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# Valuing protected areas through contingent valuation : a case study of Chitwan National Park, Nepal

Jennifer Michelle Cook  
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**VALUING PROTECTED AREAS THROUGH CONTINGENT VALUATION:  
A CASE STUDY OF CHITWAN NATIONAL PARK, NEPAL**

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by

Jennifer Michelle Cook

B.A., Wilfrid Laurier University  
Waterloo, Ontario  
June 2007

A thesis

presented to Ryerson University

in partial fulfillment of the  
requirements for the degree of  
Master of Applied Science  
in the Program of  
Environmental Applied Science and Management

Toronto, Ontario, Canada, 2011

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Jennifer Michelle Cook

## **Abstract**

### **VALUING PROTECTED AREAS THROUGH CONTINGENT VALUATION:**

#### **A CASE STUDY OF CHITWAN NATIONAL PARK, NEPAL**

Master of Applied Science, 2011

Jennifer Michelle Cook

Environmental Applied Science and Management

Ryerson University

Nepal is identified by the United Nations as one of the world's least developed countries, yet the conservation of its protected areas is praised globally. Despite success in some regions, sustainable funding sources are scarce and a lack of adequate funds can jeopardize conservation efforts. Using the contingent valuation method, this research assesses the potential to capture value from foreign tourists traveling in the country. Tourists were asked their willingness to pay for conservation and environmental efforts at Chitwan National Park, World Heritage Site, Nepal. The results show that 71.5% of those who responded were willing to pay more than the current entrance fee of \$7 USD (sample mean \$21.94 USD). This suggests that the current price of the park entrance fee could be increased with minimal negative results on tourist numbers and that management has the potential to capture the value tourists already hold for Chitwan National Park.

## **Acknowledgements**

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Finally, I am grateful for all the supportive thoughts from my friends, family and loved ones.

## **Dedication**

I dedicate this work to the ongoing conservation efforts at Chitwan National Park, Nepal.

May the park live on.

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## **List of Abbreviations**

ACAP: Annapurna Conservation Area Project

CBD: Convention on Biological Diversity

CBS: Central Bureau of Statistics, Nepal

CNP: Chitwan National Park

CVM: Contingent Valuation Method

DNPWC: Department of National Parks and Wildlife Conservation

EEA: European Environment Agency

GoN: Government of Nepal

ICEM: International Center for Environmental Management

IUCN: International Union for Conservation of Nature

ITNC: International Trust for Nature Conservation

K-S: Kolmogorov-Smirnov

LDCs: Least Developed Countries

NPR: Nepali Rupees

PA: Protected Areas

SAARC: South Asia Association for Regional Cooperation (member states include Bangladesh, Bhutan, Maldives, Nepal, Pakistan, India, Sri Lanka and Afghanistan)

SPSS: Statistical Package for the Social Sciences

TAL: Terai Arc Landscape

TEV: Total Economic Value

UMCDP: Upper Mustang Conservation and Development Project

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNWTO: United Nations World Tourism Organization

USD: United States Dollars

VDCs: Village Development Committees

WWF: World Wildlife Fund

# CHAPTER ONE

## Introduction

---

### 1.1 Introduction

Protected areas contain some of the world's most beautiful landscapes and outstanding natural and cultural scenery (International Union for Conservation of Nature (IUCN), 1994). In addition to their critical role in biodiversity conservation, protected areas provide clean water, protect soil resources, capture and store carbon and act as a reservoir of genetic material (de Groot, 1994; European Environment Agency (EEA), 2010). Further to these ecological values, the Convention on Biological Diversity (CBD) recognizes that protected areas also provide opportunities for rural development and rational use of marginal lands, generating income and creating jobs, research monitoring, conservation education and recreation and tourism activities (CBD, 2001).

Protected areas must be valued as areas where sustainable resources use and rural development can operate in partnership with a wide range of stakeholders (EEA, 2010). It is important for successful management of protected areas to understand their economic value, but equally important to find ways of capturing that value (Roe, 2003). The difficulty in capturing value comes from protected areas having not only direct and commercial values but also indirect values, option values, existence values and non-use benefits (Pearce, 1992). With the range of valuable assets attributable to protected areas in a developing country setting, there is often a limited means for flow of capital to recognize, manage and maintain them. In some circumstances protected areas can be significant revenue-earning entities and have the potential to make a considerable contribution to local economies in developing countries (Benavides & Perez-Ducy, 2001).

Valuing protected areas underlines the fact that they make up far more than a biological reserve (Dixon & Sherman, 1990). Protected areas form a supply of natural capital, which if

managed sustainably, can yield continuously a wide range of direct and indirect economic benefits to human populations (Munasinghe & McNeely, 1994; Phillips, 1998).

The concept of total economic value (TEV) identifies the goods and services or “products” protected areas offer and which are suitable for capturing revenues for the protected area (Pearce, 1993; Phillips, 1998; International Center for Environmental Management (ICEM), 2003). With proper management, the “product” on offer can be sold over and over again without diminishing its value and revenues can be used to maintain the protected area. In many cases economic valuation of a protected area has helped managers identify appropriate ways to capture value.

In the developing world, sustainable conservation funding sources are extremely scarce. A lack of adequate funds can jeopardize conservation in areas of high biodiversity by limiting the ability of protected area management to carry out critical tasks such as boundary enforcement, species protection and local education (Dixon & Sherman, 1990; Navrud & Mungatana, 1994; Baral et al., 2008). This thesis explores the economic valuation of protected areas in Nepal, specifically focusing on the case of Chitwan National Park. The study suggests ways to capture value and aid conservation management efforts at Chitwan National Park through a contingent valuation study exploring tourists’ willingness to pay.

## **1.2 Background and Conceptual Framework**

### **Global Value of Protected Areas**

A protected area, as defined by the World Commission on Protected Areas (WCPA) may be “a wetland, a tropical or deciduous forest, a cultivated landscape of value, an alpine region, a savannah, a marine area or any number of other types of natural or partially modified ecosystems – or indeed any combination of types of ecosystems” (Phillips, 1998). There are now over 100,000 protected areas worldwide covering over 12% of the world’s surface area (World Wildlife Fund (WWF), 2010). The World Wildlife Fund (WWF) describes a protected area as a wide range of land or a water conservation designations such as national parks, wildlife reserves and community conservation areas that encompass a

variety of different management approaches (WWF, 2010). In general terms, protected areas around the world are part of a key global strategy to conserve biodiversity (Dixon & Sherman, 1990; Pearce, 1993; de Groot, 1994; Garrod & Willis, 1997; Phillips, 1998; Allendorf, 2001; Nepal, 2002; ICEM, 2003).

The value of protected areas is emphasized by the many international conventions and programs working towards establishing the goals initiated at the 1992 Earth Summit. The summit began the move towards the global organization of protected areas to manage and support conservation, sustainable use and equitable sharing of environmental resources (IUCN, 1994; ICEM, 2003). The agreements and programs such as the Convention on Biological Diversity (CBD), the World Heritage Convention (WHC), the Ramsar Convention on Wetlands, the UN Law of the Sea Convention, Man and the Biosphere (MAB) Program of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the global program of the World Commission on Protected Areas (WCPA) are the foundation of international policy on the establishment and management of protected areas for biodiversity conservation and the sustainable use of natural and cultural resources. The global vision for protected areas requires awareness and understanding of the economic values generated by protected areas (Pearce, 1993; de Groot, 1994; ICEM, 2003).

### **Conservation and Management Problem in Protected Areas in Developing Countries**

Conservation and management problems that occur in protected areas and national parks across the world vary greatly. Early conservation efforts have been associated with negative consequences for social and economic development around the areas. In developing countries protected areas are often seen as controversial (Roe, 2003; Allendorf, 2006). Rural residents of developing countries have the most to lose from the depletion of natural resources upon which their livelihoods depend. On the other hand, they also have the most to lose from typical forms of conservation which may involve restricted access and resettlement (Spiteri & Nepal, 2008; Brockington & Igoe, 2006).

The park-people paradigm faced by conservation efforts in developing countries has been widely recognized as an ongoing problem (Connell & Rugendyke, 2008). This management paradigm positioned the park against the local people in a preservation oriented type of management restricting the rights of access to resources by local populations (McLean & Straede, 2003). Indigenous and local people in developing countries have often been disadvantaged by the conservation and protected area practices newly adopted in their country (McLean & Straede, 2003). Local people have been forced to move from traditional land areas which are newly designated as national parks, depriving them of access to resources upon which they have depended for generations (Brockington & Igoe, 2006).

Since the creation of the first national park in the United States (Yellowstone National Park in 1872), the spread of the North American national park model has unsuccessfully been used throughout the developing world (McLean & Straede, 2003). North American protected area management is based on strict preservation and exclusion of human interaction and dependency (Reed & Merenlender, 2008). However, in developing countries, this approach leaves concern for rural populations who depend on the park for their livelihoods (Hjortso et al., 2006). Most often, little or no compensation is given to local people, and their previous dependence on the local land resources, which are now considered part of the park, are not adequately taken into consideration. Forced community relocation was often the solution when dealing with human, wildlife, and park conflicts (Brockington & Igoe, 2006). This has led to damaging consequences for indigenous peoples and rural communities who often do not recover and lose their long-term ability to provide for themselves (McLean & Straede, 2003).

In much of the academic literature, it is now considered vital to include the cooperation and support of local people in protected area management (Sharma, 1991; Munasinghe & McNeely, 1994; Brown & WyckoC-Baird, 1995; Gurung, 1995; Tacconi, 1997; Stræde & Helles, 2000; Weladji & Tchamba, 2003; WWF Nepal, 2006a; Brockington & Igoe, 2006). It is increasingly viewed as politically and ethically unjustifiable to continue to exclude local people from protected area management. Local residents must be seen as important parts of protected area management (Spiteri & Nepal 2008).

The biophysical and social systems around a protected area are now being recognized as inextricably intertwined and park management systems are beginning to adopt processes that promote the connection (Wells & Sharma, 1998). Protected area management should serve as a dual objective of catering to nature protection as well as rural development. It should be a revolving planning and implementation process that acknowledges the complex and dynamic linkages between bio-resources and different local interests and perspectives (Grimble & Laidlaw, 2002; Straede & Treue, 2005).

It is the loss of the community's economic resources which is most damaging. Bookbinder et al. (1998) state that two conditions must be met to ensure the successful integration of biodiversity conservation and local economic development. First, the identification of economic incentives that provide immediate resources to local people must be recognized and second, the identification of economic incentives that are appropriate in space and time to the scale of the threats to biodiversity must also be recognized (Bookbinder et al., 1998).

Incentive based programs are projects that aim to balance conservation with livelihood needs of local residents (Spiteri & Nepal, 2008). Incentive based programs use financial means, directly or indirectly, to motivate communities living adjacent to protected areas to reduce the environmental and conservation risks and problems posed by their actions. These types of programs have become common practice to compensate the residents living close to protected area for the losses they incur (Nepal, 2002; Brockington & Igoe, 2006). Such losses include wildlife induced loss of life or property, displacement from homeland, difficulties meeting sustenance needs and loss of economic opportunities.

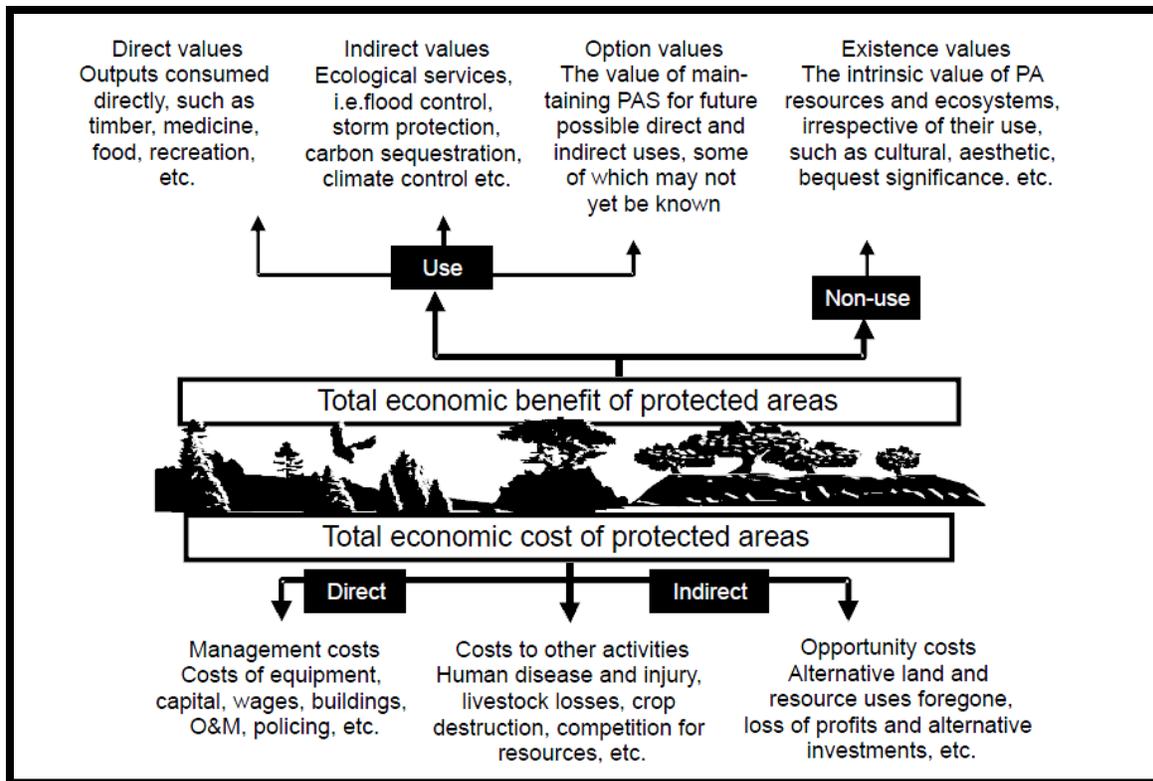
Buffer zones are land areas bordering a protected area, with the objective of ensuring the ecological integrity of the protected areas by enabling local communities to sustain their livelihood through active management of natural resources outside the park (Paudyal, 2007). Buffer zones are another model being integrated into management practices in developing countries. "The buffer zones are often considered the areas where most protection management is carried out, and inside the park a more 'pure' preservation approach is still often used" (Hjortso et al., 2006). Buffer zones have a capability of

alleviating pressure and reducing encroachment on protected areas by providing access to timber, fuel, wood and fodder (Straede & Treue, 2005).

Local people can be reluctant to engage in conservation with no economic return. There must be enough economic incentive, education or seen benefits for locals to join the conservation efforts (Gurung, 1995; Roe, 2003; Weladji & Tchamba, 2003). These benefits can come from economic opportunities brought by tourists (CNPPA, 1995). Tourists can disrupt conservation management practices with their numbers and resource needs; but their presence may result in an improved environment where governments or those in the tourism industry –hotels, restaurants and tour agencies –take on various forms of conservation and land or marine management to use the sites as products for tourism (Hitchcock, 2000; Scheyvens, 2002). Examples of this can be seen in Australia, Costa Rica and the Galapagos Islands (Tisdell & Wilson, 2001; Stem, 2003; Powell & Ham, 2008).

### **Economic Valuation of Protected Areas**

The conventional economic approach to evaluate the ‘best’ use of resources in protected areas was done by maximizing the economic value of the resource (ICEM, 2003). For example, should a forest be left untouched or logged and converted to agriculture? Should wetlands and mangroves be left in their natural state or cleared and developed? This valuation process fails in properly valuing all components of protected areas. When evaluating protected areas, many of the economic, social and environmental benefits associated with environmental goods and services in the protected areas have no formal market price or expressed cash value (Dixon & Sherman, 1990). The concept of total economic value is now commonly used to evaluate the full scope of benefits and costs of protected areas (Phillips, 1998; Fromm, 2000; ICEM, 2003). Emerging in the mid-1980s, total economic value is now widely used to identify the economic benefits associated with protected areas (CNPPA, 1995). Instead of focusing only on direct commercial values, total economic value encompasses the non-market values, ecological functions and non-use benefits associated with protected areas (Figure 1) (Aylward & Barbier, 1992; Munasinghe, 1994; Rietbergen-McCracken & Abaza, 2000).



**Figure 1: Total Economic Value of a Protected Area**  
**Source: ICEM, 2003**

The total economic value framework is best used to identify the direct use values, indirect use values and option values associated with protected areas (ICEM, 2003). The direct use value of a protected area is described as values derived from the direct use of the protected area for activities such as recreation, tourism, natural resource harvesting, hunting, gene pool services, education and research (Phillips, 1998). These activities can be commercial; however, if the prices are administratively set, they may not reflect the true value of the product. The indirect use value of a protected area is comprised largely of the protected area's ecological functions such as watershed protection, breeding habitat for migratory species and the natural process of carbon sequestration<sup>1</sup> (Pearce, 1992). The option values are values derived from the prospect of using the protected area sometime in the future. The non-use values are values which humans hold for a protected area which are in no way

<sup>1</sup> The natural process of carbon sequestration and storage is carbon stored by plants and animals (Pearce, 1992).

linked to the use of the protected area (Loomis, 2000). Two common examples are bequest values relating to the benefit of knowing that others benefit from the protected area and existence values reflecting the benefit of knowing that the protected area exists even though one is unlikely to visit it or use it (Navrud & Mungatana, 1994).

Various manuals, literature and overviews on the application of TEV to protected areas and ecosystems have been written (Dixon & Sherman, 1990; Aylward, 1991; Barbier, 1991; Pearce, 1992; Munasinghe 1994; Pearce & Moran, 1994; CNPPA, 1995; Barbier, et al., 1997; Phillips, 1998; Rietbergen-McCracken & Abaza, 2000, Samdin, 2008). These publications outline a wide range of methods for valuing both market and non-market protected area goods and services.

Valuing a protected area through a total economic value framework is anthropocentric in its approach, meaning that the values are human-held values (Phillips, 1998). The framework does not account for the possible intrinsic values of biodiversity and whether nature in general or species in particular have values unrelated to humans (Oksanen, 1997; Ghilarov, 2000). An economic valuation of a protected area is based on economic value, measuring the market and non-market values that people hold for a protected area (Pearce, 1992). Some commonly used methods for valuing protected area goods and services are market prices, effects on production, replacement costs, damage costs, avoided, mitigated or averted expenditures, travel costs, willingness to pay and contingent valuation (Phillips, 1998).

### **Willingness to Pay Potential in Protected Areas**

Global examinations have shown that the costs needed to establish and manage protected areas vary enormously among countries (Balmford, 2003). The potential mechanism to finance a protected area's conservation and management could be through the willingness to pay of tourists visiting the area. Although there are many ecosystem services provided by a protected area (water supply, flood control from wetlands, maintenance of biodiversity, etc.), opportunities for recreation and tourism have the unique potential to

provide steady income to support the costs of a protected area (Naidoo & Ricketts, 2006; Bernard et al., 2009), as shown in Figure 1.

Willingness to pay, and the ability to pay, is the foundation of the economic theory of value (Braidert, 2006). The idea is if something is worth having, then it is worth paying for. The idea can be extended to environmental resources like water quality, animal preservation and natural resources like trees. Economic methods can be used to attach estimates of willingness to pay to changes in the level of environmental quality and natural resource use (Braidert, 2006).

A protected area's total economic value, as previously presented in Figure 1, is composed of both the benefits of a protected area and the costs of a protected area. It is the balance between the costs and benefits which is most challenging for management at protected areas to achieve. The costs incurred (management, equipment, buildings, wages, competition for resources, etc.) by a protected area must somehow be paid for. Management has often failed to maximize the economic benefits of a protected area because such benefits are undervalued (ICEM, 2003). They may also be uncaptured, even where there is a willingness or ability among consumers to pay for them (ICEM, 2003). This means that protected areas may have few financial resources for conservation activities. In many cases there is no reason why the beneficiaries of protected areas goods and services should not pay for them (Phillips, 1998). Because protected areas' goods and services may be undervalued, this means they may also be underpriced by the market. Indicating that resources for biodiversity conservation may be severely limited and management often struggles to meet the costs of a protected area.

The entrance fee charged to tourists visiting a protected area is a means of capturing the value tourists hold for that protected area. When designing a pricing strategy, the basis is to set the price in view of how much the customers are willing to pay (Braidert, 2006).

Tourists, one of the potential customers to protected areas in developing countries, may be willing to pay considerably more for entrance into a protected area in a developing country if they consider the value of the protected area to be more than current entrance fees are charging. Management at protected areas may be able to capture value through tourists'

willingness to pay if the entrance price is lower than the current willingness to pay of tourists visiting the protected area.

### **Contingent Valuation in Protected Areas**

Of significance to this study is the instrument of contingent valuation. The contingent valuation method has been used in many developing countries as a successful mechanism to assess value through tourism benefits and market pricing (Brown & Henry, 1989; Ahmad et al., 1993; Navrud & Mungatana, 1994; Israngkura, 1997; Berg et al., 1998; Barnes et al., 1999; Day, 2000; Walpole et al., 2001; Mmopelwa et al., 2007). Where protected area goods and services have no market price and no replacement or substitutes, they frequently have a high value to people (ICEM, 2003). The contingent valuation method (CVM) uses a direct approach to valuing environmental goods or services in that it asks people through surveys or experiments what they are willing to pay for the good or willing to accept for the loss of the good (Stevens et al., 1991; Moran, 1994; Saichoono, 1995; Hadker et al., 1997). Park resources such as scenic beauty and conservation of endangered species are not traded in the market place. Contingent valuation is particularly attractive because it can estimate values where markets do not exist or where market substitutes cannot be found (Carson et al., 1995). For these reasons, CVM is widely used to measure existence values, option values, indirect use values and non-use values (Phillips, 1998). The contingent valuation method (CVM) has been used around the world to assess the willingness to pay of visitors for an environmental commodity (Mitchell & Carson, 1989; Hanemann, 1994). The contingent valuation method has been applied to park management in developing countries in Asia, Africa and South and Central America (Brown & Henry, 1989; Whittington et al., 1990; Lynam et al., 1991; Ahmad et al., 1993; Moran, 1994; Navrud & Mungatana, 1994; Saichoono, 1995; Emerton, 1996; Israngkura, 1997; Tejam & Ross, 1997; Berg et al., 1998; Barnes et al., 1999; Turpie et al., 1999; Day, 2000; EFTEC, 2000; Smith et al., 2000; Walpole et al., 2001; Mmopelwa et al., 2007, Samdin, 2008).

In Thailand, contingent valuation was used to measure the environmental benefits of three recreational areas. The aim of the study was to investigate the possibility of improving the

entrance fee system in order to finance the conservation of the parks (Israngkura, 1997). Results suggested the increase of entrance fees at two of the three recreational areas (Israngkura, 1997). In Kenya, at Lake Nakuru National Park, CVM was used to determine the recreational value of wildlife viewing (Navrud & Mungatana, 1994). In Namibia, CVM was used to determine tourists' willingness to pay for wildlife viewing trips, park entrance fees, wildlife conservation and community based tourism initiatives. The willingness to pay value for overseas visitors was significantly higher than the entry current fee (Barnes et al., 1999). In Komodo National Park in Indonesia, CVM was used to assess the effect of hypothetical fee increase in park revenues, visitation patterns and local economies. The visitors were willing to pay over ten times the current entrance fee, indicating a substantial increase in revenue was possible (Walpole et al., 2001). In the Moremi game reserve in northern Botswana, CVM was used to determine visitors' willingness to pay for park fees under a management scenario in which the game reserve was improved. Results suggested overseas tourists were willing to pay significantly more than South African tourists (Mmopelwa et al., 2007). Contingent valuation was also used to estimate the value of Kenya's elephants and a hypothetical tourist consumer surplus accruing from viewing elephants was thus calculated (Brown & Henry, 1989). Tourists visiting the Islands of Koh Phi Phi, Thailand, and Gili Trawangan, Indonesia were asked the role they may be willing to take in the management of natural resources, including their willingness to pay for environmental protection on the islands (Dodds et al., 2010). Tourists stated that they were willing to pay for sustainability practices, but there were differences around who they felt should be primarily responsible for implementing sustainability measures.

There is a clear message from each of the described cases that investment in protected areas can provide an important benefit to national and local economies surrounding the protected area. Far from being restricted and lost to local users, these areas have direct, indirect, option and existence values, which if captured, represent an opportunity for the development of sustainable industries and for the generation of financial returns possibly through tourists' willingness to pay.

### **1.3 Research Objectives**

The focus of this paper is on contributing to the knowledge of capturing value, specifically at Chitwan National Park in Nepal. Evaluating the value of this protected area from the perspective of the tourist is a possible tool that could provide information and recommendations for management decision-making in the future. Chitwan National Park has the highest tourist visitation numbers in the country, but has significant problems with conservation due mainly to a lack of park revenue and secure funding sources.

This research explores means to further conservation and development efforts at and around Chitwan National Park through an assessment of foreign tourists' willingness to pay for their visit to Chitwan National Park and their reasons for doing so. The aim of this study is to explore means to further conservation and development efforts at Chitwan National Park by providing insight into whether park managers can better capture value from foreign tourists visiting the area. A contingent valuation tool is used to explore the valuation associated with Chitwan National Park. Specifically, the research objectives are:

1. To determine foreign tourists' willingness to pay while visiting Chitwan National Park;
2. To evaluate those visitor characteristics which are significantly related to tourists' willingness to pay; and
3. To explore whether or not the potential exists to capture value from tourists through changes in current entrance fees.

To accomplish this, in October and November of 2009 tourists visiting Chitwan National Park were engaged in a series of semi-structured discussions concerning conservation and sustainability of the park and its region. A contingent valuation tool was used to determine foreign tourists' willingness-to-pay a higher fee for entrance into the national park.

## **Chapter Overview**

Chapter Two presents the literature on protected area management in Nepal. The country of Nepal and tourism's role is discussed. An evaluation of conservation management approaches to protected areas and the inequalities between regions follows. The Terai region and Chitwan National Park are then introduced. The need for research on capturing value at Chitwan National Park is addressed.

Chapter Three reviews the literature and use of the contingent valuation method in protected areas and developing countries around the world. Literature on the determinants of willingness to pay at protected areas is evaluated and stemming from the literature, the variables which have a potential significant effect on willingness to pay are then presented.

Chapter Four recalls the research objectives and study scope of the thesis. The research process, sample size and questionnaire construction are described followed by the description of data collection techniques and limitations.

Chapter Five presents the demographic characteristics of the research participants.

Chapter Six discusses results from the contingent valuation study presenting the willingness to pay of respondents at Chitwan National Park. This is followed by an analysis of the variables hypothesized to have a significant effect on willingness to pay. A discussion of the results highlighting the participants' reasons for their willingness to pay, possible implications of the data, and arguments for capturing value from tourists is made.

The paper concludes with Chapter Seven discussing and reviewing critical findings and results of the study. Recommendations are made and concluding judgments on the potential to capture value and increase revenues at Chitwan National Park through respondents' willingness to pay for conservation initiatives are presented.

## CHAPTER TWO

### A Literature Review of Protected Area Management in Nepal

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#### 2.1 Introduction

In this chapter the country of Nepal is introduced with an emphasis on its unique natural attractions and protected areas. Tourism's role in national and local economies is then discussed. Tourism in protected areas across the country and successful management and conservation at protected areas in the Himalayas is then presented. The conservation initiatives in the Terai region in southern Nepal and the ongoing battle between population and protection are described explaining the specific importance of Chitwan National Park. A discussion on Chitwan National Park's development and the ongoing problems facing the park follows. A look at two case studies completed at the Annapurna Conservation Area, which focus on foreign tourists as agents of conservation, reveals the contrasting management of tourists at the Annapurna Conservation Area Project and Chitwan National Park. The need for research on capturing value at Chitwan National Park is evaluated.

#### 2.2 Nepal

Nepal, officially the Democratic Republic of Nepal, is a small, mountainous, landlocked country in the central Himalayan Mountains. Located in South Asia, it borders China to the north and India to the south (Figure 2).



**Figure 2: Geographic Location of Nepal**  
Source: National Geographic (2010)

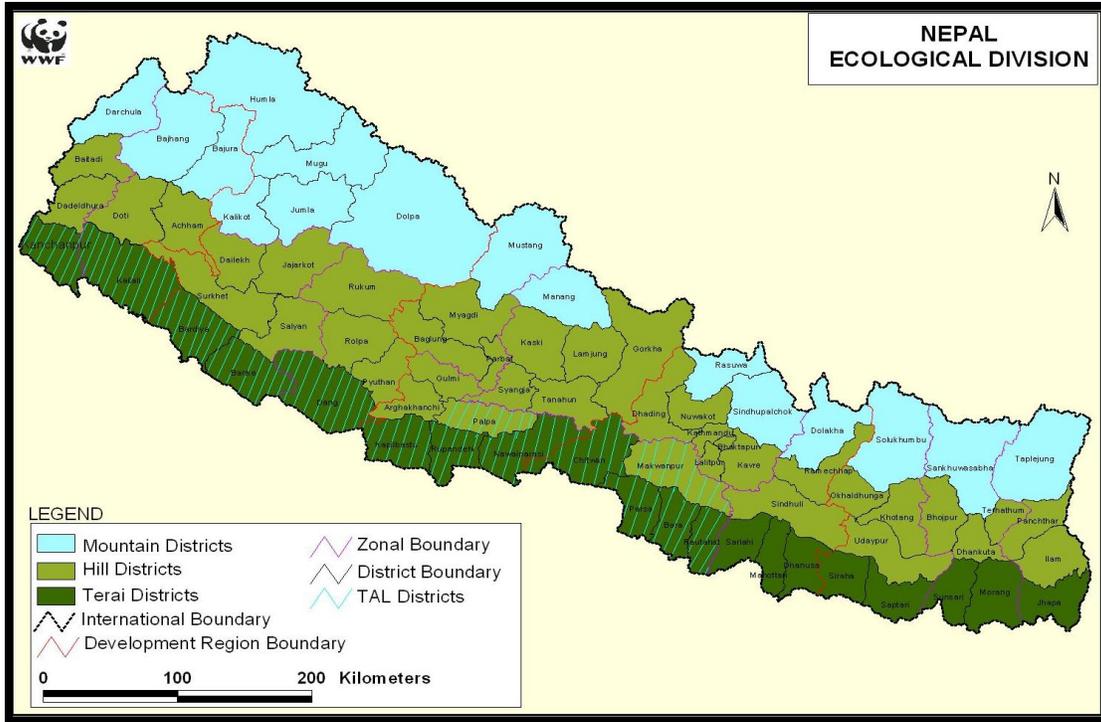
Nepal is on the United Nations list of Least Developed Countries (LDC) (Benavides & Perez-Ducy, 2001). Nepal ranks 144th on the United Nations' Human Development Index of 182 countries (UNDP, 2007) and half of the population lives below the international poverty line of \$1.25 USD a day. The approximate population of the country was 27.03 million in 2007, with 2.25% annual population growth rate in 2001, according to the most recent numbers from the Central Bureau of Statistics, Nepal (CBS, 2008). The population density of the country was about 157 per sq km in 2008 (CBS, 2008) and the total area of the country is 147,181 sq km (DNPWC, 2008).

