Developing a knowledge platform on value of parks for tourism

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Abstract

National Parks and other protected natural areas are a significant point of focus for tourism activity globally. Consequently it is important to understand the values of parks for tourism to assist with effective policy, planning and management of protected areas as conservation reserves and as tourism and recreation resources. The gathering of knowledge to better inform understanding of tourism has been described as the Knowledge Platform. The ideal being that gathering of knowledge about tourism will provide a broader understanding of the parks tourism system as a whole and better inform decision making. This paper reviews a series of 24 parks valuations for tourism between 1991 and 2007, focusing on economic valuations as an example. The intent was to explore whether these valuations had contributed to a greater understanding of parks values in the spirit of the tourism knowledge platform. The parks valuations for tourism seem to have occurred in an ad hoc manner using a wide variety of techniques and expression of value of varying complexity. This has produced a disjointed and occasionally contradictory body of knowledge around economic values of parks for tourism. A coordinated approach to parks valuations for tourism using a single accepted method would greatly improve understanding and assist with parks policy, planning and management.

Introduction

Australian protected areas, including national parks and other conservation reserves, constitute approximately 10% of the continental land area and are currently managed primarily to conserve cultural and ecological values (Australian Government, 2007). While Australia has over 600 protected areas referred to as national parks, in addition to numerous other types of conservation reserves, they are not centrally managed by the federal government as with the original US model. In Australia there are nine protected area systems, one in each state and territory and one Commonwealth system collectively known as the National Reserve System (Natural Resource Management Ministerial Council, 2004). The decentralized character of Australian protected area management has resulted in varied frameworks and approaches to protection, management and research. However, Australia

has been identified as a world leader in recognizing the value and importance of protected natural areas in a sustainability context. This is evidenced in the development of trading in ecosystem services, alterations of accounting law to include native animals as assets, world leading advancements in assessment of ecosystem assets associated with natural areas and the accumulating body of knowledge around valuation of protected areas for sustainable tourism and recreation (Daily et al., 2000; Hughes & Carlsen, 2008; Tremblay & Carson, 2007).

Protected areas and tourism

In Australia, as with other destinations, national parks are a significant point of focus for tourism, and hence, tourism research (Eagles, 2002; Kuo, 2002; Nyaupane, Morais, & Graefe, 2004). An Australian Senate Inquiry (Australian Government, 2007) noted that national parks form a key component of the tourism industry in Australia and therefore hold important values for tourism. For example, Tourism Research Australia (2007) reported national and state park visitation in Australia accounted for 15 percent of domestic visitor expenditure and 54 percent of international visitor expenditure in 2007. Consequently, natural areas have been a significant point of focus for tourism research. For example, in an analysis of 3468 academic publications on sustainable tourism it was found that 50% included issues relating to natural areas, with about 21% of the total exclusively addressing issues around natural areas and tourism (Hughes & Carlsen, 2007). With the growth in body of knowledge around sustainability and tourism, it is well now well recognized that protected natural area tourism significantly influences regional economies (Dwyer, Forsyth, & Spurr, 2004; Hughes & Carlsen, 2008), can have significant positive or negative social impacts (Fredline, Deery, & Jago, 2006) and requires careful management to ensure natural areas are conserved for future generations (Hall, Madden, & Oosten, 2007). Such recognition is based on a range of research over time, representing various perspectives on values for tourism including advocation, caution and adaptation.

Despite the general acknowledgements of values for tourism developed over time, there is evidence that government resource allocations toward management of publically owned protected natural areas are inadequate or are in decline (Australian Government, 2007; Eagles, 2003). Alpizar (2005), Athanas et al (2001), Krug et al (2002) and Font et al (2004) also noted that publically owned protected natural areas around the globe often receive inadequate resources from governments. This is seen as a product of a values hierarchy where elements such as health, education and security are considered more important than conservation of natural areas. For example, reasons may revolve around limited government

funds being directed to areas with a perceived higher value such as public health and education (Alpizar, 2005; Athanas & Vorhies, 2001; Font, Cochrane, & Tapper, 2004; Krug, Suich, & Haimbodi, 2002). Eagles (2003) claimed this to be the result of difficulties in justifying spending of public money on protected natural areas for the benefit of only a minority of the population that are users. In addition to impacting on conservation management and ecological sustainability, this can potentially degrade the visitor experience and subsequently negatively impact on tourism to protected natural areas. The result could be a degradation of ecosystem services associate with protected areas along with reduced social and economic benefits associated with the protected natural area itself and tourism activity.

