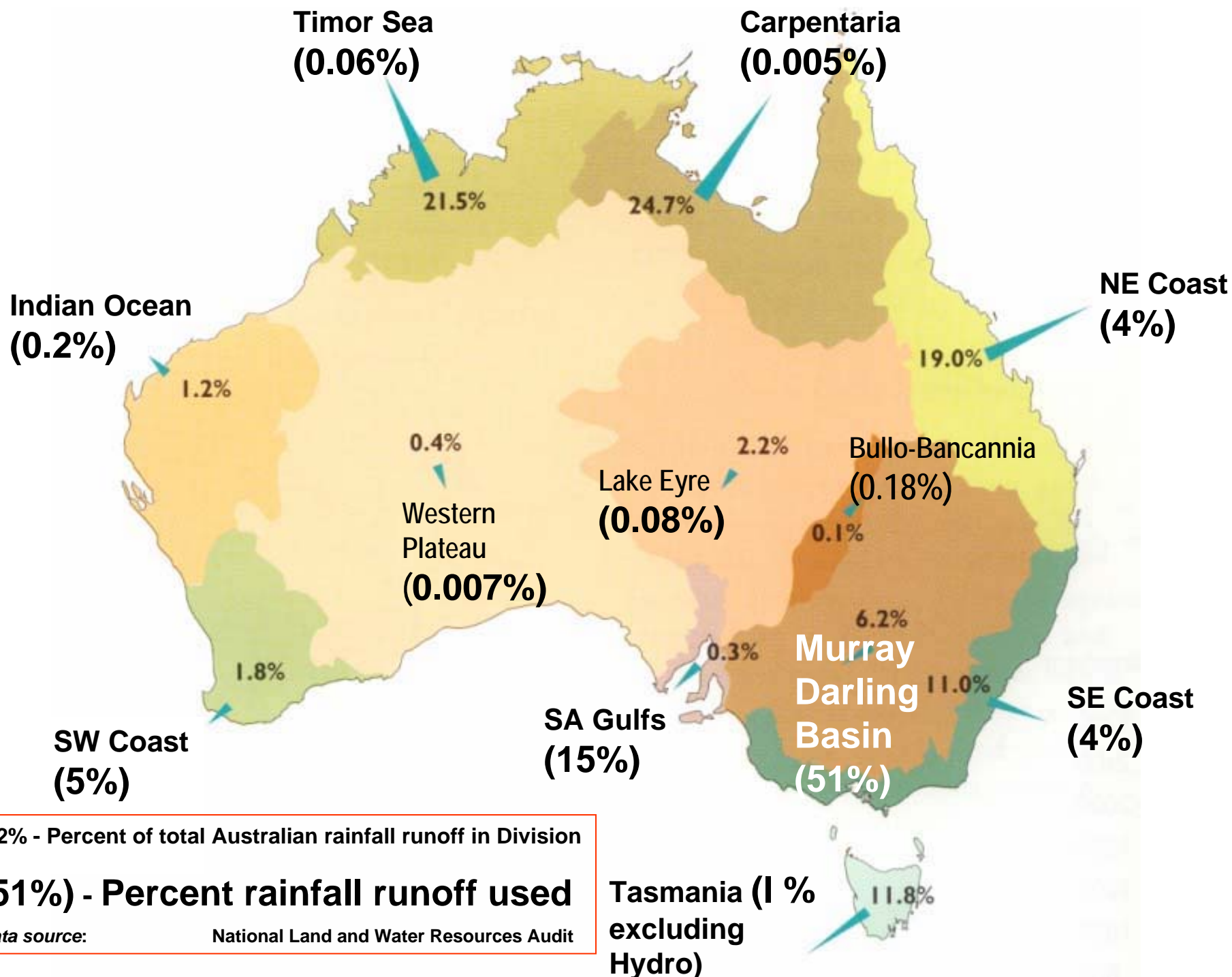


Updated from a presentation to the
STATE HISTORY CONFERENCE, RENMARK, 2003

EVOLVING MANAGEMENT OF THE MURRAY DARLING BASIN'S RESOURCES

John C Radcliffe AM FTSE





VARIABILITY OF RIVER FLOW

The Ratio between maximum and minimum annual flow

The Darling River	4 700:1
-------------------	---------

The Murray River	15.5:1
------------------	--------

The Amazon River	1.3:1
------------------	-------

THE MURRAY DARLING SYSTEM

1829-1836 – Exploration by Sturt and Mitchell

1838-1842 – Stock route to Adelaide along Murray

1840-1850 – Squatters take up river frontage

1850 – Prize for first two steamers to reach Darling Junction

1863 – Inter-colonial Conference (NSW, Victoria, SA) on river use (mainly navigation)

1881 – First reclaimed swamp irrigation, Wellington

1887 – Irrigation commenced, Mildura, Renmark (Chaffey Brothers), and SA village settlements in 1890s

HOW TO MANAGE THE RIVERS?

1893 – Corowa Conference on Trade – beginnings of Federation

1901 – Federation of Australia created

1902 – Corowa Conference on lack of agreement on use of Murray Waters.

A Royal Commission followed:-

- *“The Murray and its tributaries must be looked at as one”*
- Proposal for guaranteed minimum flow to South Australia
- Need seen for a single management body representative of, and independent of States and Federal authorities

1914-1915 – SEVERE DROUGHT!



