At the Intersection of People, Politics, and Protected Areas: A Mixed Methods Case Study on the Human Dimensions of Conservation in the Buffer Zone of Chitwan National Park, Nepal

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Protected areas impinge on the livelihoods of people, especially in the Global South. In Nepal, a constellation of conservation initiatives including, and tangential to, Chitwan National Park (CNP) have a polarizing impact on the human population living in its periphery. In this area, the human dimensions of conservation (HDC) are entangled with and shaped by the socio-cultural context of Nepal—a rigidly hierarchical society that systematically marginalizes people based on caste, gender, and economic status. This mixed methods case study examined the HDC in the periphery of CNP. A participatory action research project explored marginalized people's experiences of conservation. A survey analyzed broader trends in the HDC, elucidating a relationship between a perceived negative impact of conservation and education, occupation, and poverty. Drawing from postcolonial theorists—Said, Wainwright, and Spivak—I investigated the role of conservation in the (re)production of discrimination in Nepal. If the inequities engendered by conservation in the periphery of CNP are to be addressed, HDC researchers and conservationists must abandon all pretense of being apolitical, and the marginalized people currently excluded by the conservation discourse must be meaningfully included.

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Dedication

This thesis is dedicated to all who participated in the study. Without your thoughtfulness and trust in me this wouldn't be what it is.

Table of Contents

List of Figures xi
List of Tables xii
List of Illustrations xiii
List of Abbreviations xiv
Chapter 1: Introduction....1
1.1 The Research Problem....1
1.2 Purpose of Study....4
1.2.1 Qualitative purpose of study....5
1.2.1.1 Rationale....6
1.2.1.2 Description....6
1.2.2 Quantitative purpose of study....7
1.2.2.1 Rationale....7
1.2.2.2 Description....8
1.3 Research Questions....8
1.3.1 Mixed Method Research questions....8
1.3.2 Qualitative photovoice research questions....9
1.3.3 Quantitative survey research questions....9
1.4 Ethical Considerations....9
1.5 Research Subject Position....10
1.6 Organization of Thesis....11
2. Literature Review....12
2.1 Discrimination in Nepal....12
2.1.1 Background....13
2.1.2 The caste system....14
2.2.3 Economic and human development indicators....17
2.2.4 Symptoms of discrimination....18
2.2.5 Modes of discrimination....20
2.2.5.1 Gender-based discrimination....21
2.2.6 Intersectionality....23
2.2.7 Conclusion....24
2.3 Human Dimensions of Conservation....25
2.3.1 First phase of conservation: The ecological imperative....27
2.3.2 Second phase of conservation: The human dimension....29
2.3.3 Third phase of conservation: The "win-win" scenario....31
2.3.4 Fourth phase of conservation: The backlash....33
2.3.5 Fifth phase of conservation: Mainstreaming the poverty debate....33
2.3.5.1 Segue to the politics of knowledge....34
2.4 The Politics of Knowledge....35
2.4.1 Colonialism....35

2.4.2 Imperialism and neo-colonialism *36*
2.4.3 Theory *37*
2.4.4 Putting the pieces back together: Postcolonial theory *38*
2.4.5 Edward Said and Orientalism *39*
2.4.6 Joel Wainwright: Looking ourselves in the mirror *42*
2.4.7 Gayatri Chakravorty Spivak: The subaltern cannot speak *43*
2.4.8 Postcolonial theory and Nepal *46*
2.4.9 Reflections *48*
3. Research Setting **49**
3.1 Climate **53**
3.1.1 Biological diversity *53*
3.1.2 Agriculture *54*
3.2 Land-Use Competition **54**
3.3 Agricultural-based Livelihoods, Poverty, and Marginalization **55**
3.4 Chitwan National Park **56**
3.4.1 Governance *57*
3.5 CNP's Social Impacts **58**
3.5.1 Natural Resource Restrictions *59*
3.5.2 Crop damage *61*
3.5.3 Fatal people-wildlife interactions *62*
3.6 Tourism **63**
3.7 The Buffer Zone **64**
3.8 Buffer Zone Community Forests **66**
3.8.1 Jankauli *67*
3.8.2 Baghmara *67*
3.9 Summary **68**
4. Mixed Methods **70**
4.1 Mixed Methods Research **70**
4.1.1 Methodological eclecticism *71*
4.1.2 Paradigm pluralism and critical realism *72*
4.1.3 Divergence and diversity *73*
4.3 Summary **74**
5. Qualitative Method **75**
5.1 History of PAR **76**
5.2 What is PAR? **76**
5.2.1 PAR features *77*
5.3 Participants **79**
5.4 Procedure **81**
5.4.1 Pre-field preparation *81*
5.4.1.1 Photovoice 82
5.4.2 First field visit *84*

5.4.3 Preparation for second field visit..... 86
5.4.4 Second field visit..... 87
5.4.5 Post-field research reflection and analysis..... 88
5.5 Data and Project Evaluation..... 88
6. Qualitative Results..... 90
6.1 Identities and Livelihoods..... 91
6.1.1 Caste..... 91
6.1.2 Gender..... 93
6.1.3 Education..... 96
6.1.4 Farming..... 97
6.1.5 Conservation related employment..... 100
6.2 Living with Conservation..... 102
6.2.1 Natural resource collection..... 103
6.2.2 Benefits from conservation..... 104
6.2.3 Crop Damage..... 110
6.2.4 Fear of wildlife..... 115
6.3 Speaking Up..... 116
6.3.1 Addressing crop damage..... 116
6.3.2 Ameliorating conservation and villager relations..... 118
6.3.3 Ending discrimination..... 120
6.4 The Exhibit and Participant Feedback..... 122
6.5 Praxis of PAR Features..... 125
6.5.1 Iterative and responsive processes of planning-acting-reflecting for change.. 125
6.5.2 Attention to power relations, ethics, and issues of representation..... 126
6.5.3 Collaboration between professional and community/organization researchers in all stages of research..... 127
6.5.4 Reciprocity in terms of research benefits..... 128
6.5.5 Eclectic methods tailored to specific circumstances..... 129
6.5.6 Theoretical and applied outcomes that bind the knowledge-action nexus..... 129
6.5.7 Criterion of success based on participant/community understanding, change, and transformation..... 130
6.6 Summary..... 130
7. Quantitative Method..... 132
7.1 Methodological Design..... 132
7.1.1 Sampling Unit and Frame..... 133
7.1.2 Measurement Instrument..... 139
7.2 Procedure..... 143
7.3 Data Analysis..... 143
7.3.1 Descriptive Statistics..... 144
7.3.2 X2 test of independence..... 144
7.3.3 Decision tree classification..... 145

7.3.4 Logistic regression *146*
7.3.5 Nearest neighbour *148*
8. Quantitative Results **150**
8.1 External Validity of Sample **150**
8.2 Variable Analysis **152**
8.3 Decision Tree Results **153**
8.4 Logistic Regression Model Selection **157**
8.5 Logistic Regression Results **158**
8.6 Nearest Neighbour Results **159**
8.7 Summary **161**
9. Discussion **162**
9.1 Distribution of Conservation Costs and Benefits **163**
9.1.2 Perceived overall impact of conservation *165*
9.1.3 Distribution of conservation impact between caste groups *168*
9.1.4 Baghmara BZCF and benefits from conservation *171*
9.1.5 Summary *172*
9.2 Conservation Initiatives **172**
9.2.1 Fencing *173*
9.2.2 The wildlife damage relief scheme *178*
9.2.3 Summary *182*
9.3 Politics of Knowledge in Conservation Research **183**
9.3.1 CNP and the conservation discourse *184*
9.3.2 Discourse and knowledge production *186*
9.3.3 The state of knowledge production on the CNP BZ *188*
9.3.4 Alternative means of knowledge production *189*
9.3.5 Justifying the survey method *190*
9.3.1 Summary *191*
10. Conclusion **192**
10.1 Main Findings **192**
10.1.1 Perceived impacts of conservation *192*
10.1.2 Ineffective preventative and corrective conservation initiatives *193*
10.1.3 Social identities, representation, and conservation outcomes *193*
10.1.4 A problematic necessity *194*
10.2 Research Limitations **194**
10.2.1 Survey limitations *194*
10.2.2 Limitations in my analysis of preventative and corrective conservation initiatives *195*
10.2.3 A preliminary analysis of conservation and discrimination *196*
10.2.4 Generalizability *196*
10.3 Recommendations for Future Research **197**
10.3.1 Conservation impacts and poverty *197*

10.3.2 PAR and re-imagining PA initiatives.....197
10.3.3 Investigating the effects and drivers of political representation and marginalization.....198
10.3.4 The praxis of postcolonial theory..... 199
10.4 Policy Recommendations..... 199
10.5 Summary..... 200
References 202
Appendix A: Local Photography, Local Perspectives: A Novel Look at Conservation 214
Appendix B: The Survey 260