The complex nature of protected area management, varying conditions of use, infrastructure and services within and between regions, lack of adequate data and varying ecological characteristics even within a single park management agency's jurisdiction makes identification of reliable and specific values problematic (Hughes, Carlsen, & Crilley, 2009). Building a body of consistent and detailed knowledge could function to provide a firm and reliable understanding of the value of protected areas for tourism and help guide appropriate management actions.(Carlsen, 1997; Tremblay & Carson, 2007).

Tourism Platforms

In terms of building knowledge and conceptions of tourism, including protected area tourism, Jafari (1990) described a series of tourism platforms. The tourism platforms represent a chronological progress of four platforms of thought with regards to tourism. Building on an initial Advocacy platform, the Cautionary, Adaptancy and Knowledge tourism platforms developed in the second half of the 20th century. It is considered that each developed over time without replacing previously existing platforms (Jafari, 1990). The dichotomy between the Advocacy and Cautionary Platforms was seen to lead to the Adaptancy Platform. This was described as a mediating platform seeking to minimize negative impacts and maximize benefit. However, its focus on niche tourism experiences addressed tourism form but not volume. The knowledge platform emerged with the realization of the broad scope, high volume and long term, global character of tourism and its varying effects. The knowledge platform recognized the need to gather a body of understanding of the total tourism system. This would ideally provide a firm foundation of objective knowledge to facilitate a balance between the Advocacy, Cautionary and Adaptancy platforms in the planning, development and management of tourism (Jafari, 1990). The emergence of the knowledge platform in the late 20th century is reflected in the rapid increase in published tourism related research from

the early to mid 1990s through to the early 21st century across a broad spectrum of themes and disciplines (Hughes & Carlsen, 2007). Ideally, the knowledge platform would be developed through a coordinated approach to issues such as valuation of protected areas for tourism to enable a broader, more strategic perspective.

Authors such as Macbeth (2005) point to a requirement for additional platforms to maintain the relevance and currency of the tourism framework. This is based on the notion that Jafari's (1990) proposition of the four platforms does not take into consideration the more recent concepts of sustainability and tourism ethics. Given that knowledge could be defined as "…the theoretical or practical understanding of a subject … what is known in a particular field or in total…" (Soanes & Stevenson, 2008) it could be argued that the knowledge platform encompasses any new understandings or contexts for tourism that may emerge. In any case, this paper does not seek to debate the nature or number of tourism platforms, but rather, uses the knowledge platform as a basis for framing the argument that research on values on parks for tourism should contribute to a greater understanding of the whole.

This paper examines the character of the body of knowledge relating to values associated with national parks in the context of tourism, focusing on economic valuations as an example. This involved a review of a series of economic valuations of protected areas for tourism conducted in Australia from 1991 to 2007. Numerous projects have been carried out within this time frame to establish values of national parks for tourism for varying purposes. Ideally, in keeping with Jafari's (1990) notion of the tourism platforms, this research reflects a move toward building a body of knowledge to inform the remaining platforms and generate a whole of system perspective on parks values for tourism. Tremblay and Carson (2007) and Hughes and Carlsen (2008) noted numerous parks valuations had been conducted over the past several decades but no consistent method has been used. This is primarily because valuations were conducted independently to achieve specific objectives at the time, such as demonstrating strategic and operational needs or economic benefits to justify funding requests. The intent of this paper is to demonstrate the variation in methods and approaches and the implications this has in terms of contributing to understanding protected area values for tourism in the spirit of Jafari's (1990) knowledge platform.

Economic Valuation of Protected areas for Tourism in Australia

For this paper, 24 published valuations of parks for tourism, between 1991 and 2007, were sourced. Publications were accessed using online databases including Google Scholar, Proquest and Science Direct as well as through Australian protected area management agencies, tourism and other conservation management organization websites. The 24

publications included 29 parks or park complexes around Australia, mostly clustered along the eastern seaboard (Figure 1). The clustering of valuations along the eastern coast of the continent reflects the Australian population distribution and level of park use.