The Murray becomes a trickle
Salinity levels at Morgan reach 10,000EC

GOVERNMENTS FORCED TO ACT

1915 – after 13 years of negotiation, Commonwealth, NSW, Victoria and SA developed the *Murray Waters Agreement*, to

◆ Construct:

- A major storage on Upper Murray
- Lake Victoria
- 26 weirs and locks between Echuca and Blanchetown
- 9 weirs and locks on Murrumbidgee or Darling

◆ Coordinate the States constructing the storages and locks

◆ Regulate the river and share the water

THE RIVER MURRAY COMMISSION

The River Murray Commission was formed by the governments of the Commonwealth, NSW, Victoria and SA. Each government appointed a single Commissioner to the Commission

The first meeting was held on 14 February 1917



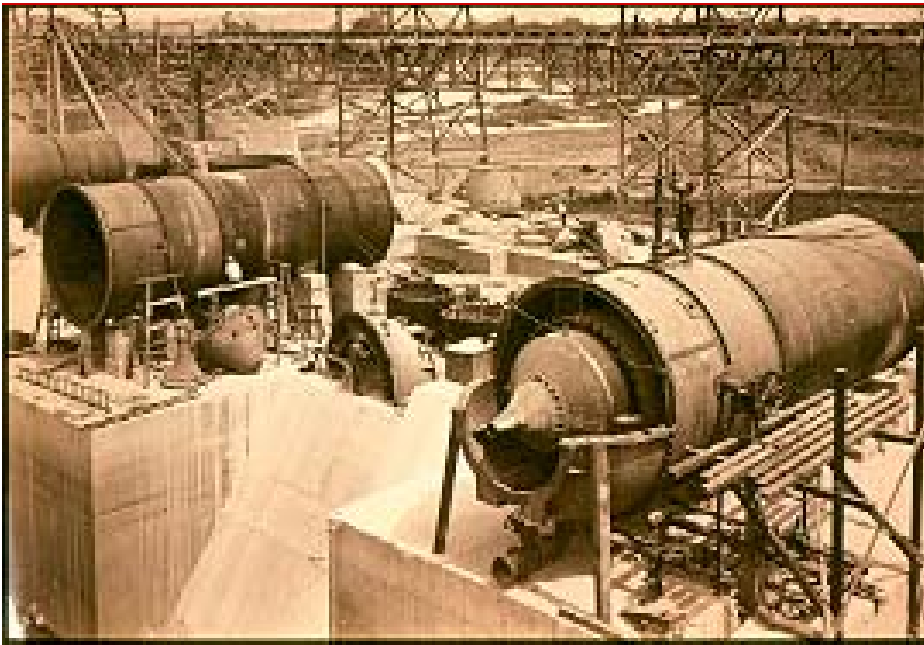
The first Commissioners and Commission Secretary at the opening meeting

THE HUME DAM

Commenced 1919



Testing the model



Under construction, 1928 – using horse-drawn trolleys and drays

THE HUME DAM

Completed 1936, enlarged 1954-61



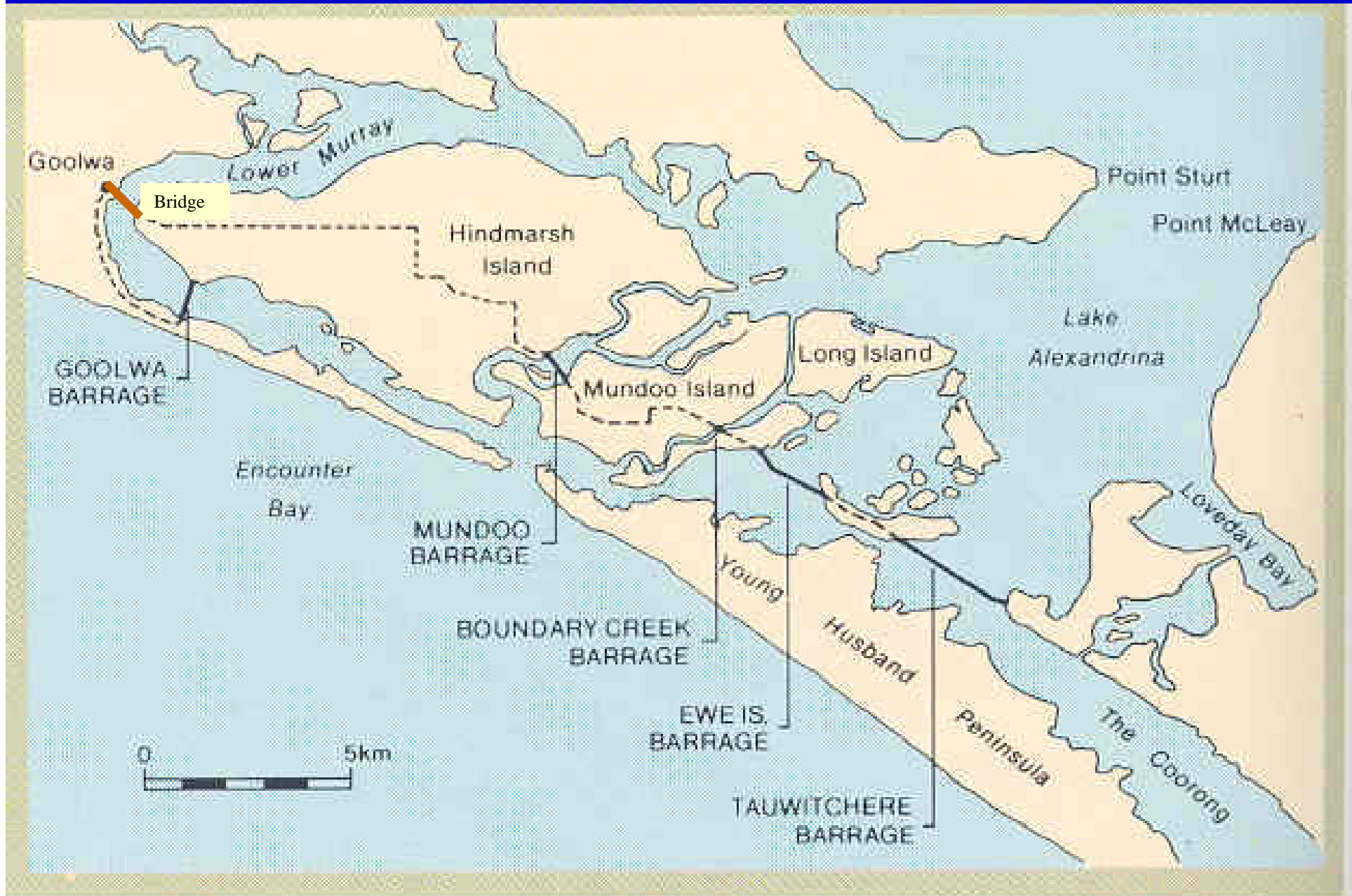
THE LOCKS Lock 1, Blanchetown, completed 1928

