



Valuing access to protected areas in Nepal: The case of Chitwan National Park



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HIGHLIGHTS

- We estimated visitors' willingness-to-pay (WTP) fee to access Chitwan National Park.
- Visitors' mean WTP is substantially higher (>2.5 times) than the current entry fee.
- WTP is positively affected by visit experience but negatively by candidate entry fees.
- At revenue maximising entry fee, park revenue would increase by more than 80%.
- Increased entry fee generates revenue for conservation and development activities.

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ABSTRACT

This paper investigates the international and domestic visitors' willingness to pay (WTP) an entry fee at Chitwan National Park (CNP) in Nepal, the factors affecting their WTP, and the trade-offs among entry fees, visitation demand and park revenue. Based on the contingent valuation surveys of 222 non-South Asian, 48 South Asian, and 40 domestic visitors, the logit regression results suggest that the visitors have a substantially higher WTP than the current entry fees. Depending on visitor categories, the estimated mean WTP per visitor per day was at least 2.5 times higher than the existing entry fee. The WTP is positively affected by the visitor's CNP experience. The current fees capture only about 21% of consumer surplus derived from CNP access. Doubling the current entry fees would modestly decrease the number of CNP visitors (<19%) but substantially increase the park revenue (>61%).

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1. Introduction

Protected areas (PAs) are the cornerstone of global biodiversity conservation (Naughton-Treves, Holland, & Brandon, 2005; Venter et al., 2014) and prime destinations for nature-based tourism due to their unique biological, natural and cultural features (Ceballos-Lascurain, 1996; Whitelaw, King, & Tolkach, 2014). By 2012, a total of 130,709 PAs of various types had been established globally

covering 24,236,479 km² of terrestrial (16,263,609 km²) and marine (8,106,430 km²) habitats (IUCN & UNEP-WCMC, 2012).³ They constitute an important sector of the global tourism industry and contribute substantially to local and national economies (Archabald & Naughton-Treves, 2001; Nyaupane & Poudel, 2011). The management of PAs, however, is invariably under-funded and their financial self-sufficiency and sustainability remain unclear (Adams et al., 2008; Bovarnick, Baca, Galindo, & Negret, 2010; Buckley, 2003; IUCN, 2005; Whitelaw et al., 2014).

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³ Only national protected areas with designated establishment date are included. A total of 43,674 national protected areas have been excluded in these figures (IUCN & UNEP-WCMC, 2012).

The entry fee charged on visitors to access PAs can be an important source of revenue for park management and local development (Alpizar, 2006; Dharmaratne, Yee Sang, & Walling, 2000). The optimal entry fee to access PAs depends on several factors including the purpose of charging the fee, characteristics of the PA, and visitors' willingness-to-pay (WTP).⁴ An entry fee is intended to capture a fair share of economic value, generate revenue, offset management costs, and reduce visitor congestion (Adams et al., 2008; Laarman & Gregersen, 1998; Lindberg & Huber, 1993; Wells, 1993; Whitelaw et al., 2014). In addition, the uniqueness of a PA in terms of its nature-based tourism experience and what it protects can add scarcity value to the entry fee. For example, the Volcanoes National Park in Rwanda, known as a haven for Mountain Gorilla, charges a whopping US\$750 for foreign visitors. Similarly, visitors' WTP, which largely depends on their socio-economic characteristics, would also influence the entry fee (Adams et al., 2008; Alpizar, 2006; Baral, Stern, & Bhattarai, 2008; Mmopelwa, Kgathi, & Molefhe, 2007; Ransom & Mangi, 2010; Reynisdottir, Song, & Agrusa, 2008).

In developing countries, the PA entry fee paid by visitors is often lower than what they are prepared to pay (Dixon & Sherman, 1991; Whitelaw et al., 2014). Using an example from Nepal, Wells (1993) states that the proportion of economic benefits captured by the host country is lower than the proportion of benefits captured by visitors. Laarman and Gregersen (1998) further argue that setting an appropriate entry fee for nature-based tourism (including visits to PAs) is a seriously neglected aspect of public policy, creating unintended results where the governments of poor countries subsidize visitors from wealthier countries. Therefore, charging reasonable entry fee to access PAs is important for developing countries, like Nepal, not only to capture an equitable share of the economic benefits generated by the PAs but also to generate revenue to improve park management and to create incentive for conservation among local communities by supporting their local development aspirations.

