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# Car Park Charging in the Cairngorms National Park

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**ABSTRACT** *Charges for parking in the countryside pose a particular dilemma in Scotland as they are seen by many outdoor groups as a backdoor approach to restricting the public's newly acquired right of responsible access to the countryside. The issue is particularly sensitive in the case of the Cairngorms National Park (CNP) where charging has spread to a number of key car parks across the area. Based on the results of a survey of over 300 visitors this paper investigates visitors' attitudes and perceptions towards car park charging in the CNP, and explores the conditions under which they would find charging legitimate; in particular, the notion of hypothecation (i.e. the practice of declaring where and how monies contributed will be spent). We find that the vast majority of visitors surveyed are supportive of charging but that support is conditional on: the nature of the charging system, the type of location in question, and the landowners' commitment to hypothecating user fees for reinvestment in visitor facilities and preservation of the environment. We conclude by proposing a CNP-wide charging policy, fundamentally based on the principle of hypothecation.*

**KEY WORDS:** Land reform, car park charges, hypothecation, Cairngorms National Park

## Introduction

Charging visitors to park their car has become a feature of many popular countryside recreation sites in the UK, but remains a controversial measure. Many advocates of fee payment draw on the 'user should pay' principle, arguing that charges allow landowners to recoup the financial costs associated with providing public access to the countryside (Crabtree *et al.*, 1994), and as a practical mechanism for managing visitor congestion at popular recreation sites (Hanley *et al.*, 2002). On the other hand, representatives of the outdoor access lobby believe that charges represent a 'back door' approach to restricting *de facto* and *de jure* rights of public access (Simpson, 2004; TAC, 2004a; MCoFS, 2005).

Today car park charging is practised quite widely across the UK—in areas such as the Lake District, the Yorkshire Dales and more recently at several popular spots in the Cairngorms National Park (CNP), including Loch Muick and the Linn O'Dee. Charges for parking in the Scottish countryside pose a particular dilemma in the

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context of recent access legislation introduced,<sup>2</sup> which specifically excludes charging for access to countryside areas.<sup>3</sup> Although there has never been a tradition of charging at car parks across the Scottish countryside it is now seen by some landowners as the principal means of lawfully redeeming their costs and managing access under the Land Reform legislation. Car park charging, although controversial, could also provide a means of meeting core objectives of the CNP, such as promoting the sustainable use of the area's natural resources, and facilitating public understanding and enjoyment of the park's special qualities. However, the issue remains relatively under-researched.

Across the years a number of studies have reported the benefits of user pricing (e.g. McCallum, 1980; Broom, 1991; Laarman & Gregersen, 1996; Dharmartne *et al.*, 2000), and others have found that the public is not altogether against fee payment in the context of outdoor recreation. For example, Hanley *et al.* (2002) found that a £5 car parking fee would act as a disincentive to only 31% of those surveyed. Suggestion has also been made that visitors' support for fee payment increases when monies raised will be utilised towards 'quality' improvements (Laarman & Gregersen, 1996). Thus, it is argued that a mutually agreed system of user payment for car parking facilities across the park, where revenues will be used to mitigate visitors' impact, could result in an overall benefit to the user and the nation as a whole (Hardin, 1968; Christie, 1999).

The principal aim of this study was to investigate car park charging in the CNP, from the perspective of the visitor, using a self-completed questionnaire; understanding visitor preferences and values placed on conservation and recreation is of considerable importance in terms of guiding future land management decisions in the countryside (White & Lovett, 1999). Specific issues investigated include: the current level of charges; the extent of charging within the park boundaries; the basis for the charge (e.g. per person or per vehicle); and the extent and consequences of non-payment. We also explore the conditions under which visitors would find charging acceptable—in particular we focus on the potential role of hypothecation (i.e. the practice of declaring where and how monies contributed will be spent) as a legitimate basis for developing car park charging in the CNP.

For the purpose of this investigation the CNP has been selected as a representative area in terms of the charging debate. The CNP is a highly popular area for outdoor enthusiasts and has seen a marked increase in fee payment for parking at a number of key car parks across the area in recent years, including car parks which provide access to the Cairngorms, Lochnagar and other popular recreation sites across the Spey and Dee valleys. Although the majority of recreational access takes place on privately owned land (Crabtree *et al.*, 1994), and the Cairngorms National Park Authority (CNPA) does not have any statutory control over car parking on that land, it is possible that a strategic role could be played by the authority in adopting a policy solution which would be mutually beneficial to each of the stakeholders involved.

Previewing the main findings, we find that the majority of visitors are in principle willing to pay to park their car, but their support for charging is very much strengthened if they are aware that revenues will be reinvested into visitor facilities and caring for the area's natural heritage. We also find strong opposition to charges that are regarded by visitors as primarily to generate profits for the landowner. We conclude with recommendations regarding the development and application of a

sustainable car parking policy for the CNP fundamentally based on the principle of hypothecation.

### **Policy and Legislative Context**

The CNP is Scotland's second national park, following the passing of the National Parks (Scotland) Act 2000 and its formal designation in September 2003. The park is considered to be of outstanding national importance in terms of outdoor recreation and nature conservation, and contains three of the four tallest mountains in the UK within 'the largest block of remote hill country in Britain' (Mackay, 2002, p. 60). It is also home to 'some of the finest remnants of "Caledonian" pine forest' (Gimingham, 2002, p. 1) and around a quarter of the threatened animal, plant and bird species in the UK (CNPA, 2003).

