Economic Valuation of Beaches

Beyond Hazard and Vulnerability Planning: Weighing the Costs, Benefits and Challenges of Climate Adaptation

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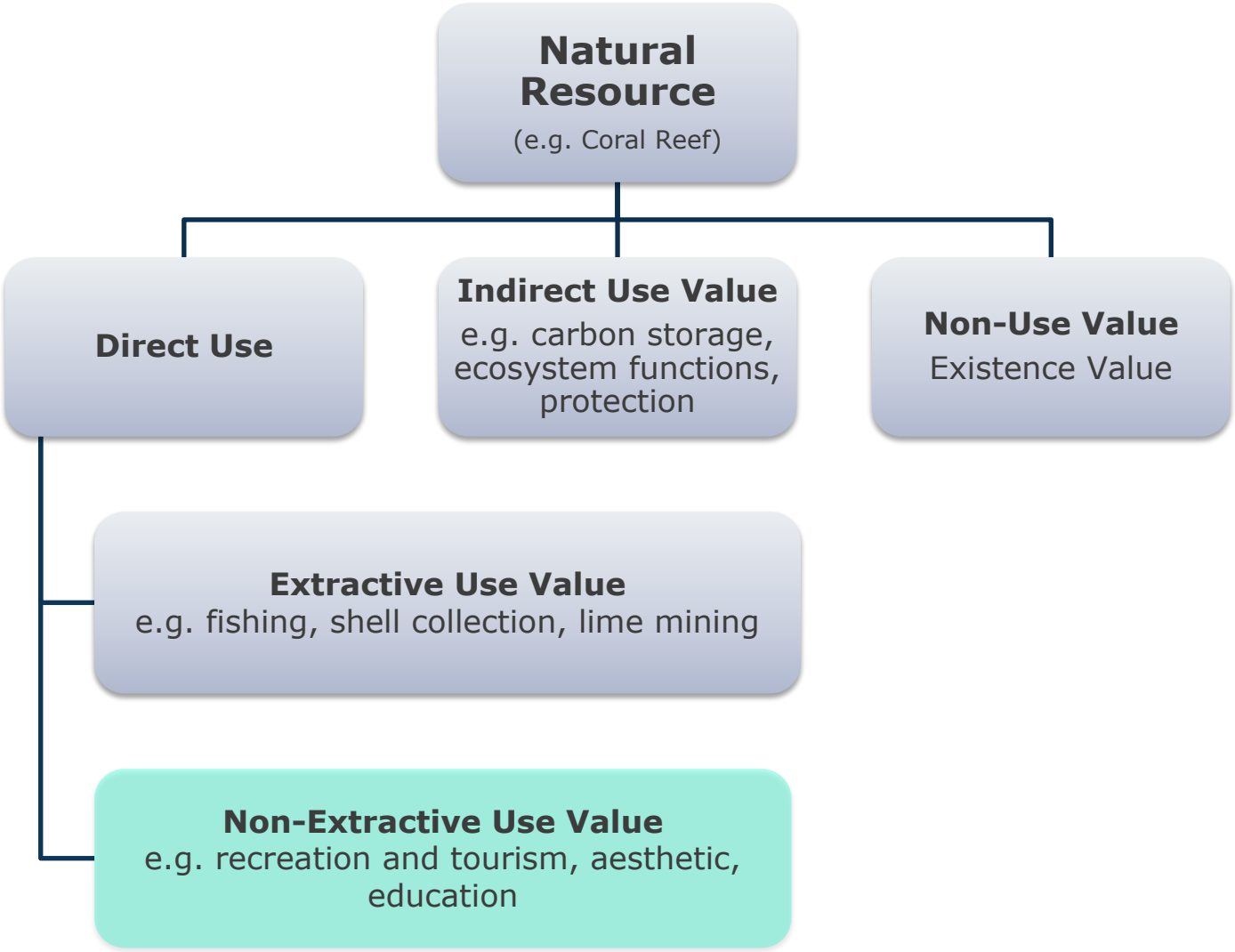
Role of Economics in Coastal Management and Climate Adaptation

- Valuing natural resources and their use
- Assisting with selection of best adaptation options
- Examine fiscal impacts of options
- Optimizing adaptation pathways and implementation of options
- Developing models for financing

Why do we need values?

