

# Economic perspectives on the proposed Basin Plan for the Southern Connected Murray

Donna Brennan

# Lack of attention to economic-environmental trade-offs

- Efficiency cost of sourcing water from tributaries for main channel not considered
- No information provided on the trade-offs between irrigation and environment regarding:
  - use of dam space (reliability impacts vs effectiveness of environmental watering plan)
  - use of channel capacity in peak irrigation months

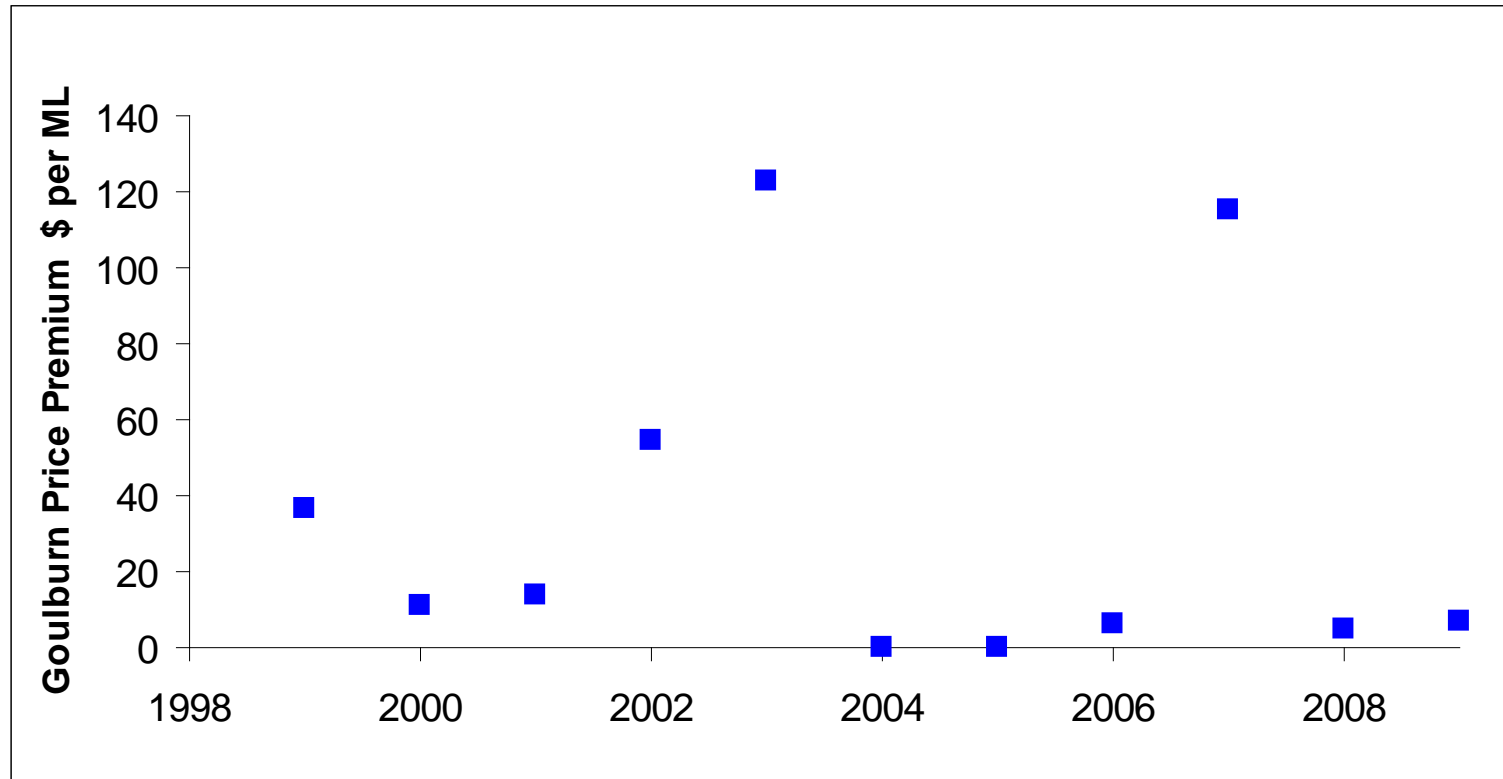
# Water for environment (local vs downstream) GL, 3000GL case

	Local	Down-stream	% Down-stream
Ovens	0	10	100%
Broken	3	3	50%
Goulburn	349	93	21%
Loddon	28	10	26%
Campaspe	28	12	30%
M'bidgee	474	191	29%
Kiewa	0	4	100%

- Murray irrigators cut by 28%

# Goulburn Price Premium 1999-2009

*(Goulburn Price – Murray below Barmah Price)*



Average premium \$34 per ML

# Modeled mean prices \$/ML, 1906-2005

*(Future climate scenario)*

Entitlements:	2008	3000GL SDL	4000GL SDL
Goulburn	61.2	118.9	154.2
Murray above Barmah	44.8	88.8	117.3
Murray below Barmah	46.5	91.0	122.9
Murrumbidgee	46.5	91.0	122.9
<b>Goulburn Premium</b>	<b>14.8 (32%)</b>	<b>27.9 (31%)</b>	<b>31.3 (25%)</b>

# Managing temporal pattern of environment and irrigation water

## Alternatives:

- Commonwealth determines which dam inflows should be sent down the river and irrigators get residual inflows, subject to providing average yield to irrigators consistent with SDLs (*Rules based approach*)
- Commonwealth holds water property rights as specified under State laws, and uses its allocations for environment, or trades it, or carries it over

# Rules based approach

- Significant change in the reliability of irrigation entitlements
- Is it the basis of all the runs done so far?
- Is it more effective than the other approach at achieving environmental outcomes?
- Is it more or less costly overall?

# Example: Spring flows for Goulburn

Impact at average diversions and when reliability is accounted for  
*(historical climate scenario)*

	Expected impact
Average diversion approach	11.4
Properly accounting for spring flows	20.0
Difference in annual cost %	75%



# Holds irrigation entitlement

- Requires clearly specified rights to storage, and spilling rules
- May improve reliability (ie stabilize prices because of counter-cyclical trade)
- Requires clear trading rules for water market given size of environmental water holdings (eg timing of information)
- Can the environmental manager cope with working the market?
- Can the environmental manager deliver?

# What hasn't been discussed or resolved:

- What is the optimal trade-off between varying rights to inflows (via rules-based approach or trade in inflows) and using existing allocation structure and trade in allocations to achieve environmental outcomes?
- In either case, need properly functioning storage markets. Unbundle rights to inflows and rights to dam storage

# Delivery constraints

- There is a conflict between flows needed to meet irrigation orders in peak season, and low summer flows required for environment
- The economic impact of alternative delivery constraints should be quantified

# Summary

- Economic trade-offs have not been adequately considered
- More sophisticated economic analysis (and in particular integrated hydrological-economic analysis) is needed
  - if the Basin Plan is to satisfy the objective of optimizing economic and environmental outcomes
  - and to prove that the environmental manager can deliver outcomes within the constraints of the Act