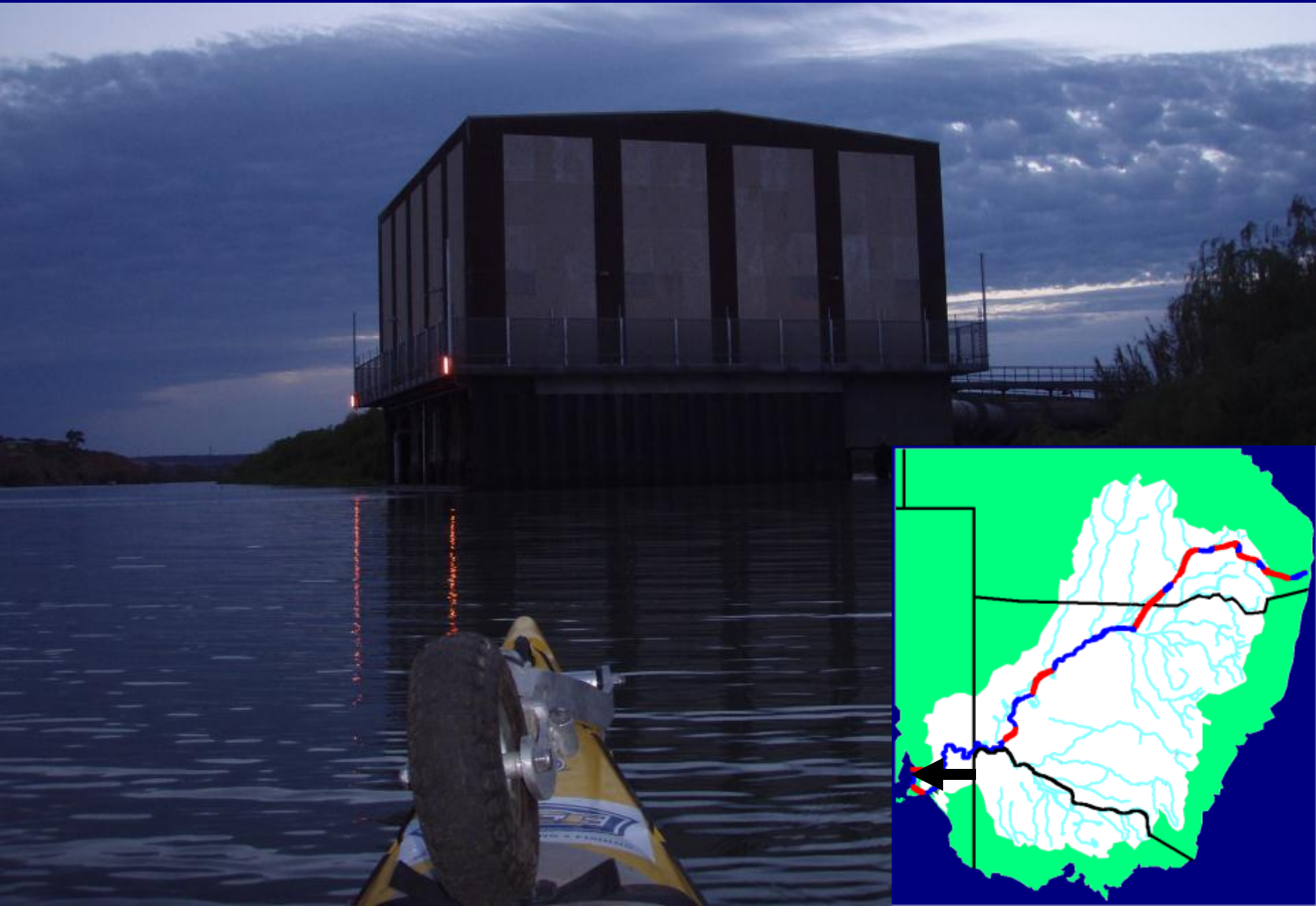


# Whyalla Pump Station



Pumps water out of the basin and all the way to the other side of Spencer Gulf

# Pump Station for Adelaide







Pumping to orchards on the Murray

# Above the Murray without irrigation - not cleared





# What water can do to this area





But it can also do this



- Salt stalagmites





Lock near Renmark

# Crossing the barrage

Lake  
Alexandrina

The  
Coorong





Never happened before; ever!

