



# Challenges in managing wetlands of the Fleurieu Peninsula



Australian Government  
National Water Commission



Government of South Australia  
Department of Water, Land and  
Biodiversity Conservation

# Outline

- Management of Fleurieu Swamps and impediments to a more effective approach
- What opportunity might exist for this situation to be improved?



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# Complexities of management

- Landholders
  - Various land uses - best practice?
  - How much water does the swamp 'need'?
    - (how much can I use??)
- NRM Boards
  - Prioritisation of investments
  - Effective monitoring of progress towards targets
- State Government
  - Several agencies, little direct work
  - Develop water allocation policies, assess development applications, EPBC referrals
- Federal Government
  - EPBC referrals
  - Other high level policy





# Recovery program

- Focus on conservation/restoration
  - Undertaking what amounts to field experimentation
  - Not resourced to test theories under controlled conditions or document and publish findings
- Required to provide expert advice on policies or developments
  - ‘will scenario x have a significant impact on a given swamp’?
  - If no information, the only recourse is to the precautionary principle



# Agencies

- Officers also deliberate on policies or development proposals
  - No quantitative data – rely on untested thresholds
    - No gray areas, no flexibility in management (no evidence thresholds actually achieve anything)
- Policies are often of little practical assistance:
  - *“The management of natural wetlands should aim to provide adequate water in an ecologically appropriate regime and of appropriate quality so as to maintain wetland functions and ecological values”* Guideline from the State NRM Plan
- Lack of quantitative science weakens any position adopted (incl. precautionary)
  - Hydrologists can model scenarios and predict impacts on flow or level...ecological responses?





# WAP in South Australia

- Water allocation plans: top level protection for a water resource
  - Must 'take account' of env. water needs before allocations
  - Present hypotheses on water regimes and ecological processes
  - Not generally tested at all (but MLR plans will be the most quantitative to date)