List of Figures

Figure 1. The three ecological regions of Nepal: Moutains, Hills, and Terai.....14
Figure 2. The Nepal caste pyramid.....16
Figure 3. Incidence of poverty by major caste and ethnic groups.....20
Figure 4. Development Regions of Nepal.....51
Figure 5. The Central Terai Region of Nepal.....52
Figure 6. Bachhauli VDC with names of villages pertinent to the research.....69
Figure 7. Satellite image taken on May 23, 2014.....137
Figure 8. Satellite image with spatially referenced markers.....137
Figure 9. Box and whisker plot for the variable impact.....152
Figure 10. Key for interpreting the decision tree.....154
Figure 11. Decision tree results.....155
Figure 12. Nearest neighbour prediction of perceived impacts of conservation.....160
Figure 13. Heat maps showing the distribution of survey respondents who reported the fences were effective.....175
Figure 14. Heat maps showing the distribution of survey respondents who reported the fences were ineffective.....176
Figure 15.Governmental and non-governmental institutions involvement in the WDRS.....180

List of Tables

Table 1. Dominant and marginalized social identities in Nepal 24
Table 2. PAR participant descriptions 80
Table 3. Results of logistic regression between respondent characteristics and perception of conservation impact 159
Table 4. Perceived impact of conservation by caste group 169

List of Illustrations

Illustration 1. Ram's village.....92
Illustration 2. Rooster at road.....94
Illustration 3. Building being built by a female contractor in Sauraha.....96
Illustration 4. Rice field.....99
Illustration 5. Tourists returning from the Elephant Breeding Center in Baadreni.....101
Illustration 6. Firewood from BZCF.....105
Illustration 7. Biogas system.....106
Illustration 8. A tailor's sewing machine.....107
Illustration 9. Elephant used for jungle tours.....108
Illustration 10. House of family who lost a loved one.....110
Illustration 11. Elephant foot print in rice field.....111
Illustration 12. Crop damage caused by a wild elephant.....112
Illustration 13. Crop damage caused by wild boars.....113
Illustration 14. Damaged wall in state of partial repair.....114
Illustration 15. Crop damage.....118
Illustration 16. Baghmara BZCF signs.....119
Illustration 17. Domesticated elephant transporting log.....120
Illustration 18. Ram's village.....121
Illustration 19. Boar in field.....177

List of Abbreviations

AIC	Akaike Information Criterion
BZ	Buffer Zone
BZCF	Buffer Zone Community Forest
BZMC	Buffer Zone Management Committee
BZUC	Buffer Zone User Committee
BZUG	Buffer Zone User Group
CA	Constituent Assembly
CAD	Canadian Dollars (1 Canadian Dollar = 78.5 Nepali Rupees)
CBS	Central Bureau of Statistics
CNP	Chitwan National Park
DID	United Kingdom Department for International Development
DNPWC	Department of National Parks and Wildlife Conservation
FPT	First-Past-the-Post
HDC	Human Dimensions of Conservation
ICDP	Integrated Conservation and Development Project
INGO	International Non-Government Organization
IUCN	International Union for Conservation of Nature
MFSC	Ministry of Forests and Soil Conservation
MMR	Mixed Methods Research
NGO	Non-Government Organization
NNA	Nearest Neighbour Analysis
NPWCA	National Parks and Wildlife Conservation Act
NR	Nepali Rupees
ORE	Office of Research Ethics
PA	Protected Area
PAR	Participatory Action Research
TA	Thematic Analysis
TAL	Terai Arc Landscape Program
UNDP	United Nations Development Program
UNESCO	United Nations Education, Scientific and Cultural Organization
VDC	Village Development Committee
WB	World Bank
WDRS	Wildlife Damage Relief Scheme
WWF	World Wildlife Fund

Chapter 1: Introduction

1.1 The Research Problem

Protected areas (PA) preserve biological diversity for future generations by restricting access to biologically significant areas. Since the beginning of the 20th century, PAs have been the mainstay of international conservation strategies. Now found in every country in the world, they number over 200,000 and cover 14% of the earth's terrestrial land mass (Deguignet et al. 2014). But this herculean effort has only curtailed—not halted—the extinction of species. The current rate of extinction is estimated at 100-1,000 times greater than prehuman background rates (Balmford, Green, & Jenkins, 2003). Global biodiversity is highly concentrated: 44% of the world's vascular plants and 35% of its four vertebrate groups reside in only 1.4% of earth's terrestrial surface (Myers et al., 2000). In response, conservationists have focused PA expansion into areas with high biodiversity, referred to as biodiversity hotspots. However, these biodiversity hotspots coincide, by and large, with countries crippled by severe and multifaceted poverty (Fisher & Christopher, 2007). Moreover, the social impact of PAs on neighboring human populations have been far from benign—particularly in the Global South.

Forced displacement, restriction of access to natural resources, pernicious livelihood changes, negative human-wildlife interactions, political marginalization—all have been experienced by human populations living adjacent to PAs. These adverse social impacts have been especially severe in the Global South (Adams &

Hutton, 2013). Signaling the widespread recognition of PA's adverse social impacts was the 1972 United Nations Conference on the Human Environment (Roe, 2008). Since then, PAs have subsumed responsibility for mitigating their adverse social impacts, alleviating poverty, and engaging in human development initiatives—in addition to protecting biodiversity (Roe, 2008). Efforts to reconcile the ecological and social goals of PAs in the Global South have been mixed (Agrawal, Redford, & Redford, 2006). Furthermore, some conservationists argue biodiversity conservation supersedes social considerations and PAs should focus exclusively on protecting biodiversity for future generations (Brechin et al., 2002); however, I believe PAs cannot shirk their social responsibilities. We, as conservationists, have a moral obligation to conserve biodiversity in ways that are compatible with poverty alleviation, human development, and traditional livelihoods. Agrawal & Redford (2009) cogently encapsulate this argument: "If conservation strategies distress human populations, especially those who are less powerful, politically marginalized, and poor, little that conservationists argue on behalf of biodiversity makes sense" (p. 1).

Nepal's network of PAs includes nine national parks, three wildlife reserves, three conservation areas, and eleven buffer zones. Collectively, these PAs cover 19.67% of Nepal's surface area (Shakya, Basnet, & Shrestha, 2007). Not only a hotspot for biological diversity, Nepal is classified as a Least Developed Country by the United Nations Development Programme (UNDP), the lowest classification on their development index (UNDP, 2014). Researchers studying the Human Dimensions of Conservation (HDC) in Nepal have investigated the social impacts,

both negative and positive, occurring at the intersection of poverty and conservation. The HDC is the study of how conservation influences and is influenced by people's livelihoods, behaviors, values, and knowledge (Saberwal & Kothari, 1996). Further complicating the HDC in Nepal is the rigidly hierarchical society within which PAs operate. Pre-dating PAs in Nepal is a society whose history, traditions, and primary religion perpetuate discrimination. Albeit attenuated compared to the past, in contemporary Nepal there exists social, economic and political exclusion based on social identity.

In 1984, the United Nations Educational, Scientific and Cultural Organization (UNESCO) declared Chitwan National Park (CNP) a World Heritage Site because of its collection of rare and endangered species. Gazetted in 1973, CNP is Nepal's first National Park. CNP is located in the sub-tropical Terai lowland and surrounded by a pastiche of subsistence farmlands, small villages, and hotels that cater to tourists eager to visit the park. Simultaneously, CNP's presence has had a host of beneficial and adverse social effects. The benefits include revenue from tourism, Buffer Zone (BZ) funded development initiatives, and Buffer Zone Community Forests (BZCF); the drawbacks, park-people conflict, forced displacement, wildlife damage, and natural resource restrictions (Chitwan National Park Office {CNPO}, 2015; Carter et al., 2013; Nepal & Spiteri, 2011; Dhakal, Nelson, & Smith, 2011; Jones, 2007; Straede & Treue, 2006). Nowhere is CNP's presence more polarizing than Bachhauli. Bachhauli is CNP's main tourist hub; approximately 90,000 tourists travel through Bachhauli each year (UNESCO & International Union for the Conservation of

Nature {IUCN}, 2007). However, Bachhauli's proximity to the park's roaming wildlife —rhino, elephant, boar, deer, tiger—results in destroyed crops, damaged assets, and lost lives. Furthermore, HDC research suggests conservation related social impacts are unequally distributed in CNP's periphery, and that groups facing discrimination bear the brunt of adverse conservation impacts (Upadhyay, 2013; Dhakal et al, 2011; Straede & Helles, 2002). The political underrepresentation of marginalized groups in existing conservation governance structures—CNP, Buffer Zone Management and User Committees, and BZCFs—means these groups have little power to ameliorate their situation (Jones, 2007; Paudel, Budhathoki, & Sharma, 2007; Budhathoki, 2004). Efforts must be made to understand the social impacts of conservation in Bachhauli, especially if conservation is compounding pre-existing poverty and discrimination of marginalized groups. Exploring the social impacts of conservation in Bachhauli, especially the ways in which marginalized people are affected, was the broad problem this research addressed.