The economic valuations reviewed were conducted by academic researchers, commercial consultants and government agencies. Some valuations used secondary data while others gathered primary data or used a combination of both to establish values on a range of geographic scales from single parks for tourism through to entire regions or states. Publication types included refereed journal papers, conference papers, consultant reports and government agency reports. The published valuations were reviewed in terms of the parks valued for tourism, the methods used and how values were expressed. A summary of the references reviewed is included in Appendix 1.
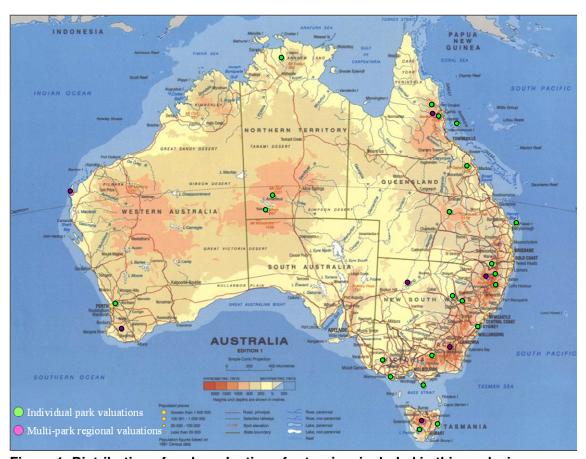

Figure 1: Distribution of parks valuations for tourism included in this analysis

An important characteristic of the 24 valuations reviewed is the diversity of units used for expressing parks values for tourism. The valuations include at least 15 different units of expression (Table 1). This was obviously partly determined by the method used and partly based on the discretion of those conducting the valuation. Each unit of expression can vary greatly in terms of the magnitude of the number and what it refers to. Different units of value are not always directly comparable between valuation studies. The combination of the

valuation method used and how the value of the park is expressed strongly determines the magnitude of value and how the figures should be interpreted.

Table 1: Various units of measure used for economic valuation of Australian protected areas for tourism between 1991 and 2007.

Unit of Economic value	Definition
Aggregate recreation use value:	The sum of consumer surplus or gross state product values for a range of respective user groups visiting a park or region.
Attributable Direct Visitor expenditure	The proportion of money spent in a region by tourists that may be directly associated with accessing the parks in that region.
Consumer Surplus / User surplus	The estimated value of benefits to parks tourists beyond the financial costs incurred on a trip
Direct financial value	Sum of visitor spending and spending by management in parks (Buultjens & Luckie, 2005).
Gross economic value	The sum of gross market value and user surplus within a region associated with parks visitation (Carlsen, 1997).
Gross market value	The gross expenditure in a region attributable to the protected area of interest.
Gross State Product	Total value added in the state economy in a year as a result of parks tourism. Essentially the total value of goods and services produced less the cost of goods and services used. (http://www.treasury.tas.gov.au)
Gross Regional Product / Gross Area Product	A measure of total income in a defined area or region directly and indirectly associated with parks tourism.
MGM value	An estimate of economic benefits from park visitation in terms of sales or output benefits, the number of new jobs created and parks management expenditures on salaries, construction projects and other park-related activities in a region (Buultjens & Luckie, 2005).
Net present value	The result of subtracting the total present value costs from the total present value benefits associated with parks tourism (www.acf.hhs.gov).
Net present value of future use	Estimate of future value in present day dollars based on projected growth in visitation to a park and the subsequent projected growth in net value.
Non-use value	Economic value attached to a park separate from the tangible use of the park. This may include existence values, bequest values, altruistic values, and option values.
Non-market value	Independent of market value, based on valuing the time and money people are willing spend to use parks and ensure they continue to be available (Lockwood & Tracy, 1995).
Total economic value	Includes use and non-use values based on contingent valuation techniques and direct and indirect financial values based on parks visitor spend and regional multipliers (Kleinhardt-FGI, 2002).
Willingness to Pay	The proxy value of a park based on how much users would be willing to pay to use or not use it (www.wiley.com).

While economic valuations and how they are expressed address a specific brief appropriate for that time and place, this can detract from the broader strategic perspective once these values are published. Problems associated with the diversity of Australian protected area economic valuations are highlighted where specific parks or regions have had multiple independent valuations conducted over time. For example, of two valuations of national parks for the Northeast region of New South Wales, one valuation found the economic value to be up to AU$20 mil (Buultjens & Luckie, 2005) while an earlier study estimated a value of AU$1.12 billion (Carlsen, 1997). Two valuations of the Great Barrier Reef varied between AU$776 mil (Driml & Common, 1995) and AU$4.5 billion (Access Economics, 2007). Multiple economic valuations of Kakadu National Park have produced values ranging from AU$34.9 mil up to AU$435 mil (Table 2). Understanding why these studies provided such vastly different values requires the reader to understand the difference between an MGM value versus gross economic value for the Northeast New South Wales region. It requires an understanding of the difference between direct financial value and gross area product for the Great Barrier Reef and what these represent. It requires knowledge of the difference between annual consumer surplus, median willingness to pay, direct financial value and attributable direct visitor expenditure for Kakadu. This could cause some uncertainty for an audience without sound knowledge of economic theory. Even for the economically literate, the various methods of valuation for specific regions or parks over time creates difficulties in identifying any possible change in value given the inability to directly compare the units of measure.