Kathmandu is the most populated urban city in Nepal with 1.5 million people living in and around the capital. Nepal has an insufficient base of natural resources to support its growing population. The greater part of the population leads poor, rural lives outside the Kathmandu valley. Agriculture employs 76% of the workforce, contributing to 40% of Nepal's GDP (CBS, 2008).

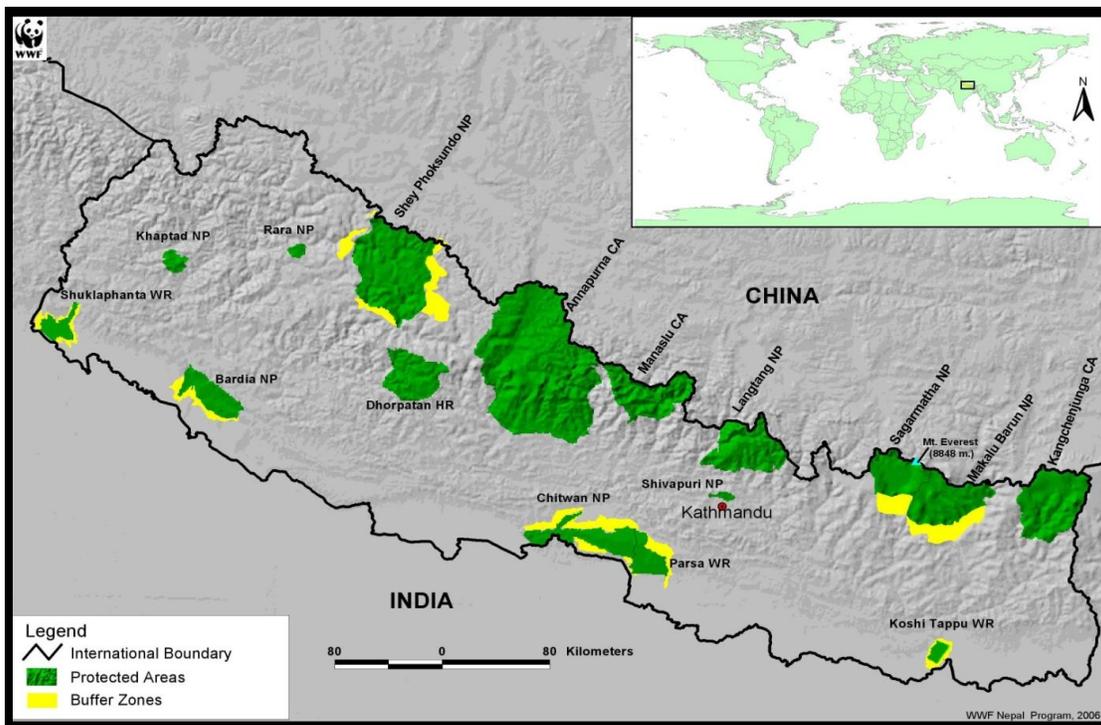
Nepal possesses a disproportionately large diversity of flora and fauna at genetic, species and ecosystem levels. This diversity is found through three distinctive ecological zones (Figure 3) which are the dense tropical monsoon forests of the Terai, the deciduous and coniferous forests of the subtropical and temperate regions, known as the Hills, and the sub-alpine and alpine pastures and snow covered peaks of the Himalayan mountain range (WWF Nepal, 2006a).

Over 19.7% (28,998.67 sq km) of the total area of the country is now declared protected (DNPWC, 2010a). The protected areas include nine national parks, three wildlife reserves, one hunting reserve, four conservation areas and eleven buffer zones (Figure 4). Nepal's protected areas, wildlife reserves and national parks were established to represent the three ecological zones (DNPWC, 2010a).

Nepal's distinctive geographical position as well as its altitude and climatic variation give the country a unique and varied biodiversity (Wells & Sharma, 1998). This rare combination of biodiversity and landscape attracts visitors from around the world to a country comprising only 0.09% of the global land area (WWF Nepal, 2006a).



**Figure 3: Nepal's Ecological Zones**  
**Source: WWF Nepal (2006c)**



**Figure 4: Protected Areas of Nepal**  
**Source: WWF Nepal (2006b)**

## **Tourism in Nepal**

Tourism, and specifically ecotourism, in Nepal, as in many developing countries, is seen as a potential source of employment, foreign currency, and a way to achieve sustainable economic development (Benavides & Perez-Ducy, 2001). Environmentalists, special interest groups, and governments often define ecotourism<sup>2</sup> differently making it a contentious issue. However, in Nepal the term ecotourism is used by the Department of National Parks and Wildlife Conservation (DNPWC) and is included in their mandate and development strategies. Ecotourism is therefore used throughout the research accepting the generally accepted definition<sup>3</sup>. Ecotourism advocates for the well-being of local people, and requires that it provide direct financial benefits and empowerment for local people. According to the United Nations World Tourism Organization (UNWTO), sustainable tourism is tourism that leads to the management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems (UNWTO, 2008). Sustainable tourism is a tourism that meets the needs of present tourists and host regions while protecting and enhancing opportunity for the future (UNWTO, 2008).

Tourism has the potential to be a source of fully sustainable development in developing countries. The UNWTO predicts that by 2020 international arrivals will surpass 1.5 billion people (UNWTO, 2010a). Given that tourism represents over 70% of service exports in least developed countries, it is uniquely positioned to deliver positive social change to those who need it the most (UNWTO, 2008). Tourism can be a key driver for socio-economic progress in a developing country (Benavides & Perez-Ducy, 2001).

Tourism has been incorporated into the national development strategy in Nepal since the 1970s (DNPWC, 2008). It was considered to be a viable model to develop remote areas commoditizing the natural beauty of the country, the tradition Nepali ways of life, and its

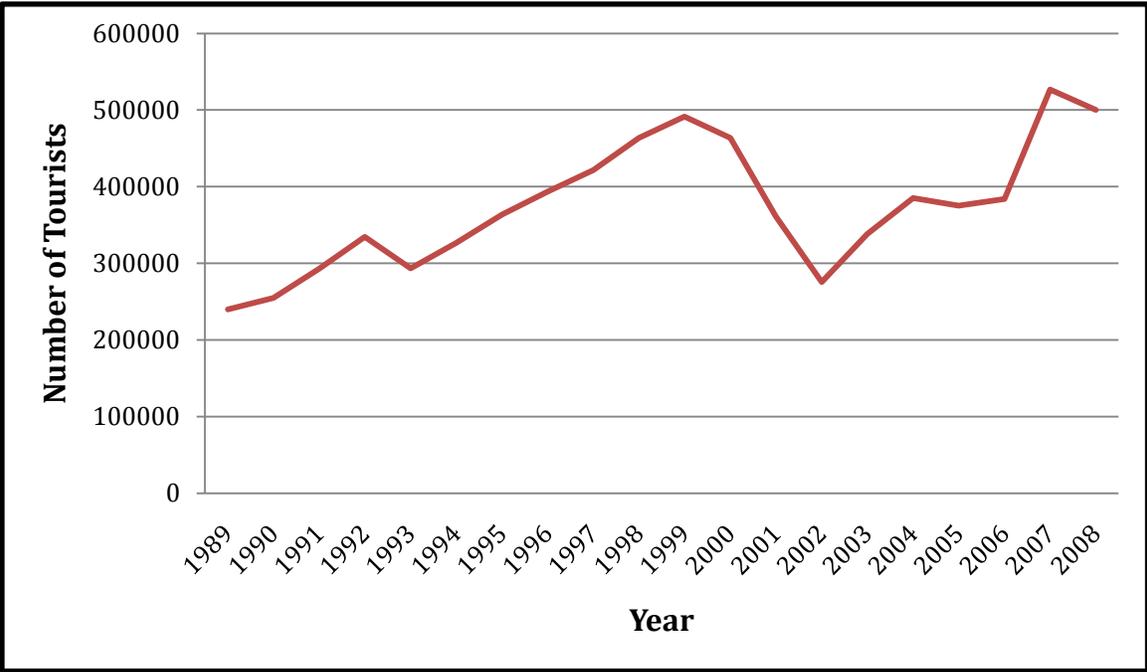
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<sup>2</sup> Ecotourism is defined by the International Ecotourism Society as "responsible travel to natural areas that conserves the environment and improves the well-being of local people" (TIES, 2006).

<sup>3</sup> Responsible tourism is defined as tourism that maximizes the benefits to local communities, minimizes negative social or environmental impacts, and helps local people conserve fragile cultures, habitats, and species (UNWTO, 2008).

artistic heritage (K. Bhattarai et al., 2005). Over the past two decades tourism in Nepal has more than doubled from 239,945 international arrivals to 500,277 in 2008 (Figure 5).

In 1990, tourism made up 21.8% of the total foreign exchange earnings in Nepal (CBS, 2008). The Maoist insurrection in Nepal and the September 11, 2001 terrorist attacks in the United States dramatically affected Nepal’s tourism industry in the period following 2000 (K. Bhattarai et al., 2005). Tourist arrivals dropped from 464,000 in 2000 to 275,000 in 2002 (GoN, 2008): about a 40% overall decline over two years.

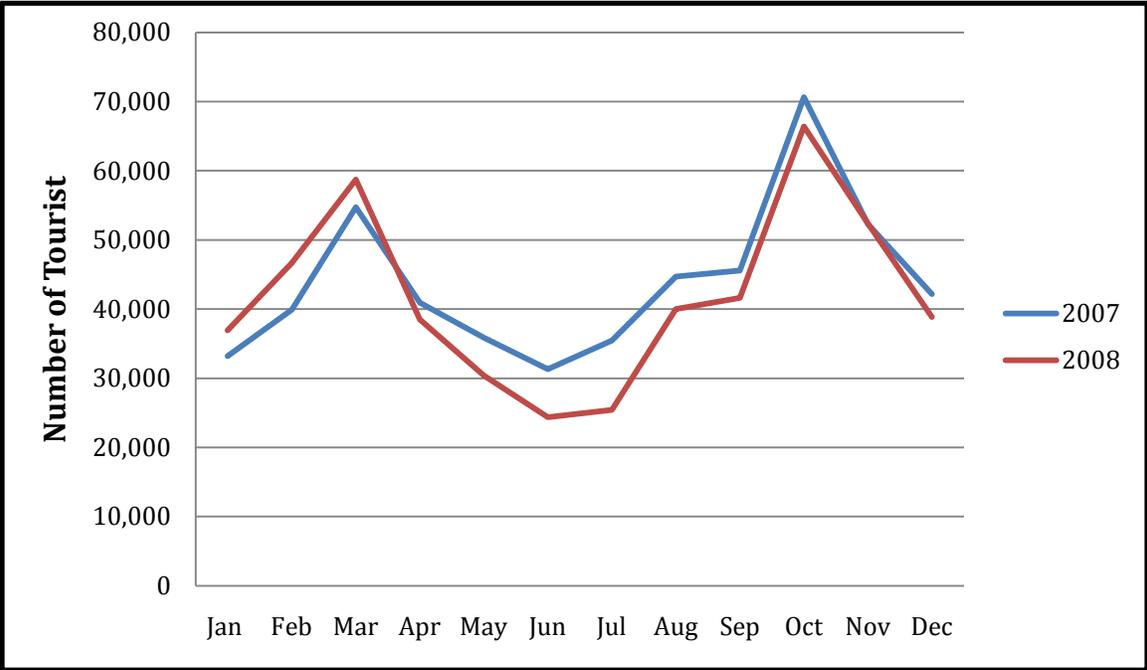


**Figure 5: Tourist Arrival in Nepal, 1989 - 2008**  
**Source: GoN (2008)**

Nepal is known as one of the most famous ecotourism destinations in the world (UNWTO, 2010a). In the report of *Nepal’s Tourism Statistics 2008*, just over 500,000 tourists arrived in Nepal in 2008 (Figure 5) (GoN, 2008). Nepal has a unique natural, religious and cultural heritage and all these aspects attract tourists (Bhusal, 2007). Today the tourism industry is mainly concentrated with Western and Asia travelers who still stay close to the Kathmandu Valley. In 2008 the foreign exchange earnings from tourism revenue reached 24,802,195,000 NPR, equaling approximately \$352 million USD (GoN, 2008).

India, Sri Lanka, China, the United Kingdom and the USA were top five nationalities of arriving tourists in 2007 (GoN, 2008). Tourists from Asia made up 57%, and those from Europe and North America made up 37% of arrivals (GoN, 2008). The average tourist stays in Nepal just under twelve days (GoN, 2008).

Nepal has two peak tourist seasons, the month of March and the months of October and November (Figure 6).



**Figure 6: Tourist Arrivals by Month, 2007 & 2008**  
**Source: GoN (2008)**

Tourism in Nepal has grown since its borders opened in 1951 (K. Bhattarai et al., 2005). The first tourists of the 1950s found a country with a captivating cultural heritage and natural beauty which had been virtually untouched by Western influences. Most Nepalese lead simple agrarian lives connected by religion and tradition (Whelpton, 2005). Tourism began its international growth when Sir Edmond Hillary ascended Mt. Everest in 1953 publicizing and promoted Nepal to the rest of the world as a place of fascination and adventure. During the 1960s, the American Peace Corps volunteers and Western hippies

increasingly popularized Nepal and mainstream tourism began to take place (K. Bhattarai et al., 2005).

Protected areas in Nepal are major tourist destinations. The Department of National Parks and Wildlife Conservation (DNPWC) run a range of conservation and protected areas management programs including the promotion of tourism. The marketing of Nepal's protected areas as tourist destinations has been very successful, attracting more than 300,000 out of the approximately 500,000 visitors to Nepal in 2007 (DNPWC, 2008).

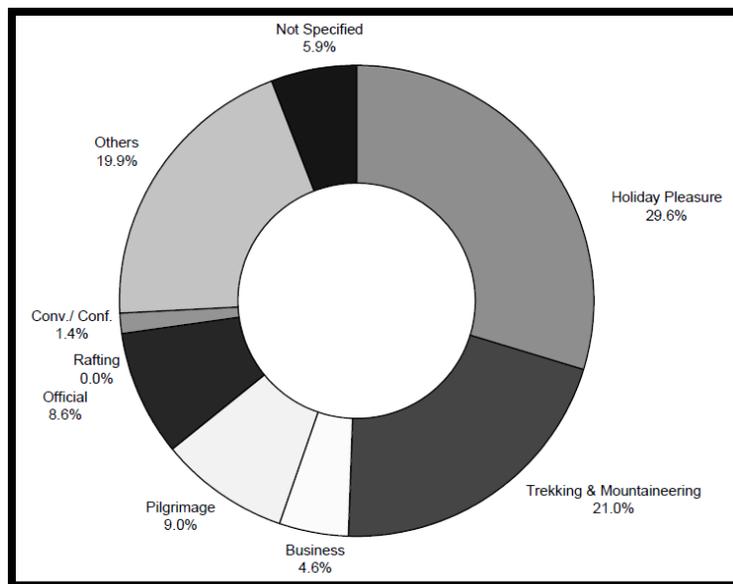
The contemporary tourism industry in Nepal today brings both problems and benefits to the country as a whole (Bhusal, 2007). There are several major issues affecting Nepal's conservation and management efforts at national parks, wildlife reserves and protected areas around the country today. Management practices are not standardized and local participation, local benefits and revenue generation vary differently from area to area and park to park. Some areas are still using traditional exclusionary conservation techniques (e.g. Chitwan National Park) while others are being praised globally for their community based conservation strategies (e.g. Annapurna Conservation Area Project).

Nepal's long term vision is to achieve sustainable economic development by reducing environmental impacts (CBS, 2008). To achieve this Nepal must solve a variety of environmental problems (CBS, 2008). Some of the challenges include shifting the focus from immediate benefits to long term sustainability of current environmental development initiatives. Other difficulties are the continued use of unsustainable management practices and finding the causes of specific environmental damages such as deforestation, soil erosion, decreasing land productivity, desertification, flooding, landslides and continued loss of biodiversity (CBS, 2008).

The country's tourist market offers a variety of adventure tourism (a form of nature-based tourism that incorporates an element of risk, higher levels of physical exertion, and the need for specialized skill) activities such as rafting, wildlife safaris, bungee jumping and paragliding, among others. However, mountaineering and trekking are the two most popular adventure tourism activities (GoN, 2008). Nepal elevation rises to 8,848 meters at Mount Everest, known as Sagarmatha in Nepal (Whelpton, 2005). Mountain climbers today

remain a small part of the tourism market, yet as the pioneers of the industry they have been influential in creating mountain viewing as an attraction worthy of tourists' time and money (Spiteri & Nepal, 2008a).

In 2007 just over 100,000 tourists participated in treks, making up about 21% of the total tourist volume in the country (Figure 7) (GoN, 2008). Treks can be anywhere from one day to three months in length, with tourists spending anywhere from \$15 to \$100 USD per day (Holden & Sparrowhawk, 2002). Out of 500,000 arriving tourists, 150,000 reported the purpose of their visit to be holiday and pleasure (Figure 7) (GoN, 2008).



**Figure 7: Tourist Arrivals for Purpose of Visit**  
**Source: GoN (2008)**

The UNWTO advocates that tourism can make a substantial contribution to the development of developing countries and in combating poverty (Benavides & Perez-Ducy, 2001). Today tourism has become one of the largest global economic activities and has the potential to contribute to the economies of developing countries through a variety of perspectives (UNWTO, 2010a).

Tourists today are more knowledgeable and more educated about environmental conservation and sustainable tourism and value pristine sites and resources (Holden &

Sparrowhawk, 2002; Dolnicar & Grun, 2009). The national park and wildlife conservation projects all have biodiversity conservation linked with tourism development stated in their goals and mandates (DNPWC, 2010a).

Tourism is expected to bring positive entrepreneurial effects to rural economies (Connell & Rugendyke, 2008). In a country with limited urban-industrial prospects, ecotourism, adventure tourism and sustainable tourism ideals are bringing hope through predictions of income earnings and employment generation (K. Bhattarai et al., 2005). One of the primary paths Nepal is pursuing is an attempt to build up rural and remote areas in southern Nepal. These areas have natural scenery, untouched rural landscapes, basic agricultural livelihood practices and unique and varied biodiversity which can be used as commercial tourism products (GoN, 2008).

### **2.3 Conservation Management at Protected Areas in Nepal**

The national parks and protected areas in Nepal are managed by the Department of National Parks and Wildlife Conservation (DNPWC), Ministry of Forest and Soil Conservation. The overall goal of the Department is to conserve and manage the rich and varied biological diversity of Nepal with an emphasis on wildlife and protected areas (DNPWC, 2010a). With an early focus on species conservation, the Department's present priorities stress a conciliatory approach with participatory management of biodiversity (DNPWC, 2008). The activities of the Department include: conservation of endangered and other wildlife species; scientific management of habitat for wildlife species; creation of buffer zones in and around parks and reserves for the sustainable management of forest resources; regulating ecotourism to improve socio-economic conditions of local communities; and creating awareness of the importance of wildlife conservation through conservation education (DNPWC, 2010a).

The National Parks and Wildlife Conservation (NPWC) Act of 1973 provides the legal basis for the management of protected areas in Nepal. The Act identifies national parks as areas set aside for the conservation and management of the natural environment, including the ecological, biological and geomorphologic associations of aesthetic importance. Developing

protected areas for ecotourism is the second objective, provided that this is compatible with sustainable conservation (Bhusal, 2007; NPWC Act, 1973). Similarly, as is the case with many developing countries, the original NPWC Act was largely developed with standards taken from Western contexts and regulations. It is now agreed, as previously discussed, that such approaches lead to park-people conflicts in developing countries. The Act has been amended five times, the latest being in 1992, and now includes community involvement in management techniques and buffer zones practices (NPWC Act, 1973).

Most National Parks and reserves in Nepal are guarded by the Nepalese Army. They are responsible for guarding the park and enforcing its rules and regulations, including controlling poachers, stopping illegal fishing, checking boundaries, preventing encroachment into the park, preventing livestock grazing and extraction of resources by area's residents (Allendorf, 2006; DNPWC, 2010a).

### **History of Conservation at Protected Areas in Nepal**

Nepal is commonly regarded as a leader among developing countries in setting conservation standards (Jones, 2007) although not all scholars agree that they have continued to be. The history of wildlife conservation in Nepal began simply in the 1840s with the restriction on hunting of certain animals like rhinos, tigers and elephants (WWF Nepal, 2006a). In 1956 under the Private Forest Nationalization Act all forest lands were under government control so that they would be in command of all commercial profits from timber (Kanel et al., 2005). The system led to widespread deforestation and loss of wildlife (Jones, 2007).

During the 1990s Nepal experienced a shift in conservation management from a more centralist and protectionist approach to one that was more community based, in both forestry and wildlife conservation. By 1999, 6,200 sq km of forest had been allocated to 8,500 forest user groups. This was to help meet people's basic needs for fuel, timber, fodder and other forest products on a sustainable basis, contribute to food production and protect against land degradation, conserve ecosystems and contribute to the growth of the local

and national economies. Under this program most community forests have been regarded as successes (Jones, 2007; Kanel et al., 2007).

### **Tourism Structure and Revenue Distribution at Protected Areas**

The DNPWC reports that tourism is a major contributor to the income at protected areas and national parks. In 2007 collective revenues from all protected areas was 111,871,108.00 NPR, equaling over \$1.5 million USD (DNPWC, 2008). Considering the great potential of tourism in protected areas, activities and facilities such as information centers, domestic elephant riding, jungle safaris, camping and boating are provided through government programs at protected areas and national parks. Construction activities and maintenance of roads, bridges and watchtowers are carried out in parks and reserves to allow access to tourists. Protected areas provide employment to local people in the form of nature guides, trekking leaders, hotel management, cooking, cultural shows and handicraft production. The DNPWC works with other international organizations on projects to further local employment in tourism at protected areas. There is a tourism plan in protected area management strategies that aims at promoting and concurrently regulating tourism in protected areas (DNPWC, 2008).

Entrance fees at national parks and protected areas around Nepal vary greatly as do the number of visitors to each area. Tourists entering the protected areas and national parks are divided into three categories based on their nationality. Those categories are domestic tourists, South Asia Association for Regional Cooperation (SAARC) tourists, and foreign tourists. SAARC member states include Bangladesh, Bhutan, Maldives, Nepal, Pakistan, India, Sri Lanka and Afghanistan. Foreign tourists include all other nationalities excluding Nepali and SAARC. Each category of tourists pays a different price to enter the national park or protected area (Table 1).

Out of all the national parks and protected areas in the country, Chitwan National Park receives the highest number of visitors (86,433). More than two thirds, 58,423, of them are foreign tourists (DNPWC, 2010a).

**Table 1: National Park and Protected Area Total Number of Visitors and Entrance Fees in 2007**

<i>Protected Areas Listed under DNPWC</i>	<b>Nepali</b>	<b>SAARC</b>	<b>Foreigners</b>	<b>Total</b>
	<b>Fee NPR</b>	<b>Fee NPR</b>	<b>Fee NPR</b>	<b># of visitors</b>
Langtang National Park	0	100	1000	8165
Sagarmatha (Everest) National Park	0	100	1000	26511
Dhorpatan Hunting Reserve	20	200	500	27
Chitwan National Park	20	200	500	86433
Koshi Tappu Wildlife Reserve	20	200	500	2166
Shey-Phoksundo National Park	0	100	1000	368
Parsa Wildlife Reserve	20	200	500	189
Rara National Park	0	100	1000	87
Bardia National Park	20	200	500	3637
Khaptad (Baba) National Park	0	100	1000	9
Sukla Phanta Wildlife Reserve	20	200	500	136
Makalu-Barun National Park and Conservation Area	0	100	1000	261
Annapurna Conservation Area	0	200	2000	60274
Manaslu Conservation Area	0	200	2000	1119
Kanchanjunga Conservation Area	0	200	2000	328
Shivapuri Nagarjun National Park				74958
Blackbuck Conservation Area				
Api Nampa Conservation Area				
Gaurishankar Conservation Area				
Upper Mustang Conservation Area			\$700USD/10day trek	

**Source: DNPWC (2008) and DNPWC (2010a)**

**Note: Some cells are empty because these protected areas are newly established and the DNPWC has not made the data publicly available yet.**

Shivapuri Nagarjun National Park receives the second highest number of visitors (74,958). Of those visitors 68,762 are domestic, Nepalese tourists (DNPWC, 2010a). Shivapuri Nagarjun National Park was recently created (in 2002) and is only 159 sq km in area. It is situated on the northern fringe of the Kathmandu valley and lies about 12 km from the center of the capital city. The park attracts day tourists from the city (DNPWC, 2010a).

The Annapurna Conservation Area is third most visited protected area receiving 60,274 tourists, of which 57,152 are foreign tourists. The Annapurna Conservation Area is 7,629 sq

km and the largest protected area in Nepal. The area features some of the world's highest peaks and is the most popular trekking destination in the country. Treks around Annapurna can last up to twenty days (DNPWC, 2010a).

Mustang, opened to foreigners in 1992, is by far Nepal's most restricted trekking area (DNPWC, 2010a). It is located in the Northwestern area of Nepal, and is part of the Tibetan plateau. The Upper Mustang Conservation and Development Project (UMCDP) aims to link biodiversity and cultural heritage conservation with tourism management. A special permit is needed for tourists to enter the Upper Mustang area and costs \$700USD/10day trek. Sixty percent of the revenues generated from these trekking royalties are used in the UMCDP (Boselli et al., 2005).

The Annapurna Conservation Area and Chitwan National Park in 2007 each received more than double the number of foreign tourists than any other protected area in the country. Having both been visited by over 60,000 foreign tourists, the numbers are very comparable, yet the difference in the entrance fees is significant. Annapurna has the highest rank of entrance fee, charging foreign tourists 2,000 NPR to enter the conservation area, yet Chitwan National Park only charges 500 NPR. The amount of revenue brought in by foreign tourists annually could be considered four times greater at Annapurna than at Chitwan. There is, however, a significant difference in the amount of time tourists spend in each protected area. Chitwan National Park tourists enter paying 500 NPR for a one day pass. The Annapurna Conservation Area charges 2,000 NPR but this is a multi day fee paid upon entering the protected area, whether you are staying inside the protected area for one or twenty days. Annapurna's entrance fee is multi-day, and must only be repaid if trekkers leave the conservation area, and then reenter. Chitwan's entrance fee is a single day entrance only. When visiting Chitwan National Park, tourists' length of stay in the area is short and they only enter the park, on average, once per visit; The entrance fee being a single day entry actually may encourage people not to enter Chitwan National Park more than once, or stay in the area longer. Alternately, the multi-day fee at Annapurna may encourage tourists to stay in the area longer, as they are not limited in their time in the park.

## **Conservation Success in Himalayan Protected Areas**

In the Himalayan Mountains community-based management has been successful in delivering conservation benefits to many communities. Evidence of success can be seen in changing patterns of resource use and behaviour among local communities, increased control of local communities over their local resources, increased conservation awareness among local people resulting from environmental education, and the development and strengthening of local institutions (Bajracharya et al., 2005). At Langtang National Park and Sagarmatha (Everest) National Park, the traditional land use practices of the local populations have been integrated into the parks' management and planning since 1976 (Straede & Helles, 2000).

In the Annapurna Conservation Area (ACAP) the growth of ecotourism has fueled the local people's positive attitudes towards the protected area and conservation initiatives (Baral et al., 2007; Nyaupane, 2006). The APCP has focused primarily on natural resources management, environmental education and tourism management. Entry fees from tourism are channeled back into villages for various conservation and development activities undertaken by local people. (Thomson, 2007; Baral et al., 2007)

The Makalu-Barun Conservation Area established in 1991 is another more recent example of successful conservation and management of the Himalayan protected areas. The Nepalese Government drew on the experiences learned from the creation of the Annapurna Conservation Area in 1986 and incorporated into the design consideration for people residing inside the area (Jones, 2007).