1.2 Purpose of Study

The purpose of the study was to explore the HDC, with an emphasis on marginalized people's experiences, in Bachhauli Village Development Committee (VDC), Nepal.

Front and center in the international conservation discourse is the issue of reconciling PAs' ecological and social objectives. The Durban Accord signed at the 2003 World Parks Congress was clear, PAs should strive to alleviate poverty and in *no*

way exacerbate existing poverty in adjacent human populations (Roe, 2008). HDC research suggests CNP, the BZ, and BZCFs have had a range of social impacts (Dhakal et al., 2011; Jones, 2007; Nepal & Spiteri, 2011). These impacts have adversely affected people's livelihoods, especially in areas, like Bachhauli, adjacent to CNP's boundary (Lamsal, 2012).

I used Mixed Methods Research (MMR) case study to examine the HDC in Bachhauli. Qualitative and quantitative methods investigated varying aspects and scales of the research problem. Although the two methods differed in many ways, in parallel both qualitative and quantitative methods addressed the "same" research problem and shared the aforementioned Purpose of Study.

HDC research is often hyper-critical of the social impacts of PAs. The HDC literature on CNP is no different (Mclean & Straede, 2003; Nepal & Weber, 1995). This criticality has served a crucial role: critics of conservation have been important in holding PAs responsible for their actions and impacts (Adams & Hutton, 2013). But who holds these critics accountable? This study re-orientated the critical vantage point to critique the politics of knowledge production within my research process. To do this I engaged with postcolonial theory and examined the inherently problematic production of knowledge within my research. The critical reflections that stemmed from this postcolonial critique had significant implications for my research.

1.2.1 Qualitative purpose of study

The purpose of the qualitative Participatory Action Research (PAR) method, photovoice, was to explore marginalized people's experiences of conservation and to facilitate social action to address the adverse social impacts of conservation in Bachhauli.

1.2.1.1 Rationale

Although Lipton & Bhattarai (2014) and Jones (2007) have called for more bottom-up, participatory conservation processes in CNP, neither have used participatory knowledge production processes. There is a dearth of qualitative research and an absence of PAR in the HDC literature on CNP. Furthermore, in this literature few academics, authors, and contributors have visible marginalized identities. The authors of the HDC literature on CNP are starkly homogenous—nearly all are Westerners or high caste Nepali men. Informed by postcolonial critiques of hegemonic forms of knowledge production, I engaged with an alternative form of knowledge production that privileged the voices of marginalized people. Motivated to fill the qualitative research gap, informed by postcolonial theory, and driven to address social justice issues in Bachhauli, I initiated a photovoice project.

1.2.1.2 Description

15 participants collaborated in the photovoice project. Participants were members of marginalized groups in Nepal—Dalits, Janajati ethnic groups, women, landless, and people with physical disabilities. Given cameras, the participants captured in film

scenes from their lives. In unstructured interviews, participants were asked to explain the meanings of photos they had taken. These interviews were translated, transcribed, and coded using semantic thematic analysis. The Photovoice project culminated in a participant curated photo exhibit attended by CNP staff, BZCF Chairpersons, as well as representatives from national and international non-governmental organizations.

1.2.2 Quantitative purpose of study

The purpose of the survey was to examine the relationships between demographic variables with residents' perceptions of the social impacts of conservation in Bachhauli.

1.2.2.1 Rationale

Surveys administered in the periphery of CNP have been plagued by small sample sizes, sampling procedures with systematic sampling biases, and limited generalizability. Scant research has been done exclusively on Bachhauli, an area reportedly polarized by CNP's presence. This survey attempted to better understand the polarizing impact of conservation on Bachhauli's population and its spatial distribution. Carter et al. (2013) and Spiteri & Nepal (2008) have revealed important patterns in the spatiality of conservation impacts in CNP. This research aimed to build on their findings.

1.2.2.2 Description

The survey administered in this project investigated the demographic and spatial distribution of the perceived impact of conservation in Bachhauli. A novel sampling technique was used to randomly sample 218 individuals from Bachhauli. Spatial information was recorded when the survey was administered. Relationships between respondent demographic information and perceived social impact of conservation were analyzed using descriptive and inferential statistics. The spatial distribution of perceived impacts was examined with a nearest neighbor analysis.

1.3 Research Questions

The research questions are divided into three parts: The MMR, the qualitative, and the quantitative research questions. The MMR, qualitative, and quantitative methods each have an overarching research question followed by three sub-questions, a research question formulation recommended by Creswell (2013).

1.3.1 Mixed Method Research questions

Q1.How are conservation initiatives operating in and around Bachhauli impacting its human population?

1. Are the benefits and costs of conservation equally or disproportionately distributed across marginalized and privileged groups?
2. How effective are conservation initiatives designed to mitigate the adverse social impacts of conservation in Bachhauli?

3. What are the challenges for a Westerner conducting research in a Non-Western context?

1.3.2 Qualitative photovoice research questions

Q2.What are the experiences of marginalized people impacted by conservation in Bachhauli?

1. How are the experiences of marginalized people similar and different?
2. What positive and negative social impacts of conservation do marginalized people experience in Bachhauli?
3. What are the challenges and possibilities for marginalized people seeking social justice through PAR methods?
4. How is the praxis of PAR similar and different from PAR in theory?

1.3.3 Quantitative survey research questions

Q.1 How are the social impacts of conservation perceived by residents of Bachhauli?

1.Is there a relationship between perceived impacts of conservation and demographic variables?

2. How are the perceived impacts of conservation spatially distributed in Bachhauli?

1.4 Ethical Considerations

Both the Photovoice (ORE # 20089) and the Survey (ORE # 19813) projects received ethics approval from the University of Waterloo Office of Research Ethics.

A research permit was sought and received by the Department of National Parks and Wildlife Conservation (DNPWC) in Nepal.

1.5 Research Subject Position

Research results are not plucked from thin air; they are shaped by people, in this case me. Who I am, and the culture within which I'm steeped matters because they influence my framing of issues, my perception of events, and ultimately the research outcome—knowledge. I'm a white, Western, middle class, heterosexual, cis-gendered male, able-bodied, settler—a privileged identity to be sure. But I care deeply about challenging oppressive structures, many of which I'm inextricably linked to and benefit from. I'm also a conservationist. Much of my adult life has been devoted to conservation work. My undergrad was in natural resource management, and my summer jobs have been with either the Ontario Ministry of Natural Resources or the Grey-Sauble Conservation Authority. In short, I think conservation is important.

I do not position myself as an apolitical researcher. Postcolonial theorist Edward Said (1978) writes:

> "The general liberal consensus that "true" knowledge is fundamentally non-political (and conversely, that overtly political knowledge is not "true" knowledge) obscures the highly if obscurely organized political circumstances obtaining when knowledge is produced." (p. 10)

I acknowledge the political circumstances within which this research produced knowledge, even if I can't account for the multifarious ways that who I am shaped

the research process and outcome. The problematic nature of my subject position and the politics of knowledge are fleshed out in the Literature Review.

1.6 Organization of Thesis

This thesis is organized into ten chapters, including the Introduction. Chapter Two reviews three bodies of literature that unpack discrimination in Nepal, the HDC in a global context, and the politics of knowledge production. Chapter Three describes the research site, the physiography, land-use, and the HDC literature pertinent to Bachhauli. Chapter Four examines the MMR design employed in this study. Chapter Five describes the photovoice method. Chapter Six reports its results. Chapter Seven describes the survey method. Chapter Eight reports the survey's results. The Ninth chapter brings together the photovoice and survey results, revisiting key themes from the literature review, and provides provisional answers to the MMR research questions. In the Tenth and final chapter, the major findings are summarized, limitations highlighted, and suggestions for future and policy research made.

2. Literature Review

This research investigated the HDC in Bachhauli. More specifically, it focused on the impacts of conservation on marginalized people's lives. To contextualize the HDC in Bachhauli the literature review examines three themes: *Discrimination in Nepal*, *Human Dimensions of Conservation*, and the *Politics of Knowledge*.

The first theme, *Discrimination in Nepal*, examines the current state of material and immaterial differences between distinct social groups living in Nepal. The second theme, *Human Dimensions of Conservation*, reviews the HDC literature to demonstrate how the international conservation discourse has impinged on conservation initiatives operating in and around Bachhauli. This theme contextualizes the trajectory of CNP's conservation initiatives within the context of the international conservation discourse. Finally, the third theme considers postcolonial theory, examining its critiques of Western knowledge production.

