



ATSE International Workshop Series

# Water and Its Interdependencies in the Australian Economy

The Grace Hotel, Sydney

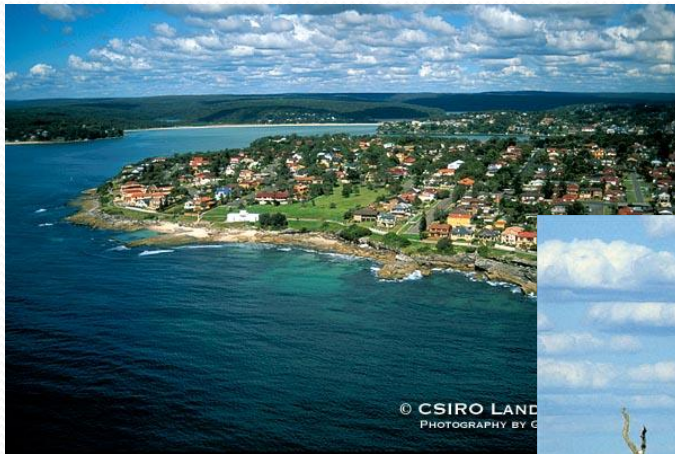
22 – 23 June 2010

# 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

# 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





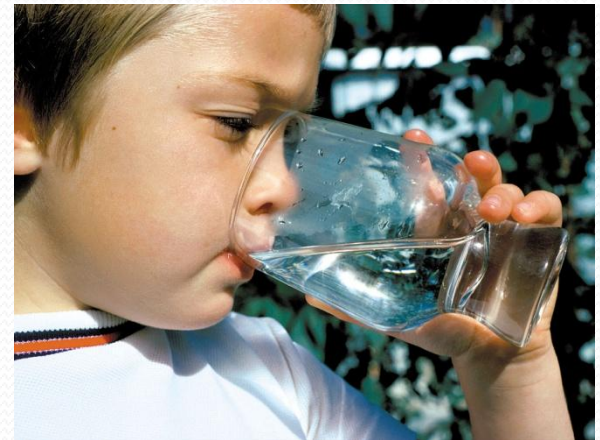


# Managing the Water Balance between extraction and environment flows

- Key is building a system that establishes  
**RESOURCE SECURITY**

for both

- **Water user and the**
- **Environmental assets**





# My vision

*Integrated action, based on sound science, to  
Manage water in the landscape for all users, for now and  
the future*