Controlled tourism (\$700USD/10day trek) has been the main reason for successful conservation in Upper Mustang. The approach to tourism management is responsible. The Upper Mustang Conservation and Development Project has undertaken an innovative approach to promote nature conservation through sustainable development of tourism, to maximize benefits to local communities, and to conduct awareness programs to both host communities and visitors for minimal negative impacts (Boselli et al., 2005).

The initiatives to adopt collaborative management practices in the Himalayan protected areas and national parks have been successful and are progressive approaches to national

park management in Nepal. Local residents have participated in management of ecosystems with success. These management programs in the Himalaya are unique in that they adopt the principles of collaborative management for the mutual benefit of nature conservation and local livelihood (Nyaupane, 2006). With these positive conservation examples throughout the country, it seems rational to look at the difference between protected areas with successful management strategies and those with less success.

The Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) is a tool used by the World Wildlife Fund (WWF) to enable a country to do a rapid assessment of the overall management effectiveness of protected areas of the whole country (WWF Nepal, 2006a). This assessment was done on Nepal's protected areas in 2003. During the country's political crisis of the 1990s and 2000s, management problems in protected areas rose rapidly, and the value of protected areas decreased. Although conservation and protection of most Himalayan protected areas continued effectively, the assessment found that management plans seemed to be weak in most of the lowland, Terai parks, and if they existed they were generally not properly implemented (WWF Nepal, 2006a). Chitwan National Park was one of the Terai national parks identified as having insufficient management implementation.

## **2.4 The Terai and the TAL project**

In terms of biodiversity, the Terai, in southern Nepal, is the richest part of the country. Its lowland jungles and grasslands (Figure 8) are home to Asian one-horned rhinoceros (*Rhinoceros unicornis*) (Figure 9) Asiatic elephants (*Elephas maximus*), Bengal tigers (*Panthera tigris tigris*) and numerous other species. The Terai spans the Indian and Nepali border. The area is also heavily populated, resulting in high pressure on the forest and agricultural resources. Achieving sustainable economic development, in the sense of development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UN, 1987), while reducing environmental impacts in such a fragile bi-national area is an enormously challenging task. With large, poor, rural populations residing on both sides of the border the area faces many challenges

affecting people and wildlife including deforestation, poaching, and pollution of rivers. Reducing environmental impacts is one of the main priorities of the area, but this must be done by bringing people and wildlife together for mutual benefit not through restrictive conservation methods (TAL-WWF, 2010a). Local communities are encouraged to carry out activities that benefit the management of the protected area.



**Figure 8: Grasslands at Chitwan National Park in the Terai**



**Figure 9: Asian One-Horned Rhinoceros in the Lowland Jungle of the Terai**

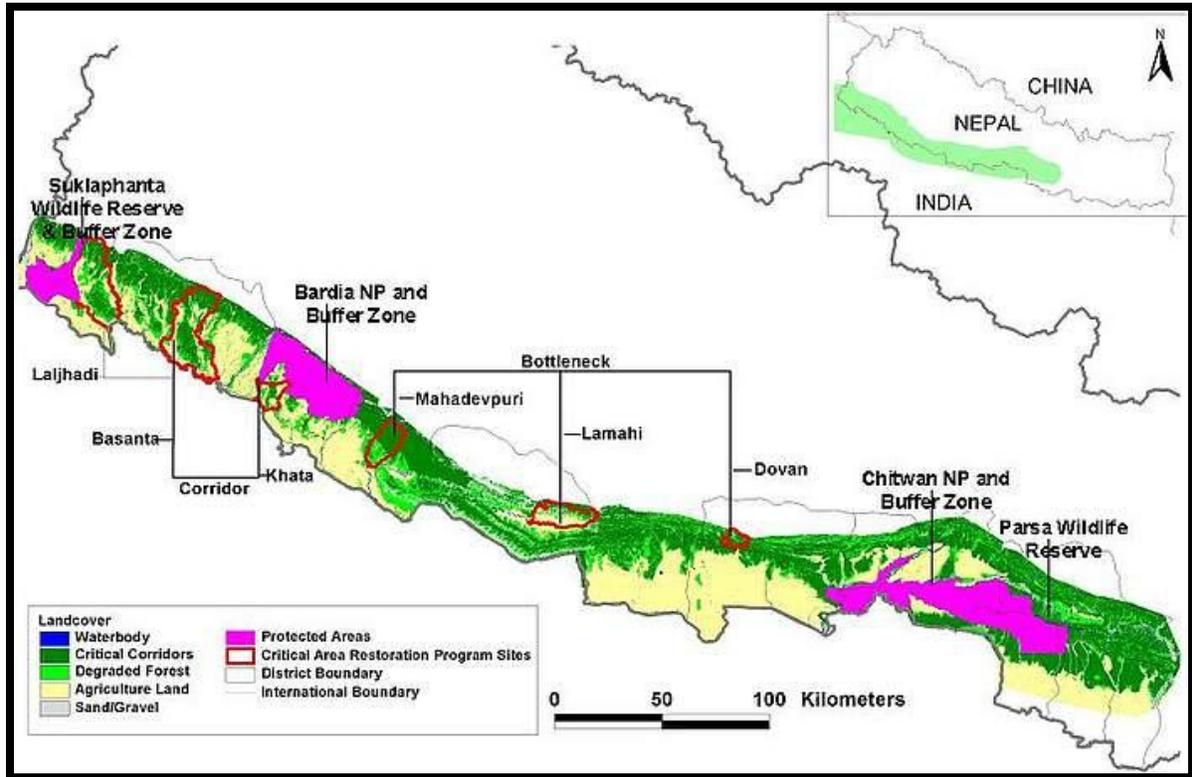
The Terai Arc Landscape Project (TAL) is one of the first landscape-level programs in Asia involving a very large geographical area, implementing a wide variety of measures to promote conservation along with the well being of local people (TAL-WWF, 2010a). The TAL is a major multinational project which is helping the Terai region to achieve sustainable economic development, while reducing environmental impacts through sustainable projects, partnerships and education.

The TAL Program is jointly implemented by Department of National Parks and Wildlife Conservation (DNPWC), the Department of Forests and the World Wildlife Fund (WWF), and involves governmental and nongovernmental organizations, partner conservation organizations and local people. The program focuses on establishing biodiversity friendly corridors and restoring the corridors between protected areas (DNPWC, 2008).

The TAL stretches from the Bagmati River in central Nepal westward to the Yamuna River in India comprising lowland forest, grasslands and wetlands. The TAL is 49,500 sq km containing eleven Nepalese and Indian-border protected areas (Figure 10). The linkage of these protected areas is imperative to allow the genetic exchange between two or more small, isolated populations of long ranging animals such as tigers (TAL-WWF, 2010a). The program not only aims to provide habitat for the long-term survival of wildlife species in the TAL but also to improve the socio-economic conditions of local people through economic opportunities (TAL-WWF, 2010a). TAL falls within the Terai-Duar savanna and grasslands and also forms part of the Chitwan-Parsa-Valmiki (India) Tiger Conservation Unit.

The biological resources of the Terai are mostly dominated by grasslands, with species of elephant grass (*Pennisetum purpureum*) and forests which vary from lush dense jungle, to open forests with more sunlight dominated mainly by the Sal tree (*Shorea robusta*) (TAL-WWF, 2010a). Lakes are small and scarce, but the area does have several large wetlands. These ecosystems are of international importance both in terms of the number of globally threatened wildlife and flora species found in them, as well as their diversity (WWF Nepal, 2006a). Within Nepal the TAL conservation project covers 14 districts containing 112,000

sq km of forests and 4 protected areas. The protected areas are Chitwan National Park, Bardia National Park, Parsa and Royal Suklaphanta Wildlife Reserves (WWF Nepal, 2006a).



**Figure 10: Nepalese Terai Arc Landscape Project Area**  
**Source: TAL-WWF (2010b)**

An important and influential part of this biological corridor in terms of wildlife conservation, environmental problems and population pressure is Nepal's first national park, Chitwan National Park.

## 2.5 Chitwan National Park

Chitwan National Park, established in 1973, lies along the southern border of Nepal with India at an elevation of 300m and less (WWF Nepal, 2006a). Chitwan National Park is located between 27°34' to 27°68' North latitude and 83°87' to 84°74' East longitude (UNESCO, 2003). UNESCO designated Chitwan National Park as a World Heritage Site in November 1984 under the World Heritage Convention, recognizing its unique biological

resources. The national park covers 1,182 sq km and the surrounding buffer zones area is 766 sq km (Figure 11).

Chitwan National Park is in a tropical and subtropical bioclimatic zone with a tropical monsoon environment and high humidity all year round. The mean annual rainfall is 2000 - 2100 mm, with over 80% falling during the heavy summer monsoon season. In the summer, the maximum daily temperature is around 35°C, nights are around 20°C. In the winter the daily maximum remains around 25°C, but night can fall under 10°C (UNESCO, 2003).

The biological richness of the park is exceptional with eight ecosystem types which include seven forest types, six grassland types, five wetland and three main river system habitats (DNPWC, 2008). The faunal diversity consists of 50 species of mammals, 526 species of birds, 49 species of reptiles and amphibians, and 120 fish species (WWF Nepal, 2006a). The floral diversity of the park consists of more than 600 plant species which include 3 gymnosperm, 13 pteridophytes, 415 dicotyledons, 137 monocot, 16 species of orchids (UNESCO, 2003). The park harbors the rare tree fern (*Cyathea spinosa*), cycas (*Cycas pectinata*), screw pine (*Pandanus furcatus*) and many endangered animals such as Asian one-horned rhinoceros, Asiatic elephant, Bengal tiger, gaur (*Bos guarus*), gangetic dolphin (*Platanista gangetica*), giant hornbill (*Buceros bicornis*), Bengal florican (*Houbaropsis bengalensis*), and Gharial (*Gavialis gangeticus*) (UNESCO, 2003; WWF Nepal, 2006a; DNPWC, 2008; Straede and Treue, 2006).

Besides biodiversity, Chitwan National Park is known for its various cultural and historical sites. In the east there exists a famous Buddhist gomba near Sahapur on the park boundary. Bikram Baba temple next to the park headquarters is a Hindu shrine where annually thousands of Nepali people pay homage (UNESCO, 2003). In Bankatt, Hindu religious temples and shrines of local importance are the Shivling, Parsuram Kunda, Panch Pandav temple and Godak Nath temple. In Kuzouli, there is a famous Siddhababa shrine with a holy pond of local importance.



To the extreme west of the park, the famous Balmiki Ashram, Brahma Chauri and Laxmi Narayani temples with historic and religious significance are located where thousands of Nepali and Indian pilgrims pay their visit annually (UNESCO, 2003; DNPWC, 2008).

### **History of Chitwan National Park**

Since the end of the 19th century the Chitwan area was used as a favorite hunting ground for Nepal's ruling class. The Tharu, the indigenous group of the Terai, were known to have a natural resistance to malaria, and lived in small populations along the flat plains stretching the length of southern Nepal (Allendorf, 2006). A large-scale malaria eradication program was established in 1951. Many populations living in the Hills resettled in the lowland and the population density of the Terai increased. The resettlement program was aimed to reduce overcrowding in the Hills and brought thousands of people to live among the Tharu (Gurung, 1983; Allendorf, 2006). This population boost increased the pressure on the natural resources, forests and wildlife habitats. Poaching of wildlife became rampant and habitats of Bengal tiger and Asian one-horned rhinoceros were lost. Within a decade these animals, and many others, came close to extinction.

In 1962 the government created the area of Royal Chitwan National Park as a wildlife sanctuary (McLean and Straede, 2003). The name of the park is derived from the name of Chitwan District, as a major portion of the park lies in this district. The Park aimed to protect the Asian one-horned rhinoceros and Bengal tiger populations. Two years later in 1964 the resettlement of people living within the borders of the park began. The program moved over 22,000 individuals. The management plan used a people-free approach to conservation, by removing those living within the borders of the national park. In 1973 the sanctuary boundary was extended and declared the country's first national park, named the Royal Chitwan National Park. Again, in 1978, the park was further enlarged to 894 sq km and today measures 1185 sq km (DNPWC, 2008). The national park is now known only as Chitwan National Park, the 'Royal' was dropped from the name with the abolishment of the monarchy in 2007 (GoN, 2010).

In 1984 it was included in the UNESCO World Heritage List for its internationally important flora and fauna (UNESCO, 2010). Chitwan National Park meets three of the criteria for the World Heritage natural properties list (UNESCO, 2010). The park is an excellent example of geological processes and biological evolution as the last major surviving example of the natural ecosystems of the Terai region. The park also contains superlative natural features of exceptional natural beauty in terms of its scenic attractions. Additionally, the park provides critical and viable habitat for significant populations of several rare and endangered species, including the Asian one-horned rhinoceros and the Gharial (UNESCO, 2003). Chitwan National Park is now also part of the World Heritage Forest Program (UNESCO, 2010).

In 1996, a buffer zone covering 750 sq km was established around the park which now includes locally governed community forests (Stræde & Treue, 2006). The buffer zone was established in response to a need for landscape-scale conservation and to address the conflicts between people and the park (Spiteri and Nepal, 2008). The buffer zone of Chitwan National Park spreads over Chitwan, Nawalparasi, Parsa and Makawanpur Districts covering whole or parts of 35 VDCs (village development committees ) and two municipalities (233 wards, approximately 510 settlements) with about 36,193 households. There was total estimated population of 223,260 in the buffer zone area in 2003 (UNESCO, 2003). The area is inhabited by an assortment of indigenous and migrant ethnic/caste/occupational groups (UNESCO, 2003).

The recent political conflict in Nepal, known as the Maoist insurgency (1996-2006), involved armed confrontations between insurgents Maoists and the Nepali Army. Shootings, bombing, attacks, and Maoist imposed strikes were frequent and there were many effects on conservation throughout the years of political unrest in the country (Spiteri and Nepal 2008). Army guards were pulled from their posts at national parks to fight, leaving the borders largely unguarded. This period saw a huge increase in poaching within national parks across the country, and Chitwan National Park reported some of the highest numbers of poached Asian one-horned rhinoceros.

At Chitwan National Park, fifty percent of the park revenue, which is fully generated by entrance fees into the National Park, is designed for the buffer zone development activities such as schools, roads, tree planting, drinking water, and the buffer zone council is trusted with the overall administration of this money (DNPWC, 2010a). Funds for management of the park are allocated by the Government of Nepal. Out of the total revenue collected in the park, fifty percent is deposited in the central treasury, while fifty percent is deposited at park level to be used in buffer zone management programs for local communities. However, the deposited fund is not directly available for park management (UNESCO, 2003). The budgetary requirements are estimated annually and submitted to the central government for allocation of funds. Nevertheless, the actual release of funds is very low and it varies from year to year (UNESCO, 2003). Funding continues to be a problem for effective management and conservation at Chitwan National Park.

### **Tourism at Chitwan National Park**

Tourism is not evenly spread throughout Nepal. There are three main centers which account for an overwhelming share of the tourism market: the Kathmandu Valley, Pokhara (leading to the ACAP), and the Chitwan National Park. Chitwan National Park is the most visited protected area in Nepal. In 2007 the national park attracted just fewer than 17% of all tourists visiting the country: 86,433 tourists entered Chitwan National Park of the 526,705 tourists who entered the country (DNPWC, 2008).

K. Bhattarai et al. (2005) describe Chitwan National Park as a typical example of externally-induced, uneven development rather than a model of wildlife conservation. Several authors argue that the endangered species in the park are indeed protected, but only to be commoditized for the consumption of high-class tourism (Bookbinder et al., 1998; Jones, 2007; Spiteri & Nepal, 2008b). It is further argued that the park's establishment has severely disrupted the domestic economy of local people (Stræde & Helles, 2000; McLean & Straede, 2003; Hjortso et al., 2006).

The high tourist season around Chitwan National Park is in October and November as skies are clear, and temperatures are warm (Bhusal, 2007). The main attractions in the park are its wilderness, forests, grassland, and wetlands with their outstanding wildlife sighting opportunities (UNESCO, 2003). Tourist activities include elephant safaris in both the park and community forests, canoeing for animal sightseeing and bird watching, jungle walks with a guide inside the park lasting a couple of hours or a couple of days, visits to wildlife breeding project such as for domestic Asiatic elephants and gharials, jeep safaris inside the park and watchtower overnight adventures (UNESCO, 2003). The park has a number of government run tourist facilities including the visitors' center in the community of Sauraha and the Park headquarters in Kasara which is located inside the park (DNPWC, 2008).

Some tourists come to Chitwan National Park with tour groups that stay for three or four days and have all their activities booked in advance. Tourists who are not part of an organized group often come on pre-packaged three or four day trips, including travel time. These packages are often sold in Kathmandu. A third type of tourist travels independently to Chitwan National Park and books activities through independent agencies selling their products around the park border (Mueller-Boeker, 2000). Chandni (2010) reports that elephant safaris are the most popular tourist attraction at Chitwan National Park, followed by sunset watching on the Rapti River and the Tharu cultural programs.

Tourist numbers around Chitwan National Park has been rising over the last three decades (UNESCO, 2003). In 1977, the park had only one lodge with about 5000 annual visitors. In 2000 there were seven lodges operating inside the park and more than 70 lodges outside the park based predominantly in the town of Sauraha (Whelpton, 2005; Bhusal, 2007). There are about 22 tourist guide offices with 383 professional guides around Sauraha (Bhusal, 2007). It was reported that during the fall tourist season of 2009, the volume of elephant safari activities rose 50% from the previous year (Chandni, 2010).



**Figure 12: Geographic Location of the town of Sauraha**  
**Source: Spiteri & Nepal (2008b)**

Sauraha is located on the northern banks of the Rapti River (Figure 12). It is 160 km by road from Kathmandu and this trip can take anywhere from four to eight hours depending on the traffic (Whelpton, 2005).

Sauraha is the main tourist hub and main access point into the Chitwan National Park (Bhusal, 2007). Tourists also have the opportunity to stay inside the park at one of the seven hotels and resorts located there (Tiger Mountain, 2010). Today there are many hotels and resorts being built around the town of Sauraha, on top of the 70 which already exist. Tourist numbers are growing and there is little to no coordination of tourism projects around the area (Lehmkuhl, 2000). Without a development and tourism management plan around the town of Sauraha, mass tourism will undoubtedly change the area. Problems already being seen are those of pollution, vandalism and difficulty with solid waste disposal. With the continuing growth around Sauraha, the area may lose its wilderness charm. Although there is not much literature on the subject, a feeling of mass tourism is creeping into the atmosphere in Sauraha.

For example, the number of tourists on elephant back safaris surrounding the one Asian one-horned rhinoceros in this picture is not a private or isolated experience (Figure 13).



**Figure 13: Asian Elephant Safari at Chitwan National Park**

UNESCO delivered the *Initial Management Effectiveness Evaluation Report* (UNESCO, 2003) on Chitwan National Park in 2003, listing unregulated tourism as a potential threat to the park along with a gap in the current understanding of tourism impacts on conservation. It was reported that the unregulated tourism industry around Chitwan National Park has resulted in various adverse environmental impacts (UNESCO, 2003). Visitors are taken into the core zones of the park resulting in some harmful impacts on the biodiversity of the park such as habitat disturbance, damage to the vegetation and pollution (UNESCO, 2003).

With the many tourism activities and cultural sites around Chitwan National Park, there is flow of economic benefits to local communities from the existence of the park through tourism and employment opportunities. In 1998, Bookbinder et al. found that 72% of hotel employees and 74% of nature guides around Chitwan National Park originated from the local area, but that the local area was losing substantial tourism dollars because of the mainly non-local hotel ownership, which was at 61% (Bookbinder et al., 1998). Another major economic loss occurs because more than half the hotel bookings around Chitwan National Park are made in advance in Kathmandu, or through an international tourism agency. The revenues which do go to the local economy are reduced by the deflated market

conditions resulting from low hotel package pricing because there are too many budget hotels in the area.

### **Problems at Chitwan National Park**

Chitwan National Park can be described as an “island in a sea of people” (Straede and Treue, 2006). Nepal has been recognized over the last thirty years internationally for promoting collaborative management of protected areas. Yet protected area management in the Terai is criticized by some scholars as having low levels of community involvement (McLean and Straede, 2003; WWF Nepal, 2006a). Park-people conflicts at Chitwan range from serious to minor situations including: crop raids by wildlife, such as wild boar (*Sus scrofa*), spotted deer (*Axis axis*), and Asian one-horned rhinoceros; confrontation with army guards; restrictions on resource collection; fear of wild elephant, tiger or other dangerous animal attacks; humans killing wild animals and; flooding from the Rapti River (McLean & Straede, 2003). Despite the presence of the Nepali Army, local communities have continued poaching, hunting and logging as their populations and needs grew. This has led to conflicts between locals and the military.

Conflicts based on resource collection have a long history at Chitwan National Park. The high economic returns of collecting products from the wild continues to be strong, and can be two to four times higher than income from casual labor (Straede and Treue, 2006). Straede and Treue’s (2006) research looks at the importance of natural resources from Chitwan National Park, the buffer zone and community forests to the livelihoods of specific households. They conclude that “there is still a gap between local people’s needs for supplementing natural resources and their rights to satisfy them on a legal basis” (Straede and Treue, 2006, p 251).

Park-people conflict resolution in the form of relocation has been designated by professionals, organizations and academics as being an unsuccessful and negative solution (Luzinda, 2008; Straede and Treue, 2006; Nepal, 2002; Brockington & Igoe, 2006; Weladji & Tchamba 2003). It is widely recognized that relocation for the protection of national

parks and protected areas is an uncertain task. Nepal is often considered to be progressive (using collaborative management) in its environmental protection programs, yet the relocation measures used in Padampur, a village located within Chitwan National Park which was resettled between 1994-1998, are not considered best practice (McLean and Straede, 2003). For most of the locals who were forced to relocate, research concludes that the move did not live up to people's expectations, and was detrimental to their livelihoods. Based on the findings of this study, the authors deem it is inevitable to conclude that the management approach at Chitwan National Park is very different from the approach used for the Nepal Himalayan protected areas (McLean & Straede, 2003). Management at Chitwan National Park is in severe contrast to the management approaches used in the Himalayan Mountain protected areas and national parks, which acknowledge and necessitate the integration of conservation and development in a partnership with local people.

Even though conflicts continue to exist, results from recent research shows that 82% of local residents are generally in favor of the park and believe that it is beneficial to have a national park (Spiteri & Nepal, 2008a). The data in McLean and Straede (2003) show that most people living within the vicinity of the park have a positive attitude toward nature conservation and protected areas. It was revealed that those who were interviewed were not ignorant and negligent of the importance of the natural resources of the Park. In fact results showed that they agreed with the national park concept being important to protect forests and wildlife.

The two most important conservation concerns at Chitwan National Park today are the poaching of the Asian one-horned rhinoceros (Figure 14) and the invasive weed *Mikania micrantha* (Figure 15) (Gurung, 2010). Both of these problems are frequently reported on in national newspapers. On Feb 7, 2010 and again on April 22, 2010 Chitwan National Park officials reported finding a dead Asian one-horned rhinoceros killed by poachers who had taken the horn (Republica, 2010b; Republica, 2010a). The last Asian one-horned rhinoceros census completed in 2008 put the population at 408. Over two dozen rhinos have been reported to have fallen prey to poachers since the census was completed (Republica, 2010a).



**Figure 14: Asian One-horned Rhinoceros at Chitwan National Park**



**Figure 15: *Mikania micrantha* at Chitwan National Park**

There is ongoing debate in the literature on whether or not “successful” management has occurred around Chitwan National Park (Jones, 2007). Agrawal and Ribot (1999) regard the most important steps in crafting new legislation for local involvement in resource management to have been taken around Chitwan National Park, but McLean and Straede

(2003) suggest that protected areas in the Terai, and Chitwan specifically, are managed with low community participation in decision-making. The early conservation strategy (1973) to protect the Asian one-horned rhinoceros saw the population recover well and increased to 544 animals around the turn of the century. Due to earlier accomplishment, Chitwan National Park has often been documented in the literature as a conservation success. However, the Asian one-horned rhinoceros population has repeatedly been jeopardized by poaching in recent years. Local communities have and continue to suffered burdens, and residences continue to have limited access to the park (McLean and Straede, 2003). Today conservation success is not so obvious.

## **2.6 Two Case Studies of Tourist Conservation Research in the Annapurna Conservation Area Project, Nepal**

Two recent research studies carried out at the Annapurna Conservation Area (ACAP) investigated how foreign tourists visiting the protected area perceived, knew about, and participated in the conservation management practices at the ACAP. In 2008, Baral, Stern and Bhattarai (2008) used a contingent valuation survey to determine foreign tourists' willingness to pay at ACAP and in 2007 Thomson (2007) studied tourists as agents of development and environmental management in the ACAP.

The findings were very positive for both studies discovering that foreign tourists were aware of the importance of conservation management at ACAP and had a desire to contribute or act responsibly while travelling. Baral et al. (2008) results suggest that most visitors would be willing to pay an entry fee considerably higher than the then current fee of \$27 USD at ACAP and the most common explanation for willingness to pay by respondents was a desire to better protect the environment (Baral et al., 2008).

Thomson's (2007) study was based on interviews conducted with foreign tourists in the region assessing the extent to which trekkers were engaged in the ACAP mission, which is based on a program of sustainable tourism. The research found that while tourists acted in a mainly environmentally responsible manner, they were not particularly aware of the

work that ACAP was carrying out. His research suggests that if policy adjustments were made to raise awareness levels then trekkers could play an increased role as agents for development and conservation in the Himalayan Mountains. Both these research results suggest that tourism can act as a positive economic driver, and that there is not only an interest from foreign tourists to travel in an environmentally responsible manner, but that there is a willingness to pay higher entrance fees based on a desire to better protect the environment.

The encouraging result of these studies lead towards some interesting questions. Could these finding be linked to or used by other parks in Nepal currently struggling with conservation, management and funding resources? Do foreign tourists visiting other protected areas act in the same way? Would foreign tourists be willing to contribute more financially at other protected areas in Nepal?

## **Assessment**

Annapurna is considered to be a positive example of conservation and local economic development success, while Chitwan National Park is still facing many conservation and management problems. As well, the recent study by Baral et al. (2008) determining tourists' willingness to pay at ACAP was based on the ACAP's current entrance fee of 2,000 NPR. Chitwan National Park's entrance fee is only 500 NPR. If foreign tourists visiting Chitwan National Park paid more than the current entrance fee, then revenue for the park would increase. Funding has been determined to be a major problem at Chitwan National Park (UNESCO, 2003). An increase in revenue could be part of the solution to solving conservation problems and finding a way to better capture value at this national park which is considered to be the best surviving example of the natural ecosystems of the lowland Terai region (WWF Nepal, 2006a).

## **2.7 Evaluation**

Although Chitwan National Park sees the highest annual tourist numbers of all the Nepalese protected areas and national parks, it has the lowest rank of entrance fees and modest conservation results (DNPWC, 2010a). With Nepal on the United Nations' list of Least Developed Countries, tourism around Chitwan National Park could make efforts capture true park value and be used as a positive economic driver, as well as a conservation funding tool (Benavides et al., 2001). The literature on tourists at and around Chitwan National Park is not complete, especially with the increasing numbers of tourists visiting the park and the continued conservation and management problems. With the aim of better capturing value at Chitwan National Park, this research can fill in some of the missing information on tourists, such as the values and ideas about sustainable and environmentally conscious tourism that foreign tourists have and in turn find out their willingness to pay for conservation and environmental efforts at Chitwan National Park.

Following a similar survey model to those used by Thomson (2007) and Baral et al. (2008) in the Annapurna Conservation Area, the collection of tourists' conservation ideas and efforts, along with their willingness to pay higher entrance fees at Chitwan National Park could bring valuable insight from those who participate in tourism around the park and bring substantial amounts of money into the economy. With a better understanding of the relationship between tourists and conservation efforts, and determining if tourists hold higher value for Chitwan National Park than is currently being captured, the management of these areas and of tourism may be mutually supportive (Scheyvens, 2002).

## **2.8 Chapter Conclusion**

Chapter Two introduced the country of Nepal and discussed the strengths and weaknesses of its tourism industry. The country's development goals for the future involve promoting protected areas as tourism hotspots. With this in mind, biodiversity conservation is still the primary goal of protected area management. Although conservation in Himalayan protected areas is often praised globally, conservation in the Terai region of Nepal is facing ongoing challenges. Even with growing tourism numbers at Chitwan National Park,

management is still facing funding and conservation problems. Modeling from the success of two recent studies completed at Annapurna, determining ways to capture value from foreign tourists could provide information for future management decisions at Chitwan National Park. A literature review of the contingent valuation method and determinants of willingness to pay is described next in Chapter Three.

## CHAPTER THREE

# A Literature Review of Contingent Valuation and Determinants of Willingness to Pay for Conservation

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### 3.1 Introduction

A literature review of the contingent valuation method (CVM), the survey-based economic technique for the valuation of non-market resources, such as environmental preservation, is presented. Recommended guidelines and CVM best practice techniques are then described. A review of literature on willingness to pay and contingent valuation studies completed at protected areas in developing countries assesses significant variables which could have a significant effect on willingness pay at Chitwan National Park. This is followed by a discussion of CVM criticisms and limitations.

### 3.2 Contingent Valuation Method

In simple terms contingent valuation is a method of estimating the value people place on a particular good (Walsh et al., 1984). Contingent valuation method (CVM) is also known as the stated preference model. It uses survey techniques to find people's willingness to pay to obtain a particular good or willingness to accept to give away the good (Munasinghe & McNeely, 1994; Ahmed & Gotoh, 2006).