As navigation's importance declined, only 16 of the originally planned 35 locks and weirs were completed, others abandoned





THE BARRAGES 1940-5, stop seawater entering Lakes



DEVELOPMENT

1917-25 - Soldier Settlements at Kingston, Waikerie, Berri, Coomealla, Red Cliffs, Shepparton, Swan Hill,

1928 – Lake Victoria Storage completed

1944 – Morgan-Whyalla pipeline built

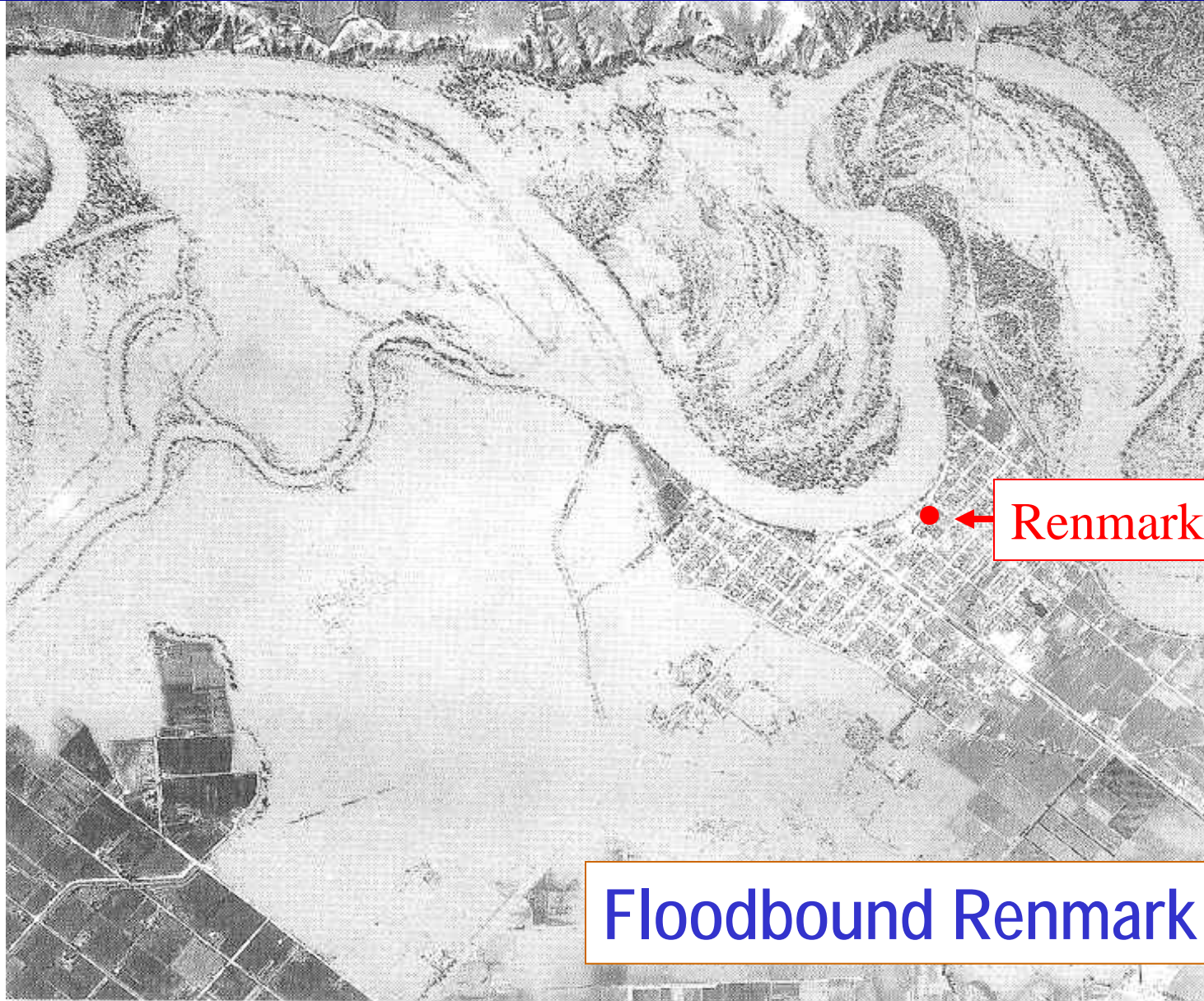
1946 – Soldier settlement - Cooltong, Loxton, interstate