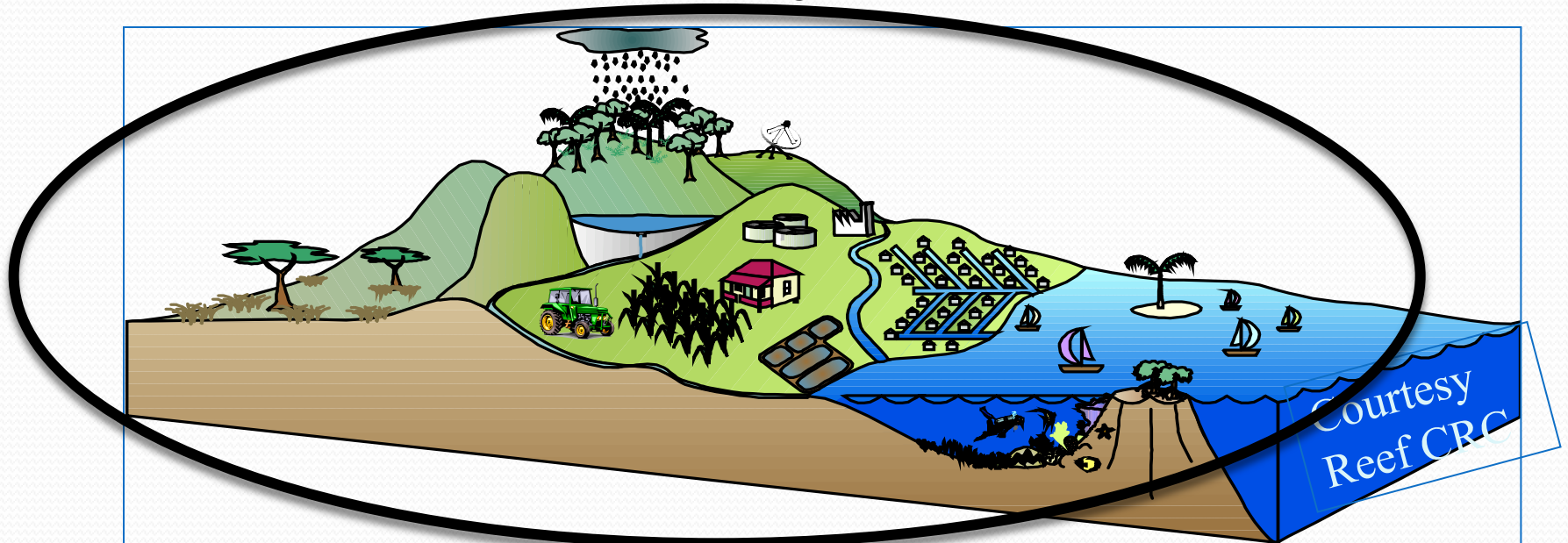
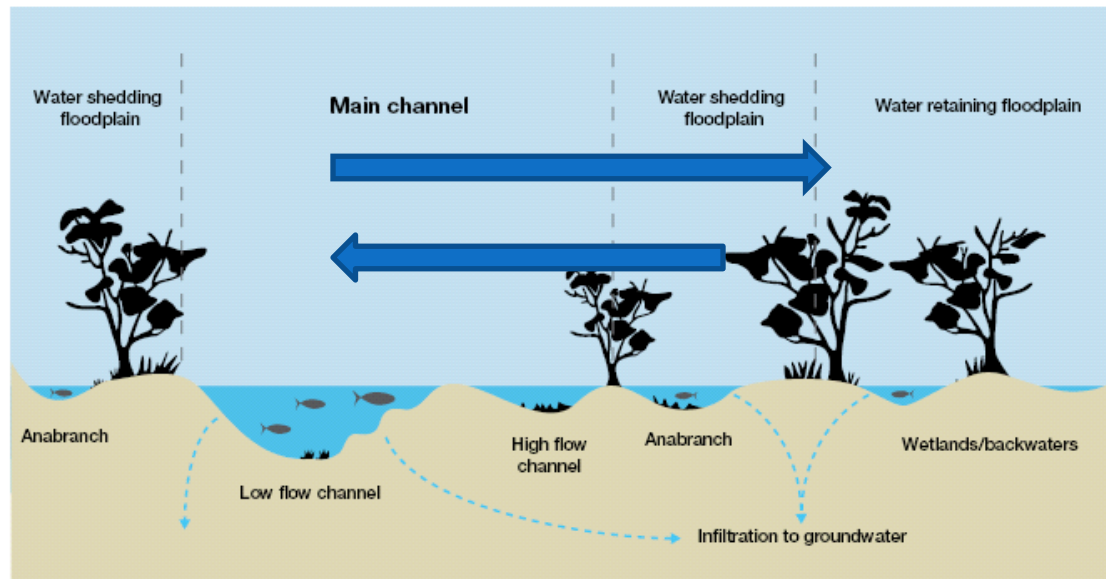


Figure 8.2: Cross section view of ecological functions and the hydrology of red gum forests



Flood waters connect the main channel and floodplain and drive ecosystem processes