It can be used for goods which are and are not traded in the market place (Bateman et al., 1999). It is commonly used as one of the standard approaches to measure the economic values of non-market goods, such as recreation resources, wildlife and environmental quality goods. For these goods not traded in a marketplace it creates a hypothetical marketplace in which respondent are given the opportunity to buy the good (Whittington et al. 1990, Phillips, 1998; ICEM, 2003).

CVM uses a survey to measure individual's maximum willingness to pay for different natural resources or other public goods presented to them in a hypothetical market (Mitchell & Carson, 1989). Asking people, as opposed to solely determining values of goods

based on market data or “use value,” can measure the “non-use value” or “existence value” component of those goods (Phillips, 1998; ICEM, 2003). This is what CVM can capture and this is a way to ascertain how individuals value something (Hanemann, 1994). The contingent CVM relies on the stated intentions of individuals’ willingness to pay (Mitchell & Carson, 1989).

### **Development of CVM**

CVM literature contains a wide spectrum of both applied and methodological case studies dealing with a huge variety of different public assets and natural resources. Contingent valuation first came into use in the 1960s in the United States (Mitchell & Carson, 1989; Hanemann, 1994). With gradual growth in usage during the 1970s, by the end of the decade CVM received official recognition by the United States Water Resource Council as a recommended valuation technique (Bateman et al., 1999). It began to be applied in Europe in the 1970s (Hausman, 1993).

Many studies based on CVM were done in the 1980s, with its first application in a developing country taking place in 1985 (Whittington et al., 1990). CVM was used as a technique to measure the value of natural resource damage from the spillage of the Exxon Valdez by the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA) 1980 (Ahmed & Gotoh, 2006). This high profile, carefully designed and implemented study attracted a lot of attention for the contingent valuation method.

The use of the contingent valuation method to help place economic value on protected area is important for biodiversity and conservation. Another famous CVM study by Costanza et al. (1997) included CVM estimates, presenting an estimate of the value of the world’s ecosystem services as \$33 trillion a year, equivalent to nearly twice the combined national income of all the countries in the world at the time (Costanza et al., 1997).

## **CVM Techniques**

In the 1990s with higher academic approval, concern and international use, the National Oceanic and Atmospheric Administration (NOAA) assembled a panel of economics experts to evaluate the use of CVM for determining passive use values of environmental goods and services (Arrow, 1993; Tietenberg, 1996). The report set out a series of recommendations and guidelines and cleared the method as sound if they were followed. The National Oceanic and Atmospheric Administration (NOAA) report (Arrow, 1993) recommends that:

- Personal interviews should be used to conduct the CVM survey, as opposed to telephone, mail, or other methods.
- Surveys should be designed in a yes or no referendum format put to the respondent as a vote on a specific tax to protect a specified resource.
- Respondents should be given detailed information on the resource in question.
- The survey must ensure that respondents understand that they are to express their willingness to pay to protect the particular resource in question, not the environment generally.
- Subsidiary questions should be asked to ensure respondents understood the question posed.

Hanemann, (1994) and Mitchell and Carson (1989) are both widely respected throughout the literature on CVM (Shultz, 1998; Lee & Han, 2002; Koirala & Bohara, 2008; Baral et al., 2008). They also suggest a variety of techniques associated with the NOAA recommendations to capture the best results. When using CVM it is suggested that in-person interviews are used to achieve the most accurate survey results. Formulating the contingent valuation question about a specific commodity that captures what one seeks to value is a reasonable and meaningful method. It is suggested that the commodity and payment mechanism must be made as specific as possible. Confronting subjects with a specific and realistic situation (rather than an abstraction) helps respondents answer more surely. Using a closed-ended question which frames the valuation as voting in a referendum and confront respondents with something concrete achieves the best results (Mitchell & Carson, 1989; Hanemann, 1994).

In-person interviews are the obvious technique of choice for the CV survey (Mitchell & Carson, 1989; Arrow, 1993; Hanemann, 1994). Although costs are very high, and the ease of access to respondents depends on the situation, in-person interviews achieve the highest availability of information for the respondents as the interviewer can communicate interactively, answer questions and provide visual aids (Ahmed & Gotoh, 2006). It is also the most applicable technique when doing research in developing countries as it is relatively easy to access respondents compared to other techniques such as telephone, mail or internet surveys in that setting (Hausman, 1993; Munasinghe & McNeely, 1994; Navrud & Mungatana, 1994; Carson, 1995; Bateman, 1999; ICEM, 2003)

There are different types of elicitation methods for deriving the willingness to pay value from respondents. Dichotomous-choice binding, where respondents simply reply yes or no to alternative willingness to pay bid offers has become the most commonly used CVM bidding format (Carson et al., 1995). This is because the decision format closely matches the way consumers make choices in the market place (Shultz, 1998). There is one price listed and the consumer decides, "Will I buy this, yes or no", based on the listed price. The major disadvantage here is that the technique requires a large sample size to achieve accurate results (Hausman, 1993). This is much harder to achieve when using in-person interviews. The elicitation method known as the bidding game asks respondents whether they would pay a specific amount for the amenity to be valued and the amount is lowered and raised like auction depending on the negative and affirmative answers (Ahmed & Gotoh, 2006). This method uses an iterated series of questions, not just one single question. The major advantage is that this method can draw out the actual willingness to pay with the guided series of questions, so the answer from each respondent would give an actual willingness to pay value (Phillips, 1998). This decreases the necessity of as large sample size and the dichotomous-choice binding technique and can be more achievable with a smaller number of surveyors doing in-person interviews. The major disadvantage of this technique is that it is prone to starting point bias (Phillips, 1998).

Follow-up questions are also used to enhance the accuracy of the willingness to pay estimate after elicitation (Hanemann, 1994).

The in-person bidding game technique is the best CVM option and facilitates the estimation of statistically robust willingness to pay values when surveying in a developing country and where the sample may be smaller due to the limited number of surveyors available.

### **Examples of CVM Use at National Parks and Protected Areas**

Some examples of CVM use were discussed in Chapter One when the concept of determining and capturing value at protected areas was first introduced. Being able to show that it is possible to express the value of non-market benefits in cash terms has underlined the fact that the economic worth of protected areas extends beyond direct, commercial resource uses, and has helped to present a more complete picture of the economic significance of protected areas. Table 2 shows an array of contingent valuation studies which have been successfully completed to value the resources in protected areas around the world.

**Table 2: Case Studies of Contingent Valuation use in Protected Areas**

<b>Authors</b>	<b>Country</b>
Ahmad et al., 1993	Malaysia
Ahmed & Gotoh, 2006	Japan
Bandara & Tisdell, 2004	Sri Lanka
Baral et al., 2008	Nepal
Barnes et al., 1999	Nambia
Berg & Ohman, 1998	Sri Lanka
Brown & Henry, 1989	Kenya
Costanza et al., 1997	World
Day, 2000	South Africa
EFTEC, 2000	Peru
Emerton, 1996	Kenya
Hadker et al., 1997	India
Horton et al. 2003	Brazil
<i>ICEM, 2003</i>	Lao
Israngkura, 1997	Thailand
Lee & Han, 2002	Korea
Lynam et al., 1991	Zimbabwe
Mladenov et al. 2007	Botswana
Mmopelwa et al., 2007	Botswana
Moran, 1994	Kenya

Navrud & Mungatana, 1994	Kenya
Peters & Hawkins, 2009	Global
Saichoono, 1995	Zambia
Samdin, 2008	Malaysia
Shultz et al., 1998	Costa Rica
Smith & Mourato, 2000	Peru
Tejam & Ross, 1997	Philippines
Turpie & Smith, 1999	Zambezi Basin
Walpole et al., 2001	Indonesia
Whittington et al., 1990	Haiti

In the research done by Shultz et al. (1998), a CVM survey was used to determine visitor's willingness to pay for return visits to two National Parks in Costa Rica. The mean willingness to pay was considerably higher than current entrance fees. Results showed that CVM is a useful tool to help determine park entrance fees in spite of some methodological limitations (Shultz et al., 1998). In South Korea, research to determine whether or not natural and cultural resources have enough economic values to justify an increase in admission fee was carried out. Lee and Han (2002) determined through the use of a CVM that the use value of each national park is far greater than the current admission fees and maintenance costs. The estimated economic value provides justification for the national park authority to increase admission fees (Lee & Han, 2002). In the ACAP, CVM was used to determine willingness to pay for visitor's entrance fees. Results suggest that most visitors would be willing to pay an entry fee considerably higher than the then current fee of \$27 USD at ACAP. The mean and median willingness to pay were \$69.2 and \$74.3 USD, respectively. The most common explanation for willingness to pay by respondents was a desire to better protect the environment (Baral et al., 2008).

Through the use of the CVM, each study in Table 3 examines willingness to pay at a protected area or protected areas in a developing country. The studies include willingness to pay of foreign tourists visiting the protected area and willingness to pay of foreign non-users, with a range of sample sizes and variables tested to have a significant effect on respondents' willingness to pay. The authors of each study, the country where the research took place and the sample size are listed, as well as the significant variables which affected the respondents' willingness to pay.

**Table 3: Case Studies of Contingent Valuation Research at Protected Areas in Developing Countries**

<b>Authors, Country and Sample Size</b>	<b>Significant Variables which Effect Visitors Willingness to Pay</b>
Bandara & Tisdell, 2004 Sri Lanka 300	- Income - Years of schooling
Baral et al., 2008 Nepal 305	- Bid amount - Family size - Visitors' satisfaction - Use of a guide - Group size
Barnes et al., 1999 Namibia 376 foreign tourists	- Nationality: foreign tourists vs African foreign tourists' - Accommodation
Horton et al., 2003 UK and Italy 407	- Environmental issues - Gender - Level of education - Income
Lee & Han, 2002 Korea 460 per park	- Education level - Gender - Age
Mladenov et al., 2007 Botswana 174	- Accommodation - Income
Moran, 1994 Kenya 311	- Experience rating - Education level - Membership in conservation groups - Viewing of wildlife on TV
Samdin, 2008 Malaysia 180	N/A
Shultz et al., 1998 Costa Rica N/A	- Knowledge of the recent park entrance fee debate - Country of origin - Gender - Satisfaction with the resources and services at the park
Walpole et al., 2001 Indonesia 465	- Revenues used for the upkeep of park - More information

Common variables included in the preceding CVM studies are age, gender, income, education, nationality, number of people in the group, type of travel group, visitors' satisfaction and employment status (Moran, 1994; Shultz et al. 1998; Barnes et al., 1999; Walpole, et al. 2001; Lee & Han, 2002; Horton et al. 2003; Bandara & Tisdell 2004; Mladenov et al. 2007; Baral et al., 2008; Samdin, 2008). However, there are no variables which consistently present themselves as statistically significant.

### **3.3 Determinants of Willingness to Pay for Conservation**

Several studies have identified some key determinants of willingness to pay for conservation (Lindberg, 1991; Vogt & Williams, 1999; Odunga & Folmer, 2004; Togridou et al., 2006; Bhandari & Heshmati, 2010). Tourists' willingness to pay is influenced by certain socioeconomic characteristics, perception toward conservation, and visit characteristics (Horton et al. 2003; Bandara & Tisdell 2004, Dodds et al. 2010). As noted by Lindberg (1991), the following factors are likely to influence willingness to pay for protected area and national parks: age, educational level, and income; the fulfillment of expectations; and the existence of substitute park and recreation sites.

A person's willingness to pay for something depends largely on their income level, regardless of the purpose (Horton et al. 2003). Likewise, a tourists' willingness to pay for biodiversity conservation will depends in some form on their capacity to pay (Togridou et al., 2006). The effect of income on willingness to pay is a widely debated issue. Some studies have found that charging an entry fee for natural attractions has small distributional impact on different income groups (Vogt & Williams, 1999; Togridou et al., 2006). Other studies on outdoor recreational activities have found that low-income users are more sensitive to price changes than high-income users (More & Stevens, 2000; Bhandari & Heshmati, 2010).

Among the demographic variables, age is a significant determinant of tourists' behavior and their choice of location to visit (Lee & Han, 2002; Cottrell, 2003; Weaver et al., 1994). In general, older tourists spend more time and money in order to learn, beyond just enjoying

the adventure of tourism (Odunga & Folmer, 2004). Younger tourists tend to be attracted more to nature and wildlife, while elderly people prefer to search for places that provide more understanding and knowledge about a particular place. The older tourists are particularly attracted to the cultural activities of tourist spots (Bhandari & Heshmati, 2010).

Education creates awareness and allows an individual to know more about the environment in which they are living (Mok & Armstrong, 1995). A superior education level increases the possibility that a person will engage in environmental conservation activities due to greater experience, awareness, and access to information. Hence, it is anticipated that higher education would imply higher awareness and appreciation for natural resources, which could have an effect on willingness to pay (Moran, 1994; Bandara & Tisdell, 2004; Togridou, 2006).

Traveling with family members or friends could diversify a tourist's activity more than that of a single traveler (Bhandari & Heshmati, 2010). Group size is likely to have a positive impact on the heterogeneity of interests as every individual traveler has his/her own expectation for the trip (Baral et al., 2008). Large groups can visit more places than small groups because of their diversity of choices (Leu et al., 1993). The average travel cost per tourist for a larger group is less compared to a small group or single traveler because of the economies of scale.

Visitor satisfaction was found to be more often than not related to visitor behavior intentions (Moran, 1994; Shultz et al., 1998; Baral et al., 2008); visitor satisfaction can have a significant effect on willingness to support nature conservation financially (Shultz et al., 1998; Tejam & Ross, 1997).

The rather low proportions of variation explained in many willingness to pay studies suggest that many other unmeasured variables may be influencing willingness to pay. Willingness to pay amounts can be based on complex concerns, including use and non-use valuation of environmental assets (Kontogianni et al., 2003). Use value is related to consumer surplus benefit from visitation control and actual recreational use (Shultz et al., 1998). On the other hand, non-use value is related to benefits from non-use satisfactions,

such as existence, option, and bequest values (Lee and Han, 2002). Lee and Han (2002) showed that use and non-use values for national parks were found and provide enough justification for park authorities to establish admission fees, should governmental budgeting support be reduced or withdrawn.

The influence of the tourists' profile, visit characteristics and the variables determined prior to the visit including their environmental dispositions is examined in relation to willingness to pay. As well as the variables which tourists' determined during their visit such as their evaluation of their trip to Chitwan National Park. The variables which are hypothesized to have a significant effect on tourists' willingness to pay at Chitwan National Park, Nepal are gender, amount spent on recreation, type of travel group, trekking, previous location visited, experience rating, age and education level.

### **3.4 Contingent Valuation Method Biases, Limitations and Criticisms**

It has been reported that possible limitations when using open-ended willingness to pay questions for market goods is that people are more likely to tell you what the good costs than what it is worth (Hanemann, 1994). Open-ended willingness to pay questions such as "How much would you pay for this mountain view" can lead to shortcomings such as protest answers, bias responses, responses ignoring income, and strategic behavior (Shultz, 1998).

Other limitations are that the CVM studies focus on actual visitors to parks and not on potential visitors; this is said to only be acceptable if the object of the study is to determine willingness to pay values only for return visits to a park. If the stated intention is to determine future willingness to pay values of an entire population, then only asking people visiting the park would be a biased sample frame (Walsh et al., 1984; Hanemann, 1994). This is a fair point, but it would not be possible to sample from an entire population of potential visitors to a national park. The sample cannot capture those who have not visited the park because they consider the current entrance fee too expensive, or have not visited for some other reason (Hanemann, 1994).

Another possible limitation to CVM could be cultural. When answering questions, respondents could have a cultural bias related to some culture's unfamiliarity with personal surveys and the respondents ability to provide truthful negative responses to interviewers. Also, respondents might be familiar with surveys online, through personal mail, or by telephone, but many people may be unaccustomed to face-to-face personal surveys and specifically with their intended non-personal, truth-seeking and anonymous nature. Respondents might just "feel bad" about giving a negative response to something if they are still present or at the location (Mitchell & Carson, 1989; Hanemann, 1994).

A major constraint in the use of CVM is the possibility that respondents will give biased answers (Tietenberg, 1996). Strategic bias could occur if the survey or situation provokes the respondent to provide a biased answer hoping to influence a particular outcome. Information bias could occur if the respondent values something in which they have little or no knowledge or experience. Starting point biases could occur if the survey instrument provides a predetermined range of choices. Hypothetical bias could occur if respondents do not take the questionnaire seriously. Sampling design bias could occur due to improper design and execution and non-response bias could occur due to a low response rate (Hausman, 1993; Tietenberg, 1996).

CVM criticisms include many of the same critiques that survey studies often have. The way the willingness to pay questions are designed and asked may bias value estimates. Respondents' answers about their behaviors during a survey often differ from what they actually do (Ahmed & Gotoh, 2006). CVM responses are contingent upon the level of information supplied by the survey and provided by the respondent (McFadden & Leonard, 1993). Moral and ethical positions may play a role in CVM as the monetary valuation process depends on the respondents' ethical beliefs.

There are also several disadvantages to the personal interview approach. For example, conducting personal interviews tends to be more expensive than other data collection methods, such as telephone or mail-in surveys (Jennings, 2005). In this case, having a personal interview type question at the end of the questionnaire made it so that the researcher could not give out the survey to someone who might not be able to complete it

at that specific time, but could later on, and then return it to the researcher. This decreased the sample size significantly, and lead to greater difficulty in getting respondents.

Moreover, personal interviews may also be influenced by social bias and respondents might provide the type of answers they feel the interviewer wants to hear, or answers that are thought to be socially correct, rather than their own honest feelings (Marshall & Rossman, 1998). The benefit of conducting the final part of the questionnaire as a personal interview, however, was deemed to outweigh these limitations.

Despite these biases and criticisms CVM has been widely used in academic and non-academic research throughout developed and developing countries (Carson et al., 1995).

### **3.5 Chapter Conclusion**

This chapter reviews the literature on contingent valuation method research. First the development of the contingent valuation method and techniques for successful research using the method are presented. A look at the different research studies involving the contingent valuation method in developing countries follows. Ten CVM studies are looked at and the statistically significant variables which had a significant effect on willingness pay were examined. This is followed by an evaluation of determinants of willingness to pay for conservation. The chapter concludes with a discussion of CVM criticisms and limitations. Chapter Four presents the methodology of the thesis.

# CHAPTER FOUR

## Methodology

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### 4.1 Introduction

This chapter begins by briefly reintroducing the purpose, objectives and study scope of the research. The research process is then presented, including sampling procedure and sample size, along with a full description of the questionnaire use to collect data from tourists at Chitwan National Park. The data collection process is then described, going through challenges and changes in the field. The sample population is described and then compared to the most current data on tourist numbers in Nepal. Possible limitations and biases are presented as well as data entry techniques and statistical tests to be used for analysis.

### Aim and Objectives

This research explores means to further conservation and development efforts at and around Chitwan National Park through an assessment of foreign tourists' willingness to pay for their visit to Chitwan National Park and their reasons for doing so. The aim of this study is to explore means to further conservation and development efforts at Chitwan National Park by providing insight into whether park managers can better capture value from foreign tourists visiting the area. A contingent valuation tool is used to explore the valuation associated with Chitwan National Park. Specifically, the research objectives are:

1. To determine foreign tourists' willingness to pay while visiting Chitwan National Park;
2. To evaluate those visitor characteristics which are significantly related to tourists' willingness to pay; and
3. To explore whether or not the potential exists to capture value from tourists through changes in current entrance fees.

To achieve the objectives it was necessary to ask the tourists their perceptions, attitudes and willingness to pay preferences based on various factors central to tourism in the area. As a result, a semi-structured questionnaire administered to tourists in the Chitwan area and designed around the contingent valuation method was selected as the most appropriate and feasible method of data collection.

### **Study Scope**

The scope of this study includes the data collection, in the format of a questionnaire, from a sample of tourists travelling around the Chitwan National Park region in October and November of 2009.

### **4.2 Sampling and Sample Size**

The research that took place in the 'field' in Nepal was a form of inquiry that was in-depth, focusing on a sample of participants. The target population of this sampling procedure was all foreign tourists visiting Chitwan National Park, staying within or around the park, paying the entrance fee to enter the park and visiting within the data collection time period of October 16, 2009 and November 5, 2009. Data collection was conducted in the main tourist town of Sauraha.

A convenience sampling method was employed to select individuals from the population and request participation in the study. Convenient sampling is a type of nonprobability sampling which involves the sample being drawn from that part of the population which is close to hand (Marshall & Rossman, 1998). That is, a sample population selected because it is readily available and convenient. Convenience sampling has been utilized in other tourism-related studies using CVM in Costa Rica, the UK, Korea and Nepal (Bateman et al. 1994; Shultz et al., 1998; Lee & Han, 2002; Thomson, 2007; Baral et al. 2008). Nonetheless, one of the limitations of convenience sampling as a non-probability sampling technique is that it diminishes the capacity to make inferences about the value of a particular variable in the population based on statistics from the sample (Rodeghier, 1996).

Despite this limitation, convenience sampling was the most feasible and realistic sampling method available. The non-probability sampling technique was chosen because only one researcher was able to travel to Nepal and collect data. Therefore the size of the sample, available funding and the researcher's ability to access individuals were the main determining factors in the choice to use non-probability sampling.

The research studies reviewed in the literature had sample sizes ranging between 174 and 465 for the most similar studies (Table 3). The researcher aimed to collect a sample between 200 to 300 foreign tourists. The sample size was determined by the sampling process which was a single researcher collecting questionnaires from tourists over a 21 day period. In total 203 usable surveys were collected.

### **4.3 The Questionnaire**

The survey is a well-known and commonly used method of gathering information on the perceptions and willingness to pay of tourists visiting national parks (Shultz et al., 1998; Marshall & Rossman, 1998; Jennings, 2005; Thompson, 2007; Baral et al., 2008).

The design of the questionnaire was modeled from the two recent case studies focusing on foreign tourists visiting Annapurna presented in Chapter Two (Thompson, 2007; Baral et al., 2008) were used for guidance, design and as models for the structure of the questionnaire. Both studies focused on foreign tourists in Nepal and their relationship, willingness to pay, and knowledge of conservation initiatives in the protected area they were visiting. These research studies used open-ended and closed questions, acquiring foreign tourist respondents through as convenience sampling method. With the inability to pretest the questionnaire in Nepal, the information on how to best sample tourists in Nepal, was gained from the methods of Thompson (2007) and Baral et al. (2008).

The six page questionnaire is divided into seven sections. (For the full questionnaire refer to Appendix A). The questionnaire consists of both open-ended and closed questions which provided greater depth in responses. Following the recommendation made in the literature reviewed in Chapter Three, the willingness-to-pay question using the contingent valuation

method was asked orally by personal interview once the questionnaire had been completed. The seven sections were divided as follows:

1. Purpose and Activities: This section determined the primary purpose respondents had for coming to Nepal and details about the number of days and places they were visiting. They were also asked how they made their travel arrangement, who they were traveling with and what activities they planned on participating, or had participated in while in Nepal and then specifically while at Chitwan National Park.
2. Motivation: Respondents chose from a list of motives which could influence people to visit Chitwan National Park. They were asked to rate on a Likert scale of 1 to 5 in which 1 equals 'very unimportant' and 5 equals 'very important,' how much each motive describes their decision to visit the Chitwan National Park area.
3. Perceptions of Chitwan National Park: In this section respondents were asked if they thought tourists brought benefits to the Chitwan National Park area, and then contrastingly if they were aware of any social, economic, political or ecological problems in and around the Chitwan National Park area. Thomson (2007) similarly used this type of question to demonstrate the degree of regional awareness tourists have of the area they are travelling in. Respondents were then asked to rate their level of agreement with a list of statements about tourism at and around Chitwan National Park based on their experience at Chitwan National Park. The statements asked rating on whether:

Tourism at and around Chitwan National Park:

- Minimizes negative impacts on the environment.
  - Contributes to the conservation and management of legally protected areas
  - Directs economic and other benefits to local people.
4. Attitudes towards Conservation and Ecotourism: Respondents were provided with another list of opinions and concerns visitors could have about ecotourism, protected area management and community-based conservation practices. They were asked to

look at the following and rate their level of agreement. Some of the key statements were:

- I am always concerned about environmental issues.
  - I think it is rational to ask local people to go without the use of some resources, so that they may be used for tourism instead.
  - I think littering (solid waste) is a problem in Chitwan National Park.
  - I always abide by a code of ecotourism ethics even if it results in hardship to me.
5. Financing: This section determined how much tourists were spending daily, did they know the amount of the park entrance fee, and if they knew on what park management was spending entrance fees.
  6. Background Information: Here respondents were asked to rate their experience, and give their background information such as age, gender, nationality, level of education, employment status. Respondents were also asked how much they had been spending on recreation (at home and away) during the past year.
  7. Willingness-to-pay In-Person Interview: The contingent valuation method was used to determine tourists' willingness to pay for entrance into Chitwan National Park. The question was structured to follow the guidelines and recommendations by the NOAA and previous researchers and academics on CVM.

Adhering to the suggestion that respondents should be given detailed information on the resource in question, the willingness to pay question was placed at the end of the questionnaire. This gave respondents an opportunity to consider aspects of their experience at Chitwan National Park prior to being asked their willingness to pay. The willingness to pay question was asked orally because in-person interviews were determined to be the obvious technique of choice for the CV surveys. Following the NOAA recommendations a Yes/No referendum format was used also. Respondents were scaled through high and low bids (bidding game elicitation technique) to find the highest point at which they were willing to pay. For example,

- Would you be willing to pay \$7 USD for your experience here? No\_\_\_ Yes\_\_\_.
  - A. If Yes, a much higher option is suggested
  - B. If No, a much lower option is suggested
  
- Would you be willing to pay \$1000 USD for your experience here? No\_\_\_ Yes\_\_\_.
  - A. If Yes, a much higher option is suggested
  - B. If No, a much lower option is suggested
  
- Would you be willing to pay \$ \_\_\_ USD for your experience here? No\_\_\_ Yes\_\_\_.
  - A. If Yes, a much higher option is suggested
  - B. If No, a much lower option is suggested

To eliminate the problem of starting point bias, the first bid was always \$7 USD. The current entrance fee to Chitwan National Park is \$7 USD and this price has been accepted as a reasonable starting point bid. Respondents could of course when asked if they would be willing to pay \$7 USD for the their experience here, no longer be willing to pay the \$7 USD, but choosing to start at \$7 USD eliminated the main disadvantage of using the bidding game technique. The researcher was also in possession of the respondents' previously completed questionnaire and was able to look at the response to Question 19 "Do you know the cost of the park entrance fee at Chitwan National Park?" and "If yes how do you consider the price of the park entrance fee?" with the option of choosing "Too Much," "Acceptable," "Too Little," or "Should not have to pay." This previous question, and the respondents' selected answer, allowed the researcher to know some of the respondents' thoughts about the entrance fee, before beginning the bidding process. This allowed the researcher to adapt the bid scaling to each respondent. If the respondent had previously answered the entrance fee was too low, then the researcher could scale up the next bid higher than if the respondent had answered the current entrance fee was acceptable. The final response was recorded by the researcher on the respondents' questionnaire.

There were then three follow-up questions that the researcher was able to ask once respondents had made their willingness to pay decision. The follow-up questions, recommended by the literature, were used to enhance the accuracy of the willingness to pay estimate. The researcher was able to understand individual respondents' reasoning and why they chose a specific final answer by asking:

- What are the most important reasons that influenced your above decision?

- Why not higher?
- Why not lower?

The three open-ended questions were designed with the hopes of leading the respondent to comment on or discuss their reasons for choosing the final amount they chose.

The willingness to pay section of the research adopted a semi-structured personal interview approach, with the use of three final guiding questions. Personal interviews have several advantages over other research methods on top of the more precise responses for CV as discussed above. For instance, building a rapport with the interviewee is more easily accomplished in a personal interview than with other interview formats. This approach also allows the researcher to ask the follow-up questions and explore issues that are brought up during the interview itself (Jennings, 2005).

### **Ethics Committee Approval**

Approval from the Ryerson University Ethics Review and Research Involving Human Subjects was needed for the questionnaires. Upon submission of the questionnaire to the committee, a series of recommendations and requests was returned. The requests were fulfilled and the research was granted approval. The researcher departed from Toronto, Ontario for Chitwan National Park, Nepal in October 2009 to begin data collection.

### **Questionnaire Pre-testing and Distribution**

Unfortunately due to the location of Chitwan National Park, Nepal from Ryerson University, Toronto, Ontario, Canada pretesting of the questionnaire on site was not feasible. Before arriving in Nepal, the questionnaires were pre-tested on a group of well travelled and international friends. English was the first language of the majority of the people pre-testing the questionnaire, this made for some challenges in the field, as many of the tourists being sampled were not primarily English speakers and were from many different countries and cultures.

In Sauraha, Nepal, questionnaires were administered to a sample of tourists visiting the area and this provided the most useful and feasible way of collecting information that could undergo statistical analysis. Participants were given a consent form detailing the project purpose and objectives and how the information would be used by the researcher. The voluntary nature of their participation was emphasized, as well as the confidentiality of their responses. The consent form can be found in Appendix A.

#### **4.4 Data Collection**

In total 203 surveys were collected in the town of Sauraha (Figure 12), the gateway into Chitwan National Park. The sample collection process was not systematic, but purposeful. A questionnaire was handed out to tourists who had consented to participate in the study in multiple locations around Sauraha. To ensure a reasonable spread of tourists was included (tour groups travelers, independent travelers, safari tourists, bird watching tourists, long term visitors, etc. ), the data were collected at activities (elephant bathing, baby elephant center, jungle walks, river boating, etc), in restaurants, at sunset on the Rapi River and at hotels during a three week period. The researcher handed out questionnaires for tourists to fill out and was available to explain words or clarify meanings to ensure uniformity of responses as the respondents were of different nationalities and had different primary languages. The survey took approximately 20 to 30 minutes to complete and consisted of 29 close and open ended questions in seven sections. Respondents answered these questions in a written format on the questionnaire. The final question was asked orally once the tourists had given back the written questionnaire.

