DOI: 10.1007/s00267-003-0219-7

Estimating the Recreational-Use Value for Hiking in Bellenden Ker National Park, Australia

ELEONORA NILLESEN*
JUSTUS WESSELER
Environmental Economics and Natural Resources Group
Wageningen University
Wageningen, The Netherlands

AVERIL COOK
School of Economics
University of Queensland, Queensland, Australia

ABSTRACT / The recreational-use value of hiking in the Bellenden Ker National Park, Australia has been estimated using a zonal travel cost model. Multiple destination visitors have been accounted for by converting visitors' own ordinal ranking of the various sites visited to numerical weights, using an expected-value approach. The value of hiking and camping in this national park was found to be $AUS 250,825 per year, or $AUS 144,45 per visitor per year, which is similar to findings from other studies valuing recreational benefits. The management of the park can use these estimates when considering the introduction of a system of user pays fees. In addition, they might be important when decisions need to be made about the allocation of resources for maintenance or upgrade of tracks and facilities.

Knowledge of the economic value of natural-resource-based recreation is important when decisions about allocating funds for those natural resources must be made. Environmental valuation methods such as the Travel Cost Method (TCM) have permitted nonmarket benefits of recreation activities to be estimated. The TCM has been applied here to value hiking and camping in Bellenden Ker National Park, part of the Wet Tropics World Heritage Area (WTWHA) in northern Queensland, Australia. The park is managed by the Wet Tropics Management Authority (WTMA), which has the responsibility to preserve and present the values of the WTWHA to locals and visitors. This responsibility has been translated into concrete actions laid down in their Nature Based Tourism Strategy (WTMA, 2000). However, implementing this strategy is costly and funding arrangements are not stable. The idea of introducing a system of user pays fees has been conceived as a possible solution. Valuing the recreational benefits people derive from hiking and camping in this area might provide some guidance for what people are willing to pay and might justify future investments in the area.

The remaining part of the article is outlined as follows: The next section discusses the travel cost method with its associated problems and provides a new approach to value multidestination trips using the TCM. The third section is devoted to the design of the questionnaire, reports on the estimation of the consumer surplus, and presents the conclusions and recommendations for future research.

KEY WORDS: Multicriteria analysis; Multiple-trip bias; Travel cost method; Wet Tropics World Heritage Area

Published online July 8, 2005.

*Author to whom correspondence should be addressed; *email:* lonnekenillesen@yahoo.com

Empirical Estimation Using the Travel Cost Method

The TCM originated in a letter to the US National Park Service from Hotelling (1949), who aimed to show that the benefits produced by a park exceed the cost to taxpayers. Hotelling suggested using the travel costs incurred by an individual to visit a recreation site as an implicit price for that site's services. The basic premise of the TCM is that the number of trips to a recreation site will decrease with increases in distance traveled. Exploiting the empirical relationship between increased travel distances and the associated declining visitor rate permits a true demand relationship to be estimated, which can be used to compute the recreational use value of a park. Such methodology has been used in early studies by Trice and Wood (1958), Clawson (1959), and Clawson and Knetsch (1966). A general reduced-form demand function, called the trip-generating function, relates visitation rates (VI) to the travel costs (TC) and other relevant variables (X_i) and can be specified as

$$\mathrm{VI}_i = \alpha + \beta_1 \mathrm{TC}_i + \beta_2 X_{2i} + \beta_3 X_{3i} \cdots + \varepsilon_i \qquad (1)$$

where α is the intercept, the β's are the regression parameters, and ϵ_i is the error term, with i indicating a zone or individual (Perman and others 2004).

Empirical Estimation of the TCM

Travel cost models of Equation 1 are estimated using either a zonal or individual approach (Ward and Beal 2000). Given the availability of data and simplicity of application, the zonal approach has been used in this study despite its loss of estimation efficiency (Brown and Navas 1973). Statistical divisions within each state have been used to define the zones in this study because population data are readily available from the Australian Bureau of Statistics (ABS 1992, 2001). The population over 14 years of age in each statistical division has been used as the zonal population. Sample members were found to originate from all Australian states but not all statistical divisions. Some studies have dropped zones with zero visitations; others have combined them with adjacent ones with positive visitation rates. Excluding zero visitation rate zones truncates the dataset, which biases the coefficient estimate, resulting in a more inelastic demand curve (Hellerstein 1992). Therefore, zero visitation zones in this study have been combined with visitation zones that are similar in both distance and character (i.e., urban zero visitation zones are combined with other urban positive zones, and rural zero zones are combined with other rural positive zones), resulting in 18 visitation zones (Nillesen and others 2003).