Under the terms of the 2000 Act it is the function of the CNPA to 'ensure that the National Park aims are collectively achieved in relation to the National Park in a co-ordinated way' (Scottish Executive, 2000: s9:1). The four national park aims unique to Scotland are to:

- a) conserve and enhance the natural and cultural heritage of the area;
- b) promote sustainable use of the natural resources of the area;
- c) promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public; and
- d) promote sustainable economic and social development of the area's communities.

It is also the role of the CNPA to ensure that, where conflict arises between these aims, the 'Sandford Principle' is implemented; this means that eventual priority will be given to aim a), ensuring that conservation will ultimately prevail over recreation (Scottish Executive, 2000; Llewelyn, 2002).

Access to the countryside has long been considered as a 'good thing' and an inherited right of the general public (McCallum, 1980; Hanley *et al.*, 2002). Until relatively recently, recreational access in Scotland was administered on the basis of a very informal system of implied consent (*de facto* access), traditional rights of way and access agreements (*de jure* access), and landowners' general goodwill (Crabtree *et al.*, 1994; Christie *et al.*, 2000). However, the introduction of the Land Reform (Scotland) Act in 2003 enhanced the public's 'right to roam' by providing a legal basis to support and extend this previously informal structure. Since it came into effect in 2005 the Land Reform Act has provided everyone with a statutory right of 'responsible access' to land throughout the Scottish countryside, allowing the public to cross, be on, be above or be below land for any of the purposes defined by the Act (Scottish Executive, 2003). The 'Scottish Outdoor Access Code' is the public document which gives detailed guidance on how their right of access can be exercised responsibly and includes details of a number of exceptions that apply, for example access to land where crops are growing (SNH, 2005). The 2003 Act also imparts an obligation upon landowners to ensure that they conduct their activities in a way which will also respect the rights of those accessing their land (Scottish Executive, 2003).

In a useful overview Rowan-Robinson (2003), contrasts the Scottish Land Reform Act and its England and Wales equivalent (the Countryside and Rights of Way Act 2000). In summary, the 2003 Act in Scotland offers a far more comprehensive right of access than that offered by its counterpart, which is arguably attributable to the more ‘bottom-up’ approach adopted north of the border. Quite distinct from England and Wales, where access is afforded only to those on foot (HMSO, 2000), the Scottish Act provides those on foot, horseback and peddle cycle with a right of access.

However, vehicular access to private land is *not* provided for, and the provision of car parks for visitors to the countryside is at the owner’s discretion. In recent years a number of landowners across the CNP have introduced car parking facilities to varying degrees of formality and management and at some places visitors are asked to pay a parking fee. Although charging for admission to private land is not feasible, or in fact lawful unless the charge was already in force before 2001 (for example, admission to the grounds and garden at HRH’s Balmoral Castle), income can justifiably be raised to cover landowners’ costs through payment for the use of particular facilities—including visitor car parking (Broom, 1991; Scottish Executive, 2003). A charge of this type is regarded by a number of commentators as an efficient way of collecting revenue from the users of countryside areas, which can be reinvested into the management of visitor impact on both the built and natural environment (McCallum, 1980; Broom, 1991; Crabtree *et al.*, 1994; TAC, 2001; Hanley *et al.*, 2002).

While charging can be circumvented lawfully by operating the car park as a visitor facility there are grey areas that have not yet been tested in court, such as the nature of the charging system. For example, Rothiemurchus Estate in Speyside is currently applying a parking charge at their Loch an Eilean car park on a car occupancy basis, which entails an incremental charge determined by the number of persons occupying the vehicle. On that basis, the charge would appear to reflect an access fee rather than a charge for parking a car and might therefore be considered to be in breach of the Act (Simpson, 2004; McNeish, 2006); a suggestion strongly opposed by the landowner in question (Rothiemurchus Estate, 2004). In a wider sense, car park charging is opposed by some outdoor enthusiasts on the grounds that it represents a ‘back door’ approach to restricting traditional access rights held by the public (Simpson, 2004; TAC, 2004a; MCoFS, 2005); although in some cases their objection is more related to the lack of transparency offered regarding how their fee will be spent (TAC, 2004b).

There are two fundamental reasons for user pricing in the context of outdoor recreation; the first is concerned with rationing visitor access using price as a disincentive to use, and the second involves utilising the visitor fee to alleviate human impact by reinvesting the fee into the environment affected (McCallum, 1980; Wilman, 1988; Willis, 1991; Sibly 2001; Hanley *et al.*, 2002). It is the second of these policies that we are interested in. In terms of pricing policies there has been much support for the hypothecation of visitor fees on the basis that visitors are much less reluctant to pay the charge if they know how and why it will be used (Laarman & Gregersen, 1996; Hanley *et al.*, 2002). A degree of support has also been shown in the literature for site-specific polices, which reflect the level of pressure at each particular site thus justifying the need to have a pricing policy in place (Crabtree *et al.*, 1994;

Laarman & Gregersen, 1996). In effect, this ensures that the visitor understands the *user* charge and why it has been applied.

### **Visitor Survey**

The research aims of this study were to understand CNP visitor perceptions and attitudes towards car park charging in the park, with a special focus on the role of hypothecation as an acceptable basis for introducing a park-wide payment scheme. The survey approach involved a hybrid combination of traditional social survey questions with two 'willingness to pay' (WTP) questions relating to car parking charges. A number of studies have examined WTP for outdoor recreation activities, some using car park charges as the payment 'vehicle' in stated preference techniques such as Contingent Valuation or Choice Experiments (e.g. Christie *et al.*, 1999; Hanley *et al.*, 2002). However, the emphasis in this study is on public attitudes towards the design and implementation of a car park charging scheme for the CNP rather than establishing the value of access or outdoor recreation per se.