#### **Field Adjustments**

Before arriving in Nepal, some of the data collection locations had been pre-determined and contact had been made with different hotels within and around the park. To get a complete sample of tourists from budget to high spending travelers, and independent

travelers to group tours, arrangements had been made in advance to stay at hotels which catered to these different types of tourists.

Upon arriving in Sauraha, the researcher found out that the hotels within the park had been closed by the government. Seven resorts within Chitwan National Park had operations suspended in July 2009 following a controversy over the renewal of their licensed land contracts. None of the hotels in which the researcher had planning on staying gave any warning of this occurrence. The Nepali Government and Chitwan National Park management had ordered Tiger Tops Jungle Lodge, Machan Wildlife Camp, Chitwan Jungle Lodge, Gaida Wildlife Camp, Island Jungle Resort, Hotel Naravani Safari and Temple Tiger Camp to close their operation on July 15, after their lease contracts expired.

A Public Accounts Committee was formed in September 2009 made up of high level parliamentary members to make recommendations on the continuing existence of the lodges and resorts inside the park. The committee members held interactions with concerned stakeholders who included local residents near the park, hoteliers operating outside the park, operators of the seven resorts, resort workers and local business entrepreneurs. There were strong opposing ideas about the reissuing of licenses. On the one side those working outside the park argue about the unfair market advantage of the seven lodges inside the park, the damage to the park from the structural operations, the constant disturbance to animal habitat and legally there is claims that extending the lease contacts without inviting tender is against the National Park and Wildlife Conservation Act 1972, its regulation of 1973 and the Buffer Zone Act 1998 (Prabhakar, 2009). The resorts within the park were continuously being praised for their environmentally responsible ecotourism practices and joint conservation activities which include wildlife research among other things (Gurung, 2010). They are also the hotels which cater to higher end tourists who are paying upwards of \$400 USD a night to stay at one of the jungle lodges. Tiger Tops, the oldest and most famous of the hotels within the park, part of the Tiger Mountain Group, boasts about being the pioneer of sustainable tourism in Nepal. While working with the UK charity, the International Trust for Nature Conservation (ITNC), the lodge has been recognized internationally as a leader in anti-poaching, wildlife crime and conservation activities (Tiger Mountain, 2010).

Three options were finalized by the committee which included allowing them to operate inside the Park for two more years so as to play a role in Nepal Tourism Year 2011. In late January 2010 five of the seven hotels resumed operation after it was reported that they cleared their tax dues (Republica, 2010c). As with much of the political business in Nepal, decisions are slow and hard to come by, and often continue to resurface as ongoing issues.

This changed the initial data collection plan and data collection only took place in the town of Sauraha and at tourist hotels, restaurants and activities in the area. This could have lead to an uncharacteristic sample, as tourists could have cancelled their trips to Chitwan National Park upon hearing they were not staying inside the park, possibly altering the potential sample of high spending tourists. During the collection period the researcher met people who thought they were staying inside the park, but upon arrival were put in lodges and hotels in Sauraha. All the tourists visiting Chitwan National Park between July 2009 and January 2010 stayed in Sauraha. This may possibly make the sample collected between October and November 2009 more accurate as all the tourists were staying somewhere around Sauraha. The hotels could have been closed indefinitely, there was no way of knowing at the time of data collection if they were going to re-open or not. It was determined that collecting data even with the hotel closures in the park would still provide meaningful results, and conceivably more accurate results.

### **Collection of the Sample**

A total of 212 questionnaires were given during the sampling period. Of the 212, 9 were lacking so many responses that they were unusable. Many of these were unusable due to major language barriers with the respondents. Some of the other questionnaires were returned partially incomplete, missing one to five question responses. Nonetheless, these were included in the data analysis to avoid the loss of data for the parts of the survey which were complete. The total was 203 usable questionnaires with some variation in response rate (N) for each question.

Tourists who enter Chitwan National Park are divided into three categories based on nationality, in accordance with the tourism management structure used throughout all of the protected areas in Nepal. The categories are domestic tourists, South Asia Association for Regional Cooperation (SAARC) tourists and foreign tourists. Each category of tourists pays a different price to enter the park (Table 4). At Chitwan National Park domestic tourists pay 20 NPR, SAARC tourists pay 200 NPR and foreign tourists pay 500 NPR. (Depending on the current exchange rate the price in USD can change slightly but for this study 500 NPR is deemed equal to \$7 USD.)

**Table 4: Chitwan National Park Entrance Fees**

Type of tourist	Price NPR	Price USD
Foreigner	500	\$7
SAARC	200	\$2.8
Nepali	20	\$0.28

**Source: Chitwan National Park Ticket Office, Sauraha**

The Nepali government and protected area officials use the Nepali calendar for official documents and park records. The Nepali year 2066 goes from April 13, 2009 to April 15, 2010. Data collection for this research took place between October 16, 2009 and November 12, 2009. This falls almost within the Nepali month of Kartik 2066 which was between October 18, 2009 and November 15, 2009. Official data from the Nepali year 2066 on the total number of tourists who visited Chitwan National Park were not available at the time of writing, therefore the previous year's data, Nepali year 2065, will be used for analysis.

**Table 5: Total Number and Percentage of Tourists who Visited Chitwan National Park in the Nepali year 2065 (April 13, 2008 to April 15, 2009)**

Type of tourist	Total	Percentage
Foreigner	46,491	55.70%
SAARC	9,815	11.76%
Nepali	27,158	32.54%
<b>Total</b>	<b>83,464</b>	<b>100.00%</b>

**Source: Chitwan National Park Ticket Office, Sauraha**

This research has chosen to focus exclusively on foreign tourists. This was done for a variety of reasons. Foreign tourists outnumber the domestic and SAARC tourists, and make up more than 55% of the tourists visiting Chitwan National Park annually (Table 5).

Foreign tourists are also charged a much higher entrance fee than any other group, 500 NPR or \$7 USD. This makes their contribution to the total amount of fees collected annually much greater than the other tourists. Foreign tourist entrance fees make up over 90% of all fees collected (Table 6).

**Table 6: Total Amount of Money Collected from Tourists' Entrance Fees in the Nepali Year 2065, (April 13, 2008 to April 15, 2009)**

Type of tourist	Total	Price NPR	Total Amount NPR	Price USD	Total Amount USD	Percentage
<b>Foreigner</b>	46,491	500	23,245,500	\$7	\$325,437	90.27%
<b>SAARC</b>	9,815	200	1,963,000	\$2.8	\$27,482	7.62%
<b>Nepali</b>	27,158	20	543,160	\$0.28	\$7,604.24	2.11%
<b>Total</b>	<b>83,464</b>	<b>---</b>	<b>25,751,660</b>	<b>---</b>	<b>\$360,523.24</b>	<b>100.00%</b>

**Source: Chitwan National Park Ticket Office, Sauraha**

This study focuses on the willingness to pay of tourists entering the park and because foreign tourists have the greatest monetary effect on park revenues they were looked at specifically in this research. The case studies by Baral et al. (2008) and Thomson (2007) on willingness to pay and tourists as agents of development recently done in Annapurna also focus solely on the collection of data from foreign tourists.

Research on willingness to pay of SAARC and domestic tourists could yield interesting and impactful results as these two groups do make up a substantial number of visiting tourists. Unfortunately, to collect data from all tourists visiting Chitwan National Park was out of the range and capacity of this project, from both a manpower and financial perspective. These groups could be examined in future research projects, combining the results with this research, or be assessed on their own.

In the month of Kartik 2065 (October/November 2008) a total of 8,131 foreign tourists visited the park (Table 7). The population of foreign tourists in 2066 is still unknown as official counts have not been made available at the time of writing. Using the data currently

available from the same time period in the year prior to data collection; a sample of 203 for a population of 8,131 foreign tourists was collected (i.e., a 2.5% sample).

**Table 7: Total Number of Tourists Visiting Chitwan National Park in Kartik 2065: October/November 2008**

Type of tourist	Total number of tourists
Foreigner	8,131
SAARC	1,390
Nepali	3,457
<b>Total</b>	<b>12,978</b>

**Source: Chitwan National Park Ticket Office, Sauraha**

### **Data Collection Limitations**

There was a range of problems and limitations identified by the researcher during the data collection period. The researcher was acting individually and was only able to accomplish what was feasible for one person each day. Conducting interviews takes practice and skill (Jennings 2005) and this was the first time the researcher had conducted such research. Over time each questionnaire and interview became more and more fluid allowing for maximum input. Cultural barriers with respect to the physical appearance of the researcher also lead to challenges. Being a female, the researcher sometimes found herself as an attraction, making it difficult to collection data from some groups of tourists.

Another challenge in the data collection process was the language barrier. The questionnaire was only made available in English. Tourists around Chitwan National Park were from all over the world, speaking many different languages. Only a small number spoke English as a first language. Although most tourists did speak and understand English as a second or third language, there were also tourists, approximately a quarter of those the researcher met, who could not complete the questionnaire because they could not speak or understand English well enough.

The length of the questionnaire also made data collection challenging. When asking tourists to complete a 30 minute questionnaire, most people either did not have time, or did not want to spend the time. This caused problems and resulted in adjustments to the times and

places where data collection took place. Tourists were busy going to activities in the morning, as well as in the early afternoons; if asked to complete a questionnaire during that time, they often answered “No”. However, if the researcher met respondents mid-morning and mid-afternoon, after they had participated in their activities, there was a much higher willingness to complete the questionnaire. Approximately three quarters of all respondents’ questionnaires were gathered in this way. Roughly two thirds of respondents who did complete the questionnaire complained about the length and time it took to complete.

#### **4.5 Data Entry**

Following guidance from Rodeghier’s (1996) book on survey research each questionnaire was numerically coded. Each response choice on the questionnaire was also numerically coded, with the same numeric values for similar responses (Rodeghier, 1996). Responses from each of the questionnaires were entered into a Microsoft Excel spreadsheet and later transferred into a Statistical Package for the Social Sciences (SPSS) data file. Data were tabulated using SPSS and frequencies and cross-tabulations were undertaken to profile the tourists and to determine relationships and whether there were correlations between variables. Responses to open-ended questions were not coded but were instead transcribed descriptively. In some cases, data from open-ended questions were clustered in order to reduce variables. The questionnaires were continually checked for errors during data entry and any noted errors were corrected.

The reliability of the questionnaires was checked to ensure that respondents who were ineligible to answer a particular question did not answer it. For example if respondents answered “No” to the question “Do you know the cost of the park entrance fee at Chitwan National Park?” but then gave an opinion on “How do you consider the price of the park fee?” this part was ignored. After the initial data entry phase, the entire spreadsheet was re-examined against the original questionnaires to ensure accuracy and minimize non-sampling error.

## **Statistical Tests**

Kolmogorov-Smirnov (K-S) tests for similarity between the sample data and the hypothesized normal curve (McGrew & Monroe, 2000). The sample was checked to determine if it had a normal distribution. Pearson Chi-square test was used to determine if a significant difference exists between a set of observed frequencies and the corresponding expected frequencies (McGrew & Monroe, 2000). The variables of gender, amount spent on recreation this year, travel group type, whether trekking was the respondents most important activity, whether respondents participated in trekking, age, education and experience rating were all tested against willingness to pay using Chi-square tests in SPSS (Rodeghier, 1996). A Chi-square result, with a probability of 0.05 or less, is commonly interpreted as the justification for rejecting the null hypothesis that the variables are unrelated (McGrew & Monroe, 2000).

Assumptions when using the Chi-square significance test are that the data are random and there is a sufficiently large sample size. Adequate cell sizes are also assumed in Chi-square significance tests. To have an accurate statistical Chi-square test there needs to be a minimum number in each cell of the table to accurately follow the structure of Chi-square significance tests (McGrew & Monroe, 2000). There must be 5 or more responses in all cells of a 2-by-2 table, and 5 or more in 80% of cells in larger tables.

For the accuracy of the significance testing some of the responses within a question were grouped together for better analysis. For example in Question 3 “Which of the following best describes your travel group?” the questionnaire allowed for 6 response options, but when doing the analysis, whether tourists were or were not part of a tour group, was the only grouping used to test for significance against the willingness to pay variable.

## **4.6 Chapter Conclusion**

This chapter has outlined the purpose of the paper, the research objectives and the method used to achieve those objectives. The collected sample has been identified and a comparison to tourism data from Nepal has been made. The chapter has also outlined the

limitations of the study. The data entry process and the statistical tests used in the analysis are discussed. The following chapters present the results of the study.

# CHAPTER FIVE

## Discussion and Results of Demographic and Travel Characteristics

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### 5.1 Introduction

This chapter presents many of the demographic and travel characteristic of the sample population. The overall descriptions and discussions provided here are meant to familiarize the reader with the research participants and serve as a basis for analyses presented in Chapter Five. The findings are compared to available data on tourists visiting Nepal and tests whether the sample is truly representative of the population of all foreign tourists visiting Nepal. For a complete summary of the results from every question in the questionnaire refer to Appendix B.

### 5.2 Demographic and Travel Characteristics of the Sample

Within the sample of the 203 tourists visiting Chitwan National Park between October 15, 2009 and November 5, 2009 the following demographic characteristics have been identified. Of those 203 people interviewed, 107 were women and 96 were men (Table 8).

**Table 8: Total Number of Foreign Tourists Visiting Chitwan National Park in the Sample Collected October/November 2009 Divided by Gender**

<b>Tourist Type</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
<b>Foreign</b>	96	107	203
<b>Percentage</b>	<b>47.3%</b>	<b>52.7%</b>	<b>100%</b>

Comparing the data available from the Chitwan National Park tourist ticket center in Sauarha (gathered by the researcher while on location) the sample collected in October/November 2009 is representative by gender of the population of foreign tourists visiting Chitwan National Park. There are an almost equal number of males and females who visit Chitwan National Park (Table 9).

**Table 9: Total Number of Foreign Tourists Visiting Chitwan National Park in Kartik 2065: October/November 2008 Divided by Gender**

<b>Tourist Type</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
<b>Foreign</b>	4025	4106	8131
<b>Percentage</b>	<b>49.5%</b>	<b>50.5%</b>	<b>100%</b>

**Source: Chitwan National Park Ticket Office, Sauraha**

From the sample collected, the respondents' mean age was 38.2 years old (the median was 35 years) with a range from 14 to 71 years.

Of respondents, 67.5% had completed an undergraduate level of education or higher.

The sample represented visitors from twenty three countries and six continents. Three quarters (75.4%) of respondents were from the European continent (Table 10), with the highest number being from the United Kingdom (22.2%), the Netherlands (17.2%) and Germany (15.8%). Thirteen percent of respondents were from North America, 2.5% from Asia and 7.4% from Oceania. The grouping of foreign tourist respondents from Asia does not include any respondents from any of the SAARC member states as the research concentrates only on foreign tourists.

**Table 10: Sample Classification by Continental Origin of Respondents**

<b>Nationality</b>	<b>Percentage N = 203</b>
<b>North America</b>	13.3%
<b>South &amp; Central America</b>	1%
<b>Europe</b>	75.4%
<b>Asia</b>	2.45%
<b>Oceania</b>	7.4%
<b>Africa</b>	0.5%
<b>Foreign Total</b>	100.0%
<b>SAARC</b>	0.0%
<b>Total</b>	<b>100.0%</b>

The data of the nationality records of tourists visiting Chitwan National Park in October and November 2009 were not available. A comparison between the sample and the data available, which comes from the *Nepal Annual Tourism Statistics Report* for 2008 (GoN,

2008) of tourist arrival by nationality to Nepal, is used to determine the representativeness of the sample (McGrew & Monroe, 2000) (Table 11). When analyzing the results from the sample with the data from the government of Nepal (2008), all SAARC tourists, those travelers from Bangladesh, Bhutan, Maldives, Nepal, Pakistan, India, Sri Lanka and Afghanistan, were removed from the Nepal statistics report data to make an accurate comparison to the sample data which contains no SAARC tourists.

**Table 11: Tourist Arrival by Continental Origin in Nepal, 2008**

<b>Nationality</b>	<b>Total</b>	<b>Percentage of Total</b>	<b>Percentage of Foreign</b>
<b>North America</b>	38,208	7.6%	11.1%
<b>South &amp; Central America</b>	6,745	1.4%	2.0%
<b>Europe</b>	149,028	29.8%	43.4%
<b>Asia ( - SAARC)</b>	121,522	24.3%	35.4%
<b>Oceania</b>	16,195	3.2%	4.7%
<b>Africa</b>	945	0.2%	0.3%
<b>Other</b>	6,789	1.4%	2.0%
<b>Not Specified</b>	4,007	0.8%	1.2%
<b>Foreign Total</b>	343,439	68.7%	100.0%
<b>SAARC</b>	156,779	31.3%	
<b>Total</b>	<b>500,277</b>	<b>100.0%</b>	

**Source: GoN, 2008**

To test whether the two proportions are equal, the z-test for two proportions is used with a 95% confidence interval, and the 2-tailed test results (McGrew & Monroe, 2000). This test is used to determine whether or not the sample and the tourism data are significantly different from one another (Table 12).

When comparing nationalities classified by continent of the sample to the nationalities classified by continent of tourists visiting Nepal in 2008 (GoN, 2008) for North America, South and Central America, Oceania, Africa and Other, the representativeness of the sample is not significantly different from the tourism statistics population data from Nepal at 95% confidence level. However, there is a significant difference of proportions between the

European and Asian (minus SAARC) populations. In the sample there is an over representation of European tourists and an under representation of Asian tourists.

**Table 12: Z-test Results for Difference of Proportions**

<b>Nationality</b>	<b>Sample Total</b>	<b>Nepal Tourism Data Total</b>	<b>p-value</b>	<b>Are the means significantly different at 95% confidence level?</b>
<b>North America</b>	27	38,208	0.4272	No
<b>South &amp; Central America</b>	2	6,745	0.4575	No
<b>Europe</b>	153	149,028	< 0.0001	Yes
<b>Asia ( - SAARC )</b>	5	121,522	<0.0001	Yes
<b>Oceania</b>	15	16,195	0.1035	No
<b>Africa</b>	1	945	0.9211	No
<b>Other</b>	0	6,789	0.0761	No
<b>Foreign Total</b>	203	339,432		

**Source: GoN, 2008**

When looking more closely at the difference in nationalities per continent, the sample collected in October and November, 2009 has a low sample number of Chinese tourists. Of the 121,522 Asian tourists (not including SAARC tourists) entering Nepal in 2008, 35,166 (28.9%) came from the Republic of China (GoN, 2008). In the sample, data from only two Chinese tourists were collected out of the 203 tourists sampled. This may reflect differences in travel behaviour: differences among groups in opting to visit Chitwan National Park while in Nepal. However, among those approached for this study Chinese tourists were the least likely of all foreign tourists to have a high enough proficiency in English to complete the questionnaire. The researcher found that Asian tourists spoke the least amount of English when approached. Chinese tourists were always with a guide and travelling as part of a tour group. This made their need to speak English much lower than other independent travelers who needed to speak English to travel successfully around Nepal as English is the main language of the tourism industry in Nepal. The over representation of European tourists could also be attributed to the language of the questionnaire. European countries teach a variety of languages in school, English being a

very common one, and this could be one of the reasons many European travelers were able to speak and read English, therefore being able to complete the questionnaire.

Almost 50% of the sample described their employment status as employed on a full time basis. Ten percent described themselves as students, approximately 28% stated they were either on a travel leave or unemployed, and 8% were retired.

Question 27 in the questionnaire asked “How much have you spent on recreation (at home and away) this year?” listing the following options: Less than \$500 USD; \$500 - \$2,000 USD; \$2,000 - \$5,000 USD; \$5,000 - \$10,000 USD; More than \$10,000 USD (Table 13). This question was structured to determine an answer with variation on people’s disposable incomes. While travelers could have very high incomes or very low incomes, the answer does not necessarily correlate to the amount of spending they might do while travelling, nor their willingness to pay. Therefore this question was build to ask about respondents’ spending choices on travel and recreation. Almost 10% of the respondents did not answer Question 27, many stating that they just had no idea how much they were spending and could not answer correctly.

**Table 13: Question 27 "How much have you spent on recreation this year?"**

	<b>Percentage N = 184</b>
<b>Less than \$500 USD</b>	3.3%
<b>\$500 - \$2,000 USD</b>	11.4%
<b>\$2,000 - \$5,000 USD</b>	37.5%
<b>\$5,000 - \$10,000 USD</b>	29.4%
<b>More than \$10,000 USD</b>	18.5%
<b>Total</b>	<b>100.0%</b>

This research focused on foreign tourists and many of the flights to get to Nepal from countries in Europe, North America, South American, Africa and Australia are over \$1,000 USD. The majority of respondents are in the top three options.

The most frequent tourist trips to Chitwan National Park from the sample were short tours (mean: 3.48 days) (adjusted for outliers who were living or volunteering in the Chitwan National Park area for a month or more); the median was 3 days.

Prior to their trip to Chitwan National Park, 45.8% of tourists had been staying in Pokhara, 23.4% had been staying in Kathmandu, and 18.4% had been travelling in India. After visiting Chitwan National Park, 55.2% planned on travelling to Kathmandu, 25.3% on to Pokhara, and 8.3% on to India. More tourists in the sample were travelling on to Kathmandu because many tour companies sell Chitwan National Park as a “quick trip down to the jungle” on the last couple of days in Nepal. Kathmandu is four to eight hours away from Chitwan National Park on a bus and accessible to travelers with only a short amount of time on their hands. Larger tour groups could be travelling on a Nepal/India combined tour coming north from India, or heading south into India, with a convenient stop close to the border at Chitwan National Park for two or three days. Tour groups might also be completing a Nepal tour and after Chitwan continuing on to Pokhara or Kathmandu. Trekking travelers from Annapurna or Everest often visit Chitwan National Park at the end of their trip and then quickly get back to Kathmandu to catch a flight. The mountain trek usually occurs first on their trip because it is their main reason for visiting Nepal.

Of the 203 tourists sampled, 85.2% said that they were visiting Nepal for the primary purpose of holiday pleasure. This is a much higher percentage than the Nepal Tourism Statistics, 2008 reports on tourists’ arrivals for purpose of visit (GoN, 2008). Chitwan National Park is a tourist destination and there are not many other things to do in the area, so these numbers are not surprising. Also foreign tourists are arriving in Nepal most often for holiday pleasure (Figure 7, Section 2.2), which for many would include trekking. Therefore, the sample may be representative of foreign tourists’ purpose of visit, but the tourism statistics report (GoN, 2008) does not make foreign and SAARC tourist distinctions in their reports.

Almost half of the sample (49.8%) answered that they had made their travel arrangements to Chitwan National Park independently. The sample is about evenly divided with 50% being independent travelers and 50% making their arrangements with a group or agent. The further breakdown of tour group tourists showed that 37.9% of the sample made their travel arrangement to Chitwan National Park through a travel agent or travel company at home, and 9.4% made their travel arrangements to Chitwan National Park through a travel agent or travel company in Nepal.

Eighteen respondents (8.9%) had previously visited Chitwan National Park. This number seems high and may be due to the inclusion of tour group leaders in the data sample. Tour group leaders on large international tours are individuals who come from the same country as the majority of the travelers, and travel with the group from the beginning to the end of the trip. For example a tour group from Germany, would usually have a German tour leader. When these individuals were foreign tourists in Nepal, they were also eligible to complete the questionnaire. Out of every group from which data were collected, the tour leader was always willing to participate and complete the questionnaire. His/her interest in the area and in doing the questionnaire was always high because they had visited numerous times, with numerous groups and now felt a personal connection to the park.

Over one third (41.1%) of the travelers who responded to the questionnaire had heard about and decided to come and visit Chitwan National Park from the Lonely Planet travel guide book (Bindloss et al., 2009). Another 22.9% had heard about the park through friends and family and 15.2% had heard about the park because it was a stop in their travel group tour.

**Table 14: Tourists' Most Important Activities**

<b>Activity</b>	<b>Percentage N = 194</b>
<b>Trekking/Hiking</b>	46.9%
<b>Wildlife viewing and bird watching</b>	15.0%
<b>Other</b>	11.9%
<b>Cultural</b>	9.8%
<b>Visiting cultural sites</b>	5.7%
<b>Photography</b>	4.1%
<b>Volunteer</b>	4.1%
<b>Research/ Study</b>	1.6%
<b>Total</b>	100.0%

One of the main reasons tourists are travelling to Nepal is to participate in trekking or hiking activities in the Himalaya (GoN, 2008). Almost half of those sampled (46.9%) described trekking and hiking as the most important activity in which they planned to participate while visiting Nepal (Table 14). Of those travelers who made their travel

arrangements independently, 49.5% described trekking as their most important activity. Of those travelers who made their travel arrangements with a group 40.5% described trekking as their most important activity.

The interest from tourists and their ranking of trekking as an activity is relevant to the research because some of the literature has said that protected areas in the Himalayas used for trekking are better managed than those protected areas in the Terai (McLean and Straede, 2003). These protected areas in the Himalayas also charge a much higher entrance fee than those in the Terai, and specifically when Chitwan National Park is compared to the Annapurna Conservation Area there is a huge variation in entrance fee. This is also important because it shows that many foreign tourists are not coming to Nepal with Chitwan National Park as their primary visiting destination.

Question 21 in the questionnaire asked the respondents “On a scale of 1 to 10, with 10 being the perfect trip, how would you rate your overall experience during this trip to Chitwan National Park?” This question created some inconsistency in the results and upon reflection could have been designed more specifically to give better and more detailed results. A follow-up question asking respondents to explain the ranking would have been sufficient to add more meaning.

Just over half of the respondents (54%) reported a positive experience at Chitwan National Park rating their satisfaction as an eight or higher on a ten point scale (Table 15). This still leaves just under half of the visitors sampled to have reported an average experience (six to seven on the ten-point scale) or reporting a negative experience (five or less on the ten-point scale). If this question had been more precise, or included a follow-up question, it could have determined which part of the respondents’ trip was positive and which part was negative.

To have 46% of visitors who were sampled rating their experience 7 or lower is a substantial finding. With an analysis of the descriptive responses in the results section we will understand some of the negative experiences more thoroughly.

**Table 15: Question 22, Experience Rating**

<b>Experience Rating</b>	<b>Percentage of Number of Responses N = 193</b>
<b>10</b>	6.7%
<b>9</b>	10.9%
<b>8</b>	35.8%
<b>7</b>	26.4%
<b>6</b>	13.5%
<b>5</b>	5.7%
<b>4</b>	0.5%
<b>3</b>	0.5%
<b>Total</b>	<b>100.00%</b>

### **5.3 Chapter Conclusion**

The profiles presented above have created an overall picture of the population of tourists visiting Chitwan National Park, Nepal in the fall of 2009. In the following chapter the results from the contingent valuation study and tourists' willingness to pay at Chitwan National Park will be presented with the goal of determining whether tourists can be used by management as a mean of capturing value at Chitwan National Park.

## **CHAPTER SIX**

### **Discussion and Results of Willingness to Pay**

---

#### **6.1 Introduction**

The following chapter discusses results from the contingent valuation portion of the study. Tourists' knowledge of the current entrance fee and acceptance of an entrance at Chitwan National Park are first discussed. The mean willingness to pay from the sample of respondents visiting Chitwan National Park in the fall of 2009 is then presented. The willingness to pay responses are grouped into categories for further analysis. Drawing upon research done by related CVM studies variables including gender, amount spent on recreation, type of travel group, trekking, previous location visited, age and education levels were hypothesized to be statistically significant variables with respect to respondents' willingness to pay. These variables are presented and compared to the categorized willingness to pay responses of the sample. The implications of the data with respect to the management, environmental and economic ability to further capture value at Chitwan National Park are discussed. After the analysis of the willingness to pay data, a descriptive review and discussion concerning tourists' reasons for their willingness to pay and their perceptions of Chitwan National Park follows. The chapter ends with a discussion of the results and chapter conclusion.

#### **6.2 Current Entrance Fee Question Results**

In Section Five of the questionnaire, tourists were asked if they knew the cost of the entrance fee at Chitwan National Park (Question 18). This was done before they were asked their willingness to pay. Thirty-nine percent answered "No" they did not know the price of the entrance fee. This is a substantial number of tourists who, before participating in the questionnaire, had no idea of the entrance price. Most of these tourists responded that their park fees had been paid through their travel group. Upon being told the current entrance fee was approximately \$7 USD, most of the tourists in tour groups who had been unaware of the entrance fee price, were surprised at how low it was. Only 10% of the

tourists sampled reported having paid their own entrance fee to get into the park at the gate themselves. This result seems low, when half of the respondents reported making their travel arrangements independently. This is probably explained by the fact that tourists might book an elephant ride or jungle safari independently but the person with whom they have booked will still purchase the entrance ticket into the park for the tourist as part of the booking price. To the 39% of respondents who answered “No” they did not know the price of the entrance fee, during the willingness to pay oral question at the end of the survey the researcher told these respondents the price of the entrance fee and asked their impression of the price and their willingness to pay now that they knew the actual price.