2.1 Discrimination in Nepal

Discrimination is any distinction, restriction, exclusion, or preference based on race, caste, class, gender, etc., which has the effect of impeding or nullifying a person's agency (UNESCO, 2015). Through *de jure* and *de facto* means, discrimination within a society produces marginalized groups of people based on race, caste, class, gender, etc. In this section, I investigate the discrimination of caste, gender, and class groups. I focus on showing empirically the disparity in social, economic, political

endowments between clearly demarcated social groups in Nepal. It is impossible to divorce an understanding of discrimination from the physiography, history, culture, economy, and politics of Nepal. Therefore, this theme begins by contextualizing the social, economic, and political spheres that marginalized groups inhabit. The scope of this section is limited to an analysis of discrimination on a nationwide scale; discrimination in Bachhauli specifically is discussed in the Research Setting chapter.

2.1.1 Background

Although Nepal is a relatively small county (147,181 km^2), it has three distinct ecological regions: the Mountains, Hills, and Terai (Central Bureau of Statistics {CBS}, 2012). These broad ecological regions are displayed in Figure 1. These regions span the snow-capped Himalayan Mountains in the North, to the lush agricultural fields of the sub-tropical Terai in the South. This dynamic geography was the crucible within which relatively isolated and distinct cultures developed, which today comprise Nepal (Whelpton, 2005). Nepal has a diverse population of 26 million people that includes 126 caste and ethnic groups, 123 languages, and ten religions (CBS, 2012). After centuries of feudal warring, the Gorkhali King Prithvi Narayan Shah's military prowess forced the reluctant amalgamation of these distinct groups, unifying Nepal as a Hindu Kingdom in 1768. The Shah and Rana monarchy ruled Nepal, with a brief interruption, the 50s "democracy experiment", until 2006 when the monarchy was dissolved. This transition was incited by a bloody, decade-long civil war between the monarchy and Nepal's Communist Party. An estimated 12,000

Nepalese were killed in the so-called "Maoist People's War" (Baral & Heinen, 2006). The resulting declaration of Nepal as a secular state and the ushering in of a multi-party democracy signaled a definitive end to Nepal's monarchy, but not to *de jure* and *de facto* discrimination against certain groups; Nepal's rigidly hierarchical culture endures.

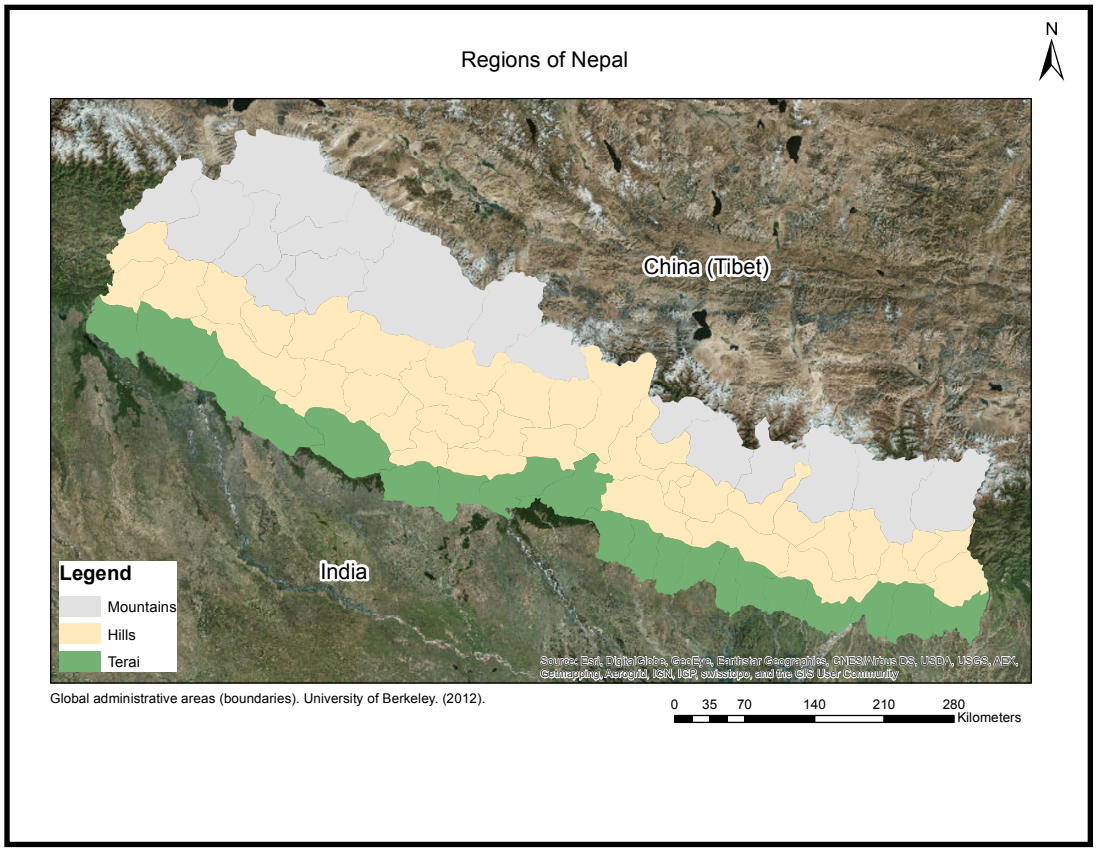

Figure 1. The three ecological regions of Nepal: Mountains, Hills, and Terai. Source: Author

2.1.2 The caste system

The caste system stratifies Nepali culture and is a major source of *de jure* and *de facto* discrimination. Nepal's dominant religion, Hinduism, is practiced by 81.4% of the

population (CBS, 2012). And although the caste system is not explicitly part of the Hindu religion, it is part of Hindu culture. Essentialized identities, endogamy, and hereditary occupations are all features of the caste system. In 1854, the Muluki Ain, the Country Code, formalized the caste system into Nepali law. Even non-Hindu ethnic groups—Newars, Tharu, Sherpa—were subsumed into the caste system through this law, becoming the Janajati caste group. The United Kingdom's Department for International Development (DID) and World Bank's (WB) multi-year study on social exclusion in Nepal culminated in a 2006 report entitled, *Unequal Citizens: Caste, Gender, and Ethnic Exclusion in Nepal.* This report includes the following description of the Muluki Ain caste system:

> "The priestly Brahmans[1] were at the top of the caste hierarchy with the Kshatriya (kings and warriors) [also know as Chhetris] just beneath them; next came the Vaishya (merchants) and the Sudra (peasants and labourers). Beneath everyone were occupational groups, considered "impure", and "untouchable" or acchut. They now call themselves the Dalits. In the Hills the top two ranks (priest and warrior) and the lowest ("untouchable") rank were filled by the in-migrating Hindus of Caucasoid stock who spoke an Indo-Aryan language on which modern Nepali is based. The middle rank was accorded to indigenous groups, generally of Mongoloid racial stock. These groups classified by the Hindus as Matwali or liquor drinkers-generally spoke Tibeto-Burman languages and followed Buddhism or various shamanist/animist religions. The Matwalis comprise the Adivasi Janajati (indigenous nationalities." (DID & WB, 2006, p. 5)

This classification system is visually represented in Figure 2. To summarize, the high caste groups in Nepal are Brahmins, and directly below them, Chhetris. Underneath the high caste groups are the ethnic groups of Nepal, the Janajati: Newars, Tharu, Sherpa, Magar, Gurung, and Tamang, among others. The lowest caste

[1] DID & WB (2006) used the spelling "Brahman" in their document. I chose to use the spelling used in the UNDP (2014a) Human Development Report, "Brahmin".

groups, the untouchables, colloquially referred to as Dalits, includes the Musahars, Dhobi, and Dom, among others.