After considering the practicalities of survey administration it was decided that a self-completed questionnaire would be most suited to the research task, with participants being requested to complete and return the questionnaire in a prepaid envelope. The main limitation associated with self-completion is low response rates and, as a consequence, the possibility that self-selection bias can influence the results. In order to encourage a high response rate considerable effort was therefore made to design a survey document that was as user-friendly, visually appealing and researcher-instructive as possible. The questionnaire was developed through preliminary testing with a small number of individual countryside visitors and was piloted in two car parks within the study area before being finalised.

Split into three sections, the questionnaire document first sought to establish visitors' awareness and perceptions of national parks in Scotland, and in particular the CNP. Second, visitors' views on car parking were sought in principle—asking questions regarding their WTP and outlining a range of conditions that might affect this, for example the relevance of the national park, the difference between town and countryside parking, and potential uses made of money collected. Visitors were then asked for their WTP for parking based on their selection of one of two possible systems: traditional daily on-site charging (which is widely used at present) or a park-wide permit system whereby tickets would be transferable between parking locations on a daily, weekly, monthly or annual basis. The above information is further supported by details of visitors' particular car parking location, setting and fee paid (if any) on the day of questioning; which was asked at the start of this section. Section three then made enquiry of visitors' familiarity with the CNP area, their reasons for visiting and obtained some background socio-economic data.

As the visiting population is not easily identifiable by means of a traditional postal survey, convenience sampling at each selected survey location was elected as the only practicable sampling option (Bourque & Fielder, 2003). Across a period of five weekends in June and July 2005, 500 questionnaires were therefore distributed to visitors with cars at parking locations throughout the CNP—the 12 discrete areas selected for distribution were chosen to best characterise the area in terms of geographical spread, physical geography, land use, car park distribution within the

defined area, car park charging policies, tourism and/or local potential and ownership/management. The approximate locations of these areas are shown in Figure 1.

### Results

Of the 500 surveys distributed, 305 were returned by the cut-off date giving a 61% response rate for analysis—a rate considerably higher than that generally anticipated for a self-completed mail-return survey. The returning sample was found to be an adequate representation of the survey population across gender, age and income levels: 63% were male, household income ranged from under £10,000 to over £100,000, with median income between £20,000 and £30,000 per annum; and the median age range was 45–54 years. Figure 2 shows respondents' familiarity with the area. Approximately 85% of visitors live out-with the park, of which most considered themselves as either occasional or regular visitors. Only 6% of the sample was first-time visitors. Visitors' reasons for parking their car show that a large majority participated in some form of walking or rambling (73%), with field sports and water pursuits being very much in the minority (Table 1). Results from the

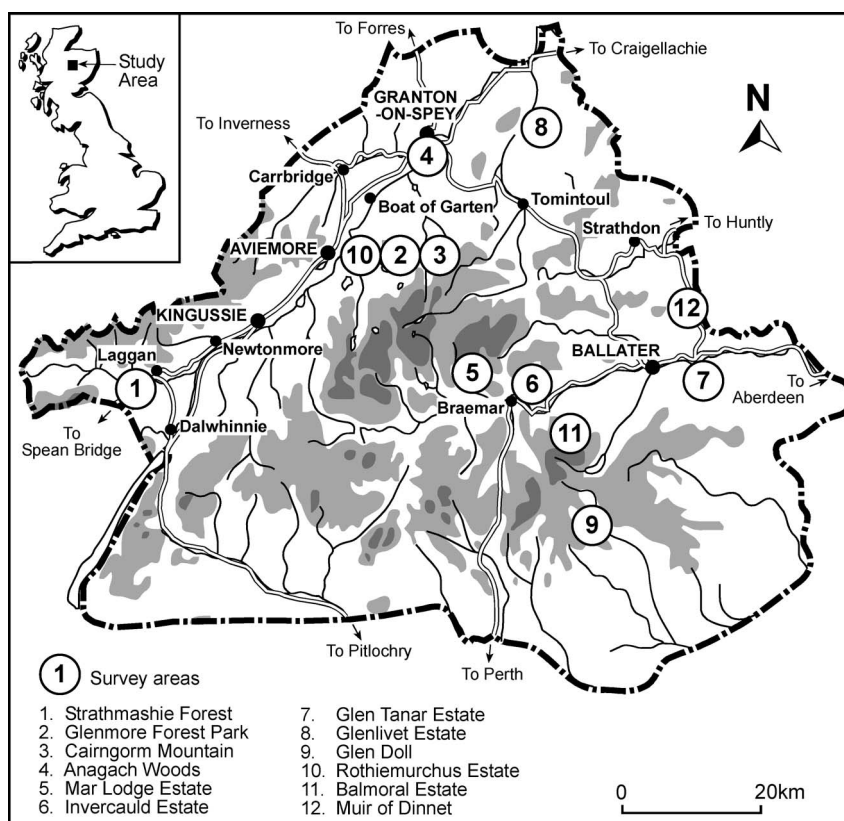
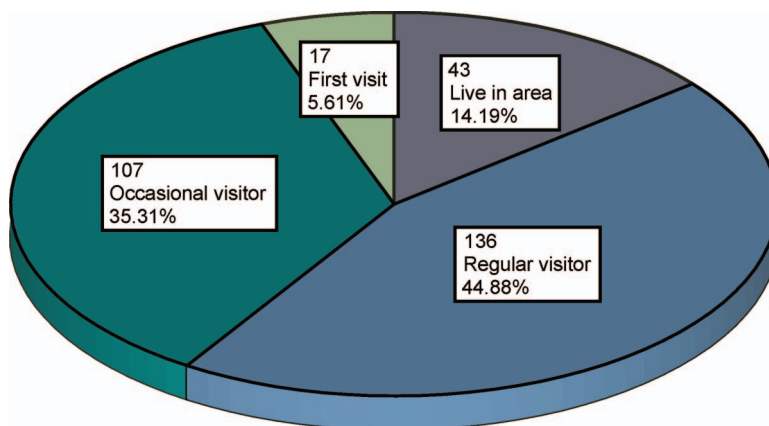


