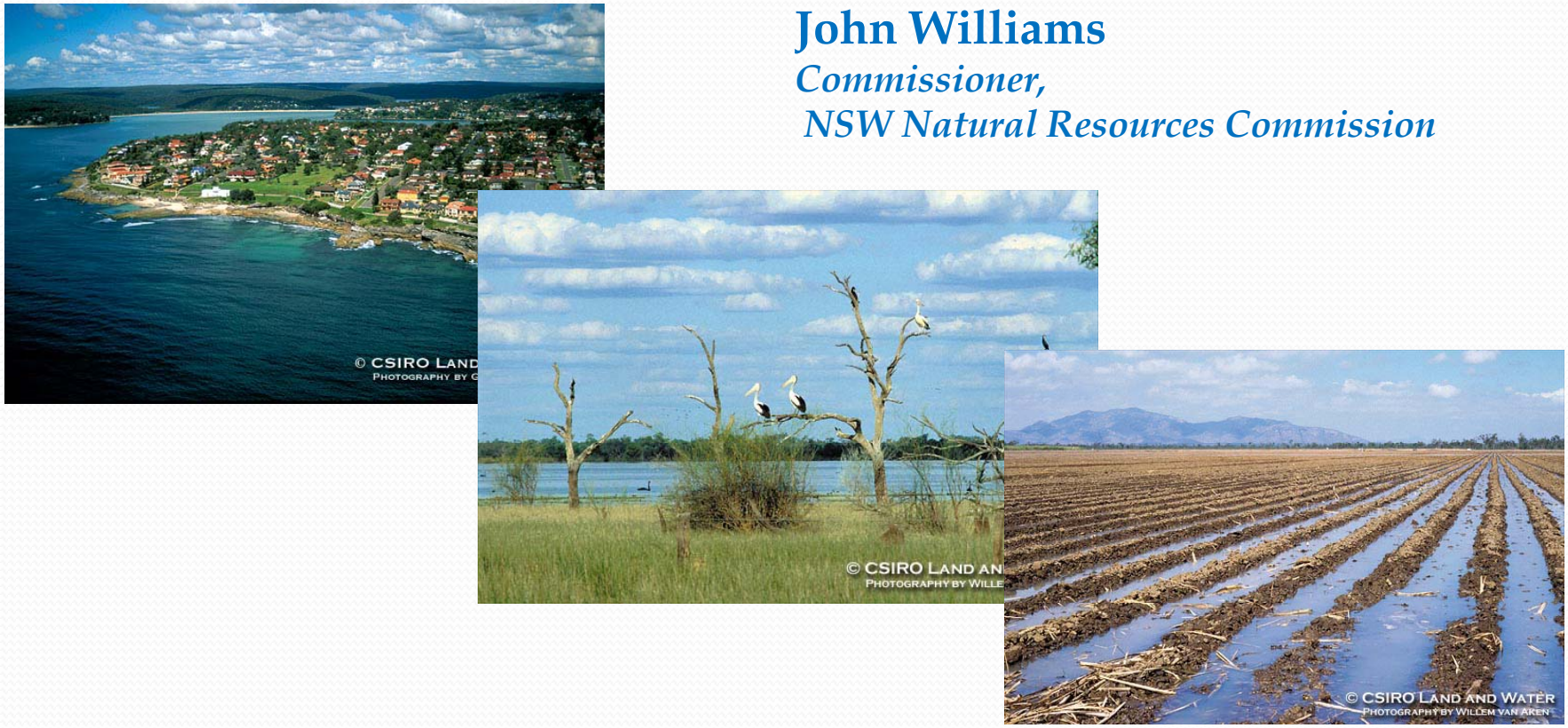
The Future of Catchment Management

Dr John Williams
NSW Commissioner
for Natural Resources

The Future of Catchment Management

Addressing water resource tradeoffs between bulk users, the environment and urban consumption



John Williams
Commissioner,
NSW Natural Resources Commission

Annual water availability/use in Australia

(NLWRA, ABS.)

- Mean Annual run-off 387,184 GL
- Annual Groundwater Yield 25,780 GL

Water Consumed: 24,908 GL

Agriculture	16,660 GL
Forestry and Fishing	27 GL
Mining	401 GL
Manufacturing	866 GL
Electricity and Gas	1,688 Gl
Water supply, Sewerage/Drainage	1,794 GL
Household Water	2,182 GL
Other	3,973 GL

Population pressure in coastal areas

75% of rural population in coastal Local Government Areas

Coastal growth rate - 2% (60% higher than national average of 1.2%)

NSW

Kempsey – 2.4%

Shoalhaven – 2.2%

Source: Alan Stokes, National Sea Change Taskforce and Australian Bureau of Statistics

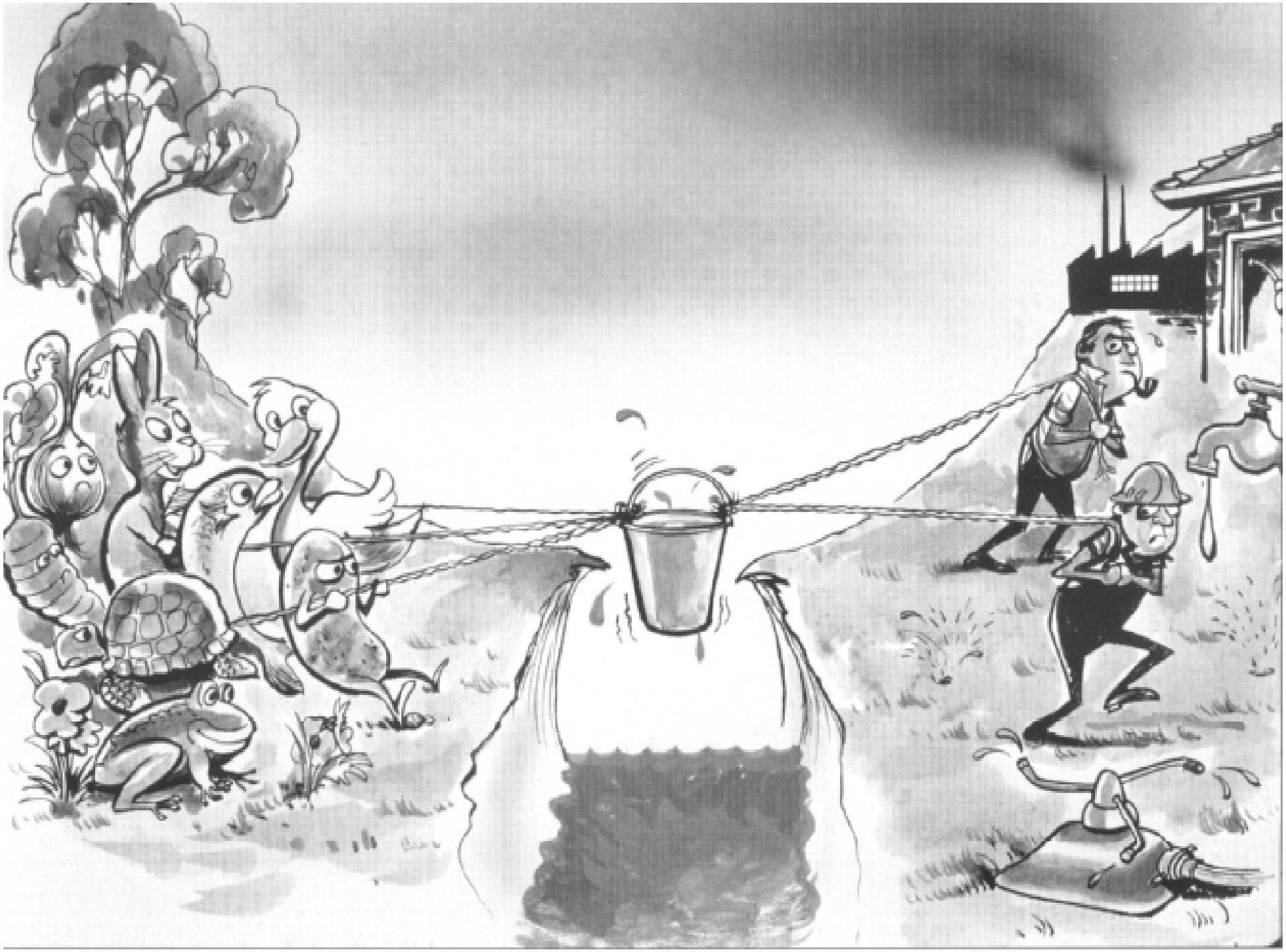
Image: NSW Department of Natural Resources