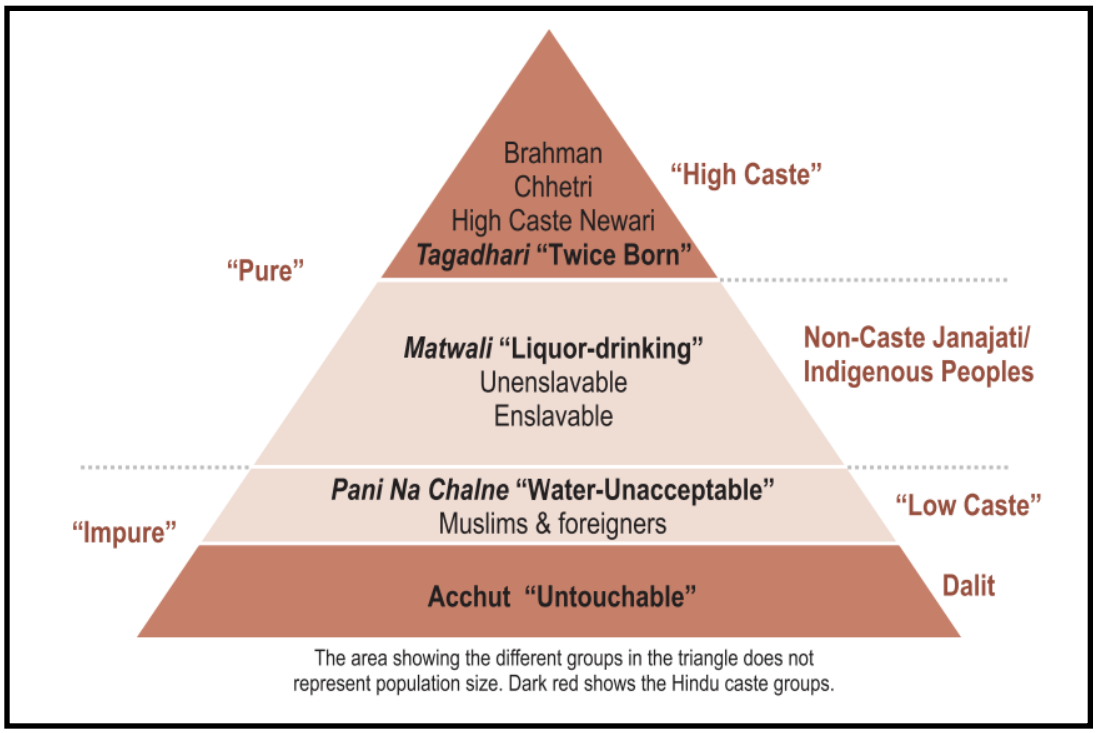

Figure 2. The Nepal caste pyramid. Source: (DID & WB, 2006, p. 6).

In law, the Muluki Ain caste system gave differential privileges and obligations to different caste groups; generally, lower the caste, higher the institutionalized discrimination. For example, in the Muluki Ain's penal provisions higher punishments were mandated for lower caste individuals than for high caste individuals—for the same offense (Department for International Development {DID} & World Bank {WB}, 2006). Even though the Muluki Ain was abolished in 1963, ostensibly ending state-sanctioned caste-based discrimination, in practice caste-based discrimination persists. The extent of inequity between caste groups is examined in a later section. But first, an examination of Nepal's economic and human

development indicators is warranted to contextualize the disparity between dominant and marginalized groups.

2.2.3 Economic and human development indicators

By Western standards, Nepal is one of the poorest and least developed countries in the world. Its per capita gross domestic product (2,245 USD at purchasing power parity) ranks 155th out of 185 countries, between Tanzania and Senegal (World Bank, 2014). The 2014 United Nations Human Development Assessment ranks Nepal 145th (Human Development Index=0.540) out of 187 countries (UNDP, 2014a). This measure of human development assesses "people's well-being, through the expansion of human capabilities and choices to live full, creative lives with freedom and dignity" (UNDP, 2014a, p. 11). The Human Development Index (HDI) evaluates achievements in three categories: long and healthy life (life expectancy at birth), knowledge (adult literacy and years of schooling), and standard of living (gross national income per capita in purchasing power parity). Nepal's life expectancy is 68.8 years. The adult literacy rate is 59.7%. And 23.7% of Nepal's population lives on less than $1.25 USD per day. Judged by HDI criteria, the UNDP's (2014a) Human Development Report classifies Nepal as a Least Developed Country, its lowest designation. The 2014 Human Development Report's conclusions are not without precedent; Nepal was designated a Least Developed Country in all four previous reports (1998, 2001, 2004, and 2009). Furthermore, all five reports highlight "the persistence of inequality and poverty and advocate policy and institutional initiatives

to promote inclusion and empowerment" (UNDP, 2014a, p. 6). In the next section I parse aggregated measures of human development to examine the distribution of material goods and intangible privileges across dominant and marginalized groups.

2.2.4 Symptoms of discrimination

Disproportionate material and intangible endowments across social groups become apparent when aggregated statistics from the Human Development Reports, Nepali Census, and Nepal's Living Standards Survey are broken down. Recall, the HDI for Nepal, 0.540, is an average composite measure (UNDP, 2014a). Averages can be misleading; breaking this average apart by social group reveals a more nuanced examination of HDI distributions. Parsing Nepal's HDI by caste reveals a troubling trend: Low caste groups have lower HDI scores than high caste groups. For example, the Dalit caste group has an HDI score of 0.434 compared to high caste Brahmin/ Chhetri groups' 0.538 HDI value—a 27% difference. Even amongst the high caste group, Brahmins score on average nine percent higher HDI values than Chhetris. Further unpacking the HDI reveals geographical differences. Dalits from the Hills[2] have a higher HDI than Terai Dalits, 0.446 compared to 0.400. The 0.434 HDI value for Dalits places them between Ethiopia and Malawi, 173rd and 174th respectively, on the HDI index.

In the next sections, using data from the UNDP, Nepali Census and Living Standards reports, I show more evidence of the economic, social, and political

[2] Hill Dalit includes Dalits from the Hill and Mountain ecological regions of Nepal.

inequities between caste and gender groups in Nepal. Furthermore, I examine institutionalized discrimination in Nepal. My analysis of institutionalized discrimination is provisional. Currently, Nepal's legislature is writing a new constitution that may significantly change the institutional and legal framework of Nepal. However, the government of Nepal has been writing the constitution since 2008; this process has been lengthy and fraught with contentious politics—no clear end is in sight (UNDP, 2014a; UNDP, 2014b).

The living standards of low caste groups trail those of high caste groups. The poverty rates clearly shows this trend (Figure 3). Additionally, the DID and WB (2006) report the incidence of poverty is falling faster for high caste groups than for Dalits. Brahmins and Chhetris' incidence of poverty declined by 46% from 1996-2004; in the same period, only a 21% decline in poverty was observed among Dalits. Bucking the trends in HDI values is a Janajati ethnic group indigenous to the Hills region, the Newars. Their HDI values are on par with that of Brahmins. Although a discussion of HDI values was included earlier, explicating the caste disparities with respect to education, literacy, and life expectancy is merited. Educational attainment is higher for high caste groups. On average a member of a high caste group has 4.41 years of schooling; the average for Dalits and Janajati (excluding Newars) is 3.42 and 3.39 years of schooling respectively. Adult literacy rates of Dalits (52%) and Janajati (67%) (excluding Newars) also trail high caste Brahmins and Chhetris (76%). Life expectancy for High caste groups (74) is seven years higher

than Dalit groups (67) and five years higher than Janajati (69) (excluding Newars) (UNDP, 2014a).

Caste and ethnic groups	Poverty headcount rate	Percent of poor
Hill Brahman	10.3	5.2
Hill Chhetri	23.4	16.6
Tarai Brahman	18.6	0.4
Tarai middle caste	28.7	17.6
Hill Dalit	43.6	15.2
Tarai Dalit	38.2	6.9
Newar	10.3	2.5
Hill Janajati	28.3	24.4
Tarai Janajati	25.9	7.3
Muslim	20.2	3.5
Other	12.3	0.5
NEPAL	25.2	100.0

Figure 3. Incidence of poverty by major caste and ethnic groups. Source: (UNDP, 2014a, p. 18).

2.2.5 Modes of discrimination

But what causes low caste groups' grinding poverty, and the relative, growing affluence of high caste groups in Nepal? One could posit low caste groups' underachievement is a reflection of their inherent potential and willingness to succeed. This is not, however, the case: Structural forces in Nepal impinge and limit low caste groups' potential whilst engendering high caste groups' privileged status. Although delving into the finer points of these structural forces, and the everyday

ways in which they are performed and maintained, is beyond the scope of this chapter, I provide some examples of the institutionalized and cultural modes of discrimination. These examples answer questions like, why is it that all women have the potential to read, but less than half of Nepali women are literate? The answer to this question, and others like it, discredits the argument that low caste groups and women are simply not trying hard enough.

2.2.5.1 Gender-based discrimination

In Nepal, women's literacy rate trail men's, 49% to 72% (UNDP, 2014a). This disparity can be explained by the fact that 44% of females never attend school, compared to only 23% of males (CBS, 2011a). But why do women not attend school? The Nepal Living Standards Survey Volume 1 (CBS, 2011a) reports "parent did not want", "help at home" and "not willing to attend" as the most answered reasons that females did not attend school. Interestingly, no gender gap in mean years of schooling exists; this means when females are allowed to attend school they attend, on average, the same number of years as males. The trouble then, seems to be getting females into schools, not keeping them there. It is not that women don't have scholastic potential, they do, it is that their potential is stifled by a deeply patriarchal society where women are relegated to subordinate positions, and primarily responsible for household work (UNDP, 2014a; DID & WB, 2006). The subordination of Nepali women is abundantly clear in their political representation.