Treatment of Multidestination Visitors

When people visit more than one destination on a particular trip, travel cost cannot be assigned only to the site in question. However, allocating costs among multiple sites is difficult (Kuosmanen and others 2003). There are two basic approaches: to use a quantifiable variable such as ''nights spent'' at the different sites, as a proxy for the site's relative importance, or to use visitor's stated preferences. Objections to the first approach arise when many sites are visited and the total costs are spread over all sites, resulting in very low travel cost for the particular site that might no longer be directly related to the distance traveled. This might violate the basic premise underlying the TCM. In applying this first approach, Stoeckl (1993) found that demand from visitors living far from a specific recreational site in Australia was higher than the demand from visitors living much closer to this site; hence, demand did not fall with increasing costs. The second approach using visitor preferences is the theoretically preferred method (Ward and Beal 2000) and has been applied in this case. The assumption is that visitors base their trip decisions on the possibility of visiting those sites that are of most interest to them. Visitors are also assumed to be able to rank visits that combine more than one site in a single trip. There are different methods for ranking, five of which have been evaluated by Hajkowicz and others (2000). The five methods include fixed-point scoring, rating, ordinal ranking, geographical weighting, and paired comparisons. The authors found that decision-makers felt uncomfortable when applying fixed-point scoring, which has been used with TCM by Willis and Garrod (1991) and Hanley and Ruffell (1992). They further found that ordinal ranking was most preferred by decision-makers and concluded that the most important advantage of this method was that the weights accurately reflected the subjective insights of visitors. However, ordinal ranks have to be converted into cardinal weights before they can be applied to the travel costs. This has been achieved using the ''expected value'' approach by Nijkamp and others (1990). The mathematical derivation of this method adopted from Rietveld (1989) can be found in the Appendix. The example below shows how the weighting is implemented.

Rietveld (1989) showed that for J criteria to be ranked, cardinalized values E of ranked numbers (γ) are

$$E(\gamma_1)=\frac{1}{J^2}$$

if ranked first

$$E(\gamma_2)=\frac{1}{J^2}+\frac{1}{J(J-1)}$$

if ranked second

$$E\left(\gamma_J\right)=\frac{1}{J^2}+\frac{1}{J(J-1)}+\cdots+\frac{1}{J\times 2}+\frac{1}{J\times 1}$$

if ranked last

If a respondent visited Bellenden Ker National Park and four other destinations, the total travel costs need to be distributed among five destinations, hence $J = 5$. If Bellenden Ker National Park ranked third, the appropriate weight would then be

$$E(\gamma_3)=\frac{1}{25}+\frac{1}{20}+\frac{1}{15}=0.16$$

The cardinal values for all other destinations have been calculated accordingly.

Travel Time and Travel Cost Components

Because there is no consistent method of how to value travel or on-site time, an informed adjustment can be made by the researcher. Moreover, travelers might gain utility from the actual experience of travel, which would reduce net travel cost. The present study follows Bojö (1985) and Shaw and Feather (1999), who set the opportunity costs of time to zero based on the argument that the majority of respondents experienced positive utility from travel. Reasons to follow this line of argument are twofold. First, over 60% of the survey respondents stated that they enjoyed traveling to Bellenden Ker National Park. Second, the park is located in the Wet Tropics World Heritage Area, a part of Australia that is known for its exceptional scenery.

The vehicular travel costs have been based on average running costs per kilometer, as published by the National Roads and Motorists' Association (NRMA 2002) for the year 2001. Costs were calculated for a range of different types of car, based on an annual distance traveled of 15,000 km and include petrol costs, depreciation, interest, registration, insurance, and NRMA membership. Types of car not listed were matched with their closest substitutes.

Weighted-average travel costs, with the weight based on the frequency of the different types of vehicle within the sample, were calculated per kilometer under the assumptions that the type of vehicle a person owns does not depend on the zone of origin and per kilometer costs are the same across all zones. Weighted-average running costs are estimated at $AUS 0.53 km in 2001 constant dollars.