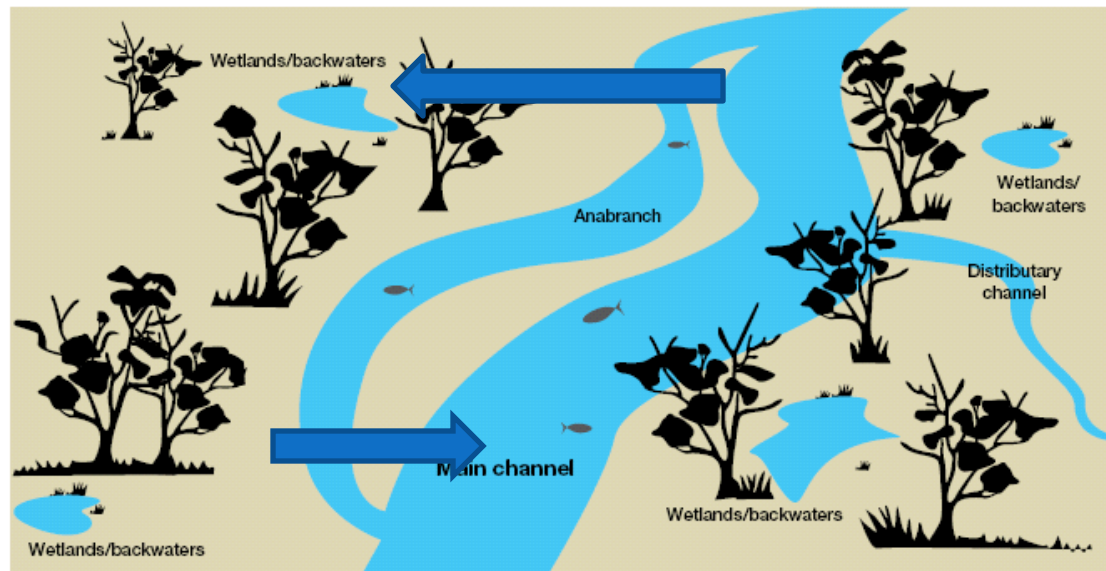
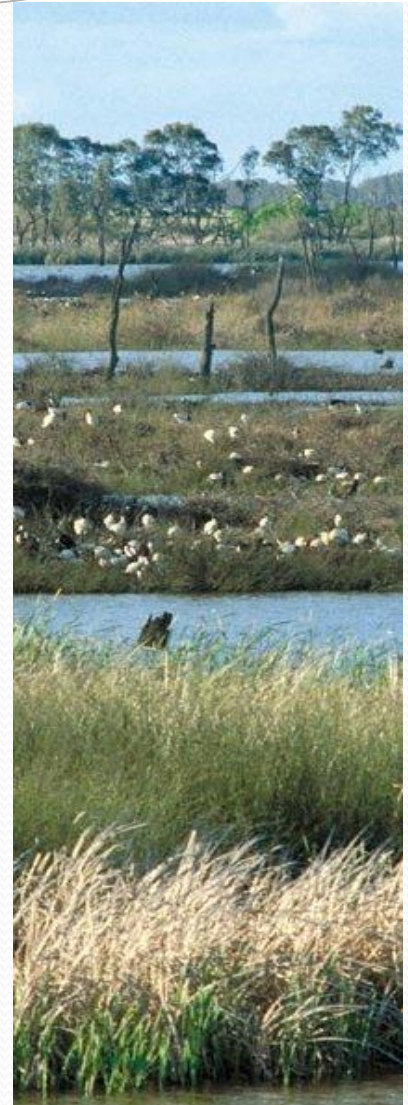


Figure 8.3: Oblique view of ecological functions and the hydrology of red gum forests