What are we planning for?

State-wide targets – Water

- Riverine ecosystems
- Groundwater systems
- Marine waters and ecosystems
- Wetlands
- Estuaries and coastal lake ecosystems

Tension between water extraction and water for river health



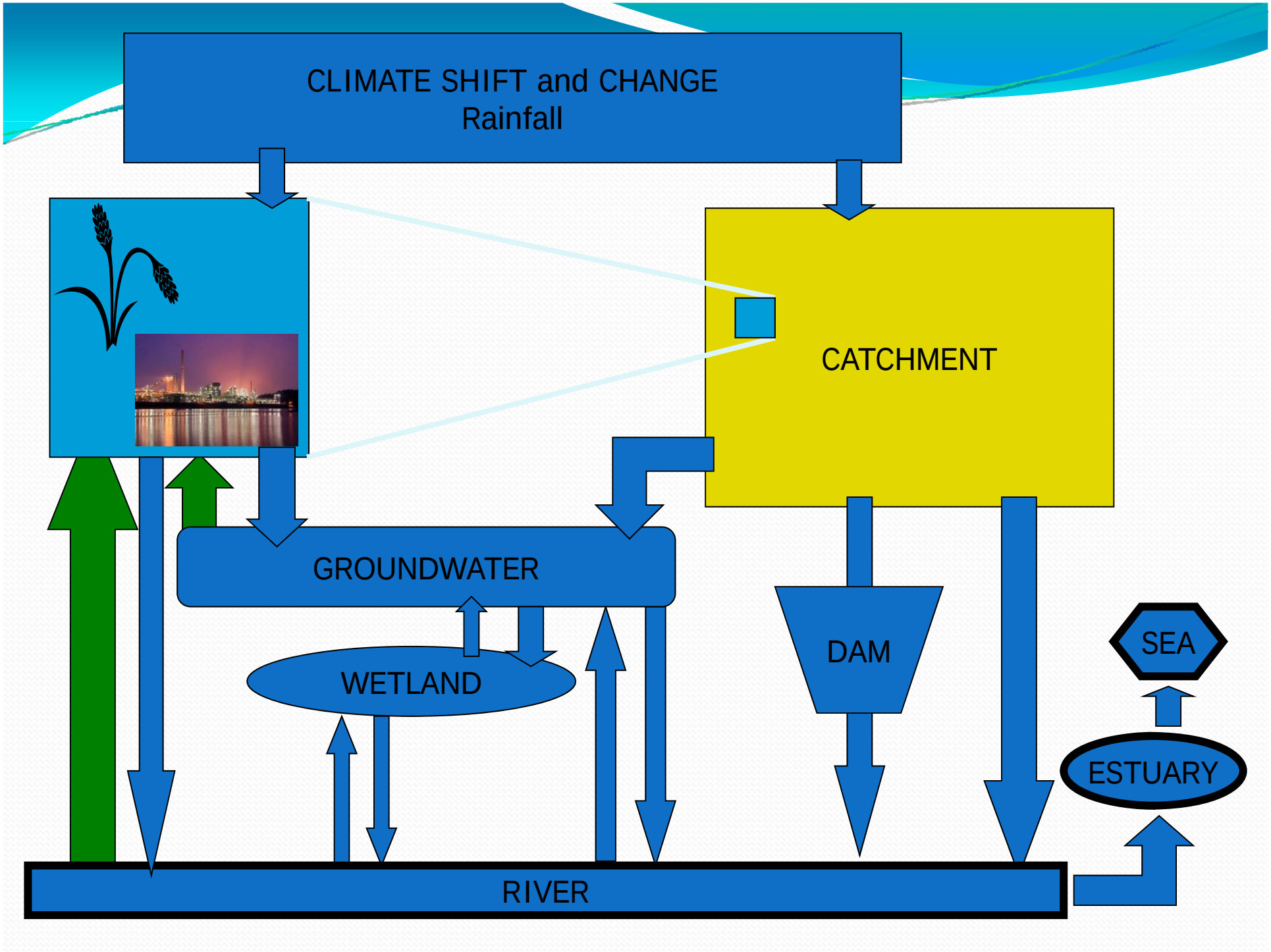
Managing the Water Balance between extraction and environment flows