Starting in 1973, Nepal has established a network of 20 PAs to conserve globally significant biodiversity and natural landscapes (DNPWC, 2012). These PAs cover 34,187 km² (23.23%) of different parts of Nepal. It has adopted a discriminatory entry fee policy in PAs based on their location (Terai, hill, mountain), type (national park, wildlife reserve, conservation area, hunting reserve), and the visitor category. The practice adopted by the Department of National Park and Wildlife Conservation (hereafter, the Department), groups PA visitors into three categories, which include domestic, South Asian Foreign (SAF), and Non-South Asian Foreign (NSAF) visitors – having two categories of foreign visitors. Visitors from Afghanistan, India, Pakistan, Bangladesh, Bhutan, Sri Lanka, and Maldives are classified as SAF visitors, while other international visitors are classified as NSAF visitors. Based on this classification, visitors pay different entry fees to access PAs. In 2011, an NSAF visitor paid Nepalese Rupees (NRs) 500 (equivalent to US\$7),⁵ a SAF visitor paid NRs 200 (US\$2.75), and a domestic visitor paid NRs 20 (US\$0.28) per day to access Chitwan National Park (CNP). The entry fee charged on domestic visitors is lower than that of other visitor categories, partly because domestic visitors pay taxes, which

contribute to financing the parks through central budget allocation. In the fiscal year 2009–2010, the entry fees collected at CNP from all 115,181 visitors contributed to two-thirds of the park revenue (US\$842,088), of which the greatest share (US\$556,397 or 92.9%) was attributed to NSAF visitors, primarily because of their numbers and higher entry fee (DNPWC, 2010).

The entry fees to PAs in Nepal were last revised in 1991 and have remained unchanged despite increased management costs and significant currency devaluation since then. The implications of this stagnation in fees include: increased visitor congestion in easily accessible parks during the peak season (mid-September to mid-May); constrained finances for park management; and limited support for local development to empower participatory conservation envisaged by the buffer zone policy. The Department had proposed to increase the entry fees in 2010 without success due to the differences between the Department and the tourism entrepreneurs, who feared negative impacts on businesses as a result of increased entry fees. White and Lovett (1999) argue that establishing appropriate entry fees in national parks requires an understanding of visitors' WTP and motivations, which depend on visitors' socio-economic and demographic backgrounds, in addition to the appeal of the particular PA (Adams et al., 2008; Thur, 2010). These facts were overlooked by both the Department and the tourism entrepreneurs in their deliberations on entry fees.

Earlier WTP studies in developing countries have focused mainly on international visitors and examined their preferences and perceptions regarding entry fees and other park attributes (see Adams et al., 2008; Baral et al., 2008; Chase, Lee, Schulze, & Anderson, 1998; Mmopelwa et al., 2007; Naidoo & Adamowicz, 2005). For example, Chase et al. (1998) examine the impact of different entry fees on hypothetical park visitation behaviour among foreign visitors in three Costa Rican parks using a contingent behaviour survey; Naidoo and Adamowicz (2005) estimate the demand for improved biodiversity among foreign visitors in a Ugandan forest park to maximise park revenue using a choice modelling survey; and Mmopelwa et al. (2007) estimate overseas and South African visitors' WTP to visit Moremi Game Reserve in Botswana using a contingent valuation survey under a hypothetical park management scenario of high-cost low-volume tourism. In Nepal, Baral et al. (2008) examined the factors affecting foreign visitors' WTP to increase the entry fee in Annapurna Conservation Area using a contingent valuation survey. However, these studies have not considered the WTP of all categories of PA visitors. To our knowledge, no other study has yet examined the WTP of all three categories of visitors who pay different entry fees to access PAs in Nepal. We aim to fill this gap in literature through a unique case study of Chitwan National Park, the most visited park in Nepal.

The purpose of this study is to estimate the willingness to pay of NSAF, SAF and domestic visitors to access CNP and identify determinants of their WTP. We hypothesise that visitors are willing to pay more than the existing entry fee, irrespective of the category, and the socio-demographic attributes affect their willingness to pay. We estimate consumer surplus⁶ generated by CNP visits and explore alternative entry fees – mean WTP or revenue maximising – and their effect on number of visitors and park revenue by visitor category.

2. Study site: Chitwan National Park (CNP)

Chitwan National Park is situated in South-Central Nepal, about 200 km from the capital Kathmandu, covering 932 km² of the sub-

⁴ If access to natural areas is treated as citizen rights then imposing entry fee on parks brings a philosophical debate, this public goods view of PAs is not covered in this paper (see Laarman & Gregersen, 1998; Reynisdottir et al., 2008). We take the 'user pay' view because park visitors in Nepal are predominantly international visitors; and the entrance fee collected from these visitors is the important source of park revenue.

⁵ The average exchange rate (selling rate) during the survey period (16 May to 15 September, 2011): 1US\$ = NRs 72.46 and 1Euro = NRs 103.41 (Nepal Rastra Bank, 2014).

⁶ The extra benefit or value a visitor receives from the difference between his or her maximum willingness to pay and the actual amount paid (current fee).

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