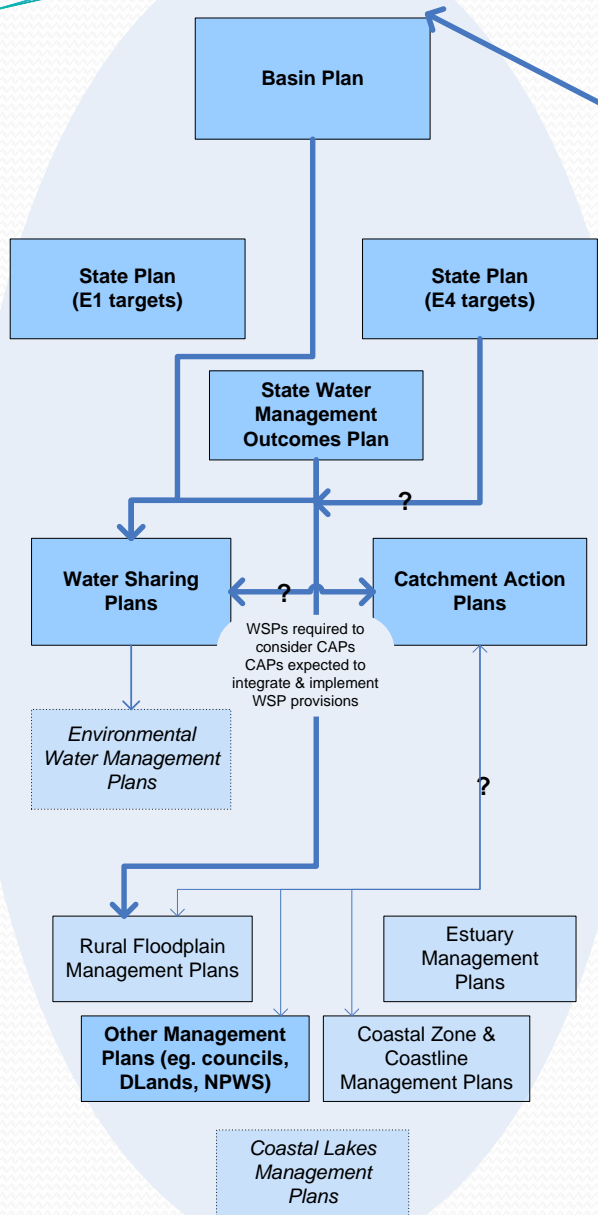
National

State

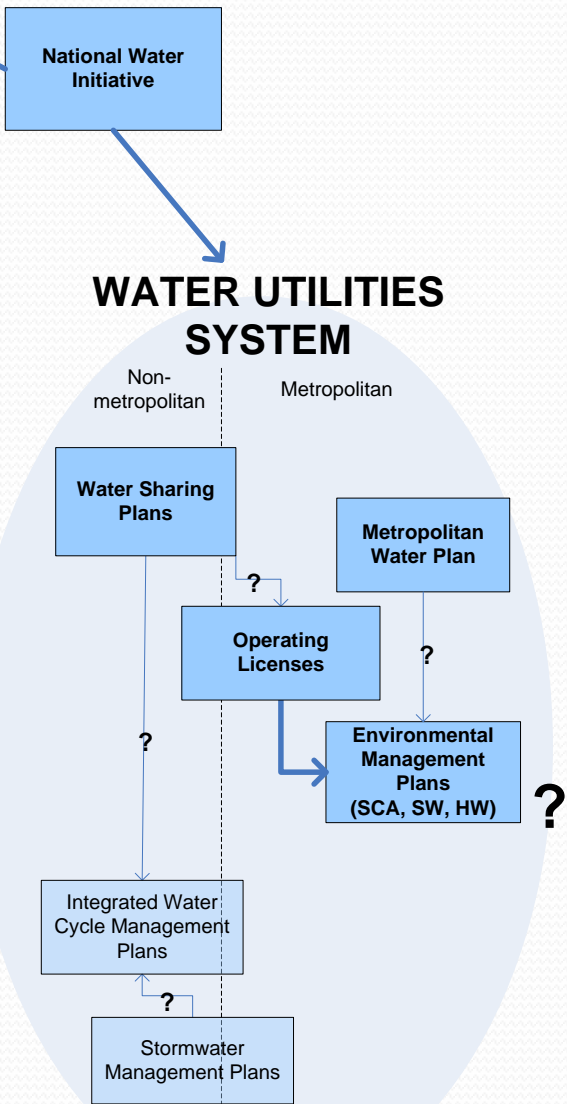
Regional

Local

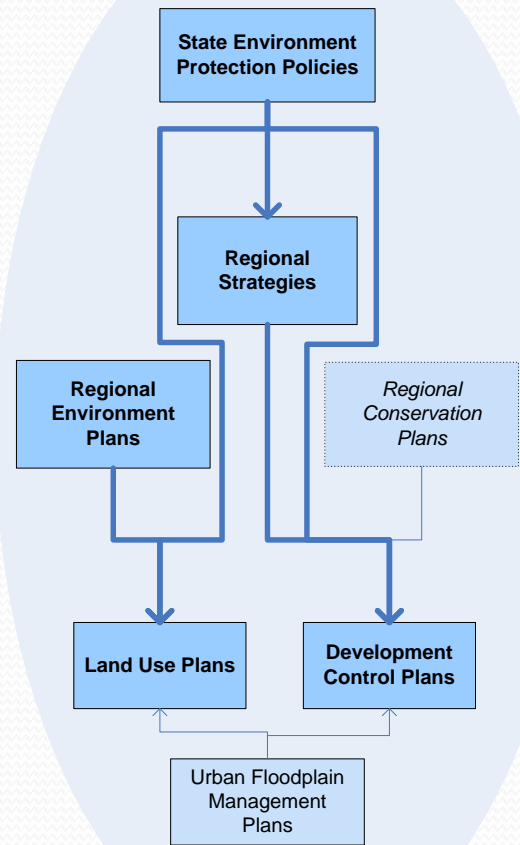
# NRM SYSTEM



# WATER UTILITIES SYSTEM



# PLANNING SYSTEM





Australian Government  
National Water Commission

## Alignment of water planning and catchment planning

Mark Hamstead

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

(Photo)

