

# Great Eastern Ranges overall river health: The big picture

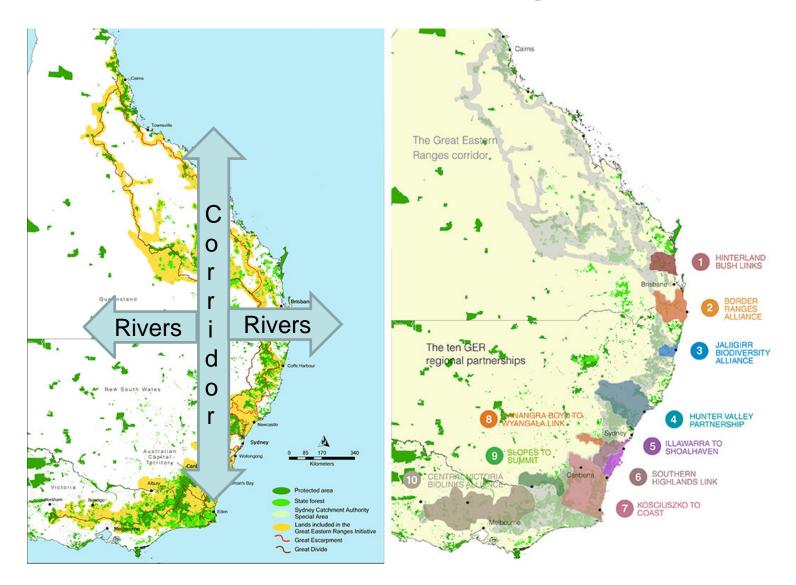
Great Eastern Ranges - Connectivity of Water Services World Parks Congress, 17 November 2015

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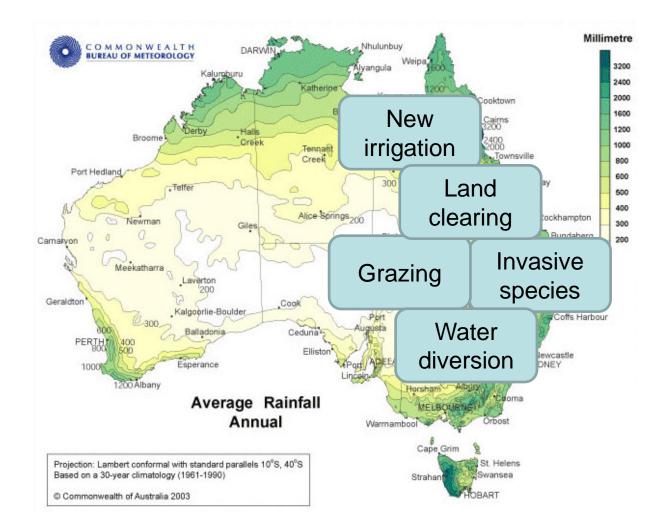
### Great Eastern Ranges and water

- "the area has 63 large rivers which provide clean water to over 11,000,000 people in the region"
- "it helps protect the water supply for three quarters of the population of Eastern Australia, essential for health, economic growth and significant nature based tourism"

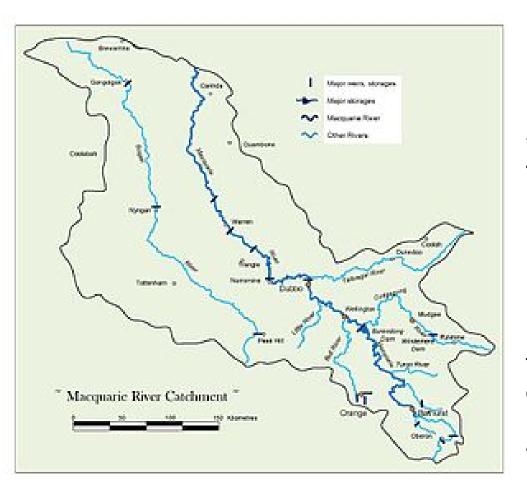
#### The Great Eastern Ranges corridor



#### Rainfall and runoff



# Trading off freshwaters for forests: Macquarie River catchment





#### Afforestation of 10% of the catchment headwaters Runoff reduced by 17%

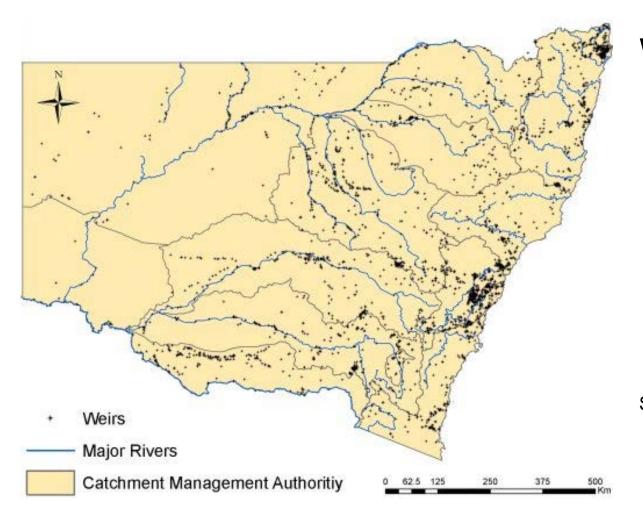
Herron, N., Davis, R., & Jones, R. (2002). The effects of large-scale afforestation and climate change on water allocation in the Macquarie River catchment, NSW, Australia. *Journal of Environmental Management, 65*(4), 369-381.

#### Linking landscapes?



The Ovens River corridor is protected as a free-flowing "heritage river", Australia.. © Jamie Pittock

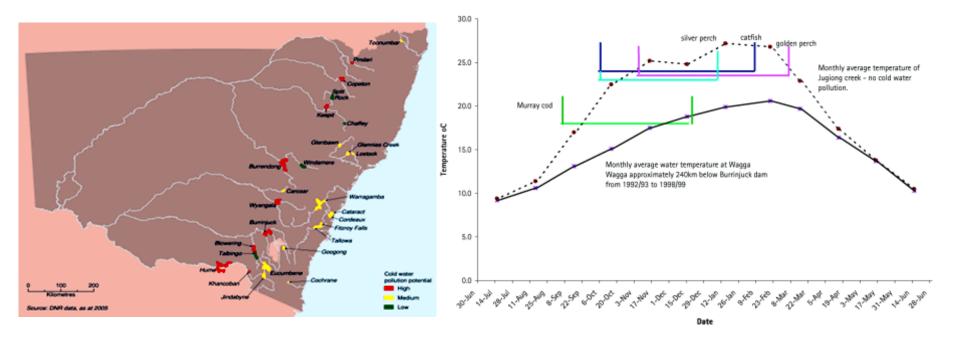
#### **Riverine connectivity**



Weirs in NSW: 4,000 weirs within the **Murray** Darling Basin alone.

Source: NSW Dept Primary Industries

#### Water temperature and fish



#### Water temperature and native fish breeding Burrinjuck Dam, NSW.

Source: NSW Fisheries

## **Complementary conservation options**

- 1. Appropriate environmental flows
- 2. Environmental works & measures
- 3. Control thermal pollution
- 4. Freshwater habitat connectivity
- 5. Restore riparian vegetation (GER?)
- 6. Conserve more resilient landscapes (GER?)
- 7. Conserve gaining reaches
- 8. Geomorphic restoration
- 9. Manage exotic species