1949 – Snowy Mountains scheme commenced

1950 – Problem of increasing salt was recognised

1954 – Mannum-Adelaide pipeline built

1956 – Largest 20th Century River Murray Flood



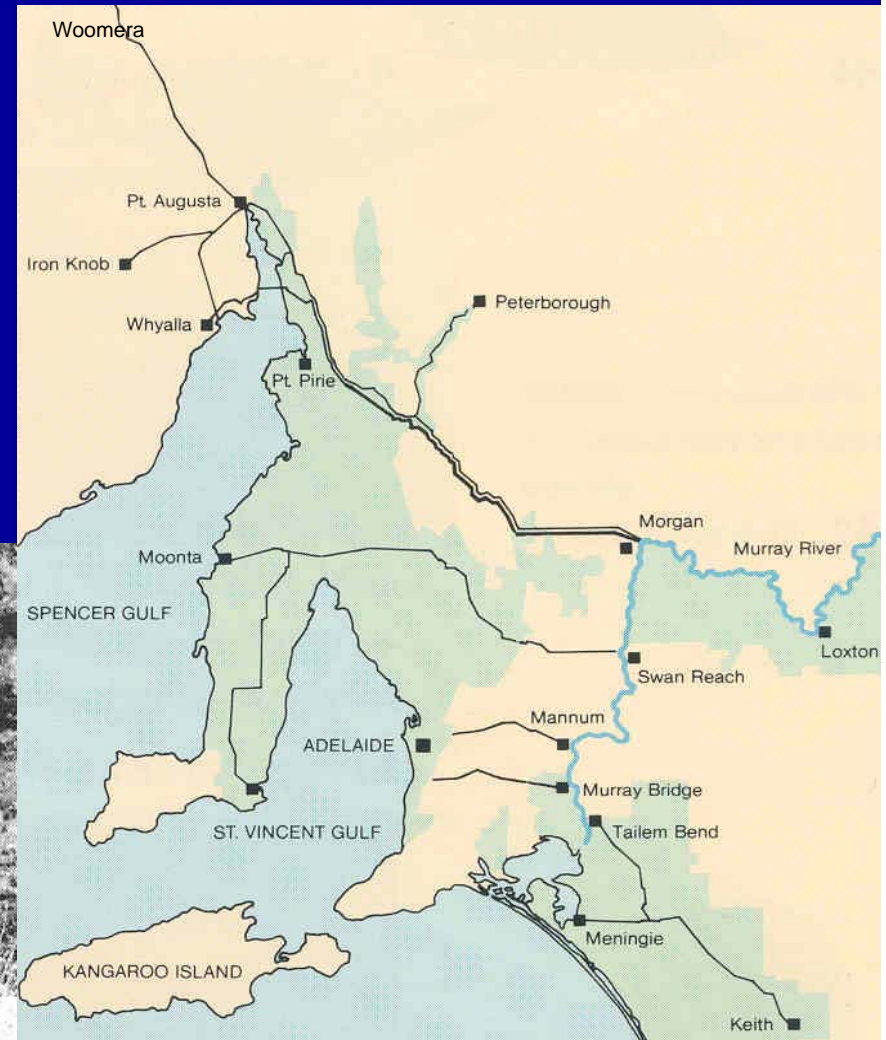
Renmark Hotel

Floodbound Renmark 1956

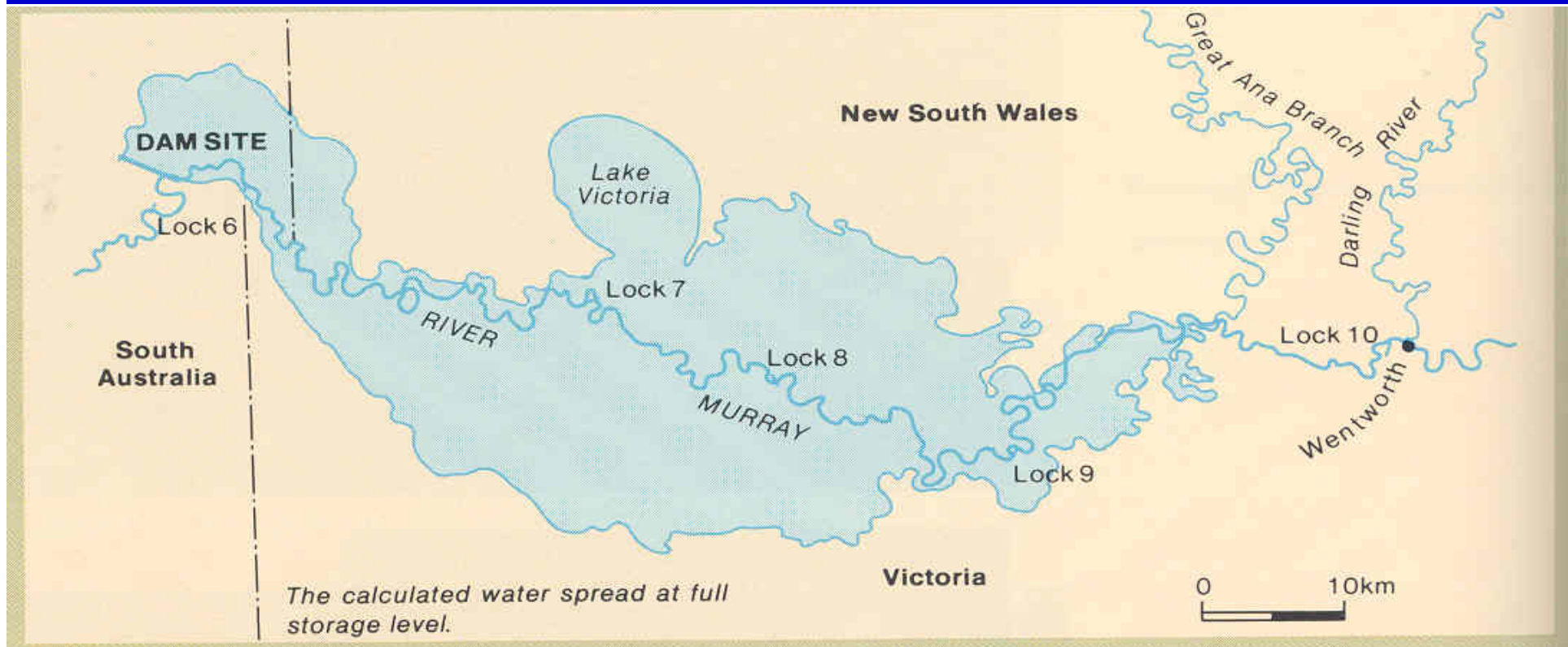
SA DEPENDENCE ON THE MURRAY

1958 – SA Govt. writ against Commonwealth, NSW, and Victoria over diversion of Murray water in the Snowy Scheme.