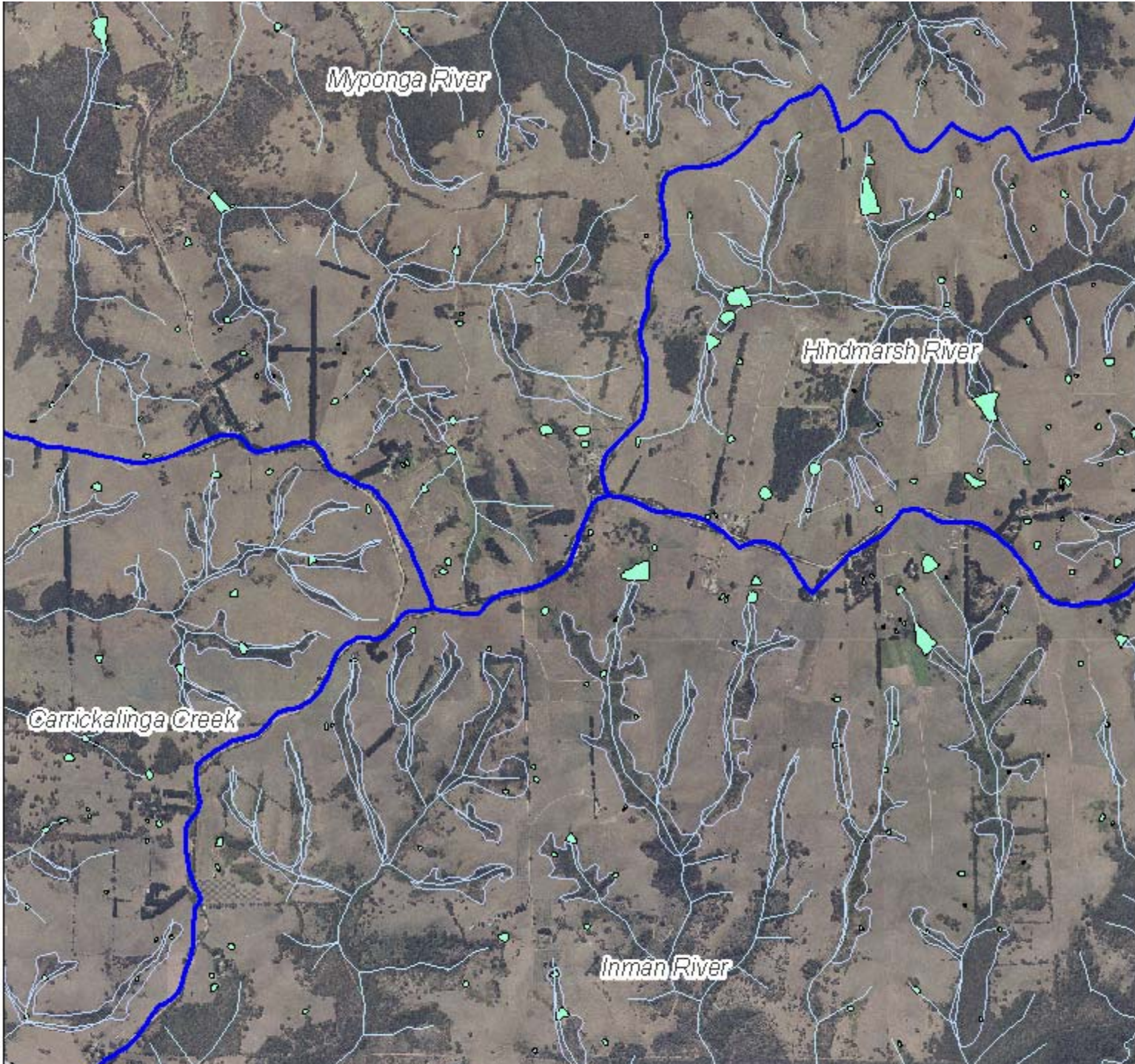




# The opportunity

- Consider Fleurieu Peninsula Swamp...
  - EPBC listed ecological community
    - Such things have attracted good funding in SA:
      - Coorong/Lower Lakes; Great Artesian Basin Springs
      - Limited opportunity to change management
  - On our doorstep, physiographically, structurally and taxonomically diverse and numerous
    - within a mixed agricultural landscape matrix of with a number of active industries
      - dairy; forestry; grazing; cropping
  - Existing Recovery Program continually implementing and assessing on-ground works
  - Their water requirements are the subject of functional hypotheses in NRM plans





*Myponga River*

*Hindmarsh River*

*Carrickalinga Creek*

*Inman River*



# The opportunity

- An effective research collaboration could:
  - Test functional theories in field and laboratory environments
  - Influence management decisions
  - Be involved in NRM reporting processes
  - Influence State and Federal legislation
  - Foster effective communication of findings
  - Establish links across the NRM hierarchy from community to federal govt





## Could maybe learn from WA:

- Centre for Ecosystem Management
  - Based at Edith Cowan Uni.
  - Has EWR research specialisation
    - Phreatophytes
    - Wetland water regimes
  - Research is (apparently) driven by State water allocation science needs
  - Numerous graduate students (9 PhDs)
  - Lots of peer reviewed publications
    - notably dozens of technical reports to State Agencies since 2000