Figure 1. Cairngorm National Park area—showing approximate location of survey areas



**Figure 2.** Parking fees requested of respondents

**Table 1.** Visitors' reasons for parking

Reason	N	% of respondents	% of total response
Walking/rambling	223	46.5	73.1
Bird/wildlife watching	68	14.2	22.3
Field sports	1	0.2	0.3
Water pursuits	5	1.0	1.6
Mountain biking/cycling	32	6.7	10.5
Mountaineering/rock climbing	41	8.5	13.4
Picnicking/general day out	65	13.5	21.3
Particular tourist attraction	18	3.8	5.9
Other	27	5.6	8.9
Total	480	100.0	157.4

Cairngorms National Park Visitor Survey support these population characteristics (CNPA, 2005); walking in all its forms is an important motivation for visiting the area, the majority of day visitors are aged between 25 and 54 (with a significant proportion of the remainder being over 55), and a significant proportion are returning or regular visitors.

A number of questions focused on the national park and its designation. On the whole, visitors' responses indicated a relatively high level of awareness (71%) that their visit was within the bounds of the CNP. However, looking comparatively at visitors' responses, those visiting the more easterly areas of the park generally indicated a much lower awareness of the park designation than visitors to areas in the west; for example at Glen Tanar Estate, the most easterly location surveyed, only 37% of visitors surveyed were aware that they were in the CNP. Overall, only 7% of visitors said they were motivated by the area's national park status as a reason for their visit.

Almost 90% of visitors indicated the 'protection of wildlife and habitats' and 'preservation of the natural landscape' as one of the three most important



grounds for having national parks in Scotland (Table 2). This is consistent with the ‘Sandford Principle’ implemented under the National Parks Act, which requires that priority will be given to the protection of cultural and natural heritage where this comes into conflict with the other national park aims (Scottish Executive, 2000; Llewelyn, 2002). Social and economic objectives were much less important. For example, only 6% of visitors ranked ‘increased prosperity in the area’ among the top three.

Seven of the 12 car parking areas that were sampled operated a payment policy and overall 185 visitors (61%) sampled indicated that they had been asked to pay to park their car (Table 3). Fees were levied on a daily basis and, in all but one car park, were applied on a per vehicle basis—daily charges ranging from £1 to £2 per car. The Loch an Eilean car park on Rothiemurchus Estate is the exception to the ‘per vehicle’ payment basis; here a £1.50 charge is levied per person, and not surprisingly this site had the highest mean charge per party of £3.53. The overall mean charge paid by respondents was £1.99 per car per day, and the modal and median charge was £2.00 per car per day (Figure 3), which is the fee paid at four of the seven charging locations surveyed.

At the fee-paying car parks three different collection methods were in use: ‘pay and display’ (PD), PD with leafleting for non-payers and payment on entrance direct to a parking attendant. Although honesty boxes were not used at any of the car parks surveyed, each location (except Loch an Eilean) relies on visitors’ honesty as the charge is essentially voluntary and not enforced by means of clamping or other means such as stickering. Leafleting is adopted, however, at some locations as an additional means of encouraging payment. Approximately 82% of the visitors to fee-paying car parks considered the charge to be reasonable—closer analysis of the remaining 18% indicates that most were visitors to Loch an Eilean, where the fee they were asked to pay was determined by the number of people occupying their vehicle. One visitor’s comment stated that they were ‘charged per person not per car’ which they found ‘strange since it’s not meant as an access fee’, and another visitor asked: ‘why per person?’. Other reasons given by those considering their fee paid to be unacceptable included thoughts that the fee was simply ‘too expensive’, some who felt that payment itself was unacceptable, and several who believed the facilities at their respective location to be substandard relative to the levy.

Only five visitors stated directly that they had refused to pay, but based on other comments received and other surveys conducted in the area the actual number is

**Table 2.** Visitors’ perception of the key grounds for having national parks in Scotland

Grounds for NP	N	% of respondents	% of total response
Protect wildlife and habitats	267	29.5	88.7
Develop agriculture and forestry	14	1.5	4.7
Promote local community interests	44	4.9	14.6
Increase prosperity in the area	18	2.0	6.0
Promote tourism and recreation	79	8.7	26.2
Control housing development	43	4.8	14.3
Preserve the natural landscape	258	28.5	85.7
Promote access to the countryside	181	20.0	60.1
Total responses	904	100	300.3

**Table 3.** Respondent breakdown: fee-paying car parks

Car Park	Parking Charge		Method of Collection			R'dents	Mean Party Charge	Charge Reasonable?		Known Refusals
	Fee	Basis	HB	PD	PD leaf			Att.	Yes	
2. <i>Loch Morlich Car Parks</i> (Glenmore Forest Park)	£1.00	per car		X			£1.00	13	87	1
5. <i>Linn O Dee Car Park</i> (Mar Lodge Estate)	£2.00	per car		X			£2.00	21	84	1
6. <i>Keiloch Car Park</i> (Invercauld Estate)	£2.00	per car			X		£2.00	19	90	1
7. <i>Brae-loine Car Park</i> (Glen Tanar Estate)	£2.00	per car		X			£2.00	24	86	
9. <i>Glen Doll Car Park</i>	£1.50	per car			X		£1.50	28	90	
10. <i>Loch an Eilean Car Park</i> (Rothiemurchus Estate)	£1.50	per person				X	£3.53	12	57	2
11. <i>Loch Muck Car Park</i> (Balmoral Estate)	£2.00	per car			X		£2.00	37	84	
<b>Totals</b>							£1.99	154	83	5

*Method of Collection*

HB—Honesty Box.

