Issues Surrounding Entrance Fees as a Suitable Mechanism for Financing Natural Areas in Australia

BY GAMINI HERATH

Abstract: Australia’s national parks, nature reserves, and wilderness areas protect biodiversity and other ecosystem values while offering opportunities for ecotourism and recreation. Tourism and recreation demands have increased dramatically, while land managers struggle with inadequate staff and funds, thereby jeopardizing the economic and social value of these protected areas. The growing use of user fees in Australia has increased revenues and improved management, but it raises questions about distributive justice and commercialization of Australia’s natural areas.

Introduction
User fee systems, although controversial, have been adopted by most nature conservation agencies in Australia. Fees are charged for entry to protected areas, campgrounds, recreational facilities, use of interpretive services, and other facilities and services. Opponents of fees argue that conservation of natural resources is a community service obligation, and access to natural areas should be available to all socioeconomic groups at no cost. Proponents say that public agencies restrict access and control visitor numbers to reduce environmental damage. Declining budgets require agencies to explore alternative sources of funding, and entry fees provide one such source (Driml and Common 1995; ANZECC 1998).

The objectives of this article are to (1) review the history of development of natural areas in Australia, (2) review existing Australian fee programs, and (3) evaluate the issues pertinent to entry fee controversies.

History of Protected Areas in Australia
Europeans first settled along the east coast of Australia about 200 years ago. Economic progress was dependent solely on the use of new land resources, and settlers cleared much of the virgin forest for agriculture. By 1920, exploitation, along with the introduction of exotic plant and animal species changed the composition of the country’s flora and fauna (Common and Norton 1992).

The first national park in Australia was south of Sydney established in 1879. The early movement to create national parks was motivated by the need to preserve native forests for forestry enterprises (Dargarvel 1987). Some areas were simply declared national parks because there was no competing land use. This was known as the “Worthless Lands” approach (Hall 1989).

Since the 1960s, Australia’s natural environment has become a major tourist attraction (Hall 1994). In the year 2000, 5.8 million international tourists are expected to visit...
Australia, and that number will rise to some 8.8 million by the year 2006 (Tourism Forecasting Council 1997). The number of Japanese visitors alone increased from 352,300 in 1988 to 670,900 in 1993 (Bureau of Tourism Research 1994). More than 50% of all international tourists visit national parks and other natural areas (Blamey 1995). Domestic demand for recreation and ecotourism grew rapidly in the 1970s. A survey in 1988 and 1990 in Tasmania shows that hiking has risen from 59.7% of the total recreational activities in 1988 to 75.8% in 1990.

In the early history of Australia's parks and reserves, little attention was paid to the overall status of the ecosystems. By the 1950s progressive conservation efforts led people to value nature beyond commodity production, and by the 1970s preservation had become a legitimate and valuable land allocation. Several conservation groups, such as the Australian Conservation Foundation, the Australian Wilderness Society, and the Victorian National Parks Association, pressured the government for better legislation. As a result, Australia's nature reserves rose to about 30 million hectares, or 4% of the country's total land area. By 1993, 10.6% of the total land area was reserved under national parks. Disputes occurred where nature conservation objectives conflicted with alternative land uses. For example, in the 1970s environmental groups fiercely opposed a proposal by the Hydroelectric Commission of Tasmania to flood Lake Pedder. The environmentalists lost Lake Pedder, but the issue was a turning point for Tasmania and the conservation movement (Kellow 1989).

The Rationale behind Entry Fees to Natural Areas
The rapid growth of Australia's tourism industry coupled with fiscal conservatism has pressured management agencies to generate revenue. The desired outcomes of user-fee systems are cost-effectiveness, improved park management, better visitor facilities, and a positive attitude toward protected areas management (ANZECC 1998).

Public opinion remains divided on use fees. The arguments favoring fees are that they achieve efficiency in resource allocation, alleviate congestion, and help recover costs and provide revenue for maintenance, thereby mitigating adverse environmental effects (Cullen 1985). Those against fees argue that they can create adverse distributional consequences, and that public resources should allow equal access for all. Use fees, opponents say, constitute double taxation.

Use fees are often determined administratively rather than by the market. Table 1 (see page 37) shows the diversity of use fees to national parks in Australia based on mode of travel and their capacity. Visitors can buy a daily pass, and in some cases annual passes are available. Different fees are charged for adults and children, and concessions are made for certain disadvantaged visitors. Table 2 (see page 38) shows fees collected from several World Heritage Areas in Australia. In three of these sites, fees covered less than 5% of management expenditures. In Kakadu, fees covered less than 10% of expenditures. Only in Uluru do use fees constitute over 65% of the management budget (Driml and Common 1995). Neither efficiency nor cost recovery is achieved in existing fee programs.

Demand/Supply Analysis for Natural Areas in Australia: The Status Quo
Quantitative assessments of the supply-and-demand parameters for natural areas are critically important to achieve optimal pricing schemes. The estimation of demand for resources such as national parks and wilderness areas is not direct since these goods are not marketed. Economists have developed several techniques, which include the Travel Cost Method (TCM) and the Contingent Valuation Method to estimate demand. Ulph and Reynolds (1981) used the TCM to estimate the recreation use value of the Warrumbungle National Park to be around $100/visitor day. Knappman and Stanley (1991) measured the recreation value of Kakadu National Parks. Beal (1995a) studied the demand for the Girraween National Park in Queensland and estimated a choke price of $47.23. Beal (1995b) also studied the Carnarvon Gorge National Park in Queensland. These studies...
provide demand curves that can be used in determining optimal pricing in conjunction with the supply curve. The inadequacy of formal demand studies is obvious here.