# Waterlines

A SERIES OF WORKS COMMISSIONED BY THE  
NATIONAL WATER COMMISSION ON KEY WATER ISSUES

# Alignment of water planning and catchment planning

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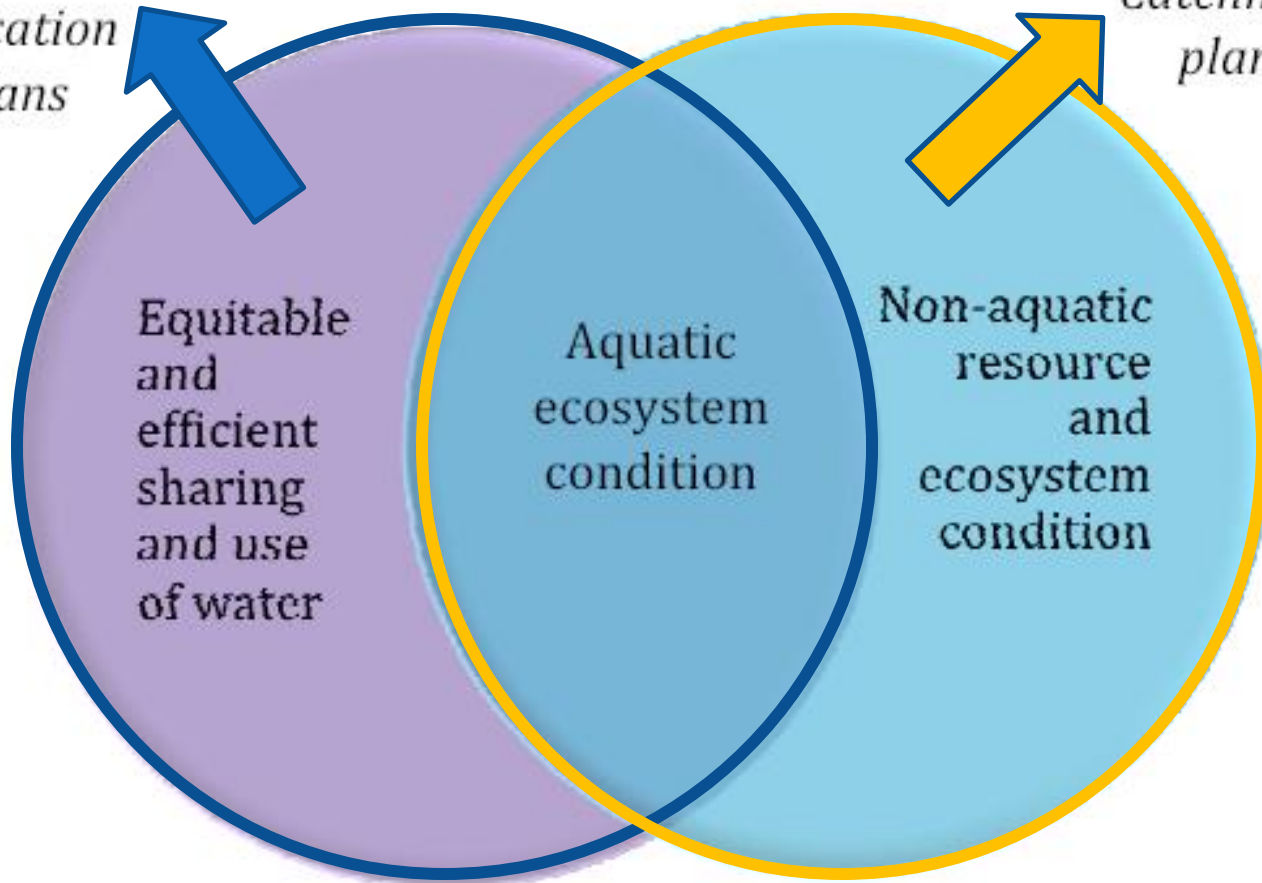
Australian Government  
National Water Commission