PD—Pay and Display.

PD leaf—Pay and Display, with attendant/leaflet for non-payment.

Att.—Attendant on entry.

probably higher. For instance, an unofficial honesty rate survey carried out by Forestry Commission staff at Glenmore Forest indicated that only 51% of visitors actually pay to park in this area; and at Glen Doll the honesty rate is reportedly 67% across the year (Forestry Commission, pers. comm., 2006).

Of the 12 sample areas surveyed, free parking locations were available in nine. Free parking visitors represent just over a third of the sample (36%), most of whom had also parked in a managed car parking site—relatively few parking their vehicle in lay-bys or on roadside verges (Table 4).

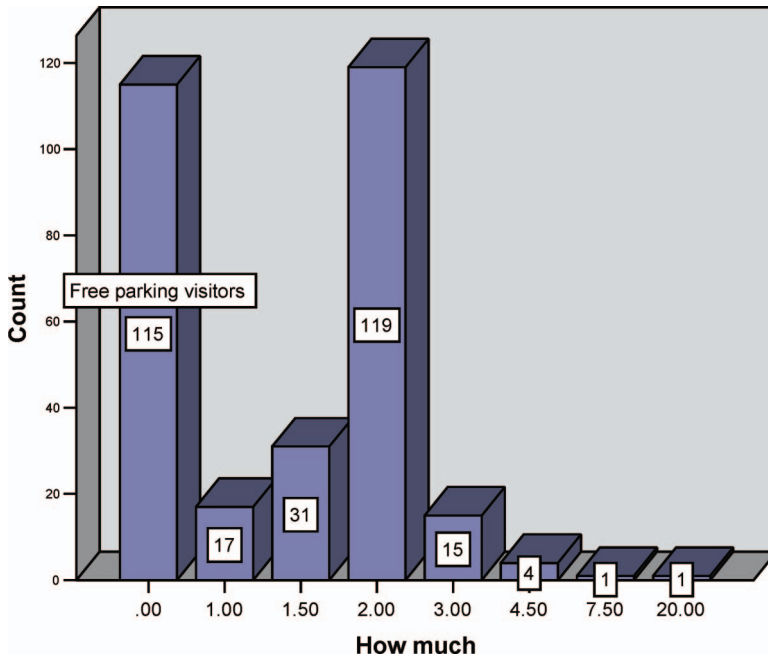


Figure 3. Visitors' familiarity with the Cairngorm National Park area

Table 4. Respondent breakdown: free parking locations

Area	Respondents	Car Park Setting				
		Managed CP	Unmanaged CP	Lay-by	Road Verge	Other
1. Strathmashie Forest	4	4	–	–	–	–
2. Glenmore Forest Park	16	9	–	1	6	–
3. Cairngorm Mountain	14	–	11	1	–	2
4. Anagach Woods	6	6	–	–	–	–
5. Mar Lodge Estate	18	8	4	–	5	1
6. Invercauld Estate	14	–	5	6	2	1
7. Glen Tanar Estate	2	–	–	1	1	–
8. Glenlivet Estate	26	4	2	4	5	11
12. Muir of Dinnet	14	12	1	0	0	1
<b>Totals</b>	<b>110</b>	<b>43</b>	<b>23</b>	<b>13</b>	<b>19</b>	<b>16</b>

Based on statistical analysis, visitors' support for the suggestion that car parking payment in the countryside is equivalent to payment for town and city parking was found to be greater if they had parked in a fee-paying location; approximately 45% of fee-paying parkers agreed or strongly agreed, compared to only 28% who had left their car at a free parking location.<sup>4</sup> And in a further enquiry, visitors' support for the suggestion that national park status should have an influence on car park charging policy was tested—again a significantly higher proportion of fee-paying parkers (46%) were found to be in agreement compared to free parking visitors (30%).<sup>5</sup> These findings suggest that visitors who had parked in free parking sites had a less positive attitude towards car park charging in the CNP countryside.

When asked outright, 85% of visitors who had parked in a fee-paying site and 62% of those who had parked at a free parking site accepted the principle of car park charging and would be willing to pay (Table 5). Based on a Pearson Chi-square test this difference is significant at the 1% level and suggests that visitors in the latter category either tend to actively seek out free parking or, alternatively, the experience of charging somehow reduces users' opposition to the idea. The former explanation gains credibility from the results of the attitudinal questions reported above, and also from further questioning that indicated that the majority of visitors (84%) who would not pay in principle sampled at free car parks would find an alternative car parking location if asked to pay. Interestingly, one respondent who refused to pay the charge would in fact be willing to pay in principle—further examination of qualitative comments given by this respondent indicates that their rejection of payment was not associated with the principle of car park charging per se, but was in response to the car occupancy-based charge applied at the site in question (Rothiemurchus Estate).

When respondents were given the opportunity to provide reasons for their unwillingness to pay a number of issues arose. One in particular was a fairly strong objection to the principle of fee payment for car parking in the countryside. The perception of some is that the introduction of bureaucracy to the countryside in the form of payment, to some extent curtails their feeling of freedom and citizenship and right of access to countryside areas. Many visitors' objections reflected some feeling of restriction or imposition on their rights, or to their feeling of a 'countryside experience'. One visitor commented that 'car parking fees take away some of the pleasure and relaxation which is part of enjoying the Cairngorms' and another said, 'I pay enough for town car parking and when I visit the countryside I don't expect to do the same'.