In Australia, demand studies are more numerous than supply studies. For estimating supply functions, information on variable costs such as compliance checking, garbage collection, implementing use fees, user-induced maintenance, and clean-up are required. Beal and Harrison (1997) estimated the supply function for the Carnarvon Gorge National Park in Queensland, which, in conjunction with the demand curve, yielded a market clearing price of $3.17 for day visitors and $15.00 for camping visitors. They found the optimal prices for day and camping visits to be $1.13 and $8.00 for the Girraween National Park in Queensland. In some cases the cost of collection could not be covered by the use-fee program. The paucity of supply studies constrains a formal evaluation of existing pricing schemes.

Revenue Argument

Another argument for use fees is to enhance revenue. The total revenue collected depends on the price elasticity of demand. If demand is price inelastic, increasing the price will lead to higher revenues. Knapman and Stoeckl (1995) estimated the price elasticity of demand for Kakadu National Park and Hinchinbrook Island National Park to be highly inelastic. In Australia, the demand elasticity varied between 0.033 and 0.041, with 0.07 being the typical elasticity of demand. Beal (1995a) also found the elasticity for day visits and camping to be 0.055 and 0.087 respectively, both highly inelastic. Bennett (1996) estimated the demand elasticity for recreation in the Dorrigo and Gibraltar Range National Parks to be around 0.0842 and 1.693 respectively. Overall, Australian studies indicate that demand is generally inelastic, suggest-

<table>
<thead>
<tr>
<th>STATE</th>
<th>PARK</th>
<th>BUS</th>
<th>CAR</th>
<th>MOTORCYCLE</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW SOUTH WALES</td>
<td>Kosciusco (daily)</td>
<td>4.00 (adult)</td>
<td>12.00</td>
<td>3.50</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Kosciusco (annual)</td>
<td>2.00 (child)</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NA</td>
<td>60.00</td>
<td>30.00</td>
<td></td>
</tr>
<tr>
<td>VICTORIA</td>
<td>Selected parks (daily)</td>
<td>21–44 (30 seats)</td>
<td>4.50–9.50</td>
<td>1.50–2.00</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14–25 (29 seats)</td>
<td>3.00</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Point Nepean (daily)</td>
<td>30 seats</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mt. Buffalo (annual)</td>
<td>130.00 (30 seats)</td>
<td>33.00</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Off-season</td>
<td>75.00 (29 seats)</td>
<td></td>
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</tr>
</tbody>
</table>

Source: Compiled by the author from data in ANZECC 1997.
ing that higher prices would lead to higher revenues. But empirically the question is whether pricing is too high or too low and whether any variation of price leads to an increase or decrease in total revenue. Again, the paucity of elasticity estimates for most natural areas in Australia constrain answers to this question.

### Table 2—Management budgets and revenue from user fees for selected locations in Australia, 1991-92

<table>
<thead>
<tr>
<th>World Heritage Area</th>
<th>Total Management Expenditures</th>
<th>Total Fees Collected</th>
<th>Fees as Percent of Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Barrier Reef</td>
<td>18.1</td>
<td>0.79</td>
<td>4.0</td>
</tr>
<tr>
<td>Wet Tropics</td>
<td>12.1</td>
<td>0.30</td>
<td>2.5</td>
</tr>
<tr>
<td>Kakadu</td>
<td>10.8</td>
<td>1.02</td>
<td>9.4</td>
</tr>
<tr>
<td>Uluru</td>
<td>2.9</td>
<td>1.85</td>
<td>63.8</td>
</tr>
<tr>
<td>Tasmanian Wilderness</td>
<td>4.8</td>
<td>0.20</td>
<td>4.2</td>
</tr>
<tr>
<td>Total</td>
<td>48.7</td>
<td>4.16</td>
<td>8.5</td>
</tr>
</tbody>
</table>


Equity Argument
Equity is an important concern in Australian society. Economists often pay lip service to equity in pursuing efficiency goals. The main objection is that fees discriminate against low-income groups. Governments often attempt to redress equity issues through concessions to needy groups and families through fee structures that charge per vehicle or per campsite rather than per person (ANZECC 1998). Recreation areas in Australia are highly subsidized, and only 30% of costs are recovered through user fees. Further studies on equity will reveal its importance to the financing of natural areas. Recent emphasis on sustainable development has encouraged the need to recognize intergenerational equity.

Concluding Remarks
Continuous changes in management structure and reductions in budgets present difficulties for managers of natural areas in Australia. Among these difficulties are a reduction in resource protection and maintenance and an increase in personnel workload. The government encourages use fees primarily to generate revenue, yet they cover a small percentage of management expenses. The fees are not determined by application of market mechanisms and bear no relationship to either supply or demand.

Use fees raise unresolved equity concerns, but equity is a matter of personal and philosophical values. Economists can suggest ways of achieving efficiency and describe equity considerations, but ultimately what is fair must be determined by political process.

Concern about fees and commercialization of natural areas ignores the essential basis upon which a protected area system is established. Still, funding issues are important and cannot be ignored. If economists are to obtain a more receptive audience for their efficiency concerns, more work is necessary on equity and issues of social justice. The guidelines for 2000, which set fees on a full cost recovery basis and introduces the goods and services tax from July 1, 2000, will have significant implications in Australia. Fees help raise revenue that supports the protection of natural areas, but alone they are not sufficient to provide all the needed funding.

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**International Journal of Wilderness** AUGUST 2000 • VOLUME 6, NUMBER 2

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**Photo:** Rock outcropping in Gibraltar Range National Park, Australia. Photo by Geff Bennett.
The desired outcomes of user-fee systems are cost-effectiveness, improved park management, better visitor facilities, and a positive attitude toward protected areas management.

REFERENCES


Bureau of Tourism Research. 1994. Australian tourism data card, Canberra, Australia: BTR.