Empirical Results

Questionnaire Design and Administration

As detailed information about socioeconomic data of all park visitors was not readily available, primary data were collected. Due to time and budget constraints, a mail survey was conducted rather than personal interviews. Camping permit applications that included a full Australian address were used to obtain the sample. The permit issued was only valid for the one specific trip to the park. This implied that if people visited the park more than once, they had to acquire a new permit and were counted as a ''new'' visitor.

From 1995 to 2001, 1135 camping permits were issued. Of those, only 482 contained complete addresses. Following Dillman's (1978) procedures for mail surveys, an initial cover letter and questionnaire were posted to the 482 addresses, 96 of which were returned unopened. After 2 weeks, a follow-up postcard was sent. Budget constraints did not allow a third mailing. A total of 141 valid responses were received, representing a response rate of 36.5%.

Data Analysis

The first step in calculating the travel costs is identification of the number of visitors from each zone. Each permit issued was generally for a group of people. The average group size was three, so the number of respondents per zone was multiplied by 3 to obtain the number of visitors. These are listed in Table 1 together

Table 1. Adjusted total number of visitors per zone

Zone	No. of visitors	Adjusted total no. of visitors
Brisbane	48	386
Moreton	6	48
Fitzroy	15	121
Northern	87	700
Cairns A	111	894
Cairns B	54	435
Canberra	21	169
Sydney	18	145
Hobart	15	121
Adelaide	6	48
Perth	6	48
South West	6	48
South Eastern	6	48
Melbourne	12	97
Loddon	3	24
Mallee	3	24
Gippsland	3	24
Richmond-Tweed	3	24
Total	423	3404

with the total number of visitors calculated by scaling the number of responses up to represent the total visitation from each zone (using the ratio of the total permits issued and the number of responses).

Visitation rates, defined as visitation per 1000 population are calculated from using

$$\mathrm{VI}_i = \frac{V_i \times 1000}{P_i} \tag{2}$$

where VI_i is the visitation rate for zone i over the years 1995–2001, V_i is the number of visitors over the years 1995–2001 per zone i, and P_i is the population per zone i (ABS 2001). The first-stage demand curve was estimated using ordinary least squares. The model initially included the travel cost variable and the socioeconomic variables age, education, and income, as suggested by Loomis and Walsh (1997) and Hanley and Spash (1993). The correlation between the variables was not higher than 0.46, which did not signal a problem of multicollinearity (Anderson and others 1990). However, as all socioeconomic variables were found to be highly insignificant, the F-test for redundant variables was used to examine the contribution of these variables to the model. Specifically, the following hypotheses were tested:

$$\mathrm{H}_0{:}\beta_2 = \beta_3 = \beta_4 = 0, \tag{3}$$

$$\mathrm{H}_1{:}\ \text{at least one } \beta_i \neq 0$$

The F-ratio was calculated to be 0.55. The critical F-ratio with 3 and 13 degrees of freedom is 3.4 1, which

Table 2. Results of the ordinary least squares regression to select the appropriate travel cost model

Functional form	b_0[a]	b_1	b_2	Log-likelihood	t-value b_0	t-value b_1	t-value b_2	F-value	Adjusted R^2
Linear	2.29	−0.001		−40.63	2.63	−1.68		2.81	0.10
	(0.87)	(0.001)							
Quadratic	4.22	−0.007	0.000	−38.11	3.59	−2.64	2.20	4.16	0.27
	(1.12)	(0.003)	(0.000)						
Linear-log	12.49	−4.15		−36.06	4.27	−3.90		15.24	0.46
	(2.93)	(1.06)							
Log-linear	−0.42	0.000		−34.46	−1.56	−1.11		1.23	0.01
	(0.27)	(0.000)							
Double log	1.51	−0.79		−33.09	1.40	−2.02		4.07	0.15
	(1.08)	(0.39)							
Reciprocal (1/travel cost)	−0.70	599.89		−25.57	−2.15	9.18		84.18	0.83
	(0.33)	(65.38)							

[a]Standard errors in parentheses.

means that the calculated F-statistic does not fall within the rejection region and, therefore, the null hypothesis cannot be rejected. It was thus concluded that education, age, and income do not contribute to the variation of VI about its mean. Consequently, a simple model with ''travel cost'' as the independent variable was estimated.

As economic theory provided little guidance for selecting the appropriate functional form, it was decided to statistically select the functional form of the travel cost equation. The test results for six different forms are displayed in Table 2. The models were evaluated using several criteria, including the probability of the observed results (log-likelihood), explanatory power (adjusted R^2), and significance (F-value). For informational purposes, the estimated β coefficients (b) and their corresponding standard error have been reported as well.