Nepal's Constituent Assembly (CA) is 30% women, but this number is somewhat misleading. Nepal has a parallel electoral system for nominating members to the CA: Members are elected either by the first-past-the-post (FPTP) or the proportional representation electoral systems. In the 2013 election less than 5% of members elected to the CA in the FPTP system were women (UNDP, 2014b). The 30% representation value is a result of women being chosen in the proportional representation system by party leaders, all of whom are men. Is 30% political representation of women in the CA truly a milestone for women's empowerment, or merely tokenism? Even the UNDP's Annual Report (2014b) alludes to the possibility of the latter, "while Nepal's Constituent Assembly has 30% women, the number at decision making levels in other national institutions is much lower" (p. 41).

With regards to caste, little has changed since the DID & WB (2006) reported:

> "During the Panchayat period and the first 10 years of multiparty democracy Brahmans and Chhetris were able to maintain around 60% presence in the legislature, and Newars just below 10%. Janajati and Madhesi presence is limited, and does not accord with their proportion in the population." (p. 31)

While high caste groups account for only 28.8% of the population, members from this group accounted for 55.4% of total members elected by the FPTP system in the 2013 election (UNDP, 2014b).

Generally speaking, women in Nepal face intense discrimination: The country ranks 112 out of 136 countries for Gender Equality (UNDP, 2014b); average income for women is 57% lower than men; 48% of women experience gender-based violence

at least once in their lifetime; and women cannot confer citizenship to their children (DID & WB, 2006). Although I have discussed caste and gender-based discrimination separately they do not exist in isolation, they interact synergistically.

2.2.6 Intersectionality

Intersectionality is a feminist concept coined by Kimberly Crenshaw (1991) that acknowledges a person can experience discrimination from multiple axes, and to varying degrees of intensity. This concept enables a more nuanced analysis of the multiple simultaneous and synergistically interacting forms of discrimination experienced by a person based on their race, caste, class, gender, etc. For example, a low caste Nepali woman may experience discrimination because of her caste *and* her gender. Table 1 is a simplification of the multiple and intersecting social identities constitutive of dominant and marginalized groups in Nepal. Andrea Nightingale's (2011) research examined the role of intersectionality in the (re)production and contestation of discrimination in Nepal. However, intersectionality has received perfunctory attention in the HDC literature in Nepal. To address this gap, my empirical research explored intersectionality, discrimination, and conservation in Bachhauli VDC.

Table 1
Dominant and marginalized social identities in Nepal

Status	Gender	Caste	Language	Religion	Geo-political
Dominant	Male	Brahnmin, Chhetri	Nepali	Hindu	Parbatiya (hill dweller)
Marginalized	Female	Janajati, Dalit	Other	Non-Hindu	Madhesi (plains dweller)

2.2.7 Conclusion

Unequal Citizens: Caste, Gender, and Ethnic Exclusion in Nepal (DID & World Back, 2006) reports political and economic power in Nepal is inextricably linked with the Hindu caste system and patriarchy. This conclusion is echoed by the UNDP's (2014a) Human Development Report. Institutionalized and cultural modes of discrimination in Nepal clearly indicate the presence of discrimination, and concomitantly, the presence of marginalized groups. In short, low caste groups and women in Nepal are unequal citizens who experience systematic discrimination. Admittedly, caste and gender are not the only social identifiers tied to discrimination and marginalization. Unfortunately, scant research has been undertaken on other historically oppressed groups: landless, queer, and people with physical disabilities. Therefore, my analysis of discrimination was focused on social groups with high visibility. Additionally, in creating this picture of discrimination in Nepal I relied exclusively on predominantly Western measurements of economic and human development (gross domestic product and the HDI), measures which Nepal's CBS

uses as well. Unfortunately, measures of economic or human development rooted and developed in Nepal, for and by Nepali people, were not available.

To summarize, Nepal's rigidly hierarchical society explicitly and implicitly values certain identities over others. This theme's aim was to elucidate discrimination in Nepal and the vast economic, social, and political inequities it engenders. This is essential context for examining the HDC in Nepal because conservation adversely impacts marginalized groups and possibly perpetuates pre-existing structures and modes of discrimination.

2.3 Human Dimensions of Conservation

Ideally, the human and ecological dimensions of conservation should be assessed jointly (Ferraroa, Hanauera, & Simsb, 2011). Due to my inexperience in ecological research, I focused exclusively on the human dimensions. The HDC is a social science research topic that investigates how people's livelihoods, behaviors, values, and knowledge influence and are influenced by conservation (Saberwal & Kothari, 1996). The theme of the literature review's second section is the HDC—its active role in the global conservation discourse; its profound impact on the scope, management, and practices of PAs globally; and the ways in which shifts in the global conservation discourse, prompted by human dimensions research, have reverberated in CNP. The HDC literature specific to Bachhauli is examined in the Research Setting chapter.

PAs are places where the preservation of biodiversity for future generations is being pursued by restricting access to biologically significant areas (International Union for Conservation of Nature {IUCN}, 2015). Their management exists on a continuum, from strict PAs, where resources extraction is prohibited, and entry severely restricted, to PAs with sustainable extraction of natural resources. PAs are the mainstay of the international conservation strategy (Adams et al., 2004). Globally, they number over 200,000, are found in every county, and cover 14% of the world's terrestrial land mass (Deguignet et al., 2014). The constellation of actors and institutions working in conservation, and their histories, form the international conservation discourse. To make sense of this discourse, I used Roe's (2008) five phase classification of the conservation discourse. Any attempt to summarize 60 years of discourse is necessarily reductive. For example, Roe's (2008) discourse analysis follows the trajectory of the conservation-poverty debate and does not encompasses the entire conservation discourse. However, my interest lies in the emergence and influence of the HDC in the conservation discourse. Therefore, using Roe's typology is justifiable. A treatise on the whole conservation discourse is beyond the scope of this thesis. Roe's typology is especially useful in that it examines each phase's motivations, proponents, dissenters, global accords and summits. Granted, the HDC are dynamic and locally specific; but these locally specific social impacts of PAs cannot be divorced from the dynamism in the international conservation discourse (Adams et al., 2004). In this section, I examine how changes in the international conservation discourse have reverberated in Nepal, drawing attention

to their inextricable linkages. But first, why all the fuss about conserving biodiversity? To understand the discourse's genesis, and the motivations that underly it still, let us examine the ecological imperative for the protection of biodiversity.

2.3.1 First phase of conservation: The ecological imperative

In 1872, United States President Ulysses S. Grant gazetted the first PA, Yellowstone National Park. However, Roe (2008) points to the creation of the International Union for the Conservation of Nature (IUNC) in 1948 and World Wildlife Fund (WWF) in 1962 as the beginning of the international conservation movement and its discourse. Roe (2008) describes the conservation discourse's first phase as, "the colonial through to postwar era when 'developed' country agencies first started to intervene in conservation and development policy and practice in developing countries" (p. 492). The fear of global ecological decline and loss of biodiversity motivated PA expansion into the Global South. The protection of biodiversity was the paramount goal during this phase, and this was reflected in PA management. Exclusionary, protectionist, top-down decision-making—all describe the management of PAs during this time (Adams et al., 2004). No surprise then that CNP, established in 1972, at the tail end of this phase, employed the so-called "fortress conservation" PA management model: Protecting biodiversity by displacing, excluding, and fining people living near CNP (UNESCO & IUCN, 2007).

Protecting species from extinction motivated the "fortress conservation" model of PAs during the first phase of conservation; to this day, species protection

propels the conservation discourse, even if the discourse has made room for other priorities. The species extinction rate is an estimated 100-1,000 times greater than prehuman background rates (Balmford et al., 2003). And although Ehrlichian ecological doomsday predictions have yet to pan out, undeniably unprecedented anthropogenic changes have occurred—affecting the world's ecological integrity and endangering its biodiversity. What's more, biodiversity is intensely concentrated: Myers et al. (2000) found 44% of all vascular plants and 35% of all species from four vertebrate groups live in only 1.4% of earth's terrestrial surface. These areas are called biodiversity hotspots.

Myers et al.'s (2000) biodiversity hotspot concept is highly influential in the conservation discourse. This paper is regularly cited by conservationists to justify the development of PAs (Fisher & Christopher, 2007). But Myers et al.'s (2000) analysis only concerns itself with the spatial distribution of biodiversity, and not the human contexts within which biodiversity exists. One cannot fault Myers et al. (2000) for their parochialism, one cannot study everything, but surely the expansion and development of PAs should account for the social contexts within which biodiversity is located. Fisher & Christopher (2007) examined the human dimensions of Myers et al.'s biodiversity hotspots, coming to a startling conclusion: Biodiversity hotspots, by and large, overlap with countries crippled by severe and multifaceted poverty. So does it matter that biodiversity and poverty hotspots overlap? Asking this questions is the fundamental difference between the first and second phases of Roe's conservation discourse typology. In the second phase, social scientists questioned the supremacy

of non-human actors in the conservation discourse and began asking, what are the human dimensions of conservation?