Issues relating to payment context were further revealed in a series of open statements given by some respondents—car park setting, for example, proved to be particularly important in terms of visitors' attitudes towards car park charging.

**Table 5.** Respondent breakdown: willingness to pay in principle

Willing to pay in principle?	Whole Group	Fee paying visitors	Free parking visitors	Refusals
Whole Group	302	182	115	5
Yes	226	154	71	1
No	45	12	29	4
Not sure	31	16	15	0

Analysis of respondents' qualitative comments suggests that locations considered as credible for visitors' payment must in some way be defined by a human environment; in other words, there should be some evidence of the area being managed or at least designated for the purpose of visitor use. Similarly, it is suggested that 'honey-pot' type sites, or sites which boast high levels of tourism numbers, should be treated with a different set of management considerations from areas with low or dispersed tourism impact. For example, 'fee payment should be kept to areas where a reasonable number of people use it', and 'charges should be considered at places and times of high demand, but otherwise it is an inappropriate urban intrusion'.

When asked to indicate their preferred payment method, 65% of all respondents stated that they would prefer to continue with the traditional on-site charging method which is widely used at present, while 28% favoured a park-wide permit system where the fee paid would allow visitors a transferable permit to be used throughout the national park area. The remainder selected neither (or both) as their preference (Table 6). The dominant preference of respondents in the permit category was for the daily option, rather than a weekly, monthly or yearly permit. Overall, 78% of respondents would therefore prefer to retain the current system of a daily charging system, whether by means of a single site or site transferable ticket.

Conditionality is an important factor in making car park charging acceptable to users. When asked, 91% of the total sample stated that the way monies raised would be spent was an important condition in their assent to car parking fees (Table 7). The prospect that landowners might benefit commercially from their parking donation was not a popular option, with more than 85% of respondents against this suggestion. However, there was clear support for all three hypothecation options suggested—the highest overall support was shown for reinvestment into visitor infrastructure (82%) and, although still considerable, the lowest was for conservation of the natural environment near the car park (67%). The order of preference among respondents not WTP in principle was somewhat different. The option most favoured by this group supports the conservation and maintenance of the CNP as a whole as the most acceptable use for monies collected (67%), and the least favoured option for this group is for the reinvestment of monies into visitor infrastructure; the fact that this is the least preferred option by the group unwilling to pay in principle supports the suggestion that many of the visitors in this category view formal car parking and its associated infrastructure as an unwanted urban intrusion.

**Table 6.** Respondent breakdown: preferred payment method

	Whole Group (N = 305)	Fee paying visitors (N = 187)	Free parking visitors (N = 113)
Traditional on-site charging	198	126	68
Daily site-transferable ticket	41	25	16
Weekly site-transferable ticket	15	8	7
Monthly site-transferable ticket	1	1	0
Annual site-transferable ticket	32	20	12
Neither	12	1	10
Both traditional and permit systems	6	6	0

**Table 7.** Respondent breakdown: acceptability of usage for charges collected

	Whole Group (N = 303)		Fee paying visitors (N = 184)		Free parking visitors (N = 114)		Visitors willing to pay in principle?					
	Yes	%	Yes	%	Yes	%	Yes (N = 226)		No (N = 45)		Not sure (N = 31)	
							Yes	%	Yes	%	Yes	%
Is it important how charges collected will be spent?	276	91	169	92	103	90	205	91	40	89	30	97
<b>Use acceptable?</b>												
Income to landowners	37	12	22	12	15	13	29	13	6	13	2	6
Reinvestment into visitor infrastructure (car parking, path maintenance, toilets etc.)	249	82	161	88	87	76	202	89	24	53	23	74
Conservation of natural environment nearby car park	203	67	134	73	68	60	159	70	25	56	18	58
Conservation and maintenance of national park as a whole	244	81	155	84	85	75	190	84	30	67	22	71

To further explore the prospect of a park-wide car park charging policy based on the principle of hypothecation visitors were asked, first, to state their maximum daily WTP per car if there was a CNP-wide policy,<sup>6</sup> and second, if they would be WTP an increased amount if the revenue collected was hypothecated according to their preference. For the whole sample group, there is a significant increase<sup>7</sup> in visitors' mean WTP from £2.50 to £3.72 on the basis of the charge being hypothecated (Table 8). Furthermore, a significant increase<sup>8</sup> is evident for those WTP in principle (£2.71 to £4.20) and also those not WTP in principle (from £1.47 to £1.84).<sup>9</sup> Hence, hypothecation is potentially an important mechanism for increasing revenues and broadening the appeal of car park charging even for those against the concept in principle.

Without the assurance of hypothecation visitors maximum WTP is closely associated with what was actually paid on site; the mean amount paid by respondents on the day was £1.99 compared to their mean WTP which was £2.50 (Table 8). However, the result of introducing hypothecation into the equation is a noticeable difference between the amount visitors paid and the mean amount they would be WTP on that basis (£3.72). The anchoring effect found associating visitors' initial WTP figure with what they paid on the day is to be expected given that visitors are aware of the level that car parking charges are set at present. Anchoring effects are commonly reported in the literature when asking hypothetical WTP for goods or services that people have experience of paying for, and it is often thought to explain why WTP may under-represent actual maximum WTP (MacMillan *et al.*, 1999).