Sixty-one percent of respondents did answer “Yes” they knew the park entrance fee. Upon choosing “Yes,” they were prompted to continue on to the question on how they considered the price of the entrance fee? Being given four options to choose from: “Too much”, “Acceptable”, “Too little”, and, “Should not have to pay”, not a single respondent answered “Should not have to pay.” All of the foreign tourists who were sampled understood and accepted that paying an entrance fee to enter Chitwan National Park was a normal and acceptable request. These are positive findings because there are examples in the literature where entrance fees or the initiation of entrances fees at protected areas has received some resistance from tourists (Munasinghe & McNeely 1994; Tietenberg, 1996; Tejam & Ross 1997; Rietbetgen-McCracken & Abaza 2000; Peters & Hawkins 2009; WWF, 2010). Of the 123 respondents who answered “Yes” they knew the park entrance fee, 80.5% (99) deemed the price to be “Acceptable.” When asked at the end of the questionnaire whether they would be willing to pay more, many of those respondents who answered it was an “Acceptable” price, were willing to pay more (see Section 6.3).

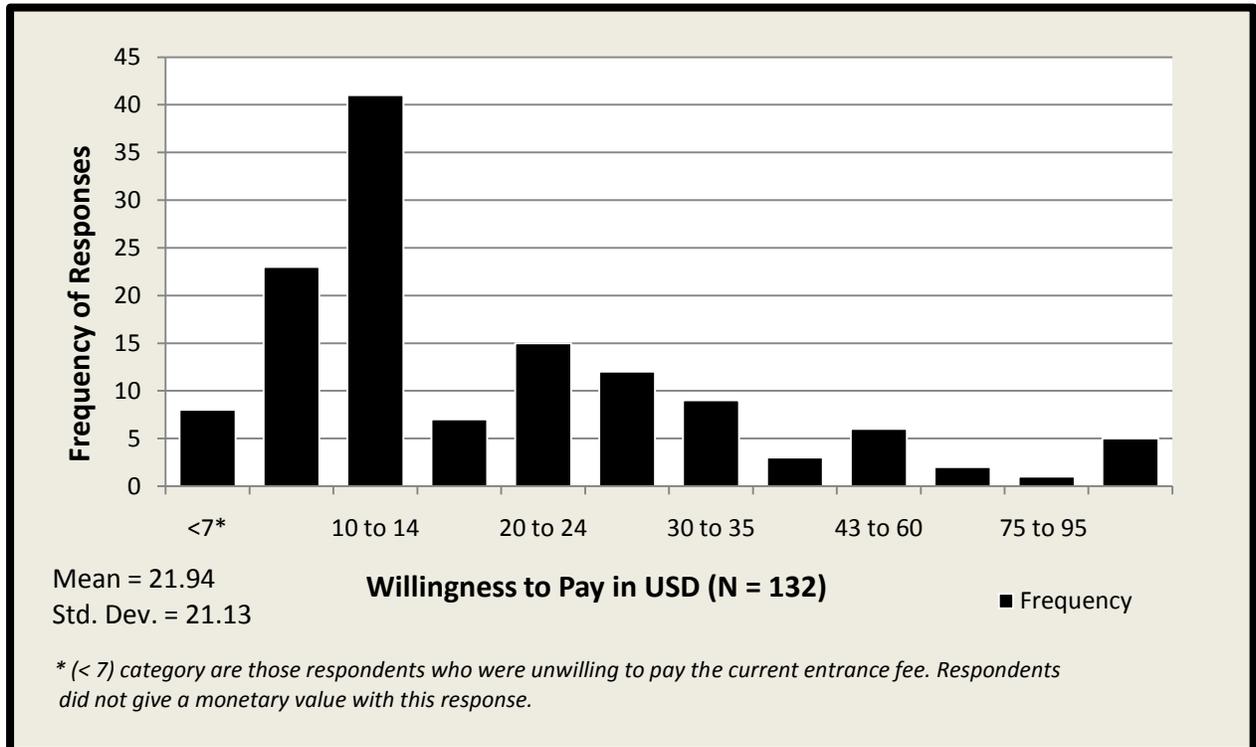
### **6.3 Willingness to Pay Results**

Overall, 132 of the 203 respondents gave a monetary response to the willingness to pay question. With this significantly lower response rate, it is necessary to check if there are statistically significant differences between those respondents who did answer the

willingness to pay question with a monetary response and those who did not. An independent samples t-test was used to check if the respondents who answered the willingness to pay question with a monetary response were representative of the larger sample group. The variables of age, gender, amount spent on recreation, type of travel group, trekking, previous location visited, education level and experience rating were tested (see Appendix C for t-test tables). In all cases, there was no significant difference between the respondents who did answer the willingness to pay question with a monetary response and those who did not.

From the 132 respondents who answered the willingness to pay question with a monetary response, the mean willingness to pay for entrance fees at Chitwan National Park is considerably higher than current entrance fee. At the time of this study, the price of the park entrance fee, as previously mentioned, was 500 NPR, approximately equal to \$7 USD.

The respondents' mean willingness to pay is \$21.94 USD (the median is \$14 USD and the standard deviation is \$21.14 USD) with a range from <\$7 USD to \$100 USD (Figure 14).



**Figure 16: Frequency Distribution Chart of the Sample's Willingness to Pay**

There were respondents who answered ‘Yes’ they would pay more, but they did not give a monetary response and could not be included in Figure 16.

This sample resulted in a K-S score of 0.2147 and a p-value of 0, supporting the hypothesis of normality that there is no significant difference between the distribution of willingness to pay and that of a normal distribution.

One hundred and eighty-six respondents provided a categorized response concerning their willingness to pay, i.e., they were willing to pay more than the current entrance fee (higher), were willing to pay only the current entrance fee (same), or would be unwilling to pay even the current entrance fee again (lower). The difference in N from that of willingness to pay is that several respondents answered this question without providing a direct monetary response: only responding, “Yes, I would pay more”, “No, I would not pay more”, or “No, I will not pay the current price.” These respondents felt unwilling or unable to give a monetary amount as their response.

Two thirds (71.5%) of those who responded were willing to pay more than the current entrance fee, one quarter (24.2%) would only pay the current entrance fee again, and 4.3% wanted a lower entrance fee price (Table 16).

**Table 16: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same)**

<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Lower</b>	8	4.3%
<b>Higher</b>	133	71.5%
<b>Same</b>	45	24.2%
<b>Total</b>	<b>186</b>	<b>100.0%</b>

The categorized willingness to pay responses are used in the statistical tests done in the following section to determine whether any of the variables have a statistically significant effect on respondents’ willingness to pay.

## **6.4 Analysis of Willingness to Pay and Select Variables**

Based on the literature review, select variables were asked in the questionnaire because they were hypothesized to have a statistically significant effect on tourists' willingness to pay (Section 3.2 and 3.3). Ten CVM research studies were chosen as the basis for the hypotheses and used in the interpretation of the results. These studies were chosen because they each had very similar methods, similar objectives or close links to this research and therefore comparisons between the studies were easily made.

Common variables included in CVM studies in the literature include age, gender, income, education, nationality, number of people in the group, type of travel group, visitors' satisfaction and employment status (Moran, 1994; Shultz et al. 1998; Barnes et al., 1999; Walpole, et al. 2001; Lee & Han, 2002; Horton et al. 2003; Bandara & Tisdell 2004; Mladenov et al. 2007; Baral et al., 2008; Samdin, 2008). There are no variables which consistently present themselves as statistically significant. The variables which could be hypothesized to have a significant effect on tourists' willingness to pay at Chitwan National Park, Nepal are gender, amount spent on recreation, type of travel group, trekking, previous location visited, age, experience rating and education level.

To see a summary of questionnaire responses refer to Appendix B.

### **Variable Testing**

Gender was hypothesized to be a statistically significant variable (Table 17). At Kayasan National Park in Korea, gender was a statistically significant variable and the probability of willingness to pay was higher among female than male respondents (Lee & Han, 2002). On the other hand in Horton et al. (2003) males tended to state higher willingness to pay.

The results show that there is no significant relationship between willingness to pay categorized responses and the respondents' gender. This is similar to findings by Shultz et al. (1998), Barnes et al. (1999), Walpole, et al. (2001) and Baral et al. (2008) where gender was not a significant variable to respondents' willingness to pay while visiting a protected area.

**Table 17: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) with Gender Difference**

Category	Frequency	Male	Female
Lower	8	5	3
Higher	133	67	66
Same	45	18	27
<b>Total</b>	<b>186</b>	<b>90</b>	<b>96</b>
<b>Pearson Chi-Square = 2.116</b>			
<b>p-value = 0.347</b>			

Respondents' income was asked by 8 of the 10 studies reviewed in the literature in a variety of different ways including monthly income, personal income and household income. In Walpole et al. (2001), Bandara and Tisdell (2004) and Horton et al. (2003) income was a significant variable in respondents' willingness to pay but in Shultz et al. (1998), Lee and Han (2002) and Mladenov et al. (2007) researchers were surprised that income was not significant and that correlations were weak. For this study, with the acknowledgement of the varied nationalities of tourists visiting Nepal and Chitwan National Park and the variety of ways income is asked in others studies (Bandara & Tisdell, 2004; Samdin, 2008), the amount of money individuals spent on recreation within the past year was asked instead of a direct question on income. By asking respondents the amount of money they had spent on recreation within the past year, the question takes into account that individuals may choose to spend different amounts or percentages of their income on travel and recreation. Having a high income does not necessarily mean you are traveling a lot or willing to spend more while travelling, although it does give you more of an option to choose to do so.

The amount respondents spent on recreation this year was hypothesized to have an effect on the sample's willingness to pay (Table 18). To follow the Chi-square test 5 cell rule (see Section 4.5), the willingness to pay categories Higher and Not Higher are used.

With a p-value of 0.174 there is no significant relationship between willingness to pay categorized responses and how much respondents had spent on recreation within the last year.

**Table 18: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) and Amount Spent on Recreation this Year (N=171)**

<b>Categorized Willingness to Pay</b>	<b>Less than \$2,000 US</b>	<b>\$2,000 – \$5,000 US</b>	<b>\$5,000 – \$10,000 US</b>	<b>More than \$10,000 US</b>
<b>Higher</b>	20	51	29	23
<b>Not Higher</b>	7	17	19	5
<b>Total</b>	26	68	48	28
<b>Pearson Chi-Square = 4.977</b> <b>p-value = 0.174</b>				

Visitors' experience rating was hypothesized to have a significant effect on willingness to pay. It is common practice around the world to tip, or pay more, for better service, so it is justifiable to assume that those tourists who rated their experience more positively would be willing to pay more for their experience (Carson et al., 1995). Visitors' satisfaction was one of the most statistically significant variables in the contingent valuation study by Baral et al. (2008) in Annapurna and was also statistically significant in one of the two national parks studied by Shultz et al. (1998).

To get an experience rating from respondents being sampled, the question "On a scale of 1 to 10, with 10 being a perfect trip, how would you rate your overall experience during this trip to Chitwan National Park?" was used. Respondents' experience rating, based on the literature, was hypothesized also to have an effect on tourists' willingness to pay (Table 19). To follow the Chi-square test 5 cell rule, the willingness to pay categories Higher and Not Higher are used.

**Table 19: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) and Respondents Experience Rating (N = 177)**

<b>Categorized Willingness to Pay</b>	<b>5 and lower</b>	<b>6 and 7</b>	<b>8 and above</b>
<b>Higher</b>	7	53	69
<b>Not Higher</b>	6	17	25
<b>Total</b>	13	70	94
<b>Pearson Chi-Square = 2.681</b> <b>p-value = 0.262</b>			

Unexpectedly there is no significant relationship between willingness to pay categorized responses and respondents' experience rating. This finding is dissimilar to results from Moran (1994), Baral et al. (2008) and Shultz et al. (1998) who all found that satisfaction with the experience and services at the protected area they were visiting did act as a significant variable on willingness to pay. Tourists visiting the Chitwan National Park area could recognize the need for more funding around the park and that the need is so great that they were willing to pay more regardless of the experience that they had while visiting. They may also attribute their lower rated experience to a lack of funding and resources at Chitwan National Park.

Table 21 shows a comparison between willingness to pay by tourists travelling in a tour group and those not traveling in a tour group. Barnes et al. (1999), Mladenov et al. (2007) and Baral et al. (2008) all hypothesis that package tourists or tour group tourists are different from those tourists not participating in tour groups or package tours and therefore predict they have different willingness to pay. Tourism around Chitwan National Park attracts both tour group and non-tour group travelers and therefore a difference in willingness to pay between these two groups is hypothesized.

**Table 20: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) and Type of Travel Group (Tour Group, or Other) (N = 185)**

<b>Categorized Willingness to Pay</b>	<b>Tour Group</b>	<b>Other (Alone, Friends and Family)</b>
<b>Lower</b>	2	6
<b>Higher</b>	32	101
<b>Same</b>	13	31
<b>Total</b>	47	138
<b>Pearson Chi-Square = 0.526 p-value = 0.769</b>		

The results show that there is no significant relationship between willingness to pay categorized responses and whether or not respondents were travelling with a tour group. In Baral et al. (2008) whether tourists were or were not travelling in a tour group, or whether they had a group leader, had an effect on their willingness to pay. Tourists

travelling with a guide (group leader) were willing to pay more than those without one. The authors suggest that this difference occurred because guides are able to give more information to tourists and therefore tourists are better informed and willing to pay more. The structure of the tourism industry at Chitwan National Park is different from Annapurna. Those respondents who were travelling in a tour group at Chitwan National Park would have arrived and left the Chitwan National Park area with a tour leader who would have been travelling with them for the whole trip. Anyone, tour group or not, must enter Chitwan National Park with a local guide, therefore the use of a guide at Chitwan National Park is not hypothesized to be a variable with significant effect in willingness to pay. At Annapurna tourists have the option of trekking with or without a guide. Other studies Shultz et al. (1998), Lee and Han (2002) and Mladenov et al. (2007) ask respondents the number of people with whom they are travelling to determine group size, but results show this does not have an effect on willingness to pay.

Trekking is one of the most common activities in which tourists participate while visiting Nepal (GoN, 2008). The literature has shown that Himalayan protected areas in Nepal are often better managed than those in the Terai (Heinen & Mehta, 1999; Nyaupane & Thapa, 2006; Koirala & Bohara, 2008). Proceeding from the literature and observations made by the researcher while on site in Nepal, it is hypothesized that the tourists who have been to Himalayan protected areas prior to visiting Chitwan National Park, those who participated in trekking or who selected trekking as their most important activity, would be more likely to be willing to pay more at Chitwan National Park.

Pokhara is the base for the most popular trekking region in Nepal and the starting point for many of the country's trekking routes (DNPWC, 2008). Tourists' previous visits to Pokhara could have meant they visited a Himalayan protected area. Question 7 asks "What was the last location you stayed at or visited before coming to Chitwan National Park?" Mladenov et al. (2007) asked in their study of the Okavango Delta which other locations respondents had visited, which other countries respondents had visited and which other parks respondents had visited as part of their trip. Shultz et al. (1998) asks tourists which other parks they have previously visited. In these two CVM studies, respondents' previously visited location is hypothesized to have a significant effect on tourists' willingness to pay. In

this study, previous location is also hypothesized as one of the variables which could have an effect on respondents' willingness to pay at Chitwan National Park. If tourists had travelled around or visited Himalayan protected areas in Nepal, they might be willing to pay less than other tourists because they would have experienced the better managed protected areas in Nepal and therefore been able to compare the conservation and management standards of the two areas.

Table 21 illustrates whether respondents' previous location had an effect on their willingness to pay at Chitwan National Park. To follow the Chi-square test 5 cell rule, the willingness to pay categories Higher and Not Higher are used.

**Table 21: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) and Respondents Previous Location (N=163)**

<b>Categorized Willingness to Pay</b>	<b>Kathmandu</b>	<b>Pokhara</b>	<b>India</b>
<b>Higher</b>	36	58	23
<b>Not Higher</b>	11	24	10
<b>Total</b>	47	82	33
<b>Pearson Chi-Square = 0.644 p-value = 0.725</b>			

There is no significant relationship between respondents' willingness to pay and their previous location before visiting Chitwan National Park. Although both Shultz et al. (1998) and Mladenov et al. (2007) hypothesized this variable to have an effect on willingness to pay, neither study found previous location to be statistically significant.

Table 22 presents whether tourists who chose trekking as the most important activity to them has a significant effect on willingness to pay. Trekking is done in Himalayan protected areas in Nepal and therefore a similar hypothesis is assumed. Trekking tourists could be willing to pay less than other tourists because they would have experienced better managed protected areas in Nepal and therefore been able to compare the conservation and management standards of the Terai and Himalayan landscapes.

**Table 22: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) and Trekking as the Most Important Activity or Not (N=178)**

<b>Categorized Willingness to Pay</b>	<b>Trekking</b>	<b>Not Trekking</b>
<b>Lower</b>	6	2
<b>Higher</b>	58	70
<b>Same</b>	20	22
<b>Total</b>	84	94
<b>Pearson Chi-Square = 2.667 p-value = 0.264</b>		

Of respondents who considered trekking to be the most important activity in which they planned to participate in Nepal (N=58), 69% were willing to pay more for their visit to Chitwan National Park. Of the non-trekkers, 74% (N=70) were willing to pay more. Statistically there is no significant relationship between willingness to pay categorized responses and whether or not respondents selected trekking as their most important activity. Similarly, Barnes et al. (1999) in their study in Namibia asked tourists which main activities attracted them to visit the country and the park, but responses were not statistically significant when compared to willingness to pay.

Respondents participation in trekking compared to willingness to pay is presented in Table 23 for a similar hypothesis to Table 22, and Table 21.

**Table 23: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) and Whether or not Respondents Participated in Trekking while in Nepal (N = 186)**

<b>Categorized Willingness to Pay</b>	<b>Participated in Trekking</b>	<b>Did not Participate in Trekking</b>
<b>Lower</b>	8	0
<b>Higher</b>	103	30
<b>Same</b>	33	12
<b>Total</b>	144	42
<b>Pearson Chi-Square = 2.763 p-value = 0.251</b>		

Although there is no significant difference between those who participated in trekking and those who did not during their trips to Nepal, it is interesting to note that all of the respondents (4.3%) who answered that they thought the entrance fee at Chitwan National Park should be lowered did participate in trekking while in Nepal.

The three variables – previous location, participation in trekking and selection of trekking as their most important activity – had no significant relationship with visitor willingness to pay. As previously discussed this could further enhance the idea that tourists visiting the Chitwan National Park area may recognize the need for more funding around the park and that the need is so great that they are therefore willing to pay more regardless of their previous experiences or participation in trekking. Although the hypothesized variables of previous location, participation in trekking and selection of trekking as respondents’ most important activity do not affect willingness to pay, it was also surprising that respondents’ experience rating did not affect willingness to pay. It could be possible that the hypothesis of tourists previously travelling to Himalayan protected areas in Nepal, or previously participating or choosing trekking as their most important activity, could instead have a statistically significant effect on their experience rating. The variables of previous location, participation in trekking and selection of trekking as respondents’ most important activity are now compared to respondents’ experience rating to determine if they have a significant effect (Table 24, 25 and 26).

**Table 24: Respondents’ Experience Rating and their Previous Location (N = 169)**

<b>Experience Rating</b>	<b>Kathmandu</b>	<b>Pokhara</b>	<b>India</b>
<b>5 and Lower</b>	2	8	0
<b>6 and 7</b>	14	40	15
<b>8 and above</b>	30	37	22
<b>Total</b>	46	85	37
<b>Pearson Chi-Square = 9.148 p-value = 0.057</b>			

Although there is no statistically significant relationship between respondents’ experience rating and the previous location, it is close to being significant (p-value = 0.057). No

travelers arriving from India were disappointed in the experience they had at Chitwan National Park. Almost 60% (59.5%) of these tourists arriving from India rated their experience as an 8 or higher. In contrast, of those tourists coming from Pokhara, the trekking region, 43.5% rated their experience as an 8 or higher. An independent samples t-test confirms that the “8 and above” experience rating group differs significantly based on the previous location they visited (p-value = 0.001). Those coming from Pokhara were also the group with the highest percentage (9.4%) of respondents who rated their experience as a 5 or lower, but this grouping is not statistically significant.

In the results from the questionnaire there was a fourth group that was not included in this statistical test because they were the “Other” group. These respondents were arriving from a variety of locations and by including all the locations the boundaries of the minimum 5 cell Chi- square test were not met. Therefore, in this analysis, N is smaller because the “Other” group was excluded from the test. This group combined contained 10% of all tourists in the sample.

Table 25 presents whether tourists who chose trekking as their most important activity had significantly different experience ratings. Those who had previously been trekking in some of the Himalayan protected areas in Nepal, where a lot of the trekking in the country is done, may have been willing to pay less, or rated their experience lower because of a comparison to better management, conservation or community participation in the Himalayan protected areas (Heinen & Mehta, 1999; Nyaupane & Thapa, 2006; Koirala & Bohara, 2008).

**Table 25: Respondents’ Experience Rating and Trekking as the Most Important Activity or Not (N = 185)**

<b>Experience Rating</b>	<b>Trekking</b>	<b>Not trekking</b>
<b>5 and Lower</b>	7	6
<b>6 and 7</b>	38	35
<b>8 and above</b>	42	57
<b>Total</b>	87	98
<b>Pearson Chi-Square = 1.825 p-value = 0.401</b>		

The results shows that there is no significant relationship between respondents' experience rating and whether or not trekking was the most important activity to them.

Respondents' participation in trekking compared to their experience rating at Chitwan National Park is presented in Table 26.

**Table 26: Respondents' Experience Rating and whether or not Respondents Participated in Trekking while in Nepal (N = 193)**

<b>Experience Rating</b>	<b>Participated in Trekking</b>	<b>Did not participate in trekking</b>
<b>5 and Lower</b>	10	3
<b>6 and 7</b>	67	10
<b>8 and above</b>	75	28
<b>Total</b>	152	41
<b>Pearson Chi-Square = 5.336 p-value = 0.069</b>		

There is no significant relationship between respondents' experience rating and whether or not they participated in trekking. It is worth noting the percentages of Table 26. Of those who did participate in trekking, 44.1% rated their experience as 6 or 7, and 49.3% rated their experience 8 and above. We also see that 25% of non-trekkers rated their experience as a 6 or 7 and 68.3% rated their experience 8 or higher.

Besides gender and a variation on income variables which have previously been analyzed, both age and education level are background demographic characteristic variables which are hypothesized to have an effect on willingness to pay. Most of the CVM studies examined in the literature ask both these demographic indicators and test their statistical significance to willingness to pay responses (Shultz et al. 1998; Barnes et al., 1999; Walpole, et al. 2001; Lee & Han, 2002; Horton et al. 2003; Bandara & Tisdell 2004; Mladenov et al. 2007; Baral et al., 2008; Samdin, 2008).

Table 27 presents whether age of respondents has a significant effect on willingness to pay at Chitwan National Park. To follow the Chi-square test 5 cell rule, the willingness to pay categories Higher and Not Higher are used.

**Table 27: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) and Respondents Age (N=185)**

<b>Categorized Willingness to Pay</b>	<b>Respondents 29 and under</b>	<b>Respondents 30 to 49</b>	<b>Respondents 50 and above</b>
<b>Higher</b>	55	49	29
<b>Not Higher</b>	21	10	20
<b>Total</b>	76	59	49
<b>Pearson Chi-Square = 7.611 p-value = 0.022</b>			

There is a statistically significant relationship between age and respondents' categorized willingness to pay responses. Eighty three percent of respondents in the sample between the age of 30 and 49 were willing to pay more for their experience at Chitwan National Park. Seventy two percent of respondents 29 and younger were willing to pay more, and 58% of respondents 50 and older were willing to pay more. Using an independent samples t-test to test for significant difference between group results does not confirm that respondents' willingness to pay "Higher" or respondents willingness to pay "Not Higher" is significantly different between the age groupings. Lee and Han (2002) reported that age was a statistically significant variable for willingness to pay at the Teaan-Haeen National Park and that probability of willingness to pay is likely to be higher in younger people than older people (Lee & Han, 2002). Baral et al. (2008) conclude that respondents who were older, male, more educated, members of environmental groups and who expressed greater environmental concern were more likely to be willing to pay more. Although most studies tested age as a variable, in none of the other studies was found age to be statistically significant (Shultz et al. 1998; Barnes et al., 1999; Walpole, et al. 2001; Horton et al. 2003; Bandara & Tisdell 2004; Mladenov et al. 2007; Samdin, 2008).

Age was the only variable which had a statistically significant effect on tourists' willingness to pay at Chitwan National Park. It is possible that younger generations are more

environmentally informed and more conscious about conservation and generally willing and aware of making positive choices while travelling in developing countries.

Contrasting to results on the variable age, much of the literature found education levels to have a statistically significant effect on willingness to pay. Bandara and Tisdell (2004) and Horton et al. (2003) found positive associations with levels of education and willingness to pay. At Pukhansan National Park in Korea the higher the education level, the higher the probability of willingness to pay yes (Lee & Han, 2002) and in Kenya, Moran (1994) found that the probability of a no decreases as education levels rise. With the consistency of these findings, respondents' education levels are hypothesized to be statistically significant to respondents' willingness to pay at Chitwan National Park (Table 28). To follow the Chi-square test 5 cell rule, the willingness to pay categories Higher and Not Higher are used.

**Table 28: Categorized Frequency Distribution of Willingness to Pay (Higher, Lower, Same) and Respondents' Education Level (N = 180)**

<b>Categorized Willingness to Pay</b>	<b>High School</b>	<b>College/ Diploma</b>	<b>Undergraduate/ Bachelors</b>	<b>Masters/ PhD</b>
<b>Higher</b>	16	23	63	26
<b>Not Higher</b>	10	10	23	9
<b>Total</b>	26	33	86	35
<b>Pearson Chi-Square = 4.502</b>				
<b>p-value = 0.609</b>				

The results show that unlike much of the literature, there is no significant relationship between willingness to pay categorized responses and respondents' education levels. Although different from most CVM studies examined, this is similar to other recent findings from Nepal. Baral et al. (2008) show that education levels did not explain significant variations in willingness to pay at Annapurna.

Based on previous willingness to pay studies and the literature, it is surprising and not fully understood why so few of the explanatory variables, especially overall experience rating, previous location and the amount respondents had spent on recreation during the year had no significance effect on willingness to pay. It is possible that this may be the result of one

or more of the following factors: the need to sample a wider or more general population of visitors, that tourists visiting Chitwan National Park are not a stratified sample and that they may well be more similar than different in their choices, or that the respondents did not truthfully respond to the willingness to pay questions.

One of the limitations of the research was that the population sampled was over representative of European tourists and under representative of Asian tourists (Table 10 in Chapter Five). Some of the variables hypothesized to be statistically significant may well have been if these two populations had been proportionally represented. An over representation of European tourists is not unusual, Walpole et al. (2001) and Thomson (2007) found that the nationality breakdown of their samples were also slightly biased toward European respondents. The issue of respondents not responding truthfully is a problem associated with CVM. As discussed in Chapter Three respondents might just “feel bad” about giving a negative response or might provide the type of answers they feel the interviewer wants to hear, or answers that are thought to be socially correct, rather than their own honest feelings (Marshall & Rossman, 1998). Although respondents may not have been being untruthful on purpose, they may have fallen into one of these biases.

Another possible explanation for so many variables not being statistically significant could be that the market of tourists visiting Chitwan National Park is extremely undifferentiated. The analysis shows that age alone is the only variable which has a statistically significant relationship to willingness to pay (Table 27). The questionnaire was designed to capture a wide variation of tourists and instead visitors travelling to Chitwan National Park may already be a narrow segment of the tourist market in Nepal. Tourists visiting Chitwan National Park may be more like one another than that of a typical tourist market (Weaver, 2001; Tkaczynski, 2009).

Although many of the variables were not found to have a significant effect on willingness to pay this type of finding is not unusual in other CVM studies. Mladenov et al. (2007) found that only those who stayed in private lodges had a higher willingness to pay for preservation and none of the other variables were statistically significant when compared to willingness to pay. Shultz et al. (1998) had similar findings to these research results.

They were also surprised so few of the predicted variables had a significant effect on willingness to pay. In Lee and Han (2002) results from five national parks across the country had statistically significant variables associated with respondents' willingness to pay but the variables at each park were different. Gender was the only significant variable at Kayasan National Park, age was the only significant variable at Teaan-Haeon National Park, and education level was the only significant variable at Pukhansan National Park. Bandara and Tisdell (2004) found only two variables, income and education level, to have a positive and significant influence on respondents' willingness to pay for elephant preservation in Sri Lanka.

With so few of the variables analyzed in this section having statistically significant results, the following sections take a more descriptive approach to the analysis of the questionnaire results examining and discussing respondents' reasons for willingness to pay and perceptions of the Chitwan National Park area. Encouragingly, there is a strong willingness to pay higher entrance fees and with the following analysis of reasons for willingness to pay, tourists' relationships and environmental perceptions, these results could mean that there exists a potential to capture value and developing positive financial responses for the park.

## **6.5 Discussion of Respondent's Reasons for Willingness to Pay**

Just over half of the respondents (57%) who answered the willingness to pay question answered the willingness to pay follow up questions. In Baral et al. (2008) three-quarters of the respondents answered the willingness to pay follow-up question. A similar conclusion is made to the Annapurna study (Baral et al. 2008) in that the percentage of responses may be lower than the total willingness to pay responses because the survey was long and tourists were looking to finish the questionnaire and continue their trip when they were being asked the final discussion questions. Many of tourists who did respond gave a variety of positive and negative comments. The comments have been grouped into:

- positive comments (Table 29 ): reasons why respondents were willing to pay a higher entrance fee; and
- negative comments (Table 30); reasons why respondents were unwilling to pay a higher entry fee.