The reciprocal model outperforms the other models on all criteria. The reciprocal model was then tested for the presence of heteroscedasticity, which would bias the estimates of parameter variances and lead to incorrect statistical conclusions. The White test revealed no problems of heteroscedasticity at a significance level of $\alpha = 0.01$.

The estimated reciprocal model was found to be

$$\mathrm{VI} = -0.699 + \frac{599.89}{\mathrm{TC}} \tag{4}$$

This initial first-stage equation was used to estimate the second-stage demand function. In order to estimate the consumer surplus, price increases were simulated by incrementing travel costs stepwise. Simulated entrance fees of $5, $10, $15, $20, $25, $35, $50, $75, $100, $150, $200, $300, $400, $500, $600, and $750 were sequentially added to the average travel cost for each zone. Visitation numbers were estimated for each zone under these entrance fees and the total number

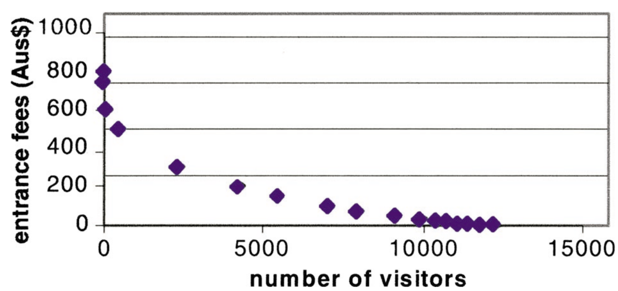

Figure 1. Second-stage demand curve for visits to Bellenden Ker National Park.

of visitors at each entry price was calculated. To avoid truncation of visitation rate, following Ward and Beal (2000) and Xue and others (2000), entrance fees were increased until visitation from all zones dropped to zero. Figure 1 presents the demand curve for visits to the Bellenden Ker National Park.

Because the current entry fee is zero, the consumer surplus is represented by the whole area under the demand curve and is approximated using discrete steps. The consumer surplus (CS) resulting from this demand curve, or the annual recreational benefits accruing to visitors hiking and camping in Bellenden Ker National Park, is estimated at $AUS 250,825 per year (2001 values) using a 6% discount rate. The CS per visitor is $AUS 515.80 based on the actual number of visits and $AUS 144.45 when using the predicted number of visits from our model.

Discussion and Conclusions

Two other TCM studies have been performed in Australian national parks to estimate recreation use values. Stoeckl (1995) estimated a CS of about $AUS 777.08 per visitor for Hinchinbrook Island National Park (north Queensland) and Knapman and Stanley

(1991) estimated \$AUS 254.72 per visitor for Kakadu National Park (Northern Territory), both in 2001 dollars. The result from this study (\$AUS 515.80 per visitor, based on actual visits) is well in line with the Australian studies that also used actual visits to estimate the per visitor CS.

The CS resulting from our predicted number of visits (\$AUS 144.45) was compared to two American studies that estimated benefits from hiking. Loomis (2001) found a value of US \$64.74 per day of hiking along Snake River and Hilger (1998) reported a CS US \$70.04 per day, both in 2001 values. They are of the same order of magnitude as our estimates.

The economic value derived in all these studies are recreational use values and represent only a part of the total economic value of the particular park. Other values include the assimilative capacity or disposal of wastes from production (referred to as carbon sink), the preservation of natural habitats for the conservation of biodiversity (of great importance in a natural World Heritage Area), and amenity and aesthetic services (current and future) both for people who visit for recreational purposes and for those people who might never visit but, nevertheless, value the natural environment. An estimate of total economic value would also include these benefits.

Our estimates might be helpful to managers when considering the introduction of user pays fees to successfully implement the Nature Based Tourism Strategy. In addition, they might be important when decisions about allocating funds must be made.

Acknowledgments

The Rainforest Cooperative Research Centre, Cairns, and the School of Economics, University of Queensland, Brisbane provided financial support for the case study. We are indebted to Hans-Peter Weikard and Steve Harrison for their valuable comments on an earlier version of this article Suggestions from three reviewers and the editor, Virginia Dale, are greatly appreciated.