To help understand visitors' attitudes and motivations towards charging more formally a series of linear regression analyses were performed. The primary objective in conducting these investigations and using this method was to ascertain the occurrence of any significant relationships between visitors' characteristics and their WTP. The covariates used in this analysis are described in Table 9.

In the first test conducted (Table 10) the dependent variable 'tradWTP' is visitors' maximum daily WTP based on the traditional on-site charging system, which was

**Table 8.** Respondent breakdown: daily willingness to pay under proposed park-wide charging policy

	Whole Group <sup>1</sup> (N = 206)	Fee paying visitors (N = 132)	Free parking visitors (N = 69)	Willing to pay in principle?		
				Yes (N = 160)	No (N = 24)	Not sure (N = 21)
				<b>Maximum WTP per car</b>		
Mean	£2.50 <sup>a</sup>	£2.58 <sup>b</sup>	£2.45 <sup>c</sup>	£2.71 <sup>d,f</sup>	£1.47 <sup>e,f</sup>	£2.05
Mode	£2.00	£2.00	£2.00	£2.00	£1.00	£2.00
Median	£2.00	£2.00	£2.00	£2.00	£1.00	£2.00
Range	£10.00	£10.00	£9.80	£9.50	£5.00	£4.00
				<b>Maximum WTP per car if hypothecated</b>		
Mean	£3.72 <sup>a</sup>	£3.97 <sup>b</sup>	£3.43 <sup>c</sup>	£4.20 <sup>d,g,h</sup>	£1.84 <sup>e,g</sup>	£2.10 <sup>h</sup>
Mode	£2.00	£2.00	£2.00	£2.00	£2.00	£2.00
Median	£3.00	£3.00	£2.00	£3.00	£2.00	£2.00
Range	£15.00	£14.50	£14.80	£14.50	£5.00	£5.00

<sup>a-g</sup>significant difference at the 1% level.

<sup>h</sup>significant difference at the 5% level.

<sup>1</sup>Based on visitors who selected traditional on-site charging option.

**Table 9.** Independent variable descriptors

Covariate name	Description
T&C	Visitors' agreement that charging to park in countryside car parks should be no different from charging to park in towns and cities (1, strongly disagree—5, strongly agree)
RSN	Visitors' general reason for parking—split into general (1) and specialist activities (2)
WTP	Visitors' approximate annual household income before tax (1, less than £10,000—11, over £100,000)
LAND	Visitors agreement that landowners' income is an acceptable use for revenues collected—yes (1) or no (2)

**Table 10.** Regression analysis: variables significant to tradWTP

Significant variables	Coefficient	S.E.	<i>t</i>	Probability value
(Constant)	2.971	.864	3.437	.001
T&C	.331	.083	4.009	.000
RSN	.428	.155	2.765	.006
WTP	-.926	.335	-2.761	.006
INC	.095	.041	2.323	.021
LAND	-.687	.309	-2.220	.028

tested against visitors' responses to all other survey variables. The results from this test reveal a significant model,<sup>10</sup> and a significant relationship between tradWTP and the independent variables T&C, RSN, WTP, INC and LAND (see Table 9).

What can be taken from the association of the variables T&C and WTP with tradWTP is that there is a natural link between the monetary amount visitors offered and their general attitude towards car parking in principle; in other words, those visitors who agree that countryside car parking should be treated with the same considerations as town and city parking (T&C), and who are WTP in principle (WTP), are generally willing to pay a higher amount than those who responded at the opposite end of each spectrum. In terms of respondent characteristics it can also be taken from this test that household income (INC) is a significant factor (i.e. as a rule those with a higher household income are WTP more), and those who are parking to participate in more specialist outdoor activities, such as mountaineering or water pursuits, are more likely to pay a higher amount than those visiting the area for more general reasons such as walking or picnicking (RSN). In addition, the results from this test further corroborate earlier findings which show that landowners' income is considered not to be an acceptable use of car parking revenues raised; visitors' disagreement with landowners' commercial profit from parking fees has been found to have a significant negative influence on their maximum WTP bid (LAND).

In a second regression test, the relationship between visitors daily WTP when hypothecated and the same independent variables were tested. As before, the dependent variable (hypWTP) represents visitors' maximum daily WTP based on the traditional on-site charging system, but this time visitors' fees are hypothecated for reinvestment into the local environment. The results from this test reveal a significant



model,<sup>11</sup> and a significant relationship between hypWTP and the independent variables T&C and INC (Table 11).

In this test a significant relationship remains between respondents' WTP if hypothecated and their relative income (INC) and their agreement that town and country parking should be treated in the same way (T&C). The most significant outcome of this test is the notable absence of three variables which were previously important to the amount visitors would pay—WTP, RSN and LAND. The fact that visitors WTP in principle is no longer a factor in the model and that no significant relationship was found between visitors' WTP and their objection to charges being used to supplement landowners' income (LAND) is not surprising as hypothecation addresses many of their concerns. Finally, visitors' reason for parking (RSN) has no significant bearing on the amount they would be WTP if the amount was hypothecated.

On the basis of these results it can be concluded overall that CNP visitors are willing to pay an affordable amount towards the management and protection of the environment they visit by means of a car parking fee, as long as they are certain that their fee will be used in this way.

### **A Car Parking Policy for the Cairngorms National Park?**

Our analysis reveals that hypothecation would be an acceptable foundation for car park charging in the CNP. Furthermore, a significant difference in the amount that visitors would be WTP resulting from hypothecation suggests that substantial funds could be raised as a consequence. On the basis of these results it is recommended that a car park charging policy be considered for the entire CNP area based on the principle of hypothecation. Under this proposal the CNPA would adopt a central role in administering and endorsing the scheme, which would ultimately be a mutually beneficial arrangement to all parties concerned.