**HAMSTEAD**  
**CONSULTING**  
PTY LTD

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*Water  
allocation  
plans*



*Catchment  
plans*

Equitable  
and  
efficient  
sharing  
and use  
of water

Aquatic  
ecosystem  
condition

Non-aquatic  
resource  
and  
ecosystem  
condition

Figure 1: Overlap between water allocation plans and catchment plans

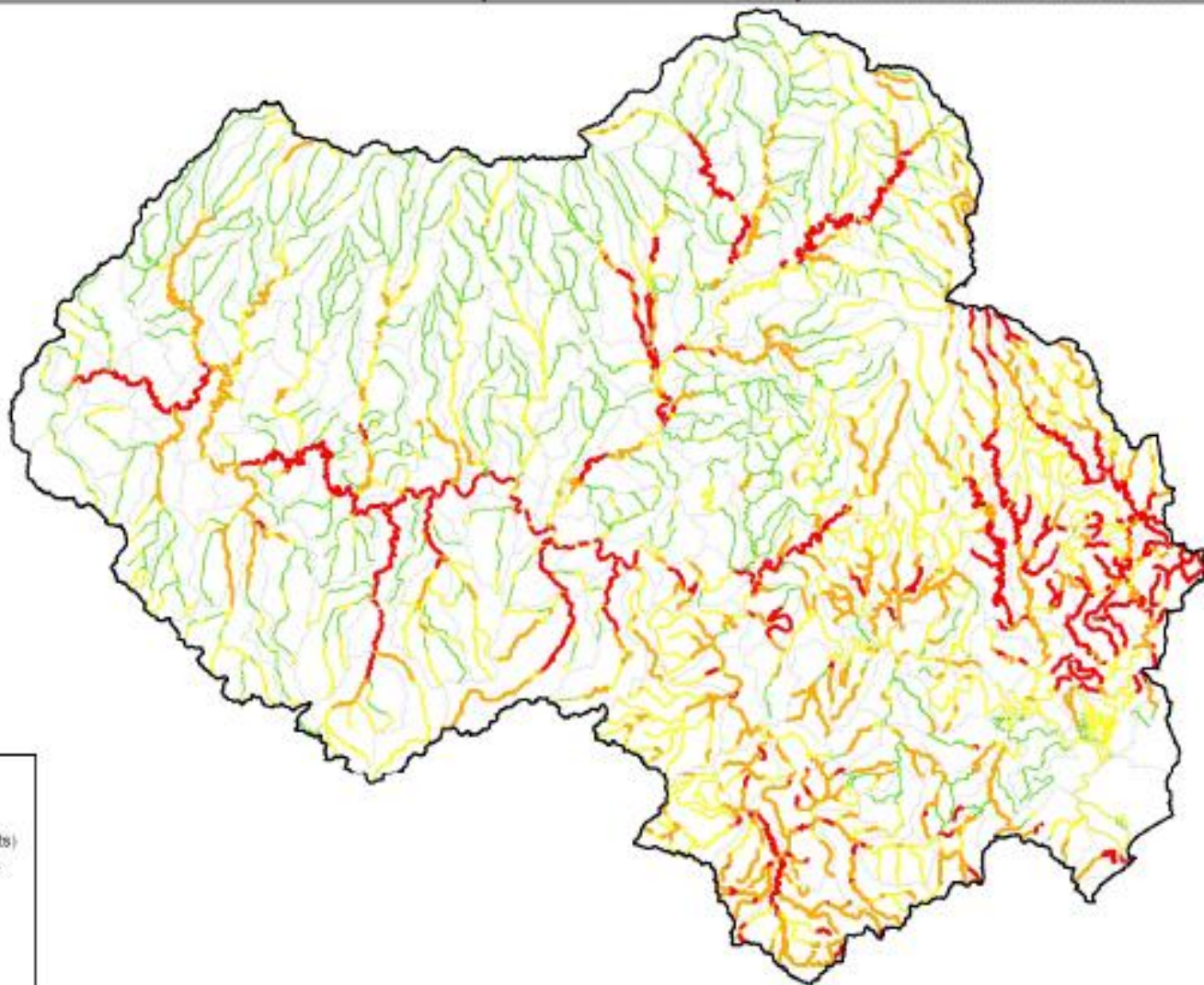




Figure 16: Risk of water extraction to instream value



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**Legend**




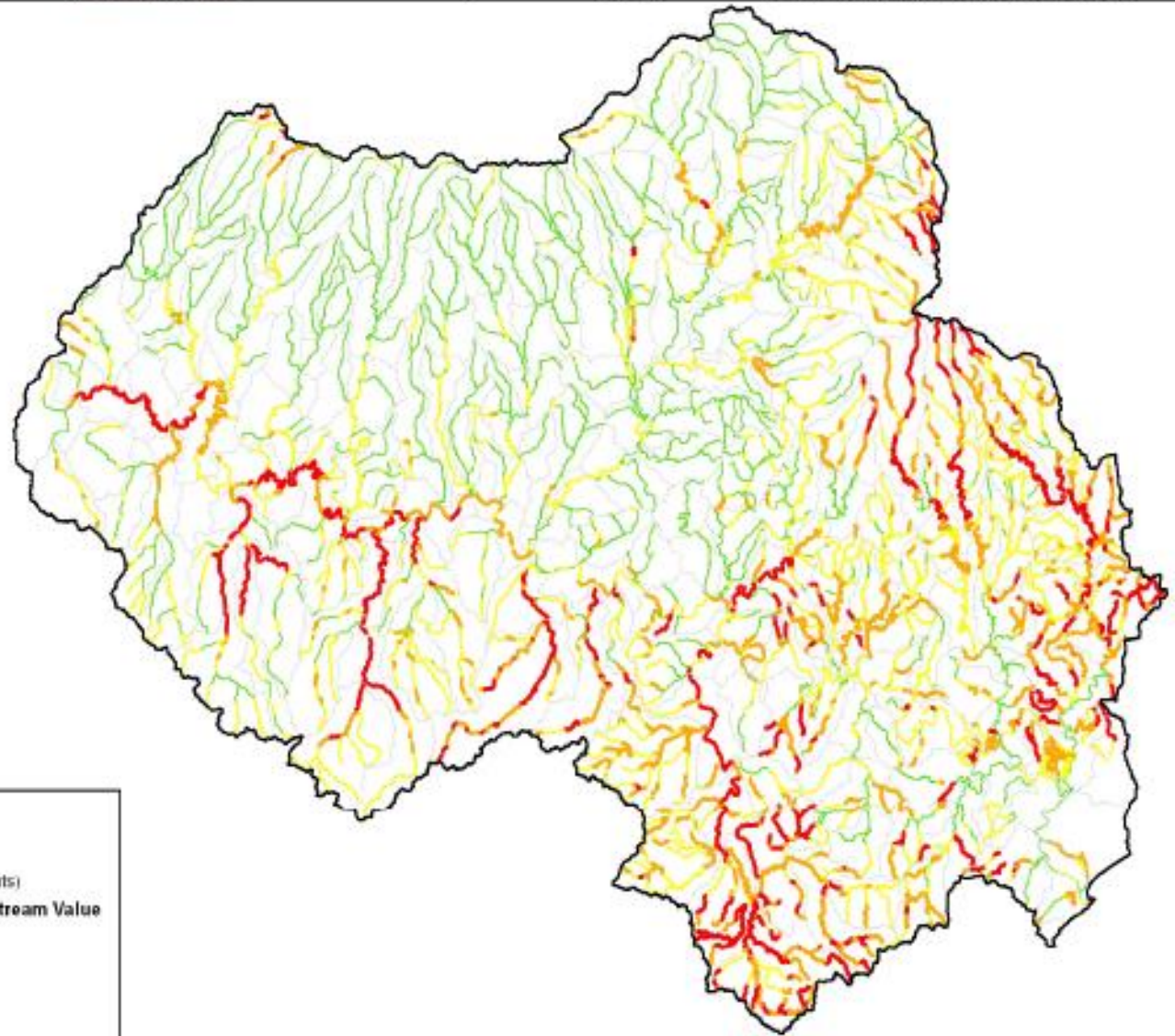
-  Hunter Catchment
-  Hunter Planning Units (Subcatchments)
- Risk of Extraction to Instream Value**
-  Low
-  Moderate
-  High
-  Very High