No prior classification was used to guide respondents’ responses. The willingness to pay follow-up comments were grouped by looking for common themes among the responses. Classification was done post hoc.

**Table 29: A Summary of Positive Responses to the Follow-up Willingness to pay Questions**

<b>Reasons why respondents were willing to pay for an increased entry fee</b>	<b>Percentage N = 52</b>
Conditional support: only if funds were judiciously used: “I would be happy to pay more knowing that it was going towards the park and wildlife conservation” “I would pay more if I knew where the money was going”	28.8%
Conditional support: only if re-entry was possible: “A higher fee is fine, but reentry/multi-day pass is necessary”	15.4%
The entrance fee is too low; if it were higher it could provide more money to improve management and conservation	11.5%
The price is low / paying more is fine	9.6%
Conditional support: only if tourism was better managed: “I would pay more if there was better tourist management,” “There needs to be a positive change to raise prices”	9.6%
The experience at Chitwan National Park is worth a higher price	5.8%
Excellent value here	5.8%
Entrance fees should be more similar to those of other big national parks: “2000 NPR like at Annapurna”	5.8%
“I came to see the park so would pay what the asking entry fee”	3.8%
I expect costs to increase over time	1.9%

Many of the positive comments were very encouraging and respondents thought they should be paying a higher price because the quality of their experience at Chitwan National Park was very good and because conservation of Chitwan National Park is important. Three of the ten most common reasons respondents were willing to pay more were based on conditions of support (Table 30). This is an important finding as the most common

condition of support was simply that respondents know where the money was going. This is consistent with some of the other CVM studies results. In Walpole et al. (2001) the largest proportion of respondents (35.7%) were willing to pay higher fees if revenues were used for the upkeep of the protected area and if information was made available on the way such revenue was used. Baral et al. (2008) reported visitors are willing to pay higher entrance fees if information was made available on how the revenues were being used for conservation and upkeep of the park. Ninety six percent of respondents in Nambia considered their trip to represent value for money and that the quality of their experience was good so they could pay more (Barnes et al., 1999).

**Table 30: A Summary of Negative Responses to the Follow-up Willingness to pay Question**

<b>Reasons why respondents were not willing to pay an increased entrance fee.</b>	<b>Percentage N = 32</b>
You get what you pay for, which is not very much; disappointed; experience is primitive	25.0%
Show the tourists where the money goes, like at Annapurna: "I have no idea what entrance fees are spent on" "More information is needed"	18.8%
The price is perfect, should not be higher	8.0%
Mass tourism makes the area undesirable: "No tourism organization here" "They are selling ecotourism, but is this sustainable?"	15.6%
The price is too high already; I cannot pay more	6.3%
On a group tour--I have no interest or knowledge of money and activity prices	2.7%
Fees do not go to the park; higher price would not help	3.1%
Price difference between Nepali and Foreign tourists is not fair	3.1%

The tourists sampled in the survey did not have some of the basic knowledge about Chitwan National Park and several asked if the entrance fees are used for conservation efforts. Respondents also asked how much of the entrance fee revenue goes to park management and if any of the money stayed local. There were many comments from tourists in the sample that they did not know what the present entrance fees were being used for, and if they had known, they would have been willing to contribute much more. As the results from Table 30 show, this is also one of the reasons respondents were unwilling

to state that they would pay more. Respondents also answered that they had no idea what entrance fees were currently being spent on, and therefore were not willing to pay more than the current entrance fee. Question 21 asked “Do you know what Chitwan National Park spends the collected fees on?” with a choice of “Yes” or “No.” Eighty eight percent answered “No” they did not know what Chitwan National Park spends the collected fees on. Almost 60% of tourists disagreed when asked if tourism at and around Chitwan National Park provided adequate information to visitors before and during their trip, but with 88% not knowing what entrance fees were spend on, 60% seems an low response. With the question “Does tourism at and around Chitwan National Park provide adequate information to visitors before and during visits,” asked before Question 20, respondents many not have considered what adequate information was, and this could be the reason for a lower percentage result than expected.

There is a major lack of knowledge from tourists travelling in the area on what entrance fees are used for. This is consistent with findings in Thomson’s (2007) research at the ACAP. Thomson’s study concluded that although foreign tourists acted in a relatively environmentally responsible manner whilst enjoying their time in the Annapurna region, they were not particularly aware of the work that ACAP undertook. Chitwan National Park does have conservation and management problems, as discussed in Chapter Two, but the park also has many successful community development programs in place, which deliver revenue from Chitwan National Park entrance fees into surrounding local communities (Lehmkuhl, 2000; Mueller-Boeker, 2000; Hjortso, 2006; Jones, 2007; Spiteri & Nepal, 2008b). Fifty percent of park revenue is designed for buffer zone development activities such as schools, roads, tree planting, drinking water, and zone management (DNPWC, 2010a).

Five different respondents from the sample referred to and asked specifically about the Minimum Impact Code (Bajracharaya, 2006) at the ACAP and questioned why Chitwan National Park did not have a similar program in place. It is clear from this sample of tourists that there is not enough information about the park getting to visitors in the Chitwan National Park area, and that an increase in marketing of the park and its programs could greatly benefit the park in a financial way.

In the negative comments most respondents made reference to the numbers of tourists who were around Sauraha and participating in tourist activities at Chitwan National Park. They said that there were too many tourists in the area and this made the experience less enjoyable. They also made reference to the lack of tourist development plans and organization in the area. There were also suggestions from some respondents that the Sauraha area was like “Disneyland.” This is obviously an exaggeration, but tourist agencies around the country and abroad are selling Chitwan National Park as a secluded jungle experience (Bhusal, 2007; Bindloss et al. 2009; Gurung, 2010; Chandni, 2010) and Sauraha is not fulfilling that kind of experience for some of the tourists who participated in the survey. This could mean that some tourists visiting Chitwan National Park will continue to be disappointed if the numbers of visitors to the area keeps increasing.

It was recognized in the literature review from Chapter Two that there was a difference between entrance fees at Himalayan protected areas and Terai protected areas. The higher price and multi-day access at Himalayan protected areas provided tourist with more access, even though they were expected to pay a higher price. Many respondents were in conditional support of a higher entrance fee at Chitwan National Park only if re-entry was possible. If entrance fees are raised, an evaluation of a change from single day entry to a multi-day entry might be considered.

## **6.6 Tourist Perceptions**

In addition to looking at tourists’ willingness to pay and their reasons for doing so, the questionnaire also investigated tourists’ knowledge of problems in the area and tourists’ awareness of the benefits they bring to the area.

When surveyed, respondents were asked to identify (Question 13) if they thought that visitors brought benefits to the Chitwan National Park region. Ten percent answered that visitors brought no benefits to the Chitwan National Park region, and 90% answered “Yes”, visitors brought benefits. Sixty seven percent recognized that tourists brought positive economic benefits, money and income to the region (Table 31). Tourists also commonly recognized that park conservation, conservation knowledge and employment in tourist

services were other benefits. These categories were grouped according to common themes among responses and had no prior classification to direct respondents' answers.

**Table 31: Benefits Identified by Tourists when Asked if they were Aware of Any Advantages Tourists bring to the Chitwan National Park Region**

<b>Benefits</b>	<b>Percentage N = 178</b>
Economic: Income/Money	67%
Money for park conservation	22%
Knowledge of the importance of park and wildlife protection and conservation	17%
Employment in tourism sector	15%
Locals learn about/Experience different cultures	8%
Local development	6%
Pride of own local area	6%
Better quality of life	4%
Military/Tourist presence stops poaching	4%
Education	3%
Money for breeding programs	3%

Respondents also were asked to identify (Question 14) any social, economic, political or environmental problems that they thought may be present at and around Chitwan National Park. Twenty seven percent of respondents in the research responded “No”, they could not identify any social, economic, political or environmental problems around Chitwan National Park. Seventy three percent answered “Yes”, citing a large variety of recognizable problems. Although 73% answered “Yes”, little awareness and common recognition of problems was demonstrated. Thomson (2007) reported similar findings in that tourists' awareness of the ACAP and problems in the local region were mostly unknown. Mladenova et al. (2007) asked tourists if they were concerned with environmental impacts in the Okavango Delta and Horton et al. (2003) asked the importance to respondent of protecting the areas in question but neither reported the findings in their results.

Litter, waste disposal and pollution were the most acknowledged problems, but only by 28% of the sample (Table 32). Most hotels in the area have a burning pit for waste and litter which is visible for tourists to see somewhere on the hotel property. This is probably the reason it is the most commonly recognized problem around the area. Litter can also be

seen in the park while hiking and along the banks of the Rapti River. While participating in a jungle safari, jungle hike, or similar activity tourists would have been accompanied by a guide. The guide would have likely explained the poaching problems, ecological and environmental problems, as well as other issues in the region and the park, yet there does not seem to be much acknowledgement of this in the respondents' answers. There was no consistent pattern in the tourists' replies, nor a high, or even moderate, awareness of the region's challenges. In the literature (Gurung, 2010; Republica, 2010a) poaching and the invasive weed *Mikania micrantha* are two of the recognized threats to conservation efforts at Chitwan National Park yet only 22% and 4% respectively knew or remembered these as problems in the Chitwan National Park region.

**Table 32: Identified Problems by Tourists when Asked if They Were Aware of Any Social, Environmental or Political Problems around the Chitwan National Park Region**

<b>Problems</b>	<b>Percentage N = 145</b>
Litter/Waste Disposal/Pollution	28%
Poaching	22%
Maoist protests/Political problems	21%
Inequality between tourists workers and agricultural workers	17%
Tourists disturb wildlife and ecology while inside Chitwan National Park	17%
Mass tourism	15%
Unsustainable resource use (water, food)	10%
Social problems	6%
Closure of resorts inside Chitwan National Park	5%
Poor healthcare	5%
Animal cruelty (elephants)	4%
Invasive species	4%
Children are kept from school to beg	3%
National corruption	3%
Loss of local culture/Tourists are changing the culture	3%
Population growth	3%

Other acknowledged problems not presented in the table because they were only recognized by one or two respondents included poverty, tourists being seen only as sources of money, locals littering, deforestation, flooding, resettlement, poor housing, animal/human conflicts, the caste system, migration into the area for tourist jobs, unemployment, poor hotel service, alcohol abuse, noise, illiteracy and poor wages.

## **6.7 Discussion of the Results**

Based on the objectives and results of this study it has been determined that many tourists are willing to pay a higher entrance fee at Chitwan National Park than they are currently being asked to pay. The evaluation of visitors' characteristics found that only age had a statistically significant effect on willingness to pay. The lack of statistically significant variables could be attributed to the similarities between respondents in the sample which was biased toward Europeans and those with strong English reading skills. Tourists to Chitwan National Park may also already represent a group with very narrow interests and therefore there exists less difference between respondents than expected. The potential to capture value from tourists visiting the Chitwan National Park area through changes in current entrance fees seems both positive and possible.

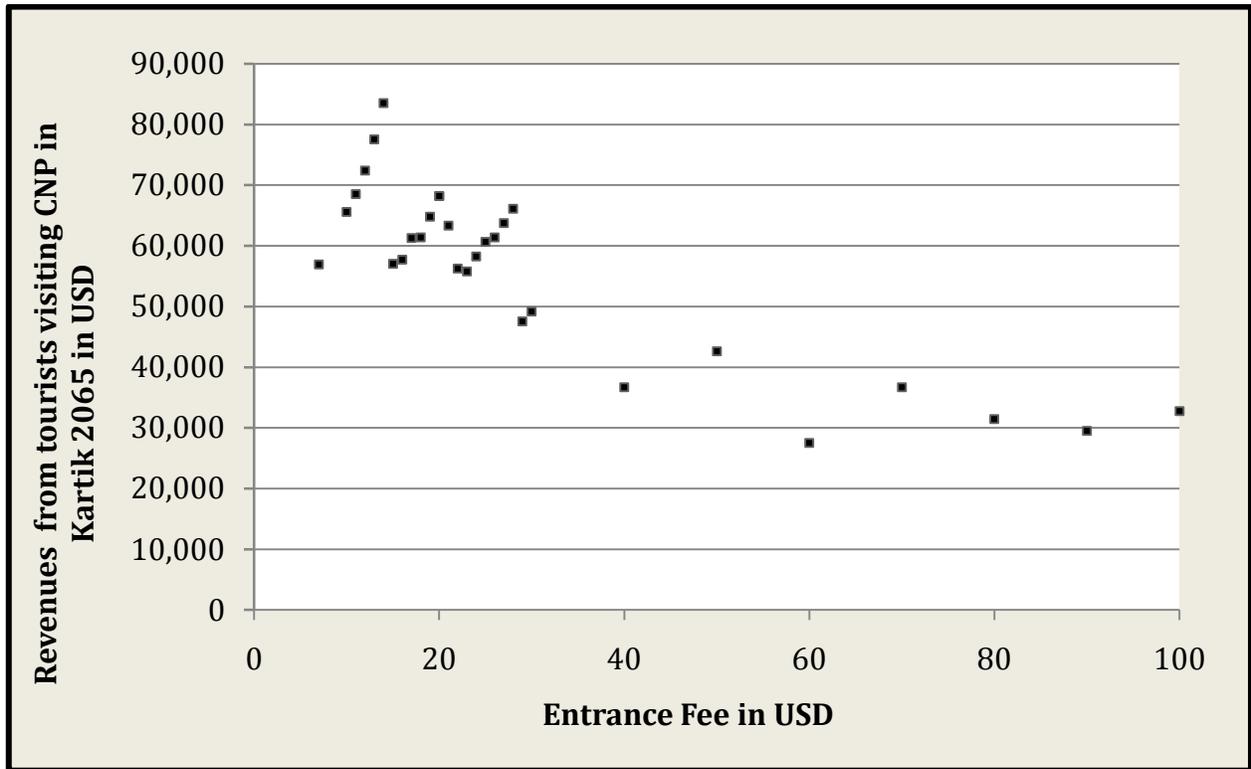
The contingent valuation study of visitors' willingness to pay for tourism experiences at Chitwan National Park has shown promising results for conservation funding at the park. The results determine that most visitors report that they are willing to pay substantially more than the current entrance fee. In an evaluation of changes to entrance fees at Chitwan National Park with results from the sample and the data of tourists visiting Chitwan National Park in Kartik 2065 (October/November 2008), Figure 17 shows that the highest possible revenue collection price point to be \$14 USD. This suggests, for example, that doubling the current entrance fee to \$14 USD (1000 NPR) for foreign tourists might be a simple solution to one aspect of the funding problem with minimal effect on foreign tourists' visitation patterns. The effect is considered minimal because doubling the entrance fee, even with a 30% decrease in foreign tourists visitation (as results suggest could be possible), could still mean a substantial increase in revenue for the park. With an

increase in the entrance fee to \$14 USD, 69.5% of the sample population included in the contingent valuation analysis could be unaffected and would still visit the park.

One could hypothesize, based on the study results, the consequences if the rise in revenue to \$14 USD had occurred during the Nepali year 2065. Of the 46,491 foreign tourists who entered the park, there could have been a possible 30% decrease in visitation numbers (the proportion not willing to accept an entrance fee of that amount) (Figure 18), meaning that 13,947 foreign tourists might not have come to Chitwan National Park that year. This would have meant that during the 2065 year there could have been 32,544 foreign tourists visiting Chitwan National Park. However, with the higher entrance fee of \$14 USD, 32,544 foreign tourists would have meant that the income that year from foreign tourist could have been \$455,616 USD. The actual revenue that year from 46,491 foreign tourists paying a \$7 USD entrance fee was \$325,437 USD. Even with the possible decrease of 30% of the foreign tourists to the area, using the data from the Nepali year 2065 (CBS, 2008), revenue to the park would have increase by more than \$130,179 USD. This is a very large potential increase in revenue for a protected area that had \$360,523 USD as the total amount of revenue earned that year.

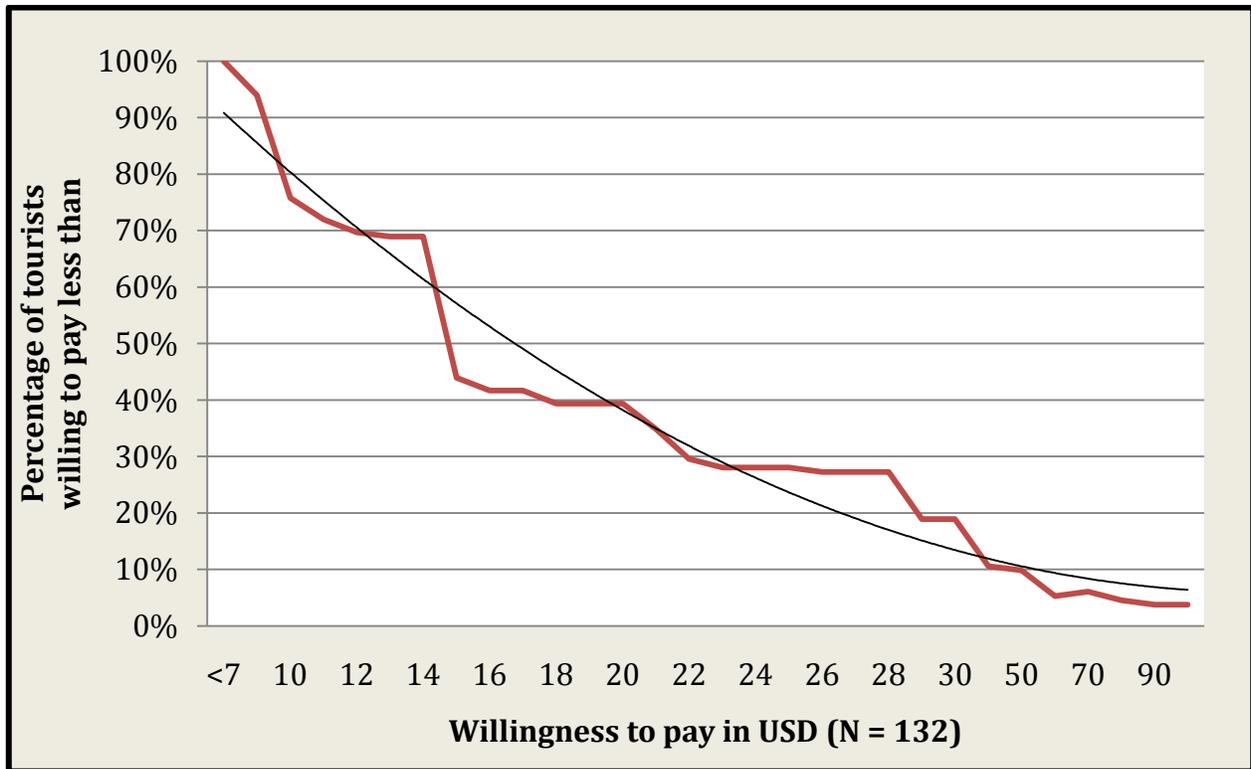
Based on the data, if the entrance fee was raised past \$14 USD the potential number of tourists who would no longer visit Chitwan National Park is high enough that revenues no longer increase. At \$7 USD, the current entrance price, collection from tourists during Kartik 2065 is \$56,917 USD. At \$14 USD, entrance fee revenues for tourists during Kartik 2065 are \$83,539, \$26,622 USD more (46.8% more) than at \$7 USD. At an entrance fee of \$22 USD, revenues dip below \$56,917 USD and a decrease in revenue occurs. The results from this research and the data from Kartik 2065 at Chitwan National Park point to a raise in entrance fee to \$14 USD as the most effective way of raising revenue. With this possibility it is worth remembering that many of the respondents did not know the actual entrance fee price into Chitwan National Park. The possible drop in tourist population ought not to be as large as predicted by this analysis because many tourists do not know what they are currently paying. This could mean that there is a group of tourists visiting Chitwan National Park who potentially would not know if prices went up or stayed the same and would continue to visit either way.

Based on the sample of tourists who responded to the willingness to pay question in monetary terms, Figure 18 shows the percentage potential drop in visitation numbers, as entrance fees rise. This graph could be useful for management at Chitwan National Park to visually see how tourist visitation numbers might be affected with each possible entrance fee option.



**Figure 17: Possible Revenue Collection Results from Tourists Data in Kartik 2065 with Changes to Entrance Fees Based on Results from the Sample Data**

It is worth mentioning again that the park keeps only 50% of total revenues collected from entrance fees (DNPWC, 2010a) and that the possible predicted increases in conservation funding and park revenues assumes that there is no change to this revenue splitting structure. The evaluation of the results assumes that 50% of the revenue collected from entrance fees continues to be returned to the park for management and working park costs, conservation funding and local community development, including buffer zone funding and education (UNESCO, 2003).



**Figure 18: Percentage Decrease of Sampled Tourists' Visitation Numbers in Comparison to Potential Entrance Fees in USD**

## 6.8 Chapter Conclusion

This chapter has presented results from the questionnaire administered to foreign tourists visiting Chitwan National Park in October and November of 2009. First, tourist entrance fee knowledge and support are presented. The mean willingness to pay of the sample and willingness to pay groupings are presented second. Results demonstrate that a higher entrance price for foreign tourists could provide a means of economically capturing value from tourists at Chitwan National Park. A number of the factors identified in the related literature as variables hypothesized to have an effect on tourists' willingness to pay are then statistically analyzed. A descriptive examination concerning tourists' reasons for their willingness to pay and their perceptions of Chitwan National Park ensues. The chapter ends with a discussion of the results, the best predicted entrance fee based on the sample and research, and a chapter conclusion. In the final chapter, Chapter Seven, the implications of the data presented above are summarized and recommendations are made.

## CHAPTER SEVEN

### Conclusions and Recommendations

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#### 7.1 Introduction

The principal aim of this research has been to gather a set of findings on tourists visiting Chitwan National Park and to determine whether managers can better capture value through tourists' willingness to pay. The findings in Chapter Five present a wide range of results from the questionnaires completed by tourists in October and November 2009 at Chitwan National Park. In this chapter, the overall implications of these findings for the management and conservation efforts of the national park and its surroundings are discussed. Recommendations for successful future planning are presented along with recommendations for future research. Tourists are willing to pay significantly higher prices than are currently being asked and these results may lead to positive conservation solutions for managers at Chitwan National Park and could suggest ways to better capture value from tourists.

#### 7.2 Protected Area Valuation

Protected areas can provide a diverse collection of biological goods and services to a diverse array of stakeholders. As presented in Chapter One, by targeting the customers (tourists) of protected areas, valuation could help protected area management promote protected area goods and services in a way that will strengthen the ability of the protected area to support the conservation of biodiversity and sustainable use of natural resources (Dixon & Sherman, 1990; de Groot, 1994; ICEM, 2003). Valuation can provide protected area managers with a structured approach to identifying real and potential customers, estimating appropriate prices for goods and services, and indicating ways of capturing that value (Pearce & Moran, 1994; Phillips, 1998).

Within Nepal, Chitwan National Park is the most visited protected area in the country receiving 86,433 tourists in 2007 (DNPWC, 2008), yet funding and conservation success

continues to be problematic (UNESCO, 2003). The process of valuation at Chitwan National Park can provide park managers with information about the value of the protected area's goods and services from the tourists' perspective. Tourists can be potential non-consumptive consumers and when asked, through a contingent valuation survey, may reveal their value for the benefits derived from Chitwan National Park through their willingness to pay for those benefits.

### **7.3 Evaluation of the Results and Recommendations**

The results of the fieldwork would suggest that if Chitwan National Park could improve its relationship with foreign tourists visiting the area and using tourists as a potential means of capturing value could contribute to solving current problems of underfunding. The current entry fee for foreign tourists is considerably below what most foreign tourist respondents stated they would be willing to pay. This is a positive finding as sources of funding continue to be problematic for effective management and conservation at Chitwan National Park (UNESCO, 2003). Tourists see Chitwan National Park as having more value than they are being asked to pay to enter the park.

The findings indicate that the economic value tourists hold for Chitwan National Park is not being fully captured with the current entrance fee. This could be enough justification for Chitwan National Park management to increase admission fees in order to improve conservation funding for the park. The results of this research could contribute to guidance on the pricing of Chitwan National Park entrance fees for foreign tourists.

The first recommendation, based on the research results, would be to consider increasing the entrance fee at Chitwan National Park. Raising the entrance fee could be a positive and feasible solution. As revenues rise, management could capture a proportion of the true value tourists hold for the park and more funding could be put towards conservation. The possible decrease in visitation to Chitwan National Park (predicted by the observation that 29% of the respondents who indicated they were willing to pay only the current entrance or less than the current entrance fee (Table 15)) might not be seen as negative. This

decrease could help to curb some of the undesirable impacts of over-visitation (UNESCO 2003; WWF Nepal, 2006a; DNPWC, 2008), which many respondents listed in problems around the area, such as litter, pollution, over use of resources, mass tourism, wildlife disturbance and conflicts, and other forms of natural resource damage (Table 32).

An increase in fees could provide considerable additional resources for funding at Chitwan National Park which could go towards biodiversity conservation, sustainable development and tourism management in the area. If the revenue splitting structure of 50% (DNPWC, 2010a) stays the same, an increase in entrance fees at Chitwan National Park to \$14 USD could provide the highest revenue returns and could generate considerably more income for the park. In addition, an increase in entrance fees could mean a more equal distribution of conservation benefits.

Current limits on conservation are due in part to a lack of funding. With more revenues being collected and more income going to park management, areas in severe need of more research and funding, such as the protection of the Asian one-horned rhinoceros from poachers and the research on controlling the invasive weed *Mikania micrantha* (Gurung, 2010), could be achieved. Further benefits could include the conservation of other endangered and wildlife species, scientific management of habitats for wildlife species, maintenance of buffer zones in and around the park for the sustainable management of forest resources, regulating ecotourism to improve socio-economic conditions of local communities and continuing to create awareness of the importance of wildlife conservation through conservation education (Jones, 2007). More park revenue could mean an increase in the amount of money going to buffer zone communities, which could lead to an increase in the distribution of the benefits. All of this could further enhance local support for biodiversity and conservation efforts at Chitwan National Park as discussed in the literature in Chapter Two.

By raising entrance fees, two goals could be achieved. The first and most important is that revenue for the park would increase, even with a lower number of visitors (assuming the current split of revenues between the park and the central government continues). Second, raising entrance fees could be used as a potential means to control tourist numbers,

helping decrease over-visitation, easing pressures on resources and improving conservation initiatives around the park by simply having less people visiting the area. With fewer visitors to the area, some of the negative comments from respondents suggesting that there were too many tourists in the area and that this made the experience at Chitwan National Park less enjoyable could lessen. However, there could be resistance from the local tourism market to increasing fees from the current levels if tourist numbers were to decrease. Hotels, local vendors, restaurants and tourist activity owners might feel (and find) their businesses threatened if tourist visitation numbers decreased.

It is commonly suggested in studies at protected areas in which a contingent valuation study has found tourists are willing to pay more than current entrance fees, that if park management is to increase entrance fees, the increases should occur progressively (Ahmad, 1993; Bateman, 1999; Loomis, 2000). At Chitwan National Park, park authorities could consider implementing a higher entrance fee through progressive fee increases until the price reaches a fee of \$14 USD (Figure 15 and 16). Another possible recommendation could be to implement the entrance fee increase at Chitwan National Park on a trial basis.

Another recommendation associated with entrance fee pricing at Chitwan National Park could be to introduce a multi-day pass. The possible change to a multi-day pass could be considered by park management. Many other national parks in Nepal work successfully with the use of a multi-day pass (DNPWC, 2008; DNPWC, 2010a). By giving tourists the opportunity to enter Chitwan National Park for more than one day, the multi-day pass could entice tourists to pay more whether or not their visitation duration patterns to the area change. Those tourists who were unaware of the entrance fee price would likely not be affected as they were probably unaware of the length of the entrance pass. However, those tourists who were aware of the price could be tempted by the multi-day pass to stay in the area longer which would benefit local business and increase tourism's economic impact.

Respondents' reasons as to why they were willing to pay higher entry fees also have management implications. The most common reason cited for supporting a higher entry fee was a desire to help improve conservation and environmental protection at Chitwan

National Park because conservation and environmental protection at Chitwan National Park is worthwhile. This paper suggests that some foreign tourists would be willing to pay a higher entrance fee at Chitwan National Park, provided they knew where this money was going. It is recommended that there be an increase in the distribution of information about Chitwan National Park and its management efforts to foreign tourists visiting the area. Visitor's knowledge of the park's conservation initiatives, the park's work with surrounding communities and their understanding of local environmental problems is poor (Table 33). Foreign tourists contribute 90% of park entrance fee revenues (Table 6). Promotion of Chitwan National Park's conservation and local activities could have the potential of enhancing both visitor experiences and their willingness to pay higher entry fees.

Possible ways to distribute information to tourists could be to develop a code of behavior, or a general information sheet on Chitwan National Park and the surrounding region. These tools could provide information and guide tourists in their conduct while visiting the area. Using an instrument like the Minimum Impact Code used at the ACAP, with which some tourists would be familiar, could be used as a model to provide more information. The production of a placemat or information sheet that hotels and restaurants could make available to tourists during meals, or put on menus, like in Annapurna, could be a possible solution. By further educating park guides about the programs and providing up to date information on conservation research in the park, information could be distributed to tourists. Tourists must travel with a guide inside the park, and if the guiding community is kept more informed and consulted, tourists could be made aware of programs and park initiatives as they participate in their chosen activity. Other possible recommendations for the dispersal of information about Chitwan National Park's conservation programs to tourists visiting the area could be through the promotion of these programs at hotels. If all conservation initiatives were announced publicly, tourists might be interested in learning current research information. Chitwan National Park does frequent Asian one-horned rhinoceros counts and by advertising these activities at hotels and restaurants, tourists could be interested in volunteering with the projects or donating to them. A marketing program in charge of disseminating information about Chitwan National Park to the

surrounding tourist community could go a long way in enhancing both visitor experience and their willingness to pay at Chitwan National Park.

