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Environmental Planning and the Basin Plan

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Murray-Darling Basin Authority

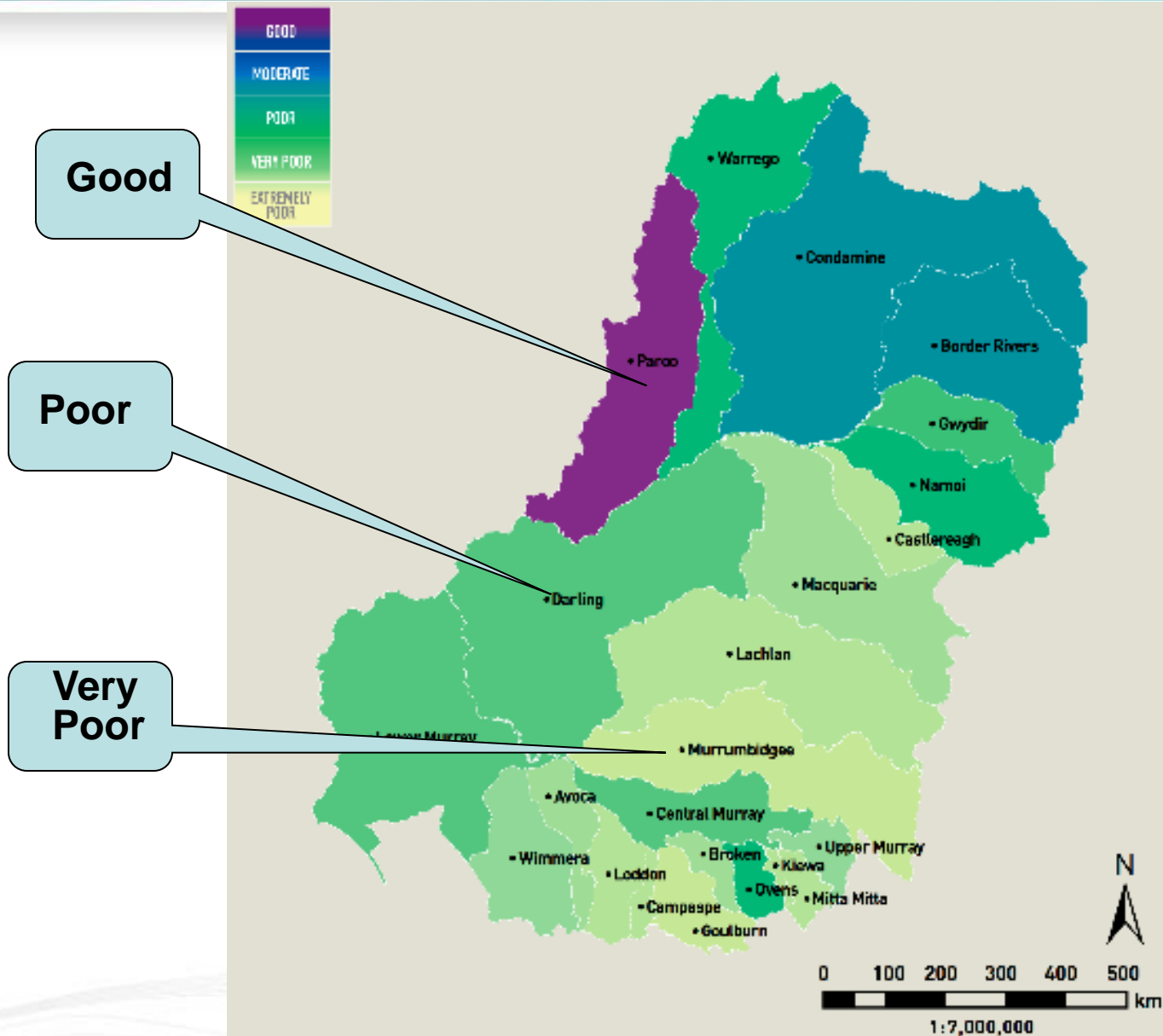
Focus

- Basin Plan - outlined in previous talk
- This talk will focus on the environmental aspects of the Basin Plan