Appendix: The Expected Value Approach to Ranked Criteria Adopted from Nijkamp and others (1990)

Assuming that J criteria need to be ranked in increasing order of importance and that weights are nonnegative and add up to 1, the set of feasible weights is

$$S = \{(\gamma_1, \ldots, \gamma_j) | 0 \leq \gamma_1 \leq \gamma_2 \leq \cdots \leq \gamma_j; \sum_j \gamma_j = 1\}$$

It is assumed that the probability density function of the weights is equal for all values in S. Thus, a uniform distribution of the weights in S is derived:

$$\begin{aligned} g(\gamma_1, \ldots, \gamma_{J-1}) &= c \quad \text{if}: 0 \leq \gamma_1 \leq \tfrac{1}{J} \\ &\qquad \gamma_1 \leq \gamma_2 \leq \tfrac{1}{(J-1)} - \tfrac{\gamma_1}{(J-1)} \\ &\qquad \vdots \\ &\qquad \gamma_{J-2} \leq \gamma_{J-1} \leq \tfrac{1}{2} - \tfrac{\gamma_1}{2} - \cdots \tfrac{\gamma_{J-2}}{2} \\ &= 0 \quad \text{elsewhere} \end{aligned} \tag{A2}$$

In Rietveld (1989), it is shown that c = $(J-1)!J!$. Once the values $\gamma_1,\ldots,\gamma_{J-1}$ are known, the value of γ_J can be found as

$$1 - \gamma_1 - \cdots - \gamma_{J-1}$$

The expected values of $\gamma_1,\ldots,\gamma_{J-1}$ are the cardinalized values of rank numbers of $1,\ldots,J$. The expected value of an arbitrary γ_j is given by:

$$E(\gamma_j) = \int_0^{1/J} \int_{\gamma_1}^{q_1} \cdots \int_{\gamma_{J-2}}^{q_{J-2}} (J-1)!J!\gamma_j \, d_{\gamma_{J-1}} \cdots d_{\gamma_1} \tag{A3}$$

where

$$q_k = \frac{1}{(J-K)} - \frac{\gamma_1}{(J-K)} - \cdots \frac{\gamma_k}{J-K} \quad (k = 1, \ldots, J-2) \tag{A4}$$

After integrating out $\gamma_{J-1}, \gamma_{J-2},\ldots, \gamma_{J+1}$ in Equation A3, the following is obtained:

$$\begin{aligned} E(\gamma_j) &= \int_0^{1/j} \cdots \int_{\gamma_{j-1}}^{q_{j-1}} \frac{(j-1)!J!}{(J-j-1)!(J-j)!} \\ &\quad (J-j+1)^{J-j+1_{\gamma_j}} (q_{j-1-\gamma j})^{J-j-1} \, d_{\gamma j} \cdots d_{\gamma 1} \end{aligned} \tag{A5}$$

Integrating out r_j in Equation in A5 and making use of the fact that the primitive function of $x(a\text{-}x)^n$ equals

$$\frac{-1}{n+1}(a-x)^{n+1}x - \frac{1}{(n+1)(n+2)}(a-x)^{n+2}$$

the following results can be obtained after the appropriate integrations (Rietveld, 1989):

$$\begin{aligned} E(\gamma_1) &= \tfrac{1}{J^2} \\ E(\gamma_2) &= \tfrac{1}{J^2} + \tfrac{1}{J(J-1)} \\ &\vdots \\ E(\gamma_{J-1}) &= \tfrac{1}{J^2} + \tfrac{1}{J(J-1)} + \cdots + \tfrac{1}{J\times 2} \\ E(\gamma_J) &= \tfrac{1}{J^2} + \tfrac{1}{J(J-1)} + \cdots + \tfrac{1}{J\times 2} + \tfrac{1}{J\times 1} \end{aligned} \tag{A6}$$

Literature Cited

ABS (Australian Bureau of Statistics). 1992. 1991 Census geographic areas. Census of population and housing. Catalogue No. 2905.0. ABS, Canberra.

ABS (Australian Bureau of Statistics). 2001. Population by age and sex. Australian states and territories. Catalogue No. 3201.0. ABS, Canberra.

Anderson, D. R., D. J. Sweeney, and T. A. Williams. 1990. Statistics for business and economics. West Publishing, New York.

Bojö, J. 1985. A cost–benefit analysis of forestry in mountainous areas: The case of Valadelen. Stockholm School of Economics, Stockholm.

Brown, W., and F. Navas. 1973. Impact of aggregation on the estimation of outdoor recreation demand functions. *American Journal of Agricultural Economics* 55:246–249.