2.3.2 Second phase of conservation: The human dimension

The second phase of conservation, according to Roe (2008), emerged in the 1970s, "when international processes sought to reconcile different priorities over economic development and environmental conservation: first of developed and developing countries, and then of conservation and development communities" (p. 492). In short, the HDC were realized and pushed to the fore of the conservation discourse. To address the HDC, the 1972 United Nations Conference on the Human Environment was held, which was the first international event to explore the linkages between biodiversity protection and human development (Roe, 2008).

The second phase also signaled an awareness of the adverse social impacts engendered by conservation (Adams & Hutton, 2013; Roe, 2008; Naughton-Treves et al., 2005). The protectionist, "fortress conservation", PA model advocated during the first phase of conservation, in some cases, dramatically affected adjacent human populations. Salient among the surfeit of social impacts was human displacement. Political ecologists are fond of pointing out that Yellowstone National Park, the first PA, displaced the indigenous people who inhabited the region 11,000 years prior to its establishment (Adams & Hutton, 2013). Agrawal & Redford (2009) report 10-20 million people worldwide have been displaced by PAs. Displacement triggered by conservation causes a host of negative livelihood effects: landlessness, joblessness,

homelessness, economic marginalization, food insecurity, increased morbidity and mortality, and loss of access to common property (Agrawal & Redford, 2009). Conservation-based displacement has also taken place in Nepal. Because of CNP's adoption of the "fortress conservation" PA model, indebted to the first phase of conservation, more than 20,00 people have been displaced (Mclean & Straede, 2003). As recent as 2005, the last of Pandampur VDC's villagers were forcibly relocated by CNP in a decade long process that saw the relocation of 10,000 people (Dhakal et al., 2011). Mclean & Straede (2003) report Pandampur's resettlement process had dramatic negative social impacts:

> "The resettlement program was forced upon the people [by CNP] and managed with almost no interaction with or consideration for their culture and livelihood. The compensation was by far inadequate in terms of money and location, amount, and quality of land. Even for landless people who became landowners, the expected livelihood improvements did not materialize. To most people the relocation did not live up to the expectations, and it had detrimental effects on people's livelihood in terms of social structures, cultural heritage, jobs, labor relations, and general future prospects." (p. 522)

Regrettably, displacement is not the only negative social impact of PAs. In *Parks and Peoples: The Social Impact of Protected Areas,* West, Igoe, & Brockington (2006) found PAs had multifarious social impacts, including restriction of access to natural resources, human-wildlife interactions, and political marginalization. The presence of these social impacts in Bachhauli is discussed in the Research Setting chapter. Now, I want to draw attention to Roe's third phase of conservation, when the discourse shifted from identifying and prioritizing the HDC to taking action.

2.3.3 Third phase of conservation: The "win-win" scenario

The 1982 World Parks Congress in Bali came to the consensus that, "protected areas in developing countries will survive only insofar as they address human concerns" (as cited in Naughton-Treves et al., 2005, p. 227). For Roe (2008), this heralded the third phase of conservation (1980s-1990s). In this phase, conservation initiatives not only looked to mitigate the adverse social impacts of conservation but to harness the potential of PAs to address human development and alleviate poverty—the conservation and development agendas merged. Reconciling biodiversity with human development became known as the "win-win" scenario. To achieve these dual objectives, conservationists unrolled a slew of Integrated Conservation and Development Projects (ICDP). CNP initiated one such ICDP during the third phase —the Buffer Zone (BZ). Established in 1996, the BZ encompasses an area of 766 km^2 around CNP. In this BZ, which continues to operate, 30-50% of CNP's park revenue is redistributed to various projects aimed to foster local economic development and alleviate the adverse effects of CNP. BZ initiatives include biogas system[3] subsidies, training workshops, and conservation awareness programs (UNESCO & IUCN, 2007). Another feature of this phase was an emphasis on participatory conservation, an approach to natural resource management and biodiversity conservation with more democratic, bottom-up governance. The CNP buffer zone, in addition to being an IDCP, has a participatory component, in that its committee members are elected.

[3] A biogas system uses manure, agricultural waste, and sewage to produce natural gas. The gas produced by biogas systems can replace the need for fuel wood.

In the Research Setting chapter, I examine in detail how participatory the BZ really is.

Baghmara Buffer Zone Community Forest (BZCF) is another example of participatory conservation in the CNP BZ. Community forestry and the decentralization of forest resource management in Nepal was initiated by the 1976 National Forest Act (Jones, 2007). Before this act, all forested land was under government ownership and control, per the 1957 Nationalization of Forests Act. Even though the government retains ownership over forested lands, some forest are now managed by communities. In 1995, 215 hectares of forest at the Western extent of Bachhauli was officially handed over to Baghmara BZCF to manage (Baghmara Community Forest, n.d.). Baghmara BZCF is governed by an elected executive committee, that together make decisions regarding sustainable forest management and development initiatives. Baghmara's successful reforestation and development initiatives are exemplary of participatory conservation; this success is also uncommon (Jones, 2007). Because of the perceived failure of IDCPs and participatory conservation initiatives globally, the conservation discourse took a critical turn against these types of initiatives—what Roe describes as the fourth phase of conservation. Whether initiatives addressing biodiversity conservation and human development have, by and large, succeeded or failed is hotly contested (Agrawal, Redford, & Redford, 2006).

2.3.4 Fourth phase of conservation: The backlash

For Roe (2008) the fourth phase of the conservation discourse, starting in the late 1990s, is characterized by critiques of IDCPs and participatory conservation projects initiated during the third phase. The backlash stemmed from those who argued conservation should focus on biodiversity protection, the original priority of PAs, and that diverting attention to human development and poverty alleviation funneled much-needed funds away from biodiversity protection. In short, asking PAs to address the social impacts they engendered was seen by some conservationists as a burden (Brechin et al., 2002; Brechin & Wilshusen, 2011). Brechin et al. (2002) found a resurgence of conservationists calling for a return to the "fortress conservation" model, what they term the "protectionist paradigm". However, at the 5th IUCN World Parks Congress held in Durban, South Africa, the conservation-poverty debate came to the fore again, squashing any attempt at shirking the duty PAs have for the human populations living adjacent to them.

2.3.5 Fifth phase of conservation: Mainstreaming the poverty debate

For Roe (2008), the 2003 Durban World Parks Congress signaled another shift—the mainstreaming of the conservation-poverty debate. The Durban Accord called for PAs to alleviate poverty, in no way exacerbate poverty, and for "all existing and future protected areas [to] be managed and established in full compliance with the rights of indigenous and mobile peoples and local communities" (as cited in Roe, 2008, p. 497). The conservation discourse remains fractured between those who argue PAs

should focus exclusively or predominantly on biodiversity conservation and those who believe biodiversity conservation must address human development. The tide, however, is moving towards the latter. In summary, the presence of conservation initiatives—national parks, BZs, community forests—impact human populations, sometimes drastically so; and the conservation discourse has impinged on the type of conservation that has been undertaken. In the conservation discourse's current phase, PAs are expected not to exacerbate poverty and alleviate existing poverty, whilst preserving biodiversity. Throughout the thesis, I probe the extent to which the actions of PAs operating in and adjacent to the study site, Bachhauli, match the rhetoric in the discourse.

2.3.5.1 Segue to the politics of knowledge

Investigating the HDC in Bachhauli would be impossible without understanding the social and cultural context within which conservation initiatives are operating. But what gives me, a Westerner, the right to research and write about a Non-Western place? The HDC literature is largely silent and uncritical of researcher subjectivity—as though who does the research does not matter (Singh & Houtum, 2004; Robbins, 2004). In this final section of the Literature Review, I examine the work of three postcolonial scholars. Engaging with postcolonial theory is important because I believe my research must be framed within a context that acknowledges the pernicious ways imperialism and neo-colonialism influence knowledge production. The weighted history of colonialism, inextricably linked with my subjectivity, was not

undone by engaging with postcolonial theory. However, postcolonial theory enabled a more nuanced negotiation of asymmetrical power relations, representational ethics, and the problematic relationship between my subjectivity and the study site.

2.4 The Politics of Knowledge

What is postcolonial theory? What do postcolonial theorists—Said, Wainwright, Spivak—tell us about the world? What is the value of the postcolonial theory perspective? More specifically, what does this perspective contribute to an understanding of the HDC in Bachhauli? These questions frame the final section of the Literature Review.