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Current condition

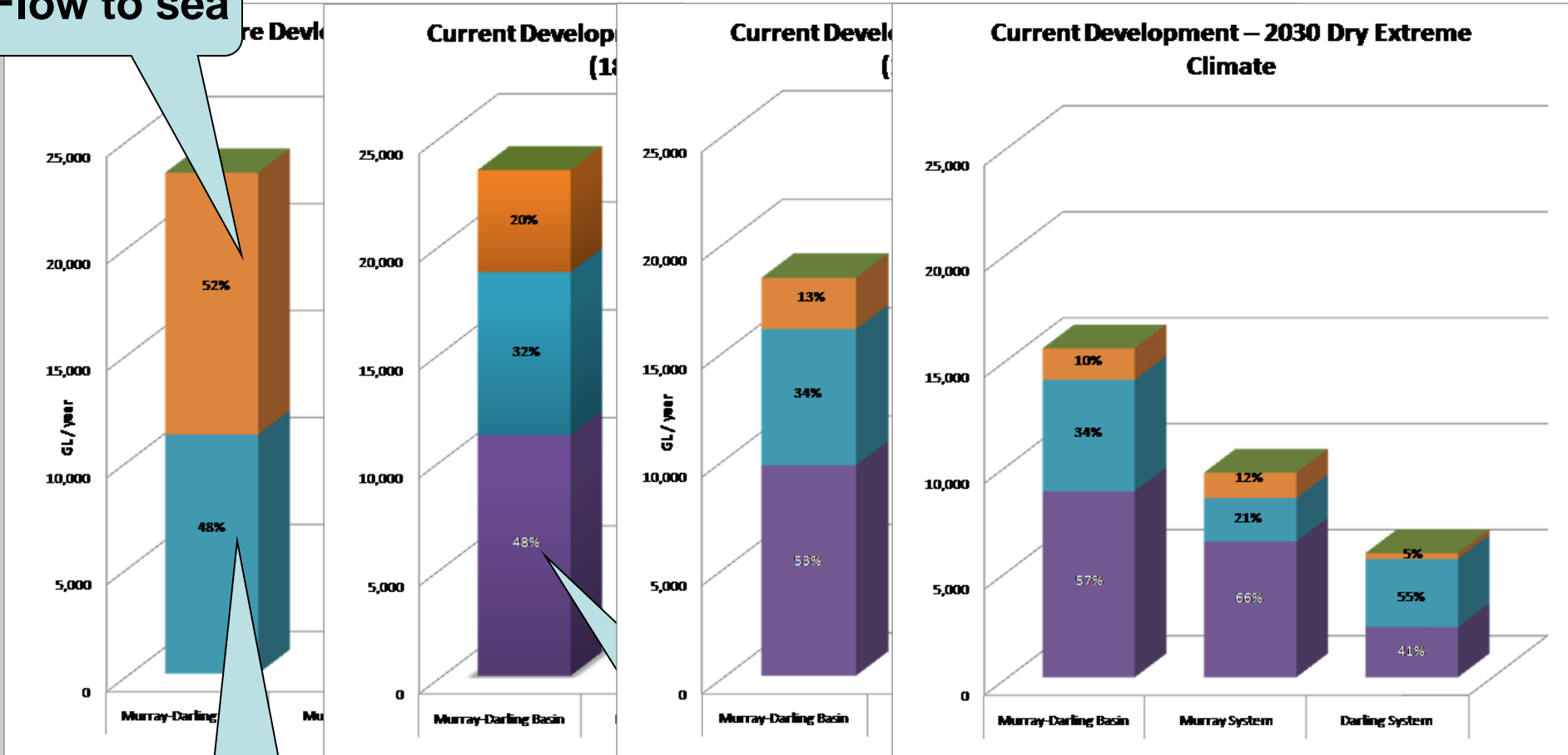


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Why so poor - lack of water?

Flow to sea



Environment

Consumptive uses

What does the Water Act require?

- **Objectives (S3):**
 - to manage the Basin water resources in the national interest
 - to ensure the return to environmentally sustainable levels of extraction for water resources that are over-allocated or overused
 - to protect, restore and provide for the ecological values and ecosystem services of the MDB
 - to ensure the management of the Basin water resources takes into account the broader management of natural resources in the MDB



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What does the Water Act require?

How?

- By defining an environmentally sustainable 'take' of water (for consumptive uses) [essentially the Sustainable Diversion Limit (SDL)]
- This is level of water 'take' should not *compromise*:
 - Key environmental assets (or)
 - Key ecosystem functions (or)
 - Key environmental outcomes (biodiversity, water quality, water resource health)
- Will probably be determined on a catchment-by-catchment basis, with additional overlay to ensure basin-wide assets/requirements (e.g. longitudinal connectivity, lower lakes) are covered



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What does the Water Act require?

- **Consider MDB as a whole**
 - systems approach
 - hydrological connectivity
 - longitudinal (connect the system)
 - lateral (floodplain assets)
 - vertical (groundwater assets)
- **Decisions to be based on best available scientific knowledge (and socio-economic analysis)**



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Vision/Objective (my version)

Rebalance the water sharing across the Basin between environmental and consumptive uses to protect or improve the overall ecological health and function of the Basin's key water-dependent environmental assets to ensure their long-term sustainability.

AND in doing so

to minimise the impact on local communities and recognises the challenges of future climate change



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How to achieve?

Water Act requires a number of steps:

1. Identify **key environmental assets**
2. Determine **management objectives** for each
3. Determine (via modeling) the **watering requirement** to achieve the objectives
4. Use 3 to determine the **Sustainable Diversion Limit** for the catchment (and subsequently the Basin)



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Process

Key environmental assets

- List of water-dependent assets
- Criteria for key assets
- Management objectives
- Watering requirements



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Classification of assets

Summer flow wetlands
(Regulated/unregulated)

Summer flow rivers
(Regulated/unregulated)

Terminal wetlands

Winter/spring flow rivers
(Regulated/unregulated)

Lower lakes
(Alexandrina, Coorong)

Winter/spring flow wetlands
(Regulated/unregulated)



Process

Key environmental assets

- List of water-dependent assets
- Criteria for key assets
- Management objectives
- Watering requirements

Monitoring & Assessment Program

Ecological modelling
Can we achieve? (Overbank flow
environmental works)

Socio-economic assessment
Sustainable diversion limit

Water resource plan

Entitlements for:

- Critical human needs
- Environment
- Consumptive uses

Challenges

- **Vision/goal**
 - What baseline? Seek improvement (restore) to what condition?
 - What targets?
- **Key environmental assets:**
 - what principles underpin the selection?
 - what criteria used to select? (Ramsar, threatened species or communities, representative-rare-unique ecosystems, critical habitat,)
 - How to include ecosystem function?
 - How to prioritise between catchments?
- **Watering needs:**
 - how to determine the watering needs?
 - how to get water to the asset(s) (volume, frequency, timing)?



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Challenges

- **Climate change**
 - How best to include climate change predictions (and uncertainties) into the assessments of SDLs?
 - How best to allow for changes in environmental and consumptive allocations as there is less water available?
- **Systems approach:**
 - what environmental aspects require a systems approach (birds, some fish species, getting water to the mouth, others??)
 - How to protect and managed these aspects?
- **Indicators of success**
 - What to measure, where and how often to show that the Basin Plan is successful?



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