

Table 2: Commonly used approaches to generate monetary values for non-traded goods and services. Additional sources: Anning 2012; Lazarow et al. 2013.

Tool	Approach	Example in practice	Complexity (low, medium, high)	Tips and traps
Replacement cost / cost of damage avoided	Simply put, this approach asks if nothing was done then what assets would be lost and what would it cost to replace them?	A 2011 study assessed the damage risks of increased wind speeds in Brisbane and northeast Queensland under current and likely future climate conditions, based on existing design wind specifications for residential housing. The study concluded that increasing design wind loads for new houses in Brisbane and southeast Queensland would lead to significant benefits (savings through avoided future damages) (Stewart et al. 2014).	Low-medium	<ul style="list-style-type: none"> • Approach traditionally limited to consideration of built assets, however, it has also been applied to habitats on an 'equivalency' basis and involves the cost of restoring partially degraded substitute sites, or the creation of for example saltmarshes or other wetlands on new substitute sites. • Unlikely to reveal full value of an asset.
Benefit Transfer (BT)	Where the results of one study are used to inform decision-making in another location based on assumptions about commonalities across the two locations. Two possibilities emerge i) that values themselves are the same i.e. beach 1 is worth the same per m ² as beach 2; and ii) beach 1 derives its value from the same sorts of things as beach 2 (ACIL Tasman 2012)	A 2013 study examined the utility of using BT to compare the value of beach recreation across multiple sites within Australia. This was achieved by first reviewing existing studies of the value of a beach visitation day and then testing the appropriateness of transferring benefits across sites (Raybould et al. 2013).	Low	<ul style="list-style-type: none"> • Cheap and relatively easy to use. • Reliant on robust original work. • Errors in assumptions can be significant because of differences in basic characteristics or behaviours across sites. • Scale (up or down) may be a limitation on the accuracy of BT approaches.
Revealed preference – Travel Cost Method (TCM)	Travel Cost Method – surveys are used to collect trip expenditure, frequency data and place of origin from visitors to a site. Using actual choices made by consumers, TCM creates proxies for the value of non-traded goods and services.	A 2009 Queensland study sought to determine the economic and social values of beach recreation on the Gold Coast. A travel cost survey set out to collect data from local residents regarding their beach use and the values they associate with the beach, and to develop estimates of the economic value of the beach to residents (Raybould and Lazarow 2009).	Low-medium	<ul style="list-style-type: none"> • Relatively simple to undertake. • Ability to report observed behaviour is a strength of this approach. • Not capable of capturing the value of future change or non-use value (often of significant social and cultural importance). • Can be challenging to use in highly urbanised environs where multiple substitution sites are available to a user at any one point in time.
Revealed Preference – Hedonic Pricing Method	Hedonic Pricing Method – based on the premise that goods are valued for their utility, this method establishes a quantitative relationship between environmental attributes (e.g. a wide beach, a view etc) and distributed markets such as the property market.	A 2012 NSW study identified price premiums for beachfront property in Collaroy-Narrabeen relative to the erosion risk information contained on property titles (Anning 2012).	Medium-high	<ul style="list-style-type: none"> • Able to capture use and amenity values while employing a revealed preference valuation technique. • Useful for use in urbanised environs. • Sample size is important. • Limited to the consideration of private land and landholders.

**State preference –
Choice Modelling**

Random Utility / Choice Modelling – respondents are presented with a series of choices between bundles of environmental goods at different prices based on the status quo. Choices reveal the importance of certain attributes and the monetary values attached to each one – revealing either a willingness to pay to preserve a certain asset or willingness to accept a payment for the loss/loss of access to an asset.

A 2012 Victorian study sought to understand the value and importance of caravan and camping parks along Victoria’s west coast, including the preferences of local residents and visitors to maintain these assets, which are currently exposed to a range of coastal hazards that are projected to increase in severity with climate change (Walker et al. 2012).

Medium-high

- Major criticism is that hypothetical questions yield hypothetical answers that bear little resemblance to revealed values. The use of real world ‘payment vehicles’ e.g. entrance fee to a site; donations to a trust; or a local tax, can provide Choice Modelling studies with a much sharper focus.
- Highly subjective.
- Generation of attribute specific ‘bundles’ of preferences is useful for supporting trade-offs scenarios.