

Quantifying the Value of Sydney's Beaches

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Economics, Management & the
Coastal Zone Forum
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Sydney Beaches Valuation Project

- Collaboration between UNSW and SCCG
- Value case study beaches using a range of methods
- Inform existing management, and response to future changes under climate change



Why value beaches?

- Beaches already affected by erosion due to large storms
- Increasing development and visitation pressure
- 90cm Sea Level Rise by 2100 (NSW SLRPS)



Manly Jun 2009 Source: Pacific Edge

How Narrabeen Beach may look in 2050
- SMH 19 July 2006

Management responses

- Do nothing, retreat, adapt, protect
- Hard or soft protection most likely
- What will different alternatives mean in environmental, social and economic terms?



Seawalls or sand

- Which makes the most economic sense?
- Who should pay?
- Source of sand for nourishment?



'Line in the Sand' demonstration
Narrabeen 2005 (SMH)



Belongil Spit June 2 2009: SMH

Research focus

What would the partial or total loss of beaches mean for:

- the local property market and rates revenue? (**Hedonic Pricing Method**)
- tourism and recreation revenue streams? (**Travel Cost Method**)
- intangible cultural and amenity values? (**Contingent Valuation**)

Hedonic Pricing Method

- How are property values influenced by the beach?
- How does erosion risk information affect the local property market?



Source: Coastalwatch, 2007

Hedonic analysis - CN

- 1200 properties included in analysis
- Land values provided by Department of Lands
- Compared to variables such as elevation, distance from beach



CN Land Values

- Strong preference for beach frontage
- Overall average \$972k per property
- Houses in first block worth \$1.22 million
- Average land value of beachfront property is \$1.99 million
- Total value of properties in first block is \$246 million

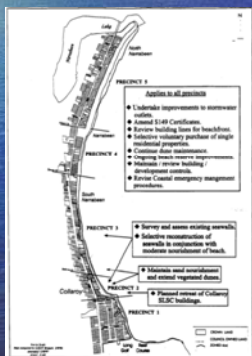


Risk and beachfront property

- Of the beachfront property, about half is located in the zone of Wave Impact
- \$88.7 million at serious risk
- Are property purchasers mad?



Erosion risk information



Property purchasers aren't mad



Beach Precinct 5 – average value of \$2.2 million

Beach Precinct 3 – average value of \$1.55 million

Beach Precinct 1 – average value of \$2.6 million

40% discount for erosion risk

What are beachfront properties worth without sand?



Climate change is reducing land values in coastal areas such as Byron Bay in NSW.

Sea change sinks coastal land values

Angus Glegg and Lisa Allen

Land values on a beachfront strip near Byron Bay in northern NSW have been slashed by 50 per cent, in an early sign of the devastating effect climate change can have on coastal property.

The unprecedented step was taken by the NSW Valuer-General and relates a proportion of Ballinagill Beach, which are being affected by coastal erosion.

This is the result of storm surge

PROPERTY HOLDING UP This could become a national problem in other low-lying areas such as the Gold Coast, Cairns and Sydney's Northern Beaches, recently reporting losses to big losses as property prices plummeted.

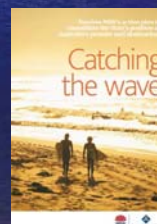
Experts said sea level rises in the coming decades will make storms surge more frequent and severe.

"There is no shade rising sea levels pose a real and significant threat to low-lying coastal property," said Matthew England from

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Travel Cost Method

- What would the loss of beaches mean for tourism and recreation?
- What would this mean for the local, State and national economies?



Tourism value of Sydney beaches

- 8.7% of domestic daytrip visitors go to beach (1.51 million visitors per year)
- 21% of domestic overnight visitors go to the beach (1.43 million per year)
- 60% of international tourists go to the beach (1.56 million visitors per year)
- **4.5 million visitors, not including residents!**



Travel Cost Method

- People spend money if they think they will get more 'value' back
- Travel costs (including time) represent a minimum for value of the resource visited



Source: Aquahumps 29 Sep 08

How much people spend

Sensitive to inclusions

- Driving and travel costs: \$5.87
- Average onsite spend: \$5.66
- Average travel time cost: \$9.04

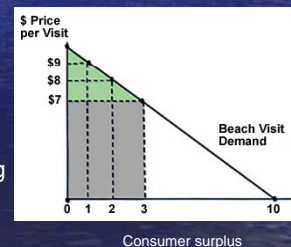


Value of a beach day

Estimated consumer surplus for Collaroy-Narrabeen (CN) and Manly Ocean Beach (MOB)

Travel costs only:
 CN: \$15.62 ± \$5.11
 MOB \$17.95 ± \$4.14

Including onsite spending
 CN: \$40.05 ± \$12.27
 MOB \$64.94 ± \$38.95



Translating to value

An example: Manly - Summer 07/08

SLSA : 855977 beach users
 Council lifeguard : 4.1 million (on sand)
 Surf camera analysis : 3942 people



Source: CoastalCOMS

Recreational value of Manly Beach

Assume 4 million visitors (conservative)

Using travel cost consumer surplus estimate:
 \$71.8 million p.a.

Including onsite costs:
 \$259.8 million p.a.



Contingent Valuation

- Hypothetical Market constructed
- Captures non-use values
- Allows for exploration of situations not experienced before – Climate Change!



Source: SMH

Paying to avoid closure

- In 2050, 10% of the time you visit the beach there will be no dry sand present at high tide. Would you be willing to contribute \$X to a fund designed to prevent this erosion occurring?



Manly Beach, Jun-July 2009
 Source: Pacific Edge

WTP results

- 71% believe SLR will affect beach amenity
- Around 53% of all respondents would be willing to pay, in principle, for a beach management fund that would prevent erosion
- Average WTP of around \$8.44 (\pm \$0.87) per person, among those who support in-principle

Understanding WTP

Reasons for non-contribution included:

- Not local beach
- Insufficient information about project
- Pay taxes already

Most common reason for positive response is future use of the beach
 Bequest value also important

Key learning outcomes

- Sydney beaches are highly important in an economic sense
- Revenue streams are substantial
- Argument for beach erosion prevention is strong
- Alternative beach management funding options may be possible, but design of a project is critical

- Need better estimates of visitation, and more valuation work in general

Funding challenges

- 2009/10 NSW Coastal Management Program grants total \$820 320

- Councils can't go to the bank with WTP

- Coastal protection service charge

What's next?

- Visitation information is critical

- The surveys identified a clear need to better understand what aspects of coastal adaptation options are most important in determining responses

- Need more detailed site-specific information on coastal planning and engineering options, timing, cost-sharing

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