- Key is building a system that establishes

RESOURCE SECURITY

for both

- Water user and the
- Environmental assets


CLIMATE SHIFT and CHANGE
Rainfall
CATCHMENT
GROUNDWATER
WETLAND
DAM
SEA
ESTUARY
RIVER

My vision

Integrated action, based on sound science, to

Manage water in the landscape for all users, for now and the future

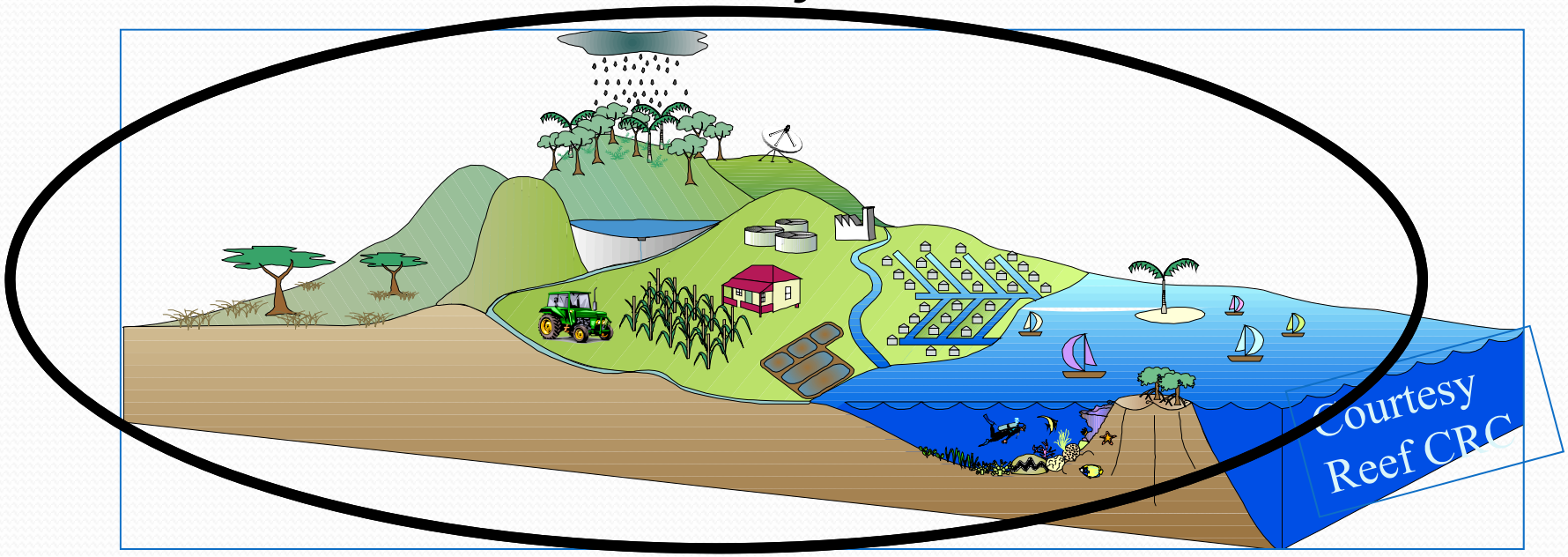
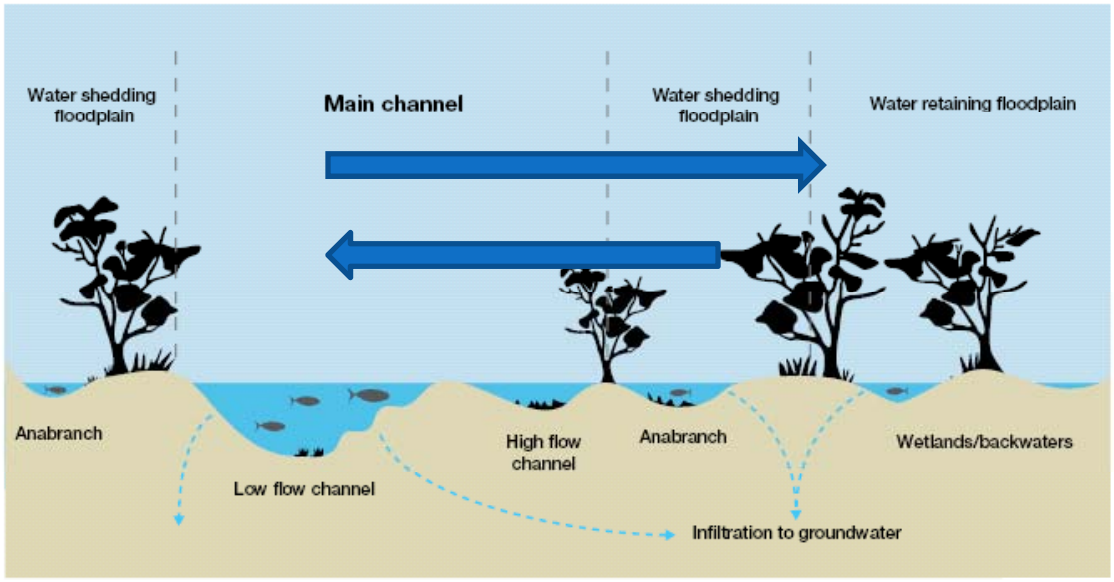


Figure 8.2: Cross section view of ecological functions and the hydrology of red gum forests