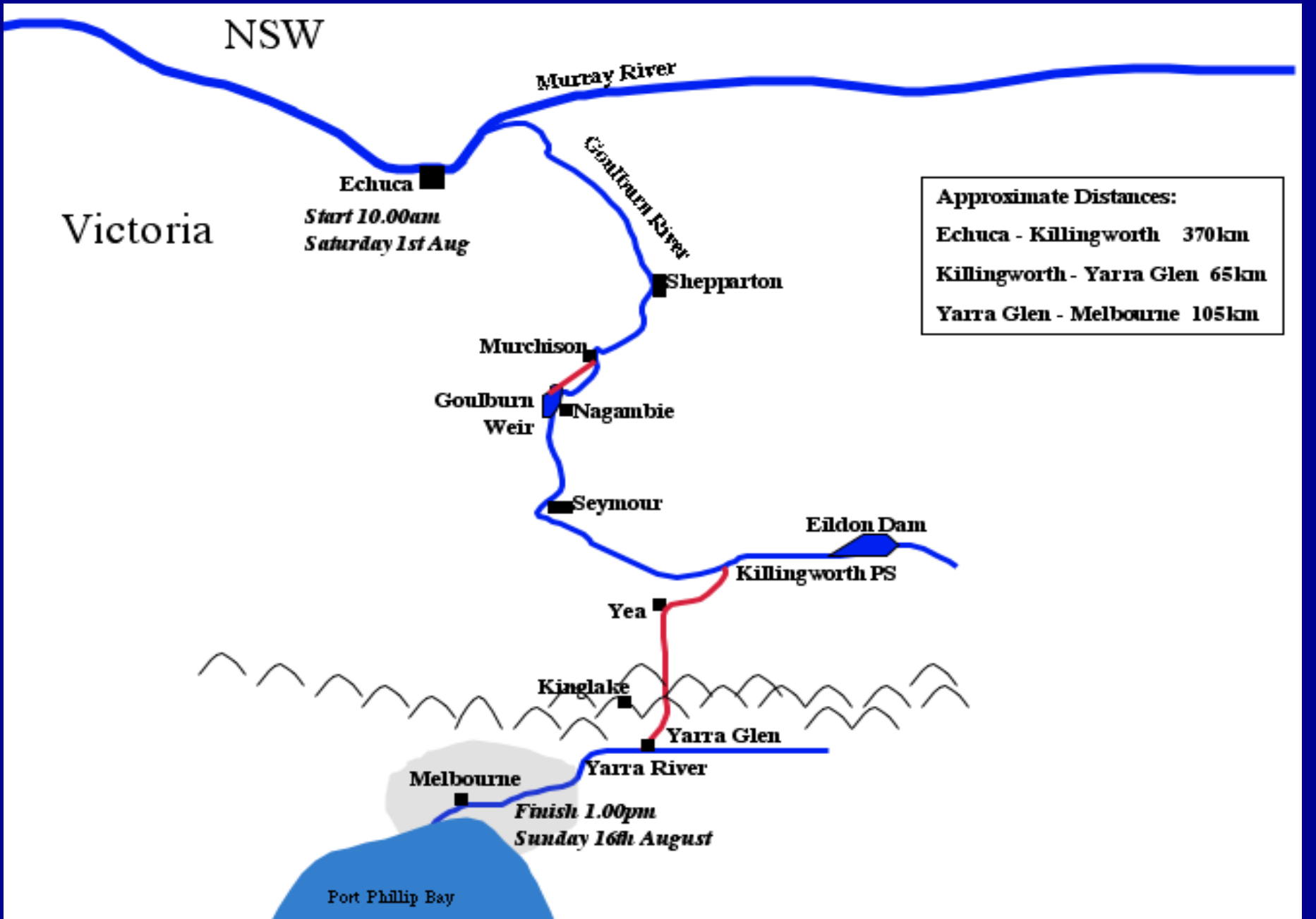




Snowy  
River



# Across Victoria August 2009



# Modernisation project

Spun as  
win:win:win

- Environment gets 1/3
- Industry & farmers get 1/3
- Melbourne gets 1/3



How much water is created for the river?

1/3rd of what?







The pipes

dia. 1700

## TWO MAIN LESSONS FROM 2007

- Much of what I saw is just a **DRAIN!**

People need to understand what a river is and the concept of the land as a sponge. Unless we understand that we are doomed to fail.

- To view society from outside is very powerful - but it increases one's frustration with humanity



But hey...

This guy tells it all in less than a minute:

<http://www.global-mindshift.org/memes/wombat.swf>