Table 2: Economic valuations of Kakadu National Park over time.

Year	Author	Method	Stated Value	Unit of measure
1991	Stanley & Knapman	Travel Cost	$34.9 mil	Annual consumer surplus
1994	Carson, Wilks & Imber	Willingness to Pay	$435 mil	Median willingness to pay
1995	Driml & Common	Secondary data – Estimated visitor direct spend in regions attributable to park. (1991 figures)	$122 mil	Direct financial value
2007	Tremblay	Annual direct visitor expenditure	$51.1 mil	Attributable annual direct visitor expenditure

In addition to variation in valuation technique, economic valuations often combined techniques or factored in secondary elements associated with employment and subsequent business spending in a region resulting from protected area tourism activity. For example, Mules et al (2005) used the travel cost method combined with regional multipliers to

establish an economic value for the Australian Alps for tourism and recreation. The value they provide relates to "…[estimating] the present value of future streams of consumer surplus from recreation use of the Alps." (p29). They extrapolated this to the sum of Gross State Product contributions to two Australian states and a territory. Other valuations based on travel cost provide consumer surplus values and net present value of future use (e.g. Beal, 1995; Bennet et al, 1996; Herath & Kennedy, 2004; Nillisen et al, 2005). Access Economics (2007) provided a different set of values for the Great Barrier Reef Marine Park based on "value-added" and "Gross Area Product" for the Great Barrier Reef Catchment Area (includes all of the land area between the Great Dividing Range and the reef from Torres Strait Islands to Bundaberg). Carson et al (1994) calculated a value for preserving the Kakadu Conservation Zone based on a median Willingness to Pay value multiplied by the number of Australian households in 1990. Each of these studies require relatively complex econometrics and express findings in varying ways and at different regional scales.

In addition to issues around limited comparability, complexity and accessibility of parks valuation knowledge, reliability of some valuation methods have been questioned. For example, the contingent valuation and travel cost methods are considered to have significant limitations which could create uncertainty regarding reliability of dollar value figures. Erbele & Hayden's (1991) review of the travel cost and contingent valuation methods summarized these concerns by stating:

> The errors most commonly identified by authors are hypothetical bias, information bias and interviewer bias. … discussions [by authors] usually surround why the studies failed to provide significant results or why they contradicted priori theory predictions.

When discussing the valuation of tourism in the wider economy, Tooman (1997) commented that a substantial portion of the economic impact of tourism activity is not addressed by multiplier analysis. In this vein, Dwyer et al. (2004) argued that multipliers measure the positive effects of tourism growth on economic activity but ignore the fact that this growth reduces the resources available to other industries within the economy, which can in some cases outweigh the positive effects. Carlsen and Wood (2004) noted that use of economic multipliers is often used to inflate parks values to more impressive levels. This is done to justify parks management budgets or agency requests for additional funding. While any valuation method will have its positive and negative aspects, arguments over the merits of various methods can contribute to the uncertainty in protected natural area valuations. Of perhaps greater significance is the heterogeneity of protected area valuations for tourism methods used combined with subtle technical variations in results interpretation. This seems to have functioned to confuse understanding of economic values of parks for tourism across regions and over time (Tremblay and Carson, 2007).

Conclusion

Despite the numerous economic valuations of national parks for tourism conducted in Australia since 1991, it seems that a cohesive and accessible body of knowledge around parks values is yet to be achieved. Valuations, even of the same park over time, are generally expressed in a variety of units of measure for varying geographical scales as seen fit for a specific park or region. The lack of coordination contributes to difficulties in understanding the value of national parks for tourism and how they compare between regions and over time. This could be seen as mainly owing to the disjointed, ad hoc approach to national parks valuations resulting from the decentralized nature or protected area management in Australia and the commissioning of valuation studies to meet needs at a given moment in time. The result is a methodologically diverse and disjointed cluster of valuations rather than a body of knowledge on parks valuations for tourism. Consequently, when considering the value of a park or park complex, the question of 'whose value is most valid?' is a likely required consideration. Given the variety of approaches evident in this economic valuation example are something of a product of the spectrum of people conducting the valuations, the diversity of methods available and the context in which they are operating, the question could equally apply to identification of social and environmental values.