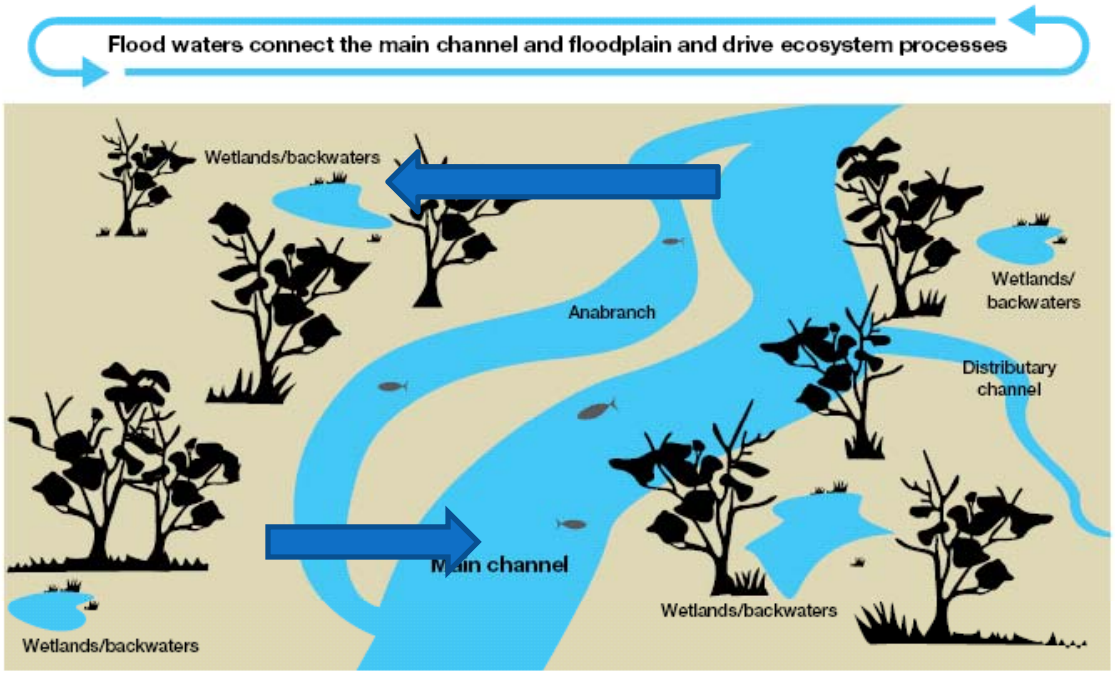
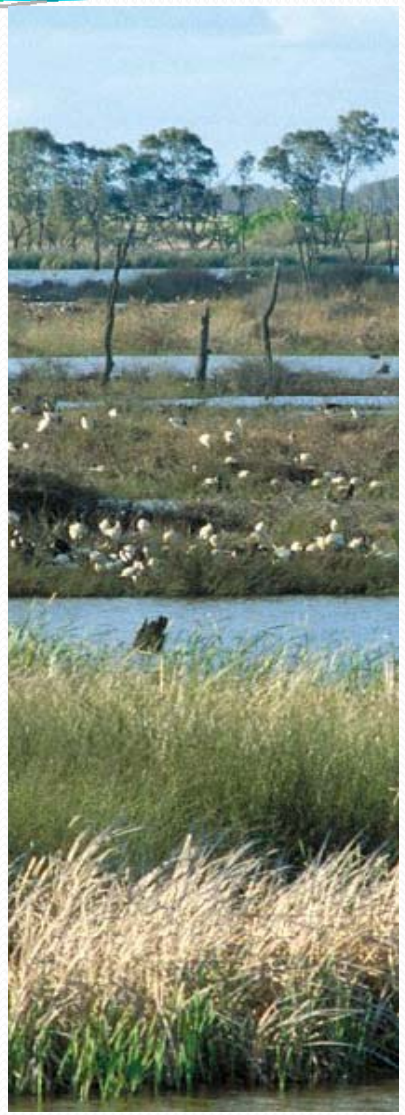
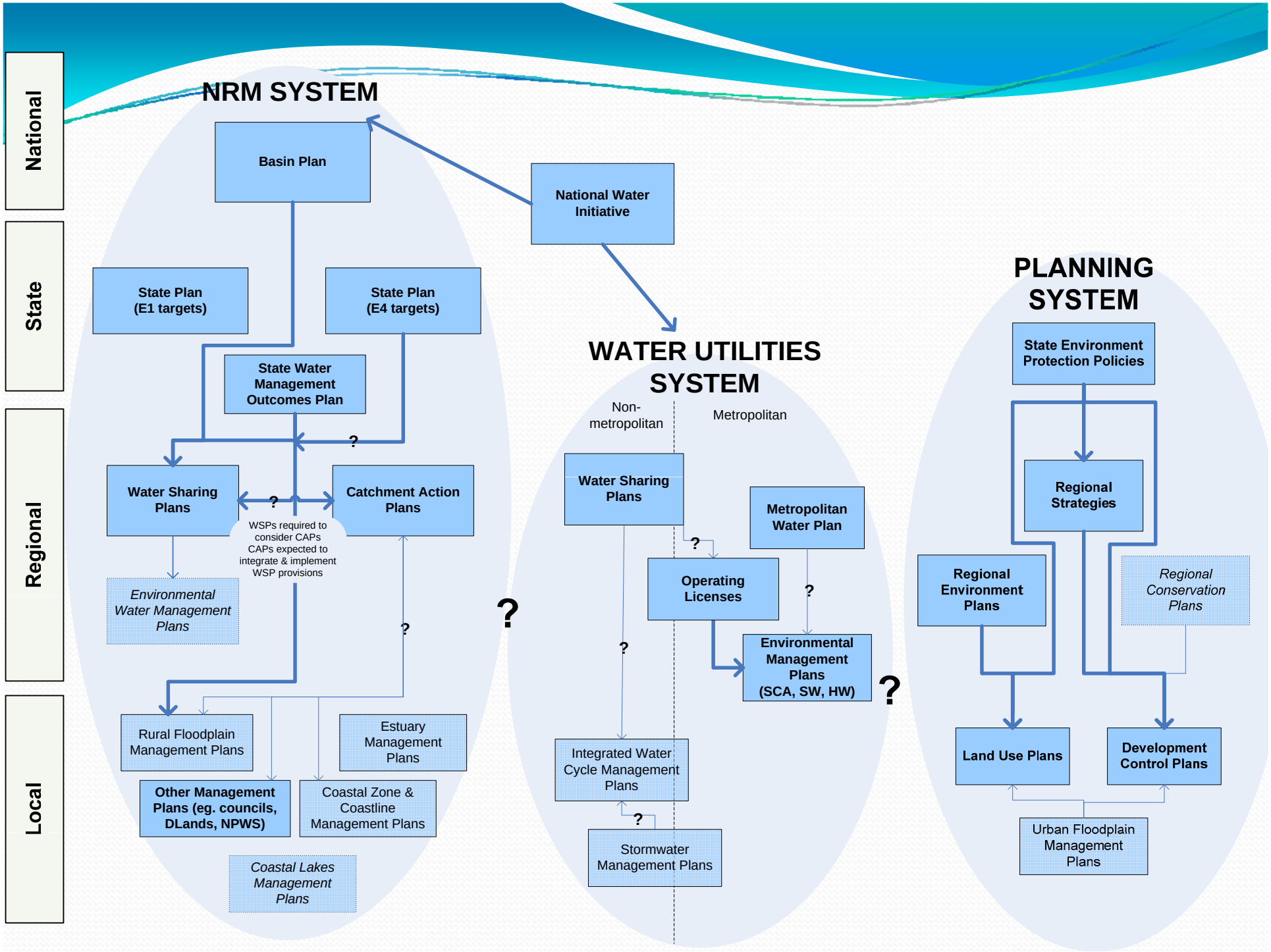
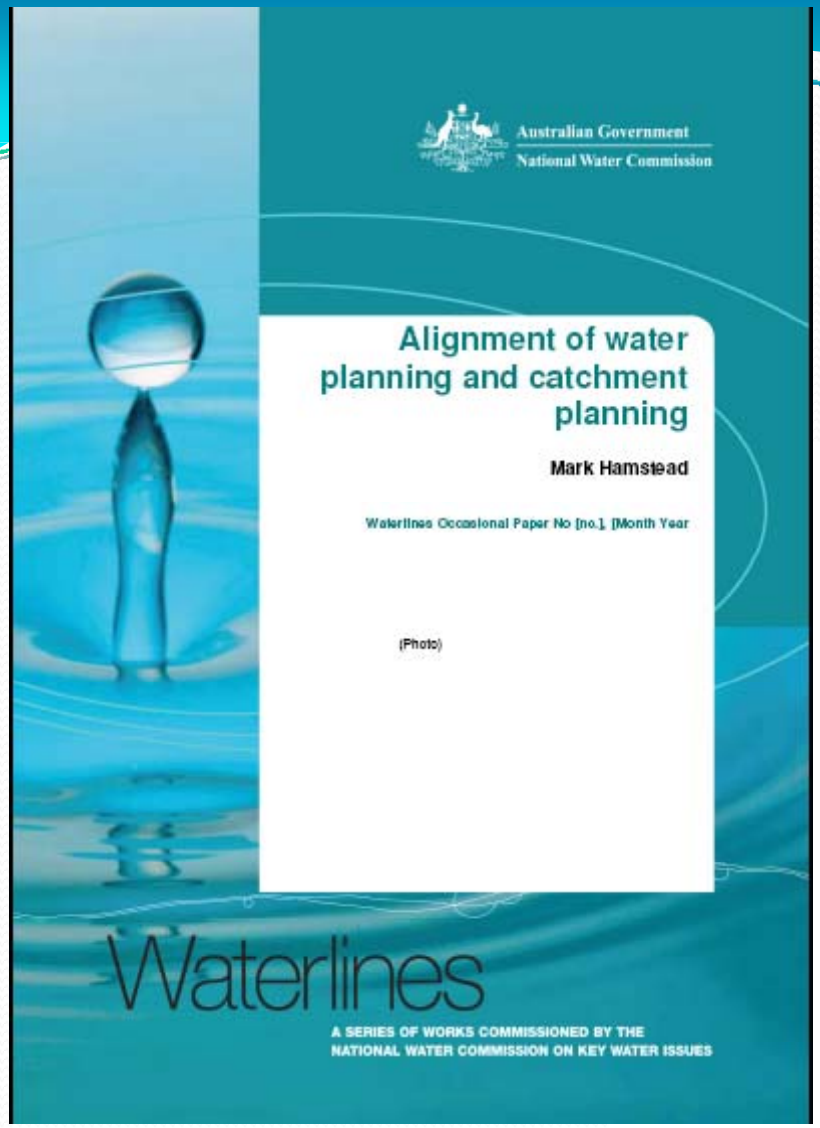