The park-wide scheme suggested would be a voluntary, 'opt-in' system, whereby participants must comply with a range of criteria to become endorsed by the park 'brand'. Hypothecation would be the central criterion, and 'user pays' the central hypothesis. Entry qualifications to the scheme would include reinvestment of all revenues into the alleviation of visitor impact and local environmental improvements, with information provided about how fees will be spent.

Over and above the direct benefits resulting from the scheme (i.e. the alleviation of visitor impact by way of reinvesting user fees), the CNP area could potentially benefit in a wider sense, by its prospective contribution toward the profile of the park within its boundaries and the achievement of the park's wider strategic objectives. For example, car parks with full facilities could be located to redirect visitor numbers away from sensitive sites for conservation (e.g. Capercaillie lekking<sup>12</sup> and nesting

**Table 11.** Regression analysis: variables significant to hypWTP

Significant variables	Coefficient	S.E.	<i>t</i>	Probability value
(Constant)	.338	.569	.593	.554
T&C	.872	.158	5.514	.000
INC	.237	0.083	2.876	.004

sites). Funds could also be used for path construction and maintenance, which would not only enhance the visitor experience but also help to manage recreational access by diverting visitors away from these sensitive natural areas.

Car park charging should not be introduced indiscriminately within the park. Our results indicate that public confidence in a charging scheme will be met if the site meets certain contextual requirements. For example, it is important that the car park setting is correct, and where a charge is levied visitors expect to see some evidence of visitor-supporting infrastructure, especially toilets<sup>13</sup> (maintained to an acceptable standard) and information provision (including details of how fees will be spent).

Another important consideration is that user demand at each site participating in the scheme should be sufficiently high to warrant charging in the first place; site-specific policies are very much supported by the public and in the literature (Crabtree *et al.*, 1994; Laarman & Gregersen, 1996). Looking comparatively at the areas surveyed, the car park at Loch Muick is an example of a ‘honey-pot’ site, where high numbers of recreational visitors congregate throughout the year. Consistent with the literature and survey findings, this site is justified in operating a system of car parking payment as the collective human impact in this area is significantly high to warrant visitor facilities and remediation efforts. Glenlivet Estate provides examples of where charging would be less appropriate as visitation is dispersed, resulting in low and distributed pressure over the area as a whole in terms of crowding and resulting environmental impact and where parking areas tend to have naturalistic settings such as disused quarries and farmyards. Effectively, the result of the policy would be a range of car parking styles: at one end of the spectrum, at key tourism sites across the area, designated fee-paying parking facilities—supported by visitor infrastructure (toilets, picnic tables, path maintenance) and other impact mitigation measures that are paid for by the user. And for visitors at the other end of the spectrum, who prefer to avoid sites where infrastructural intrusion is evident—simply a space to park, free of bureaucracy and obvious visitor paraphernalia.

The survey also indicates that the nature of the charging system is key in gaining visitors’ approval—crucially that the fee regime is perceived to be fair. For example, a considerable number of visitors who were asked to pay a car occupancy-based levy felt that the fee charged was unreasonable, on the basis that a car parking fee should not be paid on a per person basis. A number of visitors conveyed strong belief that the charge should be nominal given that it is not an admission fee or a fee for access, but a charge to park their vehicle. As a result, it is suggested that charges applied under the park-wide policy be on a ‘per car per day’ basis.

Our main recommendation is that the CNPA consider implementing a park-wide charging policy based on the principles outlined in this discussion. It has been shown that hypothecating visitors’ spent could potentially result in increased revenues, which could be reinvested to cover costs and help safeguard the areas of the CNP countryside which are popularly frequented by recreational visitors. Ultimately, the collaborative CNP-wide brand has the potential to assist and support the developing profile of the park, while also benefiting individual landowners by visitors’ recognition of the CNP brand significance. In this way, the acceptability of parking charges will also be increased as drivers are further assured of the positive way that their money will be spent.

In the absence of a CNP-wide scheme, or where sites choose not to participate, it is suggested that individual landowners who charge for parking adopt a policy underpinned by hypothecation of the fee towards reinvestment. It is acknowledged that many landowners do declare environmental objectives at present; however, it is suggested that increased transparency in terms of specific projects or end uses would act to promote increased acceptability to the visitor.

## Notes

- <sup>1</sup> Corresponding author.
- <sup>2</sup> Land Reform (Scotland) Act 2003.
- <sup>3</sup> Unless in force before 2001.
- <sup>4</sup> Significant difference at the 5% level based on a Pearson Chi-Square test.
- <sup>5</sup> Significant difference at the 5% level based on a Pearson Chi-Square test.
- <sup>6</sup> Based on traditional on-site charging, and the visitors who selected this option (N = 206).
- <sup>7</sup> Significant difference at the 1% level based on paired t-test.
- <sup>8</sup> Significant difference at the 1% level based on paired t-test.
- <sup>9</sup> Although this group were not willing to pay in principle many offered to pay a positive amount in response to the WTP question because the WTP scenario described a park-wide scheme covering all major car parks.
- <sup>10</sup>  $R^2 = 0.273$ ; adj.  $R^2 = 0.251$ ; Sig level: 0.000.
- <sup>11</sup>  $R^2 = 0.189$ ; adj.  $R^2 = 0.181$ ; Sig level = 0.000.
- <sup>12</sup> Lekking sites are small clearings which are used by males to display and attract females.
- <sup>13</sup> Direct reference was made to 'toilets' in excess of 45 times in visitors' qualitative remarks.

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