Clawson, M. 1959. Methods of measuring the demand for and value of outdoor recreation. Resources for the Future (RFF) Reprint 10. RFF, Washington, DC.

Clawson, M., and J. L. Knetsch. 1996. Economics of outdoor recreation. Johns Hopkins University Press, Baltimore, MD.

Dillman, D. A. 1978. Mail and telephone surveys: The total design method. John Wiley & Sons, New York.

Hajkowicz, S. A., G. T. McDonald, and P. N. Smith. 2000. An evaluation of multiple objective decision support weighting techniques in natural resources management. *Journal of Environmental Planning and Management* 43:505–518.

Hanley N. D., and R. Ruffell. 1992. The valuation of forest characteristic. Working Paper No. 849. Institute for Economic Research, Queens University. Kingdom, Ontario, Canada.

Hanley, N. D., and C. L. Spash. 1993. Cost–benefit analysis and the environment. Edward Elgar, Cheltenham.

Hellerstein, D. 1992. The treatment of nonparticipants in travel cost analysis and other demand models. *Water Resources Research* 28:1999–2004.

Hilger, J. R. 1998. A bivariate compound poisson application: The welfare effects of forest fire on wilderness day-hikers. Unpublished M. S. thesis, Resources and Applied Economics, University of Nevada, Reno, NV.

Hotelling, H. 1949. The Economics of public recreation. The Preitt report. Land and Recreation Planning Division, National Park Service U S Dept. of the Interior, Washington, DC.

Knapman, B., and O. Stanley. 1991 A travel costs analysis of the recreational use value of Kakadu National Park. Kakadu Conservation Zone Inquiry Consultancy Series KAC91/23. Kakadu Conservation Zone Inquiry, Canberra.

Kuosmanen, T., E. Nillesen, and J. Wesseler. (2003. Does ignoring multi-destination trips in the travel cost method cause a systematic downward bias? Working Paper Mansholt Graduate School MWP-09. Wageningen University, The Netherlands.

Loomis, J. B., 2001. Final Snake River contingency value methodology study report. Submitted to the Wyoming Bureau of Land Management, Cheyenne, Wyoming.

Loomis, J. B., and R. G. Walsh. 1997. Recreation economic decisions: Comparing benefits and costs. Venture Publishing, State College, PA.

Nijkamp, P., P. Rietveld, and H. Voogd. 1990. Multicriteria evaluation in physical planning. Elsevier, Amsterdam.

Nillesen, E., J. Wesseler, and A. Cook. 2003. Correcting for multiple destination trips in recreational use values. An application to Bellenden Ker National Park, Australia, Working Paper Mansholt Graduate School MWP-07, Wageningen University, Waqeningen, The Netherlands.

Perman, R., Y. Ma, J. McGilvray, and M. Common. 2003. Natural resource and environmental economics. Pearson, London.

NRMA, 2002. Vehicle operating costs. Available from http://www.mynrma.com.au/motoring/cars/car_mr_op_about.shtml (accessed Novemeber 2001).

Rietveld, P. 1989. Using ordinal information in decision making under uncertainty. *System Analysis, Modeling, Simulation* 6:659–672.

Shaw, W. D., and P. Feather. 1999. Possibilities for including the opportunity costs of time in recreation demand systems. *Land Economics* 75:592–602.

Stoeckl, N. 1993. A travel cost analysis of Hinchinbrook National Park, PhD thesis, James Cook University of North Queensland, Townsville, Australia.

Stoeckl, N. 1995. A travel cost analysis of Hinchinbrook National Park. Pages 181–201 *in* B. Faulkner, M. Fagence, M Davidson, S. Craig-Smith (eds.), Tourism research and education in Australia. Bureau of Tourism Research, Canberra.

Trice, A. H., and S. E. Wood. 1958. Measurement of recreational benefits. *Land Economics* 3:195–207.

Ward, F. A., and D. Beal. 2000. Valuing nature with travel cost models. A manual. Edward Elgar, Cheltenham, UK.

Willis, K. G., and G. D. Garrod. 1991. An individual travel cost method of evaluating forest recreation. *Journal of Agricultural Economics* 42:33–42.

WTMA. 2000. Wet Tropics nature based tourism strategy. WTMA, Cairns, Australia.

Xue, D., A. Cook, and C. Tisdell. 2000. Biodiversity and the tourism value of Changbai Mountain Biosphere Reserve, China: A travel cost approach. *Tourism Economics* 6:335–357.