Figure 15: Risk of physical disturbance to instream value



Data source: 1991 Data on River Catchments (DAR) 2010  
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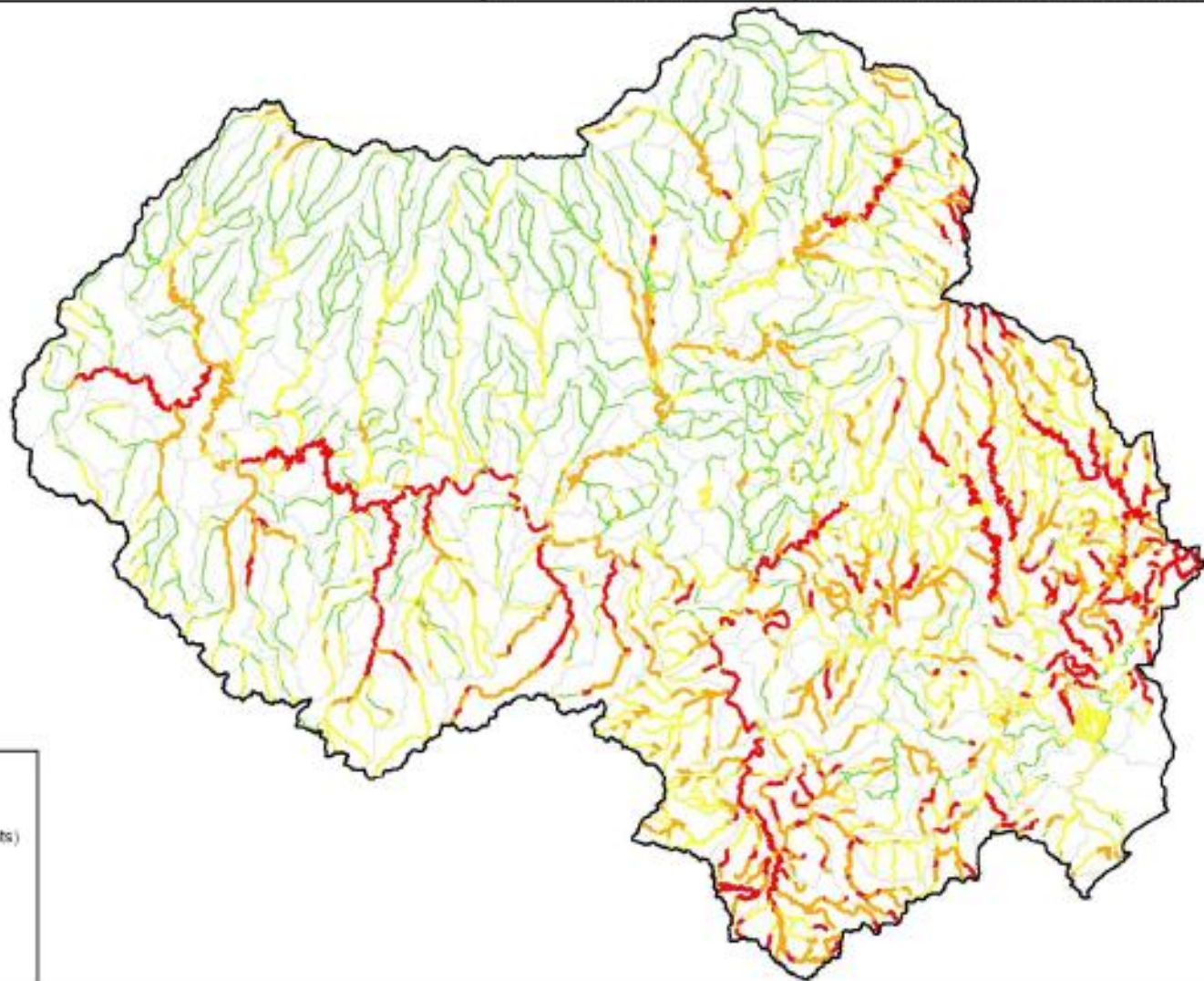
**Legend**

- Hunter Catchment
- Hunter Planning Units (Subcatchments)
- Risk of Physical Disturbance to Instream Value**
- Low
- Moderate
- High
- Very High

Figure 17: Combined risk to instream value



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**Legend**

- Hunter Catchment
- Hunter Planning Units (Subcatchments)

**Risk to Instream Value**

- Low
- Moderate
- High
- Very High



# 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!**