#### **7.4 Future Research**

There is a need for further research to be done at Chitwan National Park in a variety of areas. Although not examined during this study, the impact on SAARC and domestic tourists' visitation patterns should be considered an important part of the fee increase decision making process. If entrance fees for foreign tourists were raised, should entrance fees for SAARC and domestic tourists be raised as well? With a possible 30% decrease in foreign tourist visitation numbers, filling in this foreign tourist decline with more SAARC or domestic tourists would not be considered a successful result from an over-visitation perspective. More SAARC and domestic tourist could lead to an increase in tourist numbers at and around the park, but the result would be lower revenues, as SAARC and domestic entrance prices are considerably lower than foreign tourist entrance prices.

If the same or similar questionnaire was administered to both SAARC and domestic tourists visiting the Chitwan National Park area, then a complete sample of all tourists visiting the Chitwan National Park area could be collected and analyzed in the same way the data of foreign tourists have been analyzed. The evaluation of an entrance fee change with data from all types of tourists (foreign, SAARC and domestic) would make for a more complete basis upon which a decision for a change in entrance fee in all tourist categories could be assessed.

Further research could include obtaining more foreign tourist surveys. By surveying more tourists, over a longer period and in different seasons, could provide a more accurate sample and be more representative of the population of tourists travelling to the park. A larger sample could lead to a more statistically reliable data set upon which the results and recommendations of this research are based.

The difference between management and conservation success at Himalayan protected areas and Terai protected areas, as described in Chapter Two, could lead to this type of

research being done at the other protected areas in the Terai. For example a similar study looking at Bardia National Park could be beneficial for both national park managers and local communities. Others could do similar projects and evaluate the other Terai parks, combining the results from all the research projects to come up with some Terai-wide decisions and management plans.

Evaluating the value of protected areas from the perspective of the tourist is a possible tool that could provide information and recommendations for management decision-making in other protected areas around the world. This research looks specifically at Nepal and Chitwan National Park, but using a similar research method, protected areas in other regions of Asia, or in African or South America could also be examined. For example, in the Nam Ha protected area in Northern Laos, there exists similar tourist and conservation conditions and the area could be worthy of a similar investigation (Hyakumura, 2010). Protected areas around the world have direct, indirect, option and existence values which, if captured, represent a chance for the development of sustainable businesses and for the generation of financial returns possibly through tourists' willingness to pay.

## **7.5 Conclusion**

Chitwan National Park, Nepal's first National Park, is a UNESCO World Heritage Site and is considered to be the best surviving example of the natural ecosystems of the lowland Terai region. It is also the most visited national park in the country. Those involved in the park's management face challenges of protection, conservation, addressing concerns of those living adjacent to the park and dealing with increased numbers of tourists. The research in this study found that tourists are willing to pay more for entrance into Chitwan National Park. With these results and following some of the recommendations, management at Chitwan National Park can better capture the value of the park's product by raising entrance prices to levels where the park fee is no longer less than the value tourists have for it. The results of this study point to the potential for management at Chitwan National Park to develop positive financial responses through appropriate tourism management while capturing the true value tourists hold for Chitwan National Park.

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## APPENDICES

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### Appendix A:

#### Questionnaire

### Tourists' Perceptions on Conservation and Management

#### *Chitwan National Park, Nepal*

We are investigating the potential role of tourists in the environmental conservation and management of Chitwan National Park. The project involves surveying tourists in the area to gather information on what they think about the environmental conservation efforts at Chitwan National Park, and their willingness-to-pay for components of their visit.

Your response is very important as it will help in exploring strategies to enhance ecotourism in the area, protect the environment and promote sustainable development. Your answers will be completely anonymous, confidential and the findings will never discuss individuals.

The questionnaire should take less than 20 minutes to complete.

There are no anticipated risks, compensation or other direct benefits to you as a participant in this study. Participation is voluntary. Thank you in advance as your responses will help us understand why tourists visit the park and to devise strategies for improved park conservation and management in the future.

#### *Section I: Purpose and Activities*

1. What is the **PRIMARY purpose** for your visit to Nepal? (*Check one only*)
  - Leisure/Vacation/Holiday
  - Meeting/Convention
  - Other:
  - Visiting Friends & Relatives
  - Business
2. How did you make your travel arrangements to Nepal?
  - Independently
  - Travel agent/company at home
  - Travel agent/company in Nepal
  - Other
3. Which of the following best describes your travel group? (*Check one only*)
  - Alone
  - Family
  - Friends
  - Friends & Family
  - Tour group
  - Other (please describe):

4. How many people are in your travel group including you? \_\_\_\_\_ (number of people)
5. Have you visited Chitwan National Park before?  
No \_\_\_ Yes \_\_\_

If 'Yes,' number of times \_\_\_\_\_ Year of last visit? \_\_\_\_\_

If 'No,' how did you learn about Chitwan National Park and what most made you decide to come? (*ex: guidebook, travel agency, magazines, friends, internet, etc.*):

6. How many days are you planning to be in and around the Chitwan National Park area? \_\_\_\_\_ days.
7. What was the last location you stayed at or visited before coming to Chitwan National Park? \_\_\_\_\_. Where are you going after your visit to Chitwan National Park? \_\_\_\_\_ (*List the city or location, ex: Kathmandu, or Langtang National Park*)
8. Please check each activity you participated in or intend to participate in during your trip to **Nepal**. (*Check all that apply*)

Activities		Activities	
___	Trekking/Hiking	___	Visiting ethnic museums
___	Mountaineering	___	Photography
___	Wildlife viewing or bird watching	___	Research/Study
___	Visiting cultural sites	___	Other _____

9. Which one of the above activities is the **MOST IMPORTANT** for you?

10. Please check each activity you participated in or intend to participate in during your trip to **Chitwan National Park**? (*Check all that apply*)

Activities		Activities	
___	Elephant Ride/ Safari	___	4WD Safari
___	Canoeing/ Boating Trip	___	Bird watching
___	Guided Jungle Walk	___	Research/Study
___	Visiting wildlife breeding project	___	Other _____

11. Which one of the above activities is the **MOST IMPORTANT** for you?

### ***Section II: Motivation***

12. This is a list of motives which could influence people to visit Chitwan National Park. Please rate on a scale of 1 to 5 in which 1 equals 'very unimportant' and 5 equals 'very important,' how much each motive describes **your** decision. (*Circle one for each item.*)

Your Motives	Very	Important	Neutral	Unimportant	Very
--------------	------	-----------	---------	-------------	------

	Important				Unimportant
Relaxation	5	4	3	2	1
To do things with other people	5	4	3	2	1
To get away from the everyday routine of life	5	4	3	2	1
Opportunities for solitude	5	4	3	2	1
To tell others about it at home	5	4	3	2	1
Help keep me in shape	5	4	3	2	1
Be in a natural setting	5	4	3	2	1
Opportunities to challenge myself	5	4	3	2	1
To see wildlife	5	4	3	2	1

### ***Section III: Perceptions of Chitwan National Park***

13. Do you think visitors bring **benefits** to the Chitwan National Park region?  
No\_\_ Yes\_\_

If **yes** please list any **benefits** you can think of

14. Are you aware of any social/economic/political/ecological **problems** in and around Chitwan National Park? No\_\_ Yes\_\_

If **yes** please list any **problems** you can think of

15. Based on your experience **AT Chitwan National Park**, please look at the following statements and rate your level of agreement using a scale of 1 to 5 where 1 = Strongly disagree, 3 = Neutral, and 5 = Strongly agree. (*Circle **one** number for each statement.*)

<b>The tourism at and around Chitwan National Park -</b>	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Minimizes negative impacts on the environment.	5	4	3	2	1
Minimizes negative impacts on local people.	5	4	3	2	1
Increases the awareness of the area's natural and cultural systems.	5	4	3	2	1
Contributes to the conservation and management of legally protected areas.	5	4	3	2	1
Directs economic and other benefits to local people.	5	4	3	2	1
Promotes participation and empowerment of local people.	5	4	3	2	1

Provides adequate information to visitors before and during visits.	5	4	3	2	1
Satisfies visitors' expectation towards successful ecotourism project.	5	4	3	2	1

**Section IV: Attitudes towards conservation and ecotourism**

16. Visitors hold different opinions and concerns about ecotourism, protected area management and community-based conservation. Please look at the following statements and rate your level of agreement using a scale of 1 to 5 (*same as above*) where 1 = Strongly disagree, 3 = Neutral, and 5 = Strongly agree. (*Circle one number for each statement.*)

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I am always concerned about environmental issues.	5	4	3	2	1
I think it is rational to ask local people to go without the use of some resources, so that they may be used for tourism instead.	5	4	3	2	1
I will not take showers if water is heated by firewood.	5	4	3	2	1
I support regulations for ecotourism activities that require compliance with environmentally friendly behaviors.	5	4	3	2	1
I prefer to travel in natural areas in a group to minimize impacts.	5	4	3	2	1
I always abide by a code of ecotourism ethics even if it results in hardship to me.	5	4	3	2	1
I think littering (solid waste) is a problem in Chitwan National Park.	5	4	3	2	1

**Section V: Willingness to pay**

17. On average, how much have you been spending in **A DAY** around the Chitwan National Park area for accommodation, meals, trips, souvenir purchases, etc.? (*\$US if possible*).

18. Do you know the cost of the park entrance fee at Chitwan National Park?  
 No \_\_\_ Yes \_\_\_ Cost \_\_\_

If **yes**, how do you consider the price of the park fee? (*Circle one*)

Too Much	Acceptable	Too Little	Should <b>not</b> have to pay
----------	------------	------------	-------------------------------

Please explain your answer:

19. How did your park entrance fee get paid?

- By me at the gate
- Through my travel group
- Other :

20. Do you know what Chitwan National Park management spends the collected fees on? No\_\_\_\_\_ Yes\_\_\_\_\_

If **yes** please list any you can think of:

***Section VI: Conclusion and Background information***

21. On a scale of 1 to 10, with 10 being a perfect trip, how would you rate your overall experience during this trip to Chitwan National Park? (*Circle **one** only*)

Very Negative Experience				Average Experience			Perfect Experience		
1	2	3	4	5	6	7	8	9	10

22. What is your age? \_\_\_\_\_

23. What is your gender? Male \_\_\_\_\_ Female \_\_\_\_\_

24. What is your nationality? \_\_\_\_\_

25. What is your highest level of education? \_\_\_\_\_

26. What best describes your employment status? \_\_\_\_\_

27. How much have **you** spent on recreation (at home and away) this year? (*Check **one** only*)

- Less than \$ 500 US
- \$ 500 - \$ 2,000 US
- \$ 2,000 - \$ 5,000 US
- \$ 5,000 - \$ 10,000 US
- More than \$ 10,000 US

28. Are you a member of environmental, conservation or wildlife organizations? Yes \_\_\_\_\_ No \_\_\_\_\_. If 'Yes' please name:

THAT COMPLETES THE QUESTIONNAIRE. THANK YOU VERY MUCH FOR YOUR COOPERATION. ENJOY YOUR TRIP!!!

----- STOP -----

Please return questionnaire to researcher

-----

***Section VII: Willingness-to-pay Personal Interview***

Would you be willing to pay \$ \_\_\_\_ US for your experience here?

What are the most important reasons that influenced your above decision?

Why not higher?

Why not lower?

## Information Sheet

### **Tourist-conservation Relationships in the Management of Chitwan National Park, Nepal**

Location: Sauraha, Chitwan District, Narayani, Nepal

*Information Sheet for Ryerson University Thesis Research*

We are investigating the potential role of tourists in the environmental conservation and management of Chitwan National Park. The project involves surveying tourists in the area to gather information on what they think about the environmental conservation efforts at Chitwan National Park, and their willingness-to-pay for components of their visit.

Your response is very important as it will help in exploring strategies to enhance ecotourism in the area, protect the environment and promote sustainable development. Your answers will be completely anonymous, confidential and the findings will never discuss individuals. All data will be securely stored with the researcher until the end of the collection period, and will then be entered into a secure digital format, with access to the original data strictly limited. The researcher, Ms. Cook and the supervising professor, Dr. Bardecki, will have access to the data and will monitor and evaluate further use and dissemination.

There are no anticipated risks, compensation or other direct benefits to you as a participant in this study. Participation is voluntary. You have the choice to opt out of any specific questions without consequence, or to stop at any time. Thank you in advance as your responses will help us understand why tourists visit the park and to devise strategies for improved park conservation and management in the future.

Estimated Time: 20 minutes

Contacts:

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## Appendix B:

### Responses to the Questionnaire: Tourists' Perceptions on Conservation and Management at Chitwan National Park, Nepal

#### Section 1: Purpose and Activities

1. What is the PRIMARY purpose for your visit to Nepal? (N = 203)
  1. Leisure/Vacation/Holiday (173)
  2. Visiting Friends & Relatives (3)
  3. Meeting/Convention (1)
  4. Business (5)
  5. Trekking (14)
  6. Volunteering (4)
  7. Other (3)
  
2. How did you make your travel arrangements to Nepal? (N = 203)
  1. Independently (101)
  2. Travel agent/company at home (77)
  3. Travel agent/company in Nepal (19)
  4. Other (6)
  
3. Which of the following best describes your travel group? (N = 202)
  1. Alone (28)
  2. Family (32)
  3. Friends (51)
  4. Friends & Family (8)
  5. Tour group (56)
  6. Couple/Partner (22)
  7. Other (7)
  
4. How many people are in your travel group including you? (N = 202)

0 = 3	6 = 3	14 = 2
1 = 22	8 = 1	15 = 6
2 = 73	10 = 19	20 = 14
3 = 20	11 = 8	21 = 1
4 = 17	12 = 1	22 = 1
5 = 6	13 = 3	23 = 2

  - Mean = 5.8 people
  - Median = 3 people

5. Have you visited Chitwan National Park before? (**N = 203**)  
 No = **185**  
 Yes = **18**
- a) If 'Yes,' (**N = 16**)
- Number of time visited (**Range between 2 and 20**)
  - Year of last visit? (**Range between 1989 - 2009**)
- b) If 'No,' how did you learn about Chitwan National Park and what most made you decide to come? (**N = 175**)
1. Guidebook/Lonely Planet (**94**)
  2. Friends (**27**)
  3. On travel group tour (**32**)
  4. Internet (**3**)
  5. Travel Agency (**10**)
  6. Family (**2**)
  7. Other (**7**)
6. How many days are you planning to be in and around the Chitwan National Park area? (**N = 203**)
- |               |               |                |
|---------------|---------------|----------------|
| 1 = <b>0</b>  | 5 = <b>25</b> | 56 = <b>1</b>  |
| 2 = <b>29</b> | 6 = <b>7</b>  | 70 = <b>1</b>  |
| 3 = <b>89</b> | 7 = <b>2</b>  | 90 = <b>1</b>  |
| 4 = <b>46</b> | 30 = <b>1</b> | 150 = <b>1</b> |
- **Mean (5.3)**
  - **Mean adjusted for outliers (i.e., those  $\geq 30$  Days) (3.5)**
  - **Median (3)**
7. a) What was the last location you stayed at or visited before coming to Chitwan National Park? (**N = 201**)
1. Kathmandu (**47**)
  2. Pokhara (**92**)
  3. India (**37**)
  4. Other (**25**)
- b) Where are you going after your visit to Chitwan National Park? (**N = 194**)
1. Kathmandu (**107**)
  2. Pokhara (**49**)
  3. India (**16**)
  4. Other (**22**)
8. Each activity you participated in or intend to participate in during your trip to Nepal.

**Respondents selected all responses that fit with their situation therefore responses are reported in percentage.**

1. Trekking/ Hiking **(78.3%)**
2. Mountaineering **(7.4%)**
3. Wildlife viewing and bird watching **(87.2%)**
4. Visiting cultural sites **(87.2%)**
5. Visiting ethnic museums **(30.5%)**
6. Photography **(58.1%)**
7. Research/ Study **(4.4%)**
8. Cultural **(9%)**
9. Volunteer **(4%)**
10. Other **(16.2%)**

9. Most Important Activity **(N = 194)**

1. Trekking/ Hiking **(91)**
2. Mountaineering **(1)**
3. Wildlife viewing and bird watching **(29)**
4. Visiting cultural sites **(11)**
5. Visiting ethnic museums **(1)**
6. Photography **(8)**
7. Research/ Study **(3)**
8. Cultural **(19)**
9. Volunteer **(8)**
10. Other **(23)**

10. Each activity you participated in or intend to participate in during your trip to Chitwan National Park

**Respondents selected all responses that fit with their situation therefore responses are reported in percentage.**

1. Elephant Ride/Safari **(91.1%)**
2. Canoeing/Boat trip **(65.5%)**
3. Guided Jungle Walk **(78.8%)**
4. Visiting Wildlife breeding projects **(66.5%)**
5. 4WD Safari **(25.1%)**
6. Bird watching **(25.1%)**
7. Research/Study **(1.4%)**
8. Volunteer **(0.5%)**
9. Elephants/Elephant Bathing **(4.4%)**
10. Other **(9.8%)**

11. Most Important Activity **(N = 192)**

1. Elephant Ride/Safari **(82)**
2. Canoeing/ Boat trip **(7)**
3. Guided Jungle Walk **(52)**
4. Visiting Wildlife breeding projects **(2)**
5. 4WD Safari **(0)**

6. Bird watching **(5)**
7. Research/ Study **(1)**
8. Volunteer **(1)**
9. Elephants/ Elephant Bathing **(18)**
10. Other **(24)**

### Section 2: Motivation

12. List of motives which could influence people to visit Chitwan National Park

Your Motives	Very Important	Important	Neutral	Unimportant	Very Unimportant
Relaxation <b>(N = 199)</b>	5 <b>(52)</b>	4 <b>(84)</b>	3 <b>(43)</b>	2 <b>(12)</b>	1 <b>(8)</b>
To do things with other people <b>(N = 199)</b>	5 <b>(20)</b>	4 <b>(53)</b>	3 <b>(70)</b>	2 <b>(36)</b>	1 <b>(20)</b>
To get away from the everyday routine of life <b>(N = 198)</b>	5 <b>(56)</b>	4 <b>(95)</b>	3 <b>(33)</b>	2 <b>(7)</b>	1 <b>(7)</b>
Opportunities for solitude <b>(N = 193)</b>	5 <b>(14)</b>	4 <b>(37)</b>	3 <b>(75)</b>	2 <b>(46)</b>	1 <b>(21)</b>
To tell others about it at home <b>(N = 197)</b>	5 <b>(13)</b>	4 <b>(45)</b>	3 <b>(59)</b>	2 <b>(44)</b>	1 <b>(36)</b>
Help keep me in shape <b>(N = 192)</b>	5 <b>(3)</b>	4 <b>(18)</b>	3 <b>(63)</b>	2 <b>(55)</b>	1 <b>(53)</b>
Be in a natural setting <b>(N = 199)</b>	5 <b>(92)</b>	4 <b>(85)</b>	3 <b>(15)</b>	2 <b>(3)</b>	1 <b>(4)</b>
Opportunities to challenge myself <b>(N = 199)</b>	5 <b>(22)</b>	4 <b>(51)</b>	3 <b>(68)</b>	2 <b>(31)</b>	1 <b>(27)</b>
To see wildlife <b>(N = 203)</b>	5 <b>(130)</b>	4 <b>(58)</b>	3 <b>(12)</b>	2 <b>(2)</b>	1 <b>(1)</b>

### Section 3: Perceptions of Chitwan National Park

13. Do visitors bring benefits? **(N = 198)**

1. No **(20)**
2. Yes **(178)**

14. Do visitors bring problems? **(N = 199)**

1. No **(54)**
2. Yes **(145)**

15. Level of Agreement based on your experience at Chitwan National Park:

<b>The tourism at and around Chitwan National Park –</b>	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Minimizes negative impacts on the environment. <b>(N = 193)</b>	5 <b>(17)</b>	4 <b>(43)</b>	3 <b>(65)</b>	2 <b>(55)</b>	1 <b>(13)</b>
Minimizes negative impacts on local people. <b>(N = 191)</b>	5 <b>(13)</b>	4 <b>(42)</b>	3 <b>(85)</b>	2 <b>(48)</b>	1 <b>(3)</b>
Increases the awareness of the area's natural and cultural systems. <b>(N = 186)</b>	5 <b>(38)</b>	4 <b>(108)</b>	3 <b>(25)</b>	2 <b>(15)</b>	1 <b>(0)</b>
Contributes to the conservation and management of legally protected areas. <b>(N = 189)</b>	5 <b>(38)</b>	4 <b>(107)</b>	3 <b>(33)</b>	2 <b>(7)</b>	1 <b>(4)</b>
Directs economic and other benefits to local people. <b>(N = 188)</b>	5 <b>(47)</b>	4 <b>(103)</b>	3 <b>(27)</b>	2 <b>(11)</b>	1 <b>(0)</b>
Promotes participation and empowerment of local people. <b>(N = 188)</b>	5 <b>(29)</b>	4 <b>(102)</b>	3 <b>(46)</b>	2 <b>(11)</b>	1 <b>(0)</b>
Provides adequate information to visitors before and during visits. <b>(N = 189)</b>	5 <b>(19)</b>	4 <b>(66)</b>	3 <b>(68)</b>	2 <b>(27)</b>	1 <b>(9)</b>
Satisfies visitors' expectation towards successful ecotourism project. <b>(N = 188)</b>	5 <b>(16)</b>	4 <b>(61)</b>	3 <b>(79)</b>	2 <b>(30)</b>	1 <b>(2)</b>

#### Section 4: Attitudes towards conservation and ecotourism

16. Level of agreement with the following statements:

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I am always concerned about environmental issues. <b>(N = 193)</b>	5 <b>(58)</b>	4 <b>(102)</b>	3 <b>(29)</b>	2 <b>(4)</b>	1 <b>(0)</b>
I think it is rational to ask local people to go without the use of some resources, so that they may be used for tourism instead. <b>(N = 186)</b>	5 <b>(9)</b>	4 <b>(23)</b>	3 <b>(46)</b>	2 <b>(57)</b>	1 <b>(51)</b>
I will not take showers if water is heated by firewood. <b>(N = 191)</b>	5 <b>(26)</b>	4 <b>(38)</b>	3 <b>(61)</b>	2 <b>(49)</b>	1 <b>(17)</b>
I support regulations for ecotourism activities that require compliance with environmentally friendly behaviors. <b>(N = 191)</b>	5 <b>(95)</b>	4 <b>(78)</b>	3 <b>(18)</b>	2 <b>(0)</b>	1 <b>(0)</b>
I prefer to travel in natural areas	5 <b>(30)</b>	4 <b>(62)</b>	3 <b>(60)</b>	2 <b>(27)</b>	1 <b>(6)</b>

in a group to minimize impacts. (N = 185)					
I always abide by a code of ecotourism ethics even if it results in hardship to me. (N = 186)	5 (34)	4 (88)	3 (52)	2 (11)	1 (1)
I think littering (solid waste) is a problem in Chitwan National Park. (N = 192)	5 (48)	4 (70)	3 (47)	2 (26)	1 (1)

### Section 5: Willingness to Pay

17. How much have you been spending on average per day

1. a) = \$US (N = 122)  
**Mean = \$ 32.17 US**

2. b) = \$NPR (N = 26)  
**Mean = 1569.23 NPR**

18. Do you know the cost of the park entrance fee? (N = 202)

1. No = (77)  
2. Yes = (125)

If 'Yes,' (N = 123)

1. Too much (2)  
2. Acceptable (99)  
3. Too little (22)  
4. Should not have to pay (0)

19. How did your park entrance fee get paid? (N = 194)

1. By me at the gate (20)  
2. Through my travel group (123)  
3. By my hotel/package (44)  
4. Other (6)

20. Do you know what Chitwan National Park spends the collected fees on? (N = 196)

1. No = (173)  
2. Yes = (23)

### Section 6: Conclusion and Background Information

21. How would you rate your overall experience? (N = 193)

Very Negative Experience				Average Experience			Perfect Experience		
1 (0)	2 (0)	3 (1)	4 (1)	5 (11)	6 (26)	7 (51)	8 (69)	9 (21)	10 (13)

22. Age (N = 202)

Mean = 38.2

Median = 35

23. Gender

1. Male = (96)

2. Female = (107)

24. What is your nationality?

	Count of Nationality
<b>Africa</b>	<b>1</b>
South Africa	1
<b>Asia</b>	<b>5</b>
China	2
Singapore	2
Taiwan	1
<b>Europe</b>	<b>153</b>
Austria	2
Belgium	3
Czech Republic	4
France	8
Germany	32
Ireland	4
Italy	3
Netherlands	35
Norway	1
Slovakia	1
Spain	9
Sweden	1
Switzerland	5
United Kingdom	45
<b>North America</b>	<b>27</b>
Canada	15
United States	12
<b>Oceania</b>	<b>15</b>
Australia	13

New Zealand	2
<b>South America</b>	<b>2</b>
Venezuela	2
<b>(blank)</b>	
<b>Grand Total</b>	<b>203</b>

25. What is your highest level of education? **(N = 194)**
1. High School **(27)**
  2. College/ Diploma **(36)**
  3. Undergraduate/ Bachelors **(93)**
  4. Masters/PhD **(38)**
26. What best describes your employment status? **(N = 197)**
1. Employed **(97)**
  2. Part time **(9)**
  3. Retired **(15)**
  4. Travel leave **(16)**
  5. Unemployed **(38)**
  6. Student **(20)**
  7. Other **(2)**
27. How much have you spent on recreation (at home and away) this year? **(N = 184)**
1. Less than \$500 US **(6)**
  2. \$ 500 - \$ 2,000 US **(21)**
  3. \$ 2,000 - \$ 5,000 US **(69)**
  4. \$ 5,000 - \$ 10,000 US **(54)**
  5. More than \$ 10,000 US **(34)**
28. Are you a member of an environmental, conservation or wildlife organization?  
**(N = 193)**
1. No = **(143)**
  2. Yes = **(50)**
- 29a. Would you be willing to pay more for your experience here? **(N = 174)**
1. No = **(30)**
  2. Yes = **(132)**
  3. Unsure = **(12)**
- If 'Yes,' how much? **(N = 124)**
- Mean = 21.94**
- Median = 14**

29b. (Question 30 combined with Question 19) Would you be willing to pay a “higher” price for the park entrance fee, a “lower” price, the “same” price. **(N = 186)**

- 0 = Lower : < \$ 7 US **(8)**
- 1 = Higher : > \$ 7 US **(133)**
- 2 = Same: \$ 7 US **(45)**

## Appendix C

Independent T-tests determining whether there are statistically significant differences between respondents who did answer the willingness to pay question with a monetary response and respondents who did not answer the willingness to pay question with a monetary response. Testing the variables of age, gender, amount spent on recreation, type of travel group, trekking, previous location visited, education level and experience rating.

<b>Experience Rating</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Respondents who did answer the willingness to pay question with a monetary response</b>	119	7.59	1.29
<b>Respondents who did not answer the willingness to pay question with a monetary response</b>	74	7.34	1.26
<b>t = 1.316 Sig. = 0.190</b>			

<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Respondents who did answer the willingness to pay question with a monetary response</b>	124	1.52	0.501
<b>Respondents who did not answer the willingness to pay question with a monetary response</b>	79	1.53	0.502
<b>t = -0.103 Sig. = 0.918</b>			

<b>Amount Spent on Recreation</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Respondents who did answer the willingness to pay question with a monetary response</b>	112	3.38	1.02
<b>Respondents who did not answer the willingness to pay question with a monetary response</b>	72	3.64	1.01
<b>t = -1.656 Sig. = 0.099</b>			

Type of Travel Group	N	Mean	Standard Deviation
Respondents who did answer the willingness to pay question with a monetary response	124	1.61	0.72
Respondents who did not answer the willingness to pay question with a monetary response	79	1.72	0.85
<b>t = -0.979</b> <b>Sig. = 0.329</b>			

Trekking: Most Important	N	Mean	Standard Deviation
Respondents who did answer the willingness to pay question with a monetary response	117	3.78	3.42
Respondents who did not answer the willingness to pay question with a monetary response	77	4.03	3.40
<b>t = -0.495</b> <b>Sig. = 0.621</b>			

Trekking: Participation	N	Mean	Standard Deviation
Respondents who did answer the willingness to pay question with a monetary response	124	1.52	1.20
Respondents who did not answer the willingness to pay question with a monetary response	79	1.49	0.87
<b>t = 0.358</b> <b>Sig. = 0.702</b>			

Previous Location Visited	N	Mean	Standard Deviation
Respondents who did answer the willingness to pay question with a monetary response	123	2.19	0.94
Respondents who did not answer the willingness to pay question with a monetary response	78	2.22	0.93
<b>t = -0.227</b> <b>Sig. = 0.820</b>			

<b>Age</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Respondents who did answer the willingness to pay question with a monetary response</b>	124	37.09	14.01
<b>Respondents who did not answer the willingness to pay question with a monetary response</b>	78	39.91	14.35
<b>t = -1.377 Sig. = 0.170</b>			

<b>Education Level</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Respondents who did answer the willingness to pay question with a monetary response</b>	119	2.86	0.99
<b>Respondents who did not answer the willingness to pay question with a monetary response</b>	75	2.60	0.96
<b>t = 1.831 Sig. = 0.069</b>			