- Governments need to demonstrate to the public that they are using funds wisely
- Applications for funding assistance require demonstrating that a project is cost-effective
- Cost Benefit Analysis is the dominant decision-support tool in many systems
- Unpriced is not the same as priceless

Total Economic value



Hedonic Pricing Method

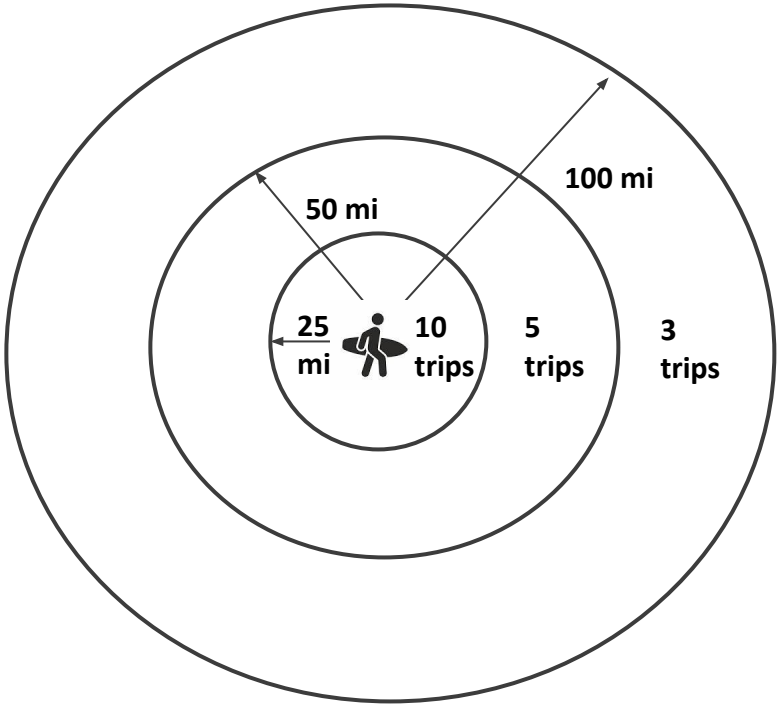
- Properties near the coast are worth more
- Part of this value is due to the natural features (amenities)
- Analysis of many property records can determine the value of a view, beach proximity
- Can also be applied to hotel room rates or short term accommodation bookings
- What would happen if there was no sand?

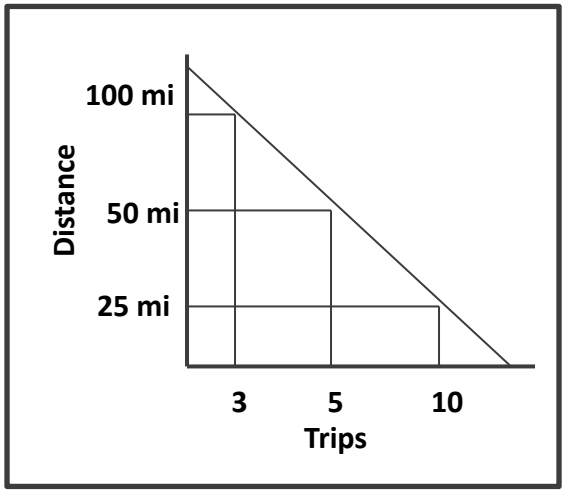
Waikiki Beach. Source: Hotels.com

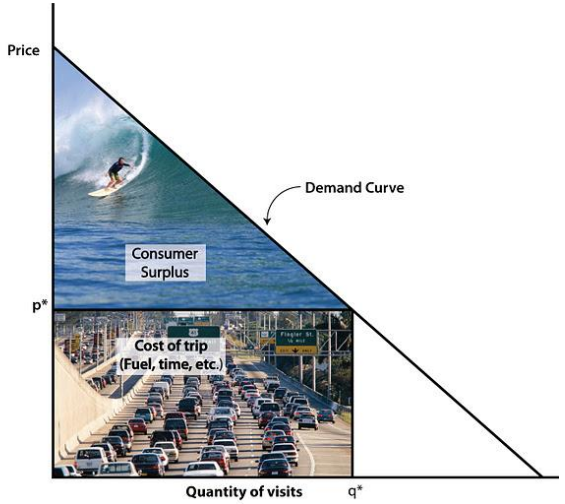
Rocky Point, Feb 2022. Source: Hawaii DLNR

Travel Cost Method

- People take a trip if they think the utility they will get is higher than the costs they have to pay