Figure 8.3: Oblique view of ecological functions and the hydrology of red gum forests




National
State
Regional
Local
NRM SYSTEM
Basin Plan
National Water Initiative
State Plan (E1 targets)
State Plan (E4 targets)
State Water Management Outcomes Plan
Water Sharing Plans
Catchment Action Plans
WSPs required to consider CAPs
CAPs expected to integrate & implement WSP provisions
Environmental Water Management Plans
Rural Floodplain Management Plans
Estuary Management Plans
Other Management Plans (eg. councils, DLands, NPWS)
Coastal Zone & Coastline Management Plans
Coastal Lakes Management Plans
WATER UTILITIES SYSTEM
Non-metropolitan
Metropolitan
Water Sharing Plans
Metropolitan Water Plan
Operating Licenses
Environmental Management Plans (SCA, SW, HW)
Integrated Water Cycle Management Plans
Stormwater Management Plans
PLANNING SYSTEM
State Environment Protection Policies
Regional Strategies
Regional Environment Plans
Regional Conservation Plans
Land Use Plans
Development Control Plans
Urban Floodplain Management Plans



Alignment of water planning and catchment planning

Mark Hamstead

Waterlines Occasional Paper No [no.], [Month Year

Australian Government
National Water Commission

HAMSTEAD CONSULTING PTY LTD

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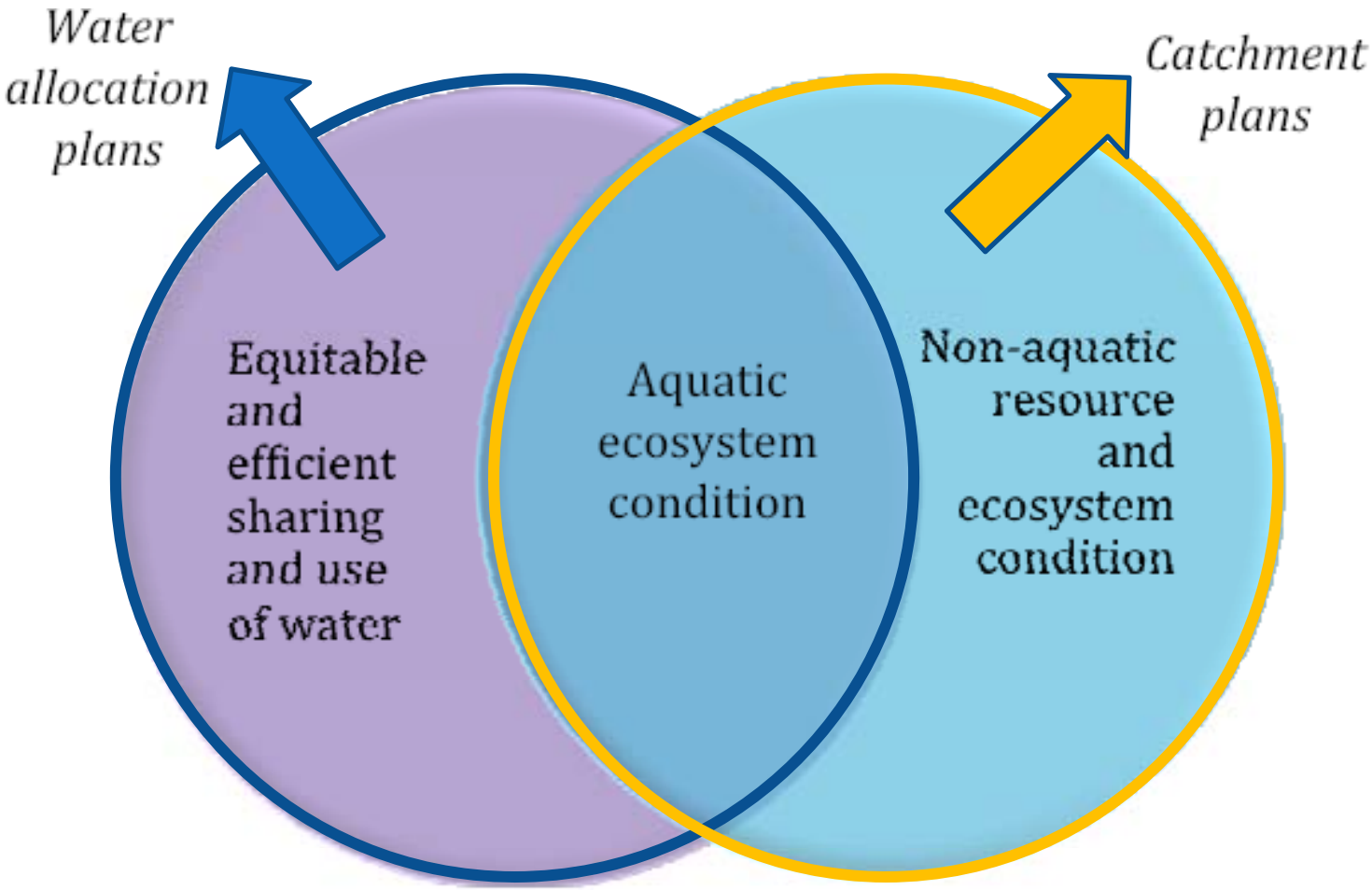
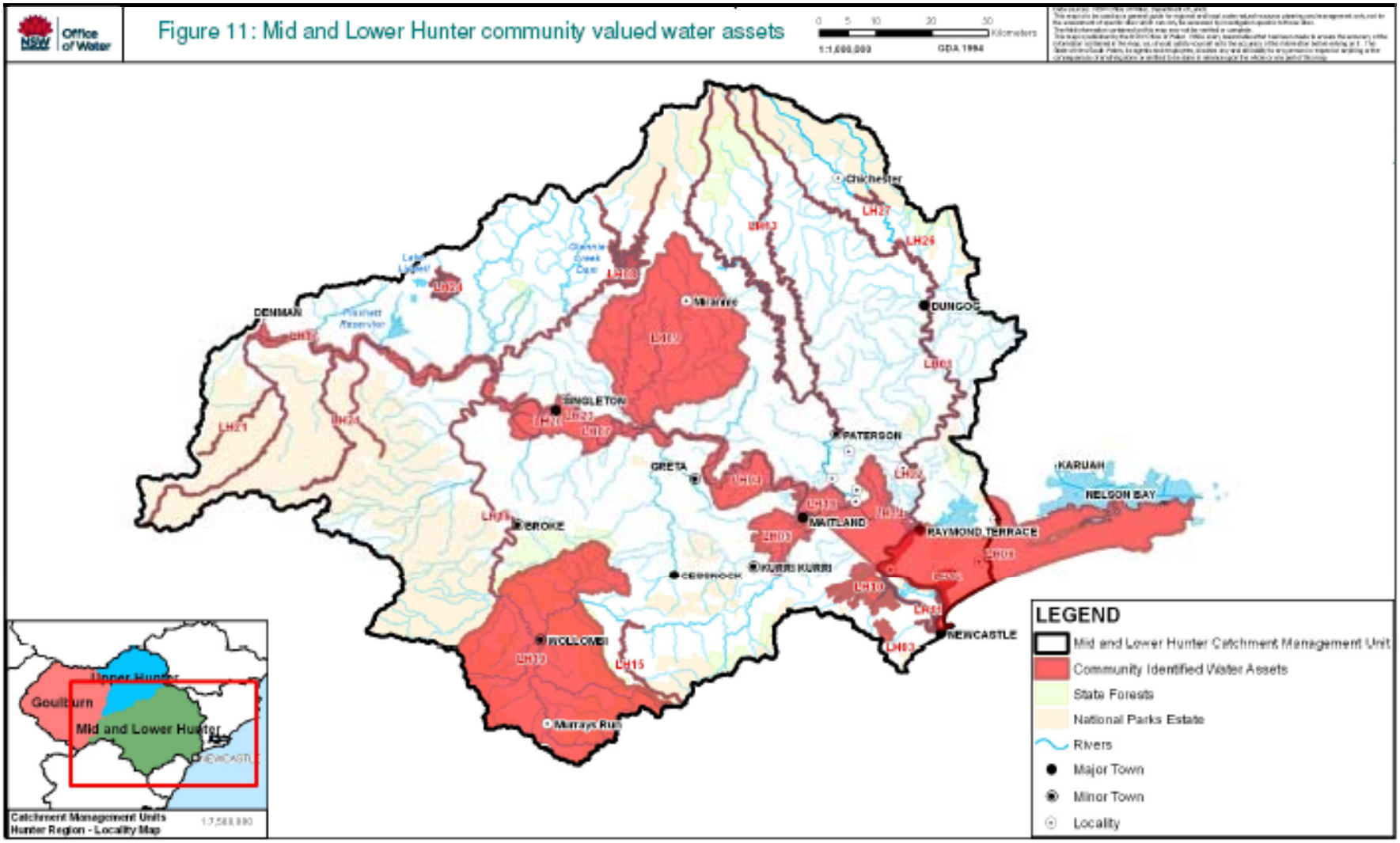


