

## Economics project results



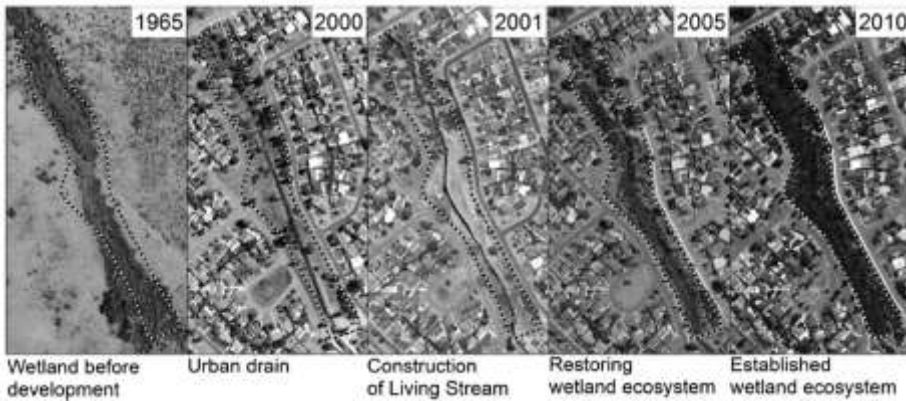
**David Pannell, UWA**

## Who? When?

- ❑ Teams at UWA and Monash
- ❑ Mid 2013 to June 2016

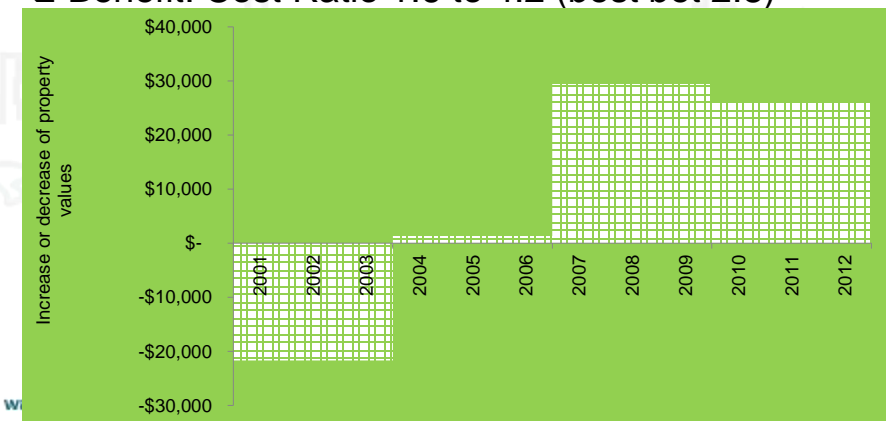
## Non-market values (house prices)

- Conversion of drain to “living stream” (Bannister Creek)



## Non-market values (house prices)

- +3.9 to 4.7% within 200 m (eventually)
- Benefit: Cost Ratio 1.6 to 4.2 (best bet 2.8)



## Non-market values (house prices)

- Green space (Joe Rossetti), measured by “enhanced vegetation index”.
  - 2.6 million transactions nationally over 2000-2009.
  - One standard deviation in EVI increased housing prices by 8.6 to 15.6%
  - One standard deviation = difference between Port Melbourne and Albert Park

## Non-market values (house prices)

- Valuation of different garden types (low vs high water using)
  - Part of a broader study on nutrient management
  - Conversion of some lawn to native can be a win-win
  - As area of natives grows, the marginal benefit falls



## Non-market values (house prices)

- ❑ Rainwater tanks in Perth
- ❑ Savings of water ~\$650 over 15 years
- ❑ House price premium \$18,000
- ❑ Well in excess of private costs (\$2500 + time)



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## Non-market values (house prices)

- ❑ Value of street trees
- ❑ 5606 single family homes sold in 2009 in Perth
- ❑ Large verge trees increase property value (e.g. +\$14,000)
- ❑ Decreases value when on own property or adjacent property near boundary (e.g. -\$6,000)