2.4.1 Colonialism

To describe postcolonial theory, I examine its constituent parts—colonialism, the prefix post, and theory—then reassemble them back into a coherent whole. Colonialism is the domination of one group over another, with the presence of settlers from the dominant group in the subordinated group's territory (Horvath, 1972). In other words, the colonizers, the dominant group, occupy and control a colony that was once ruled by the colonized, the subordinated group. Generally, a colony is colonized by a combination of military, economic, and political interventions. Colonizers benefit militarily, economically, and politically from colonization (Horvath, 1972). The British Empire is an example of colonialism. In the early 20th century, the British Empire exerted political control over 1/5th of the

world's population (Maddision, 2001). Without a doubt, the settlement of British Nationals abroad, the material exploitation of the colonies, and subjugation of the colonized constituted colonialism. But this Empire, whose sun rose in the 16th century, did finally set: India gained independence in 1947, Rhodesia (now Zimbabwe), the last British African colony, gained independence in 1980, and today only 14 British oversea territories exist—with a combined population of 350,000 people. A far cry from the estimated 458 million people under direct control of the British Empire during the 1920s (Maddison, 2001). It's true that India and Zimbabwe are post-colonial states, no longer are they under direct British control. But postcolonial theorist Gayatri Spivak (as cited in Jackson & Mazzei, 2011, p. 38) is skeptical about the end of colonialism, calling the post-colonial, "a future anterior, something that will have happened, if one concerned oneself with the persistent crafty details of the calculus of decolonization." What Spivak is gesturing towards is colonialism's relations to other forms of domination—imperialism and neo-colonialism.

2.4.2 Imperialism and neo-colonialism

Imperialism and colonialism have shared characteristics, but should not be conflated. Imperialism is direct or indirect control of one territory over another through social, political, economic channels. However, in imperialism there is no settlement of colonizers in a colony. Via imperialism, postcolonial theorists posit, a dominant group exerts control over a subjugated group without settlement and direct control of a

post-colonial sovereign nation state's economic, political, and discursive realms. Kwame Nkrumah classifies this type of imperialism as neo-colonialism (1965). For Nkrumah (1965), neo-colonialism is a replacement of colonialism and extension of imperialism:

> "The essence of neo-colonialism is that the State which is subject to it is, in theory, independent and has all the outward trappings of international sovereignty. In reality, its economic system and thus its political policy is directed from outside." (p. ix)

The semantics of postcolonial theory's name gestures towards this denial of a genuine and complete separation from colonialism. The absence of the hyphen in postcolonialism indicates not a distancing, which the presence of a hyphen would imply, but a closeness with the colonial past. Postcolonial theory's subject matter is this "post-colonial" world, a world not completely detached from colonialism, but imbued by imperialism and its extended means of control, neo-colonialism.

2.4.3 Theory

Theory in the social sciences and humanities provides a lens through which the alarming complexity of the world can be interpreted. Theory is, according to Reeves, Kuper, & Hodges (2008), "an organized, coherent, and systematic articulation of a set of issues that are communicated as a meaningful whole" (p. 633). Most theories provide *a priori*, intricate, and comprehensive conceptual framings of complex issues. Although some theories, like postcolonial theory, are more fractured, in the sense that there is disagreement on fundamental issues. For example, on the possibility of the representation of marginalized groups, the views of prominent theorists in this

tradition clash. For Spivak (1988), the subaltern cannot speak; for Said (1994), "indeed, the subaltern can speak, as the history of liberation movements in the 20th century eloquently attests" (p. 335). Theory dovetails with some qualitative and quantitative methods. In short, theory helps make sense of complex social relations.

2.4.4 Putting the pieces back together: Postcolonial theory

Postcolonial theory has roots in critical theory, a tradition engaged with critiquing and changing society. There is no well defined, and certainly no agreed upon, non-textual postcolonial research method (Raghuram & Madge, 2006). Discourse analysis has been the primary tool employed by postcolonial theorists. Indebted to Foucault, postcolonial theorists discursively investigate the implicit and explicit, beliefs, values, and ideas embedded in texts. Through discursive analysis of colonial and neo-colonial texts, postcolonial theorists examine the interplay between power/knowledge and the ways in which this interplay reaffirms asymmetrical relations of power.

Postcolonial theory is a critical theory that discursively examines the vestiges of colonialism and presence of imperialism and neocolonialism. This theory challenges the notion that the colonial past is severed from our shared present. Postcolonial theorists asks questions like, "What are the underlying justifications for domination of one group over another?"; "How does knowledge production within colonial, imperialist, and neo-colonial discourse reinforce itself; "What do these discourses say about ourselves and others?"; "How is prejudice perpetuated by these discourses?; and "Who can speak and who is heard?"

In this literature review, I examine three prominent postcolonial theorists—Said, Wainwright, Spivak—and their contributions for understanding the politics of knowledge production in the "post-colonial" era. Namely, I explicate three lessons I learned from these theorists: The achievement and perpetuation of colonial rule required the production of particular forms of knowledge; we cannot escape the cultural and historical context within which knowledge is produced; and to read with persistent skepticism the practices that represent others, especially the marginalized.

2.4.5 Edward Said and Orientalism

The seminal work in postcolonial theory is Edward Said's *Orientalism* (1978). In *Orientalism*, Said examined the study of the Orient by Western Orientalist writers, from the 16th to the 20th century. Using discourse analysis, Said concluded the Orientalist discourse produced and maintained by Western writers reduced the Orient, its vast geography, its people, and its cultures to an almost single-minded and static entity. Said's analysis revealed knowledge produced in the West about the Orient created a self-referential history and tradition of thought, giving the Orient a "reality" and presence in the West. Said found the Orientalist discourse rigidly disciplined the Orient by "authorizing view of it, teaching it, ruling over it" (Said, 1978, p. 3). The West, in short, exerted power over the Orient through discourse by means of the productive capacity of power/knowledge: "...knowledge of subject races or "Orientals" is what makes their management easy and profitable; Knowledge is

power, more power requires more knowledge and so on in an increasingly profitable dialectic of information and control" (Said, 1978, p. 36).

The discourse produced and maintained by Orientalists did not reflect "truths" about the Orient but rather representations imposed by the West's "own system of learning, discovery and practice" (Said, 1978, p. 73). This discourse enabled Western cultural forms to predominate over the Orient's, reinforcing Western colonialism and imperialism. As Robbins (2004) argues, the Orientalist discourse was not, however, a nefarious Western imperialist plot bent on oppressing the Orient. Far more pernicious mechanisms, like intertextuality, elevated and sustained this discourse. Discourse does not appear fully formed or articulated; but, emerges via mechanisms like intertextuality, a mechanism Said argues is instrumental in the production of the Orientalist discourse. Intertextuality describes a mechanism of discursive production whereby the pressures of a convention, textual predecessors, and style dictates what can be said and how. Echoing Foucault's articulation of the productive effect of power/knowledge (1980), Said (1978) states, "we can better understand the persistence and durability of saturating hegemonic systems like culture when we realize that their internal constraints upon writers and thinkers were productive, not unilaterally inhibiting" (p. 14). Importantly, Said argues this harmful discourse, and its mechanisms, persists and that its pernicious effects are not constrained to the colonial past. Postcolonial scholars, as well as academics influenced by Said's ideas, like post-development theorists, use Said's insights to understand how particular forms of knowledge production perpetuate ideologies—

systems of (un)conscious beliefs, values, ideas (Escobar, 1994). Said's analysis elucidated that knowledge production and oppressive structures of domination are entangled in a self-reinforcing relationship.

A major criticism leveled against *Orientalism* is the treatment of the Western Orientalist discourse as a monolithic entity (Said, 1985). This critique contends that Said falls into the same trap he so eloquently criticizes by projecting a singular Orientalist discourse. In the introduction of *Orientalism,* Said makes it clear his analysis is necessarily incomplete and not representative of all writers who ever dealt with the Orient. His goal is to provide a narrative that touched on prominent themes. That the Orientalist literature is littered with prejudicial, racist, and paternalistic views is unquestionable. It was these problematic works, by prominent authors in the Orientalist canon, that interested Said.

Accepting Said's conclusion that academic writing can perpetuate imperialism should scare any academic researching another culture. It scares me. Could I, of kind and well-intentioned heart, be complacent in an Orientalist style discourse by researching the HDC in Nepal? The challenge for a reader inclined to Said's conclusions is how to avoid the entrapments of pernicious discursive mechanisms that gently guide one's research into bodies of knowledge like Orientalism. Said suggests inviting the other to speak for themselves. Shockingly, Said found an absence of Oriental voices in the Orientalist literature. The subject was always the Western scholar, politician, writer, poet. In the context of academia, the subject, me, is always the sieve through which the other's act of self-

representation is strained. And as we will see from Spivak's critiques, we should be skeptical, if not dismissive, of any attempt at representation, especially of the marginalized. Bringing together Said's suggestion of letting the other speak with Spivak's critique of the possibility of representation produces an aporia. We must let the other speak, but the other is always understood through the Western subject, in this case, me. In Joel Wainwright's *Decolonizing Development*, I found space for movement in this aporia.

2.4.6 Joel Wainwright: Looking ourselves in the mirror

Joel Wainwright, in *Decolonizing Development* (2008), reflects on how his analysis is ordered