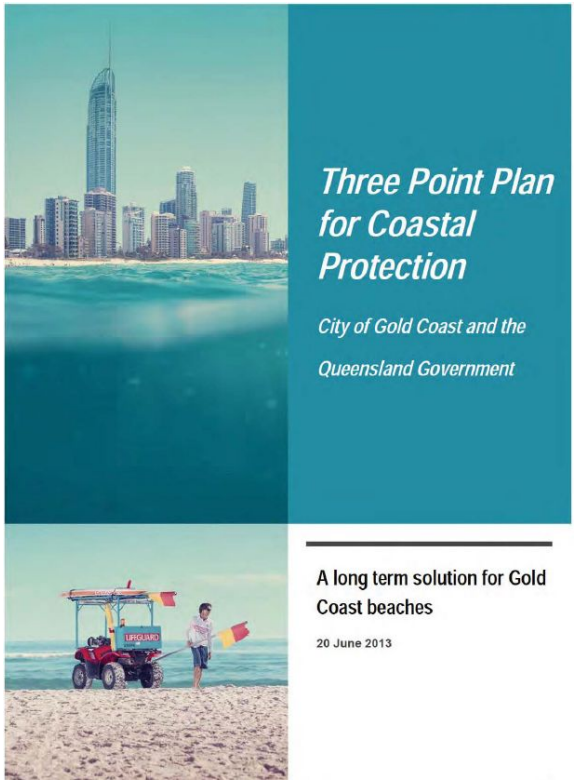




Surfrider blog, Chad Nelsen: Measuring Stoke

Case Study Example

- Examined proposal for AUD$20m in sand nourishment to provide storm protection
- Approximately 4 million cubic yards of sand
- Annual beach recreation values of AUD$5m, annual tourism expenditure of $81m associated with beach use
- Project was approved, and importance of surfing guided sand placement



Beach Holiday Destination Choices

Site A

- 5 hour flight
- 200ft beach width
- Poor water quality
- Low crowd

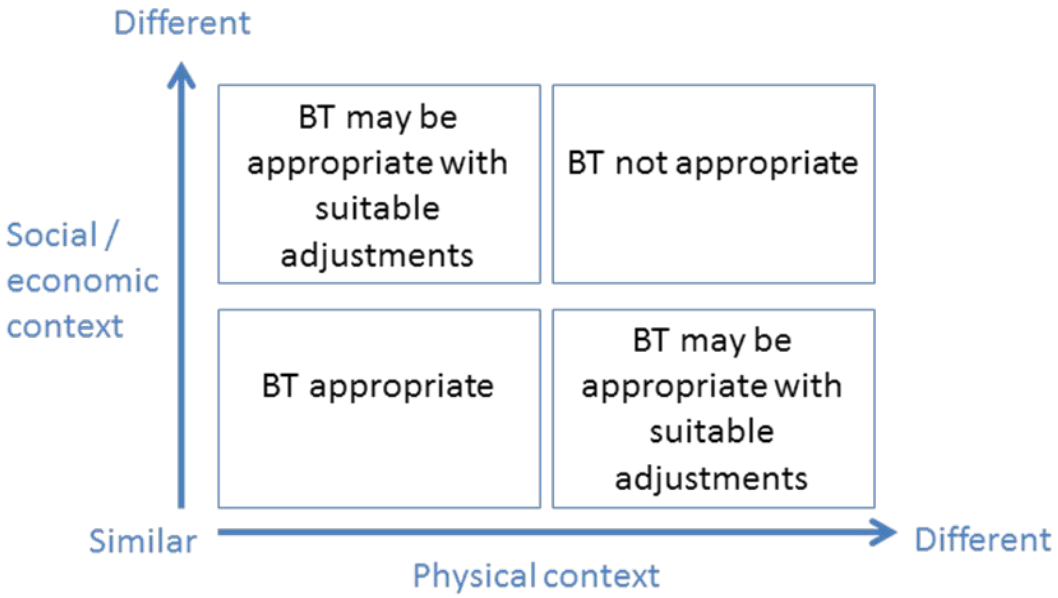
Site B

- 10 hour flight
- 30ft beach width at low tide
- Clean water
- High crowds

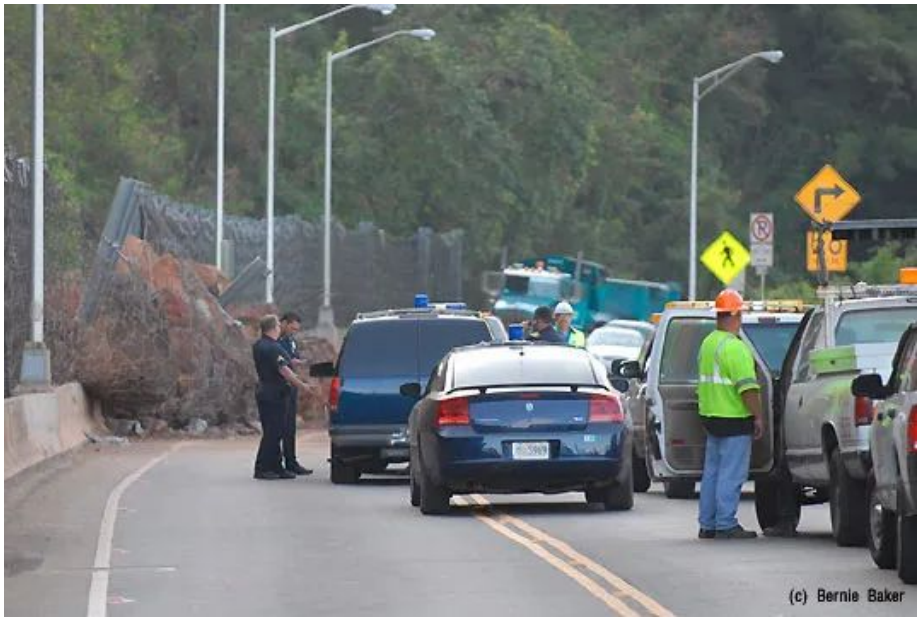
From a series of choices with different attribute levels, can calculate willingness to pay for beach width, or to improve water quality