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## Non-market values (surveys)

- Various water-related benefits (Sydney and Melbourne)
  - improvements in stream health (AU\$160 ± AU\$77 /year)
  - reduction in water restrictions (AU\$145 ± AU\$74 /year)
  - cooler summer temperatures (AU\$53 ± AU\$30 /year)
  - reduction in flash flooding (low values)

## Non-market values (surveys)

- Waste-water treatment plant: Community preferences for land-use options in buffer zone



## Non-market values (surveys)

- ❑ Wastewater treatment plant results
- ❑ Compared to commercial land use, local residents would pay about \$8 (\$5-\$11) per year per household for 1% expansion of natural conservation land uses within the buffer zone
- ❑ \$4 (\$2-\$7) for 1% expansion of recreation areas
- ❑ \$1(\$0-\$3) for 1% expansion of agricultural areas

## Non-market values (surveys)

- ❑ Ecological values of the Swan River (\$/person/yr)

	<b>Foreshore vegetation in good condition</b>	\$129-170
	<b>Average frequency of significant fish kill events</b>	\$55
	<b>Health of dolphin population</b>	\$55-113



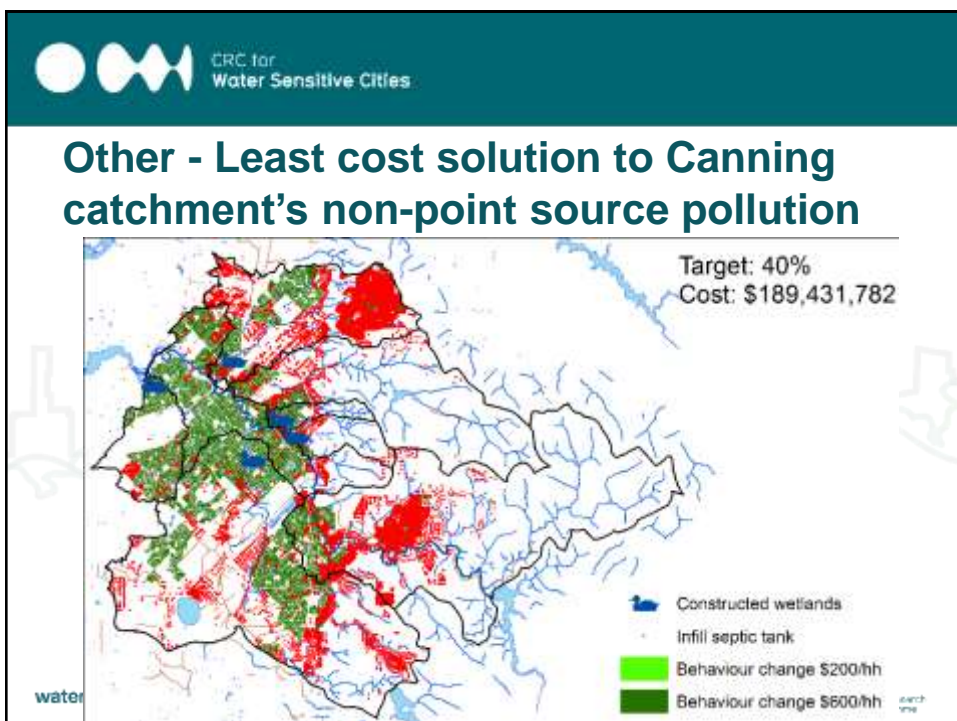
CRC for Water Sensitive Cities

## Benefit: Cost Analysis

- Guidelines on ranking water-sensitive projects



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## Other – cost of reduced water allocations

- ❑ Economic impact of groundwater allocation reduction strategy in WA (Department of Water)
- ❑ \$ impact on horticulturalists from 25% reduction
- ❑ 14-22% reduction in net returns



## Other – efficient irrigation

- ❑ Masters student Sonia Mennen (UWA) The most cost-effective ways to maintain public open space with less water in Perth
  - Six irrigation methods
  - Substantial differences in cost per kilolitre water saved