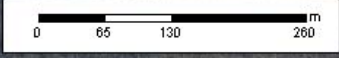


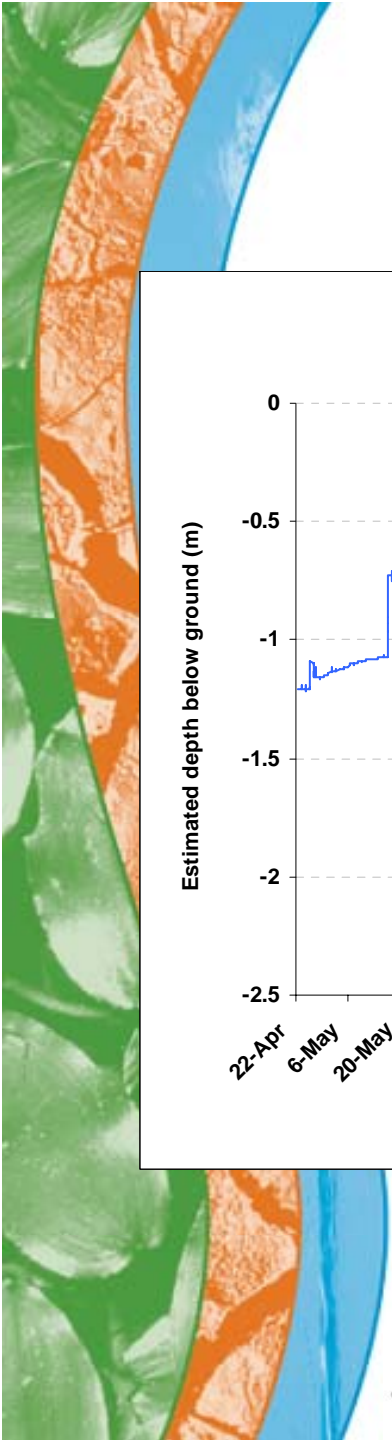


# To whet your appetites...

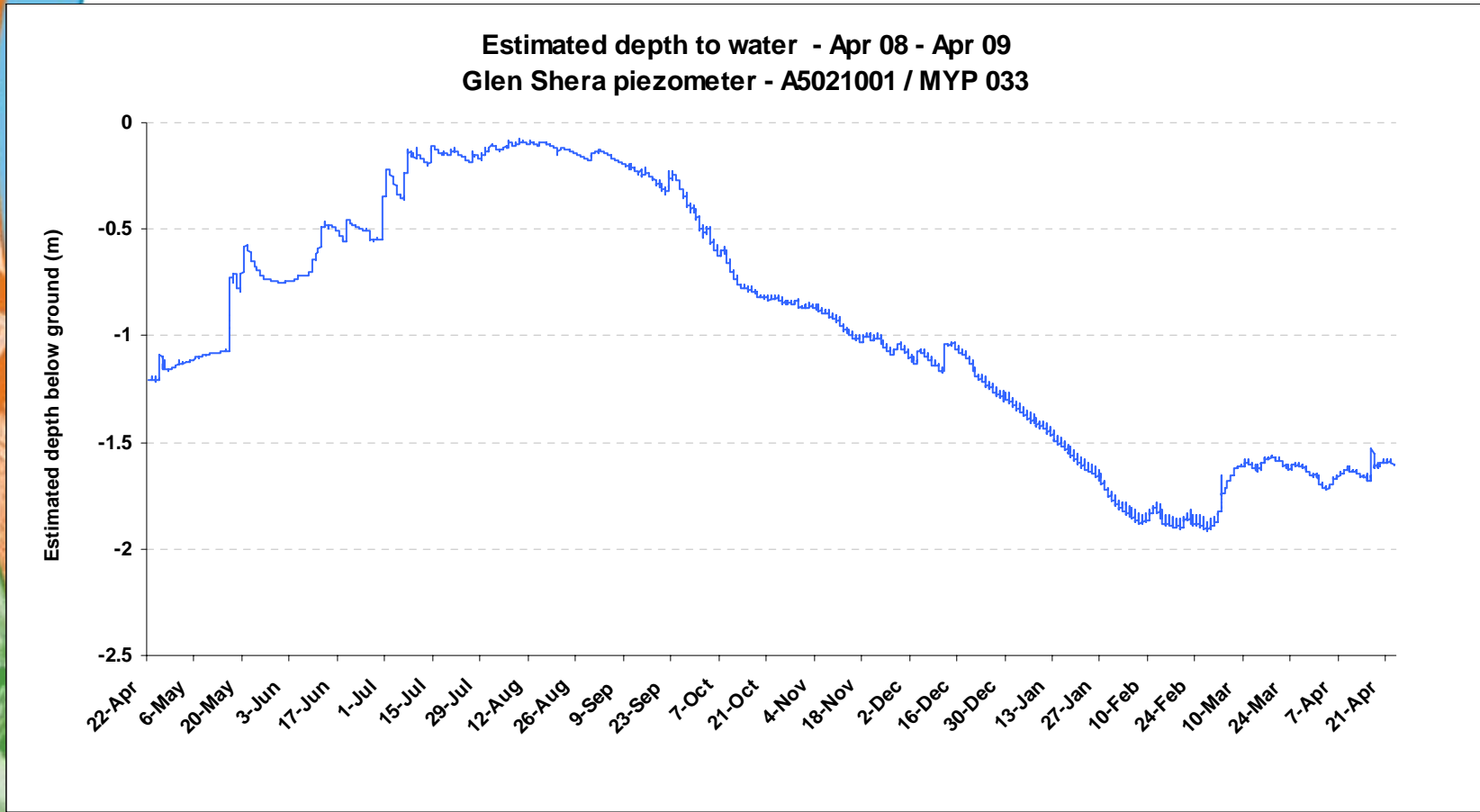
- Glen Shera swamp (Stipiturus CP)
  - Shallow observation well (~ 3m) with data logger deployed in April 2008
    - 12 months+ of hourly water level readings
  - digital elevation model
    - Should be possible to link quadrat data to water regime at the site







Estimated depth to water - Apr 08 - Apr 09  
Glen Shera piezometer - A5021001 / MYP 033



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