The wide variations in values and questionable validity of methods creates difficulties in generating acceptance of values produced. Adoption of a generally consistent and accessible approach to national parks valuation for tourism would benefit planning and management through provision of outcomes accessible to parks managers not expert in econometrics. Adopting a single accepted approach to parks valuation for tourism accessible to managers and policy makers could prove a more strategic approach to protected area valuation for tourism. A universal valuation method could improve policy formation through a more informed and accurate broader picture of the value of parks for tourism at the regional, state and national level, comparable between regions and over time.

The authors suggest that a direct visitor expenditure approach as used by Carlsen and Wood (2004), Tremblay (2007) and Tremblay and Carson (2007) could provide a foundation for a common approach. Attributable direct expenditure valuation affords a reliable (though conservative) objective method with limited potential bias. It is based on a clear method reliably comparable between parks and regions and over time. Direst expenditure does not require estimation of demand curves, use of multipliers and avoids other potential sources of error in contingent and travel cost valuations as described by Erbele and Hayden (1991). It also provides a unit of value (attributable annual direct expenditure) accessible to parks managers and non-economists. Pearce (1981) noted that visitor direct expenditure forms the

basis for further extrapolation of economic contribution, but most often is the primary tourism contribution in rural regional areas where parks tourism commonly occurs. A coordinated approach to parks valuations, irrespective of the dispersed nature of parks management, would better reflected the spirit of Jafari's knowledge platform in building a cohesive body of knowledge that provides a broader view of the value of parks for tourism..

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APPENDIX 1: Summary of Published Parks Valuations for Tourism Reviewed

Year	Author(s)	Title	Valuation method	Estimated park tourism value p.a.	Publication type
1991	Stanely, O. & Knapman, B.	A travel cost analysis of the recreation use of Kakadu National Park	Travel Cost	Consumer Surplus value $34.9 mil	Report to Kakadu Conservation Zone Inquiry
1994	Carson, R., Wilks, L. & Imber, D.	Valuing the conservation of Australia's Kakadu Conservation Zone	Willingness to Pay	Median willingness to pay value $435 mil	*Oxford Econ. Papers* v 46
1995	Beal, D.	A travel cost analysis of the value of Carnarvon Gorge National Park for recreational use.	Travel cost method	Minimum net present value $40 mil Consumer surplus value $2.4 mil	*Rev. Marketing & Agricult. Econ.* 63(2)
1995	Driml, S. Common, M.	Economic and financial benefits of tourism in major protected areas.	Secondary data – Estimated visitor direct spend in regions attributable to park. (1991 figures)	Great Barrier Reef $776 mil Wet Tropics $377 mil Kakadu $122 mil Uluru $38 mil Tasmanian Wilderness $59 mil	*Aust. J. Env. Management* 2(1)
1995	Lockwood, M. & Tracy, K.	Nonmarket economic valuation of an urban recreation park	Travel Cost Method	Centennial Park, Sydney $23 – $33 mil	*J. Leisure Res.* v27 (2)
1996	Bennett, J; Gillespie, R; Powell, R	The economic value and regional economic impact of national parks	Travel Cost Method	Present value of future use (consumer surplus value) Gibraltar Range NP $11 mil ($0.76) Dorrigo Range NP $77 mil ($5.4 mil)	*Aust. J. Environ. Management* v3
1997	Carlsen, J	Economic evaluation of recreation and tourism in natural areas: a case study in New South Wales, Australia	Willingness to pay, Travel Cost	Gross economic value Upper NE Region $1.12 bil	*Tourism Econ.* 3(3)
1998	NSW NPWS Conservation Economics Unit	The contribution of Coolah Tops National Park to regional economic development	Park visitor survey, input-output analysis with regional multipliers	Gross regional product: $390,000	Report to *NSW NPWS