- *“SA water entitlement unsafe!”*
- *“Future development at risk!”*
- But SA water 10% overcommitted!
- Here was a bargaining chip!



CHOWILLA DAM - approved for construction 1961



1966 – Estimated cost \$28m,

Lowest tender \$68m

1968 – 260 Computer models showed original model didn't provide dilution flows, underestimated Victorian use, the evaporation, and in the 1967 drought, showed Dam would become very saline if low.

CHOWILLA vs DARTMOUTH

An alternative dam was proposed on the Mitta Mitta, Dartmouth.

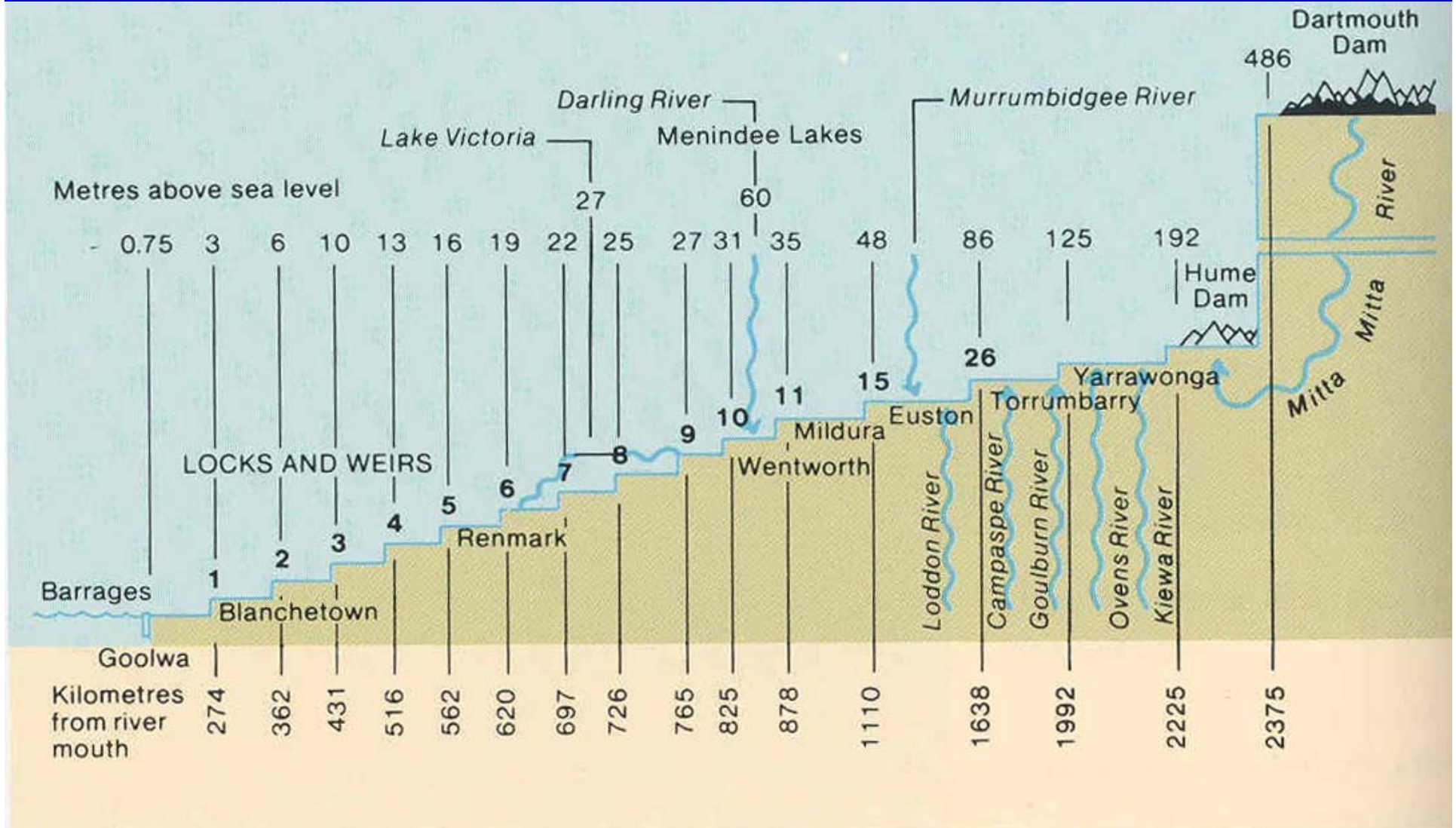
Three SA governments came and went during the debate - Some proposed both dams be built – quite unaffordable.

Construction of 4,000,000 ML Dartmouth Dam began in 1972 after SA had negotiated an increased water entitlement.