Figure 1: Overlap between water allocation plans and catchment plans

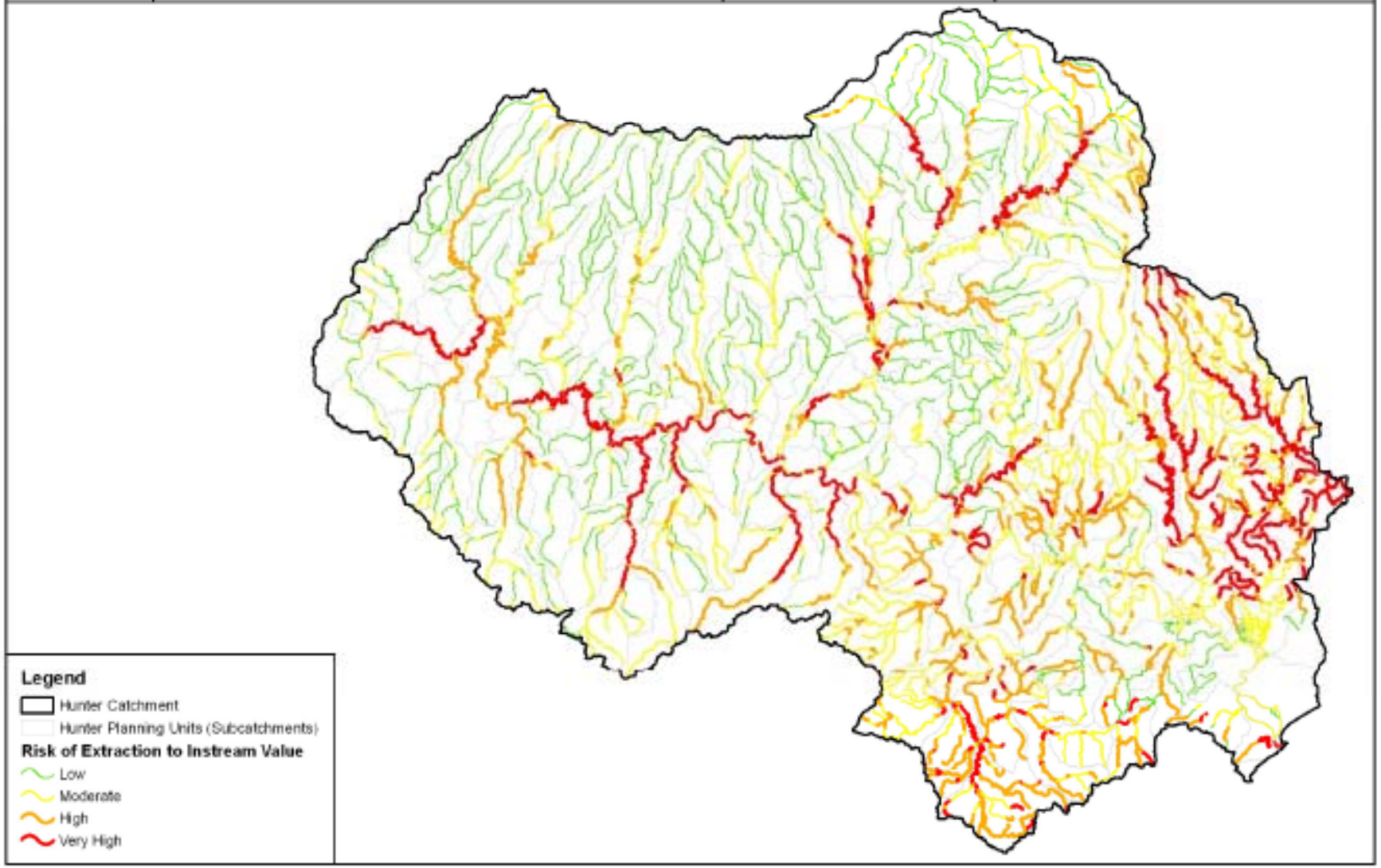

Office of Water
Figure 11: Mid and Lower Hunter community valued water assets
0 5 10 20 30 Kilometers
1:1,000,000
GDA 1994
Chichester
DUNGOG
DENMAN
SINGLETON
PATERSON
GRETA
KARUAH
NELSON BAY
MAITLAND
RAYMOND TERRACE
BROKE
CESSNOCK
KURRI KURRI
WOLLOMBI
NEWCASTLE
Murrays Run
LH01
LH02
LH03
LH04
LH05
LH06
LH07
LH08
LH09
LH10
LH11
LH12
LH13
LH14
LH15
LH16
LH17
LH18
LH19
LH20
LH21
LH22
LH23
LH24
LH25
LH26
LH27
Upper Hunter
Goulburn
Mid and Lower Hunter
Catchment Management Units
Hunter Region - Locality Map
LEGEND
Mid and Lower Hunter Catchment Management Unit
Community Identified Water Assets
State Forests
National Parks Estate
Rivers
Major Town
Minor Town
Locality