Using Estimates From Elsewhere

- Benefit transfer is a first-pass approach
- Appropriate where the social and physical environments are similar



Timing of Impacts is Important

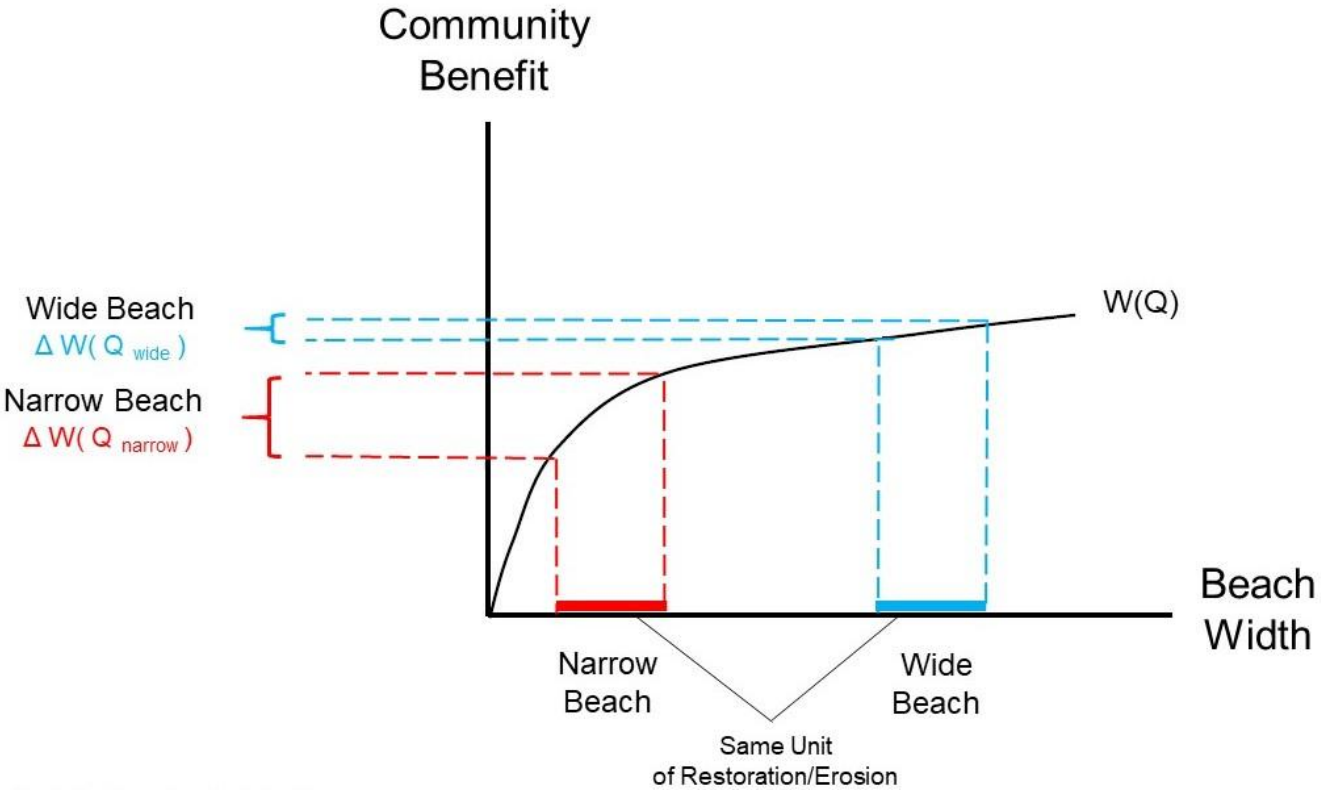


Rockfall Waimea Bay, Feb 5 2023

The Eddie, Jan 22 2023
Source: Khon2

Equity Considerations

- Sand is a finite resource
- Impact of the same beach width loss or gain differs for those with wide and narrow beaches
- As beaches erode, they become more valuable



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