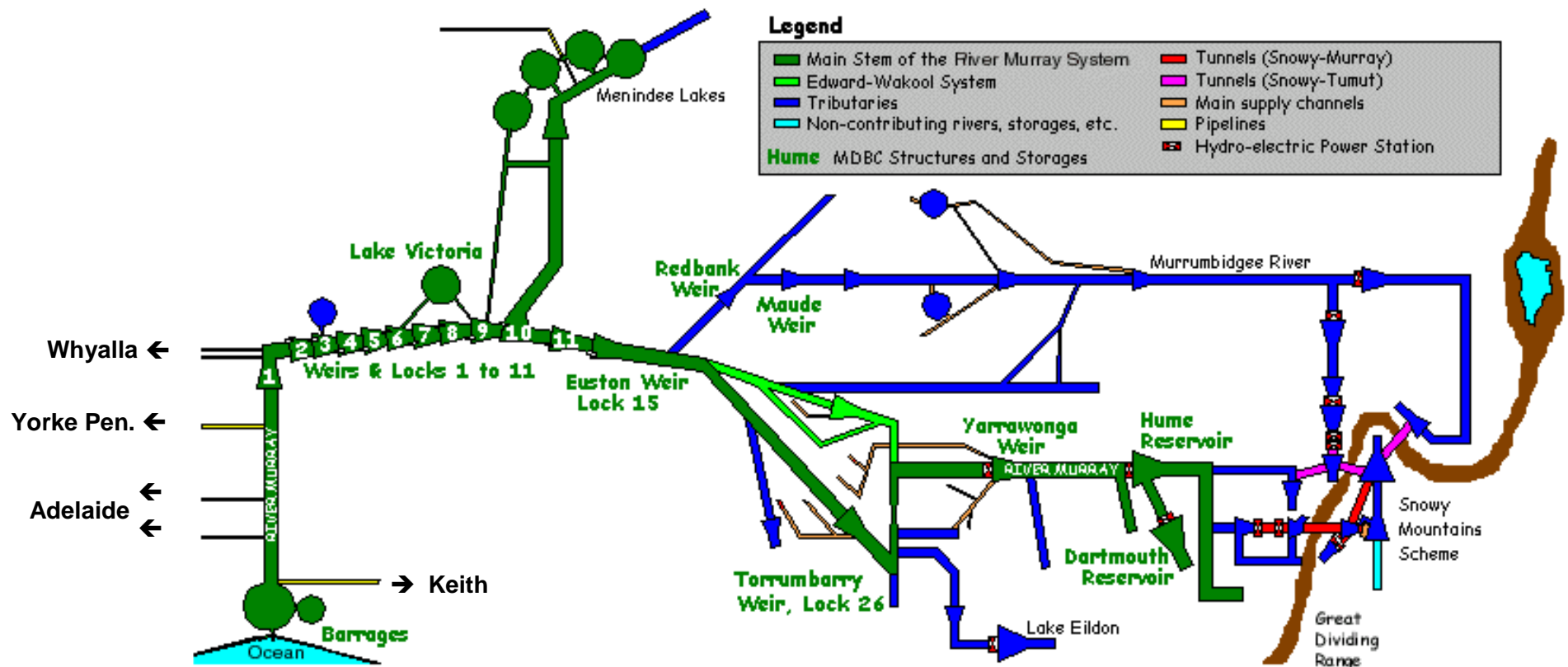


THE RIVER MURRAY SYSTEM

Longitudinal section



HOW THE RIVER MURRAY IS RUN



THE SOUTH AUSTRALIAN SYSTEM

SA River Murray Diversion

Megalitres per annum

SA Metropolitan

130 000

SA Country

50 000

Irrigation

573 000

Other stock, domestic, industrial

13 000

Evaporation & seepage

800 000

TOTAL USE

1 566 000

ENTITLEMENT

1 850 000

1981 – Drought – Murray Mouth closes



1985-88 - MANAGEMENT OF THE MURRAY DARLING RESOURCES CHANGED

**from water,
to water, land and the environment**

1985 – Murray Darling Basin Ministerial Council
established

1988 – New Murray Darling Basin Agreement ,
Murray Darling Basin Commission formed,
2 Commissioners - Commonwealth, NSW, Victoria, SA

1993 – Queensland joined, ACT added as an observer

Murray Darling Basin Ministerial Council

Murray Darling Basin Commission

Community Advis.C'tee

Staff of the Commission

Water Business

Managing Basin Sustainability

Government Agencies

Common
wealth

NSW

Victoria

South
Australia

Queens-
land

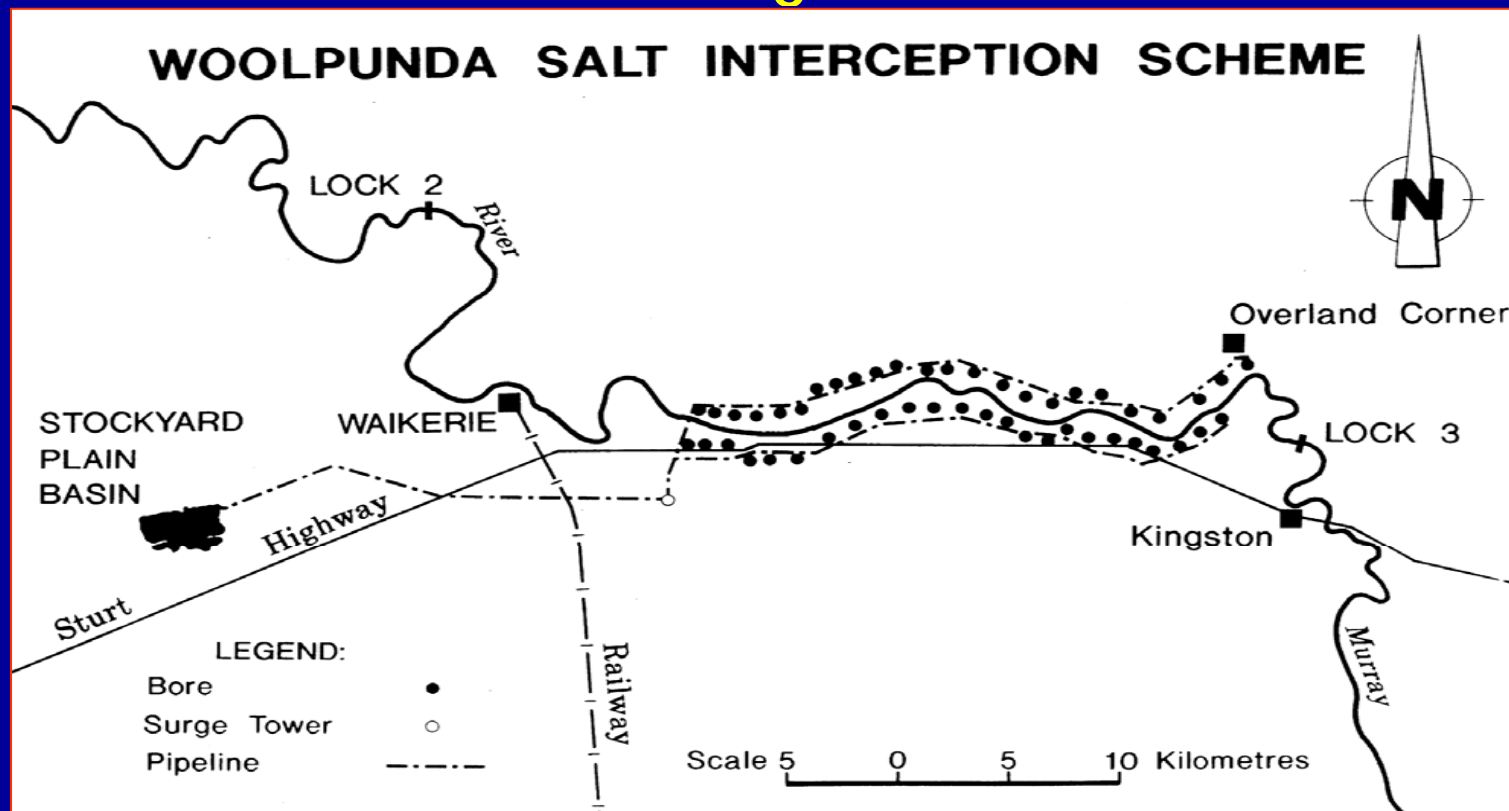
ACT

The Community

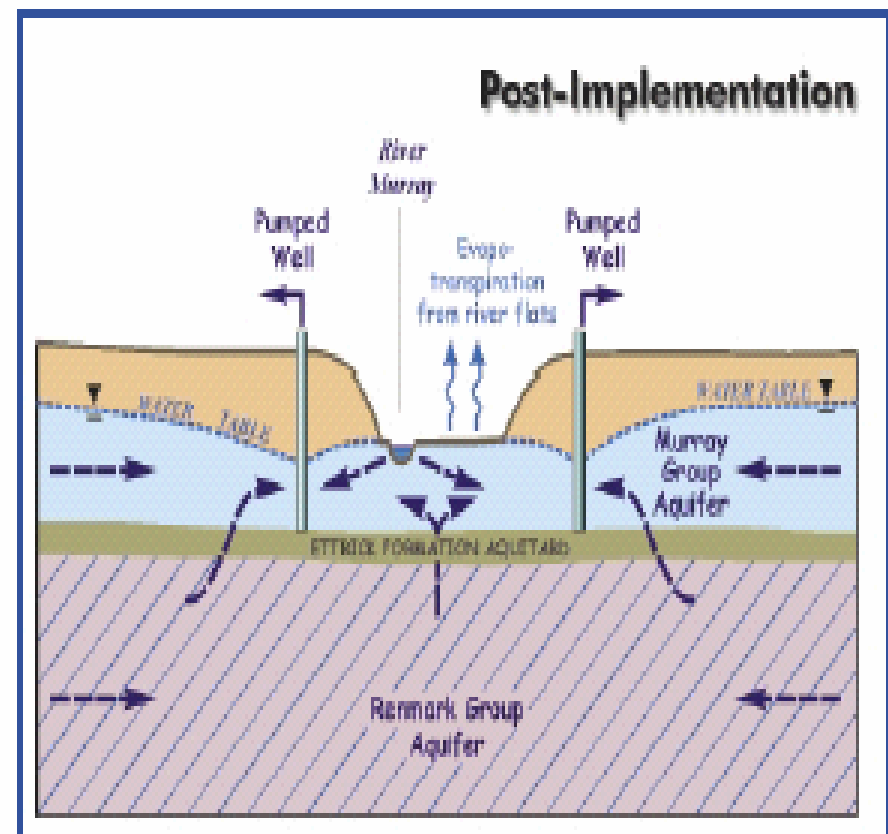
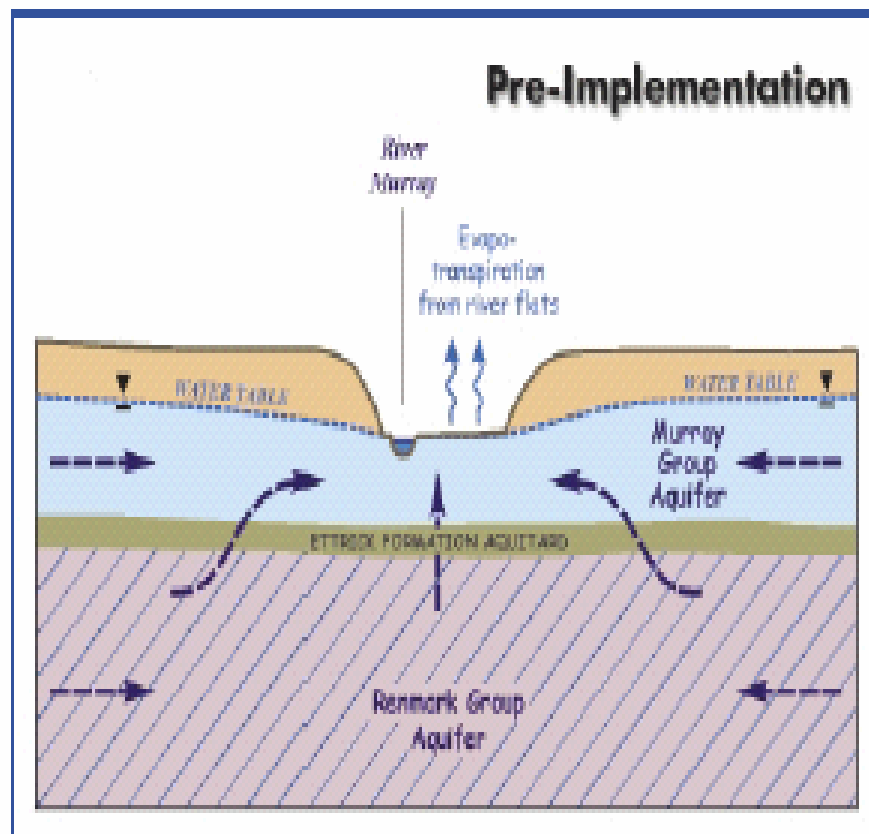
MANAGING FOR THE FUTURE