Year	Author	Title	Method	Values	Source
2000	NSW NPWS Conservation Economics Unit	The contribution of Warrumbungle National Park to regional economic development	Park visitor survey, input-output analysis with regional multipliers	Annual direct visitor spend: $2.65 mil Gross regional product: $2.08 mil	Report to NSW NPWS
2001	NSW NPWS Conservation Economics Unit	The contribution of Sturt National Park, Kinchega National Park and Mutawintji National Park to regional economic development	Park visitor survey, input-output analysis with regional multipliers	Annual direct visitor spend: $5.76 mil Gross regional product: $5.53 mil	Report to NSW NPWS
2002	*Kleinhardt-FGI*	Tourism & Recreation Values of the Daintree and Fraser Island.	Secondary data for Fraser Coast and Douglas Shire with extrapolations and assumed attribution	Direct financial values (total value) Daintree - $141.7 mil ($162.9 mil) Fraser Isle - $166.7 mil ($265.25mil) -	Report for the Australian Tropical Research Foundation
2002	Madden, J., Groenwold, N. & Thapa, P	Estimating the value of Tasmanian national parks to park visitors	Park visitor survey, Travel Cost Method with substitution factor	Consumer surplus value Freycinet NP: $14 mil All Tasmanian NPs $120 mil	**STCRC report
2003	PriceWaterhouseCoopers	The value of parks: The economic value of three of Victoria's national parks: Port Campbell, Grampians and Wilson's Promontory	Secondary data to estimate total economic value based on visitor spend, repeat visitation rate management spend and multipliers.	Direct visitor spend (total value) Port Campbell $143.5 mil (190.4) Grampians $186.6 mil ($246 mil) Wilsons Prom $37 mil ($50.2 mil)	Consulting report to Parks Victoria
2004	Carlsen, J. & Wood, D.	Assessment of the economic value of recreation and tourism in Western Australia's national parks, marine parks and forests	Visitor direct spend in region with park attribution and substitution factors	Attributable direst visitor spend values Gascoyne Coast region $127 mil Southern Forests $62 mil	STCRC report
2004	Herath, G. & Kennedy, J.	Estimating the economic value of Mount Buffalo National Park with the travel cost and contingent valuation models	Travel Cost method,	Consumer surplus value $3.1-$11.1 mil Total value $31 mil	*Tourism Econ.* 10(1)

2004	Linberg, K. & Denstadli, J.	Impacts of national park visitation on rural economies and government revenue in Queensland: Examples of Girraween, Eungella, Daintree and Carnarvon	Visitor direct spend in region with park substitution factor and regional multipliers for economic impact	Gross regional product Girraween, $1.6-$3.2 mil Eungella, $3.8-$10.9 mil Daintree $31.1-$54.1 mil Carnarvon $1.5 - $2 mil	STCRC report
2005	Buultjens, J. & Luckie, K.	Economic impact of selected national parks in north-eastern New South Wales	Money Generation Model – visitor spend in parks, park management costs and regional economic multipliers	Visitor/ NPWS regional spend $10.9 mil MGM value ~ $20 mil	STCRC report
2005	Mules, T., Faulks, P., Stoeckl, N. & Cegielski, M.	Economic value of tourism in the Australian Alps	Travel Cost Method and visitor spend with substitution factor and regional multipliers using input-output models	Estimated aggregate recreational use value $40 bil	STCRC report
2005	Nillesen, E., Wesseler, J. & Cook, A.	Estimating the recreational use value for hiking in Bellenden Ker National Park , Australia	Park visitor survey, Travel Cost Method, zonal method	Recreational use value $250,825	*Enviro Management* 36(2)
2005	Pepper, C., McCann, L. & Burton, M.	Valuation study of urban bushland at Hartfield Park, Forrestfield, Western Australia	Random household mail back survey, Willingness to Pay	Willingness to pay for preservation value $16.6 mil	*J. Ecol. Management and Restoration* 6(3)
2007	Access Economics	Measuring the economic and financial value of the Great Barrier Reef Marine Park, 2005-06	Secondary Data Value added, Gross Area Product	Value Added - $3.7 bil Gross Area Product - $4.5 bil	Consulting report to GBRMPA, Feb 2007
2007	Prideaux, B. & Falco-Mammone, F.	Economic values of tourism in the Wet Tropics World Heritage Area	Hybrid –visitor survey with direct spend and time based attribution and secondary data	$426 mil	Tropical Rainforest Ecology CRC report
2007	Tremblay, P.	Economic contribution of Kakadu national park to tourism in the Northern Territory	Visitor direct spend in region with park attribution and substitution factors	Attributable direct visitor spend value $51.1 mil	STCRC report

2007	Tremblay, P. & Carson, D.	Tourism and the economic valuation of parks and protected areas: Watarrka National Park, Northern Territory	Visitor direct spend in region with park attribution and substitution factors	$40.55 mil	STCRC report

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