Office of Water

Figure 16: Risk of water extraction to instream value

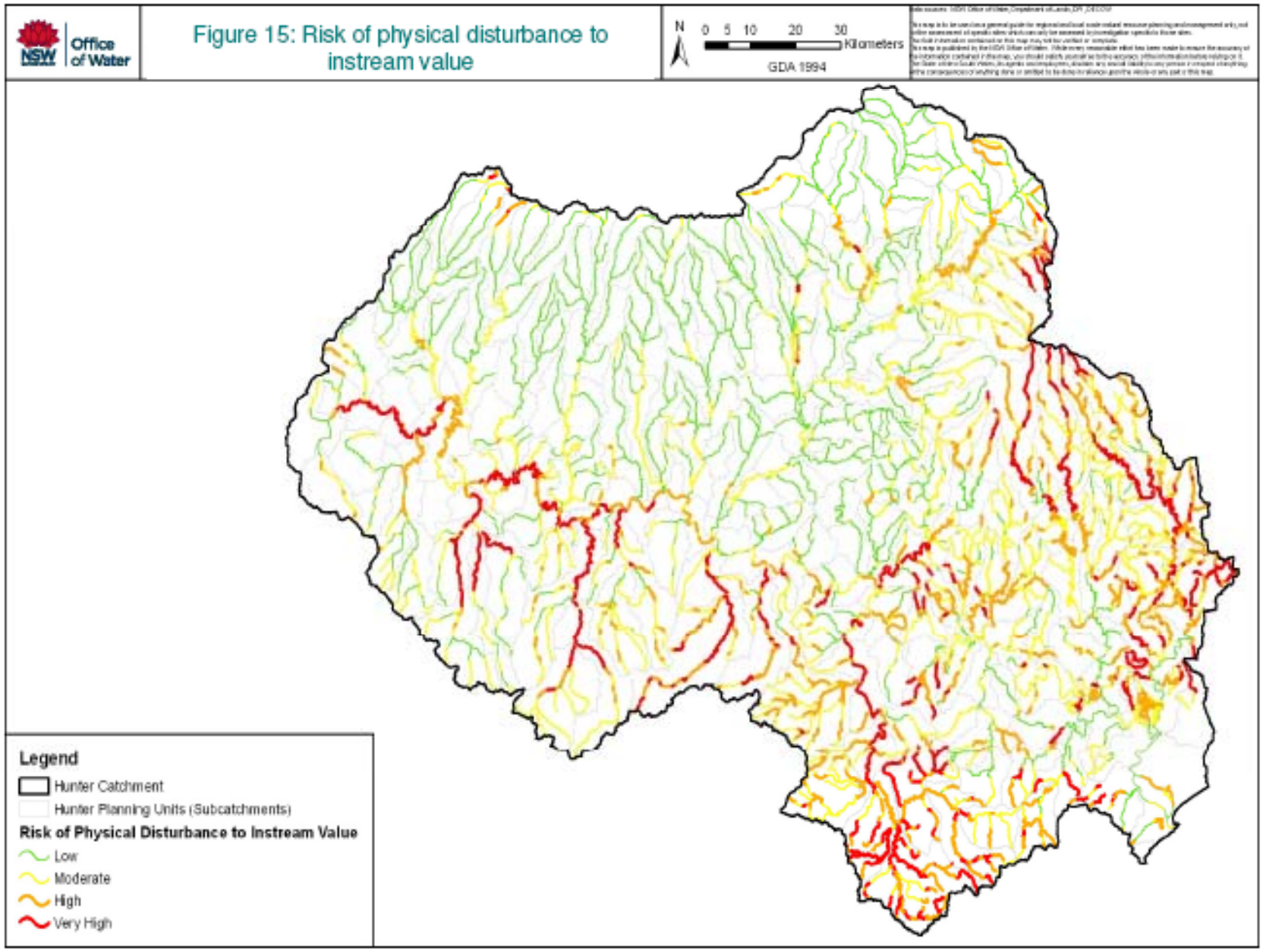
N 0 5 10 20 30 Kilometers

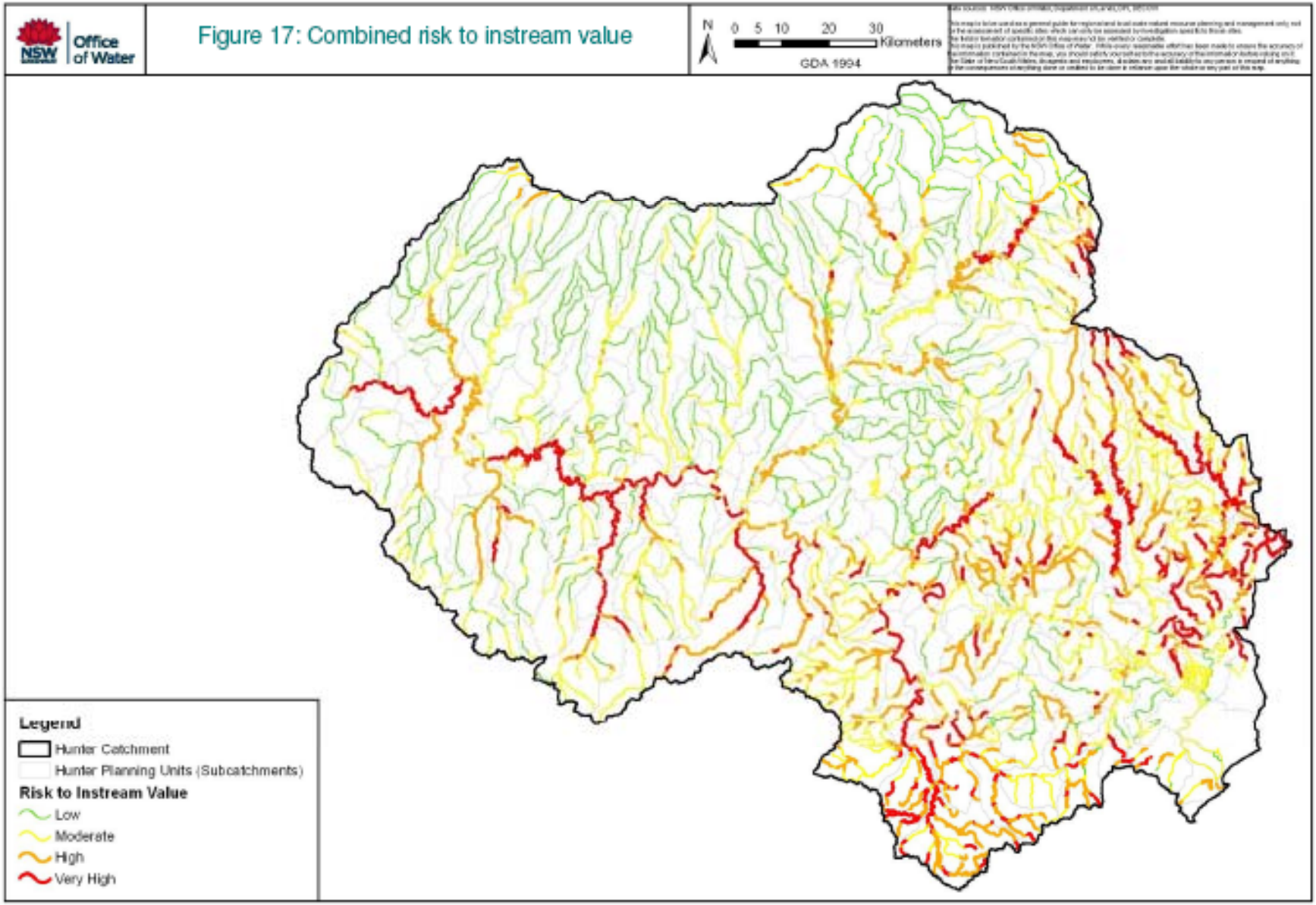
GDA 1994

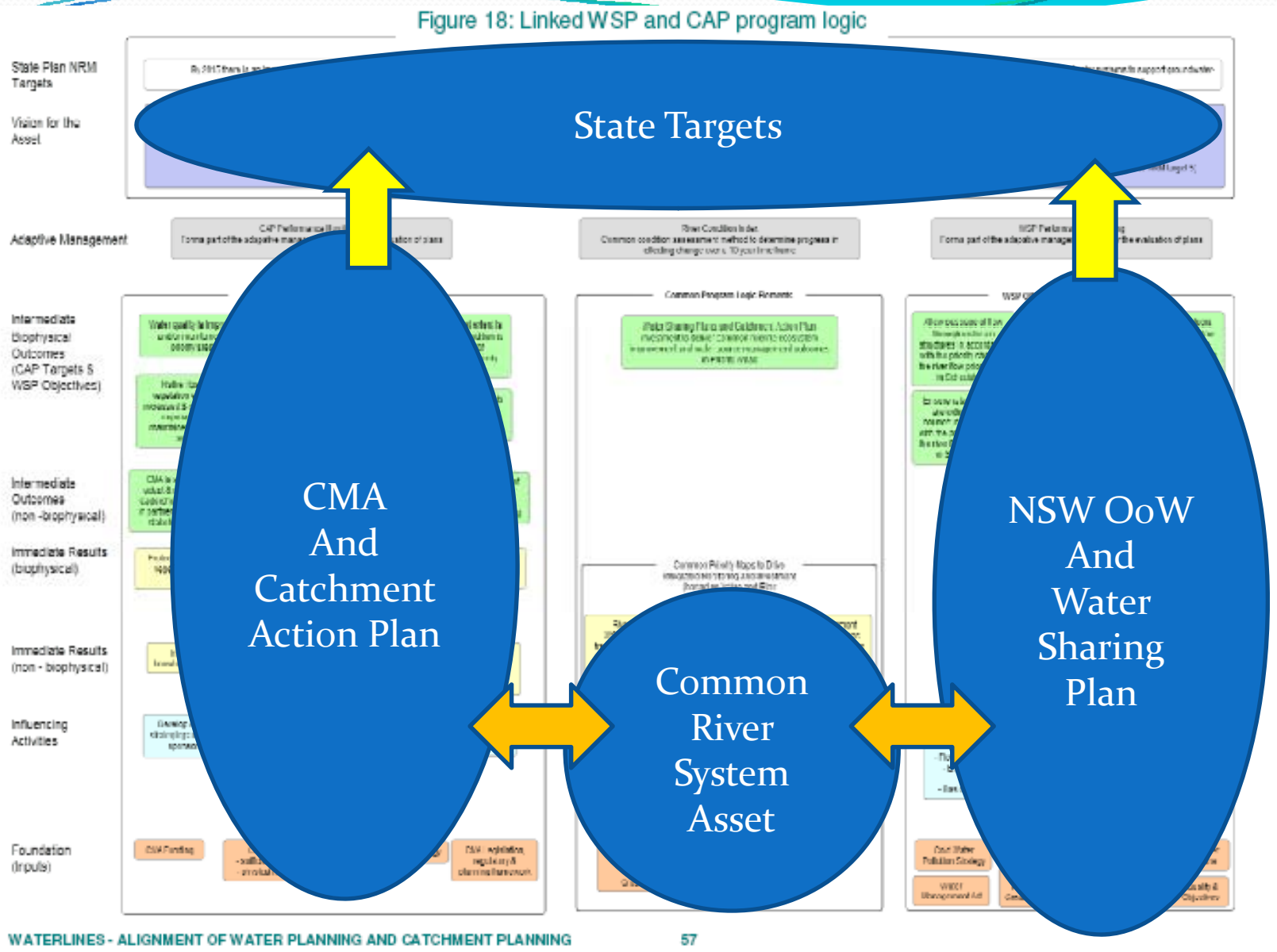


Office of Water

Figure 15: Risk of physical disturbance to instream value




Office of Water
Figure 17: Combined risk to instream value
N
0 5 10 20 30
Kilometers
GDA 1994
Legend
Hunter Catchment
Hunter Planning Units (Subcatchments)
Risk to Instream Value
Low
Moderate
High
Very High



Courtesy Nick Cook- NSW Office of Water

The future

- **Planning for climate variability and climate change**
- **Managing water as part of Catchment Management**
- **Managing the whole landscape together**
- **Remember what we are planning for**
- **Different disciplines working towards the same objectives**
- **Learning from each other!**