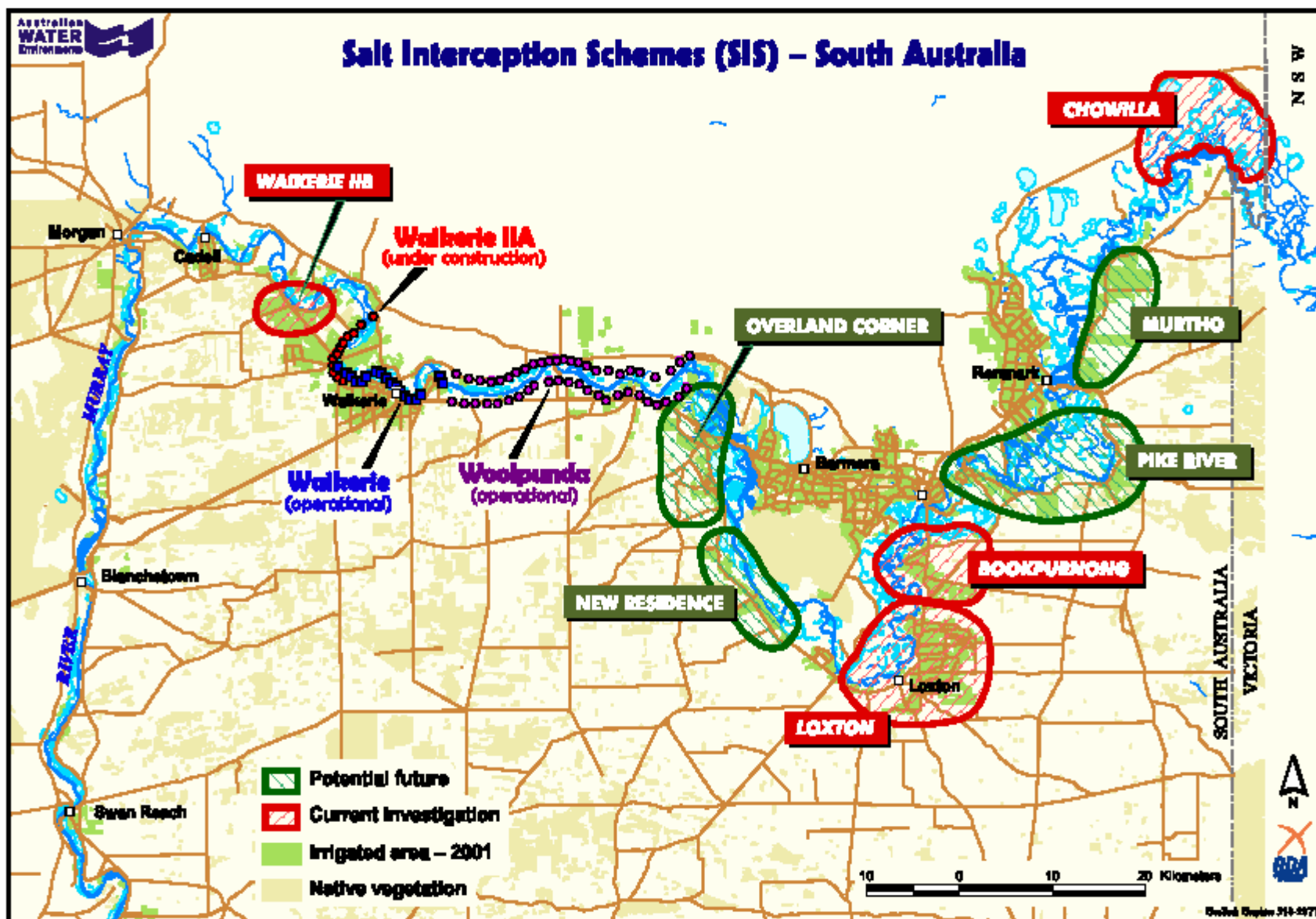
1989 – MDB Natural Resources Management Strategy – recognised needs of the Environment

1992 – Salinity and Drainage Strategy – New initiatives, salinity credits between states – Morgan below 800EC 95% of time.



Salt flows before and after interception





1992 – Rehabilitation of remaining irrigation schemes in SA begun

1994 – COAG Water reform – Separation of water entitlements from land titles. Trading of water entitlements introduced

1997 – Transfer of Govt. Highland Irrigation Districts to grower ownership

1998 – Imposition of “Cap” on new water allocations

2002 – Again dredging a channel to reopen the Murray mouth

2003 – Proposals to secure additional water for the Environment
350 000, 750 000 or 1500 000ML per annum?

THE QUEST FOR BETTER MANAGEMENT CONTINUES

It seems not!

In 2007, the Prime Minister proposed a completely new way of managing the Murray Darling Basin

THE NEW MODEL - 2007

Basin managed solely by the Australian Government

- Creates new Murray Darling Basin Authority
- Appoints 5 full-time Commissioners
- Prepares catchment & aquifer plans with sustainable caps
- Manages rivers, flows, channels, storages, environment
- Sets water trading rules, administers entitlements
- Manages water quality, salt credits, interception schemes
- Accredits farm dams, bores, tree plantations
- The MDBA will be audited by National Water Commission

Australian Government will invest \$10 000 000 000.

- Includes \$3b for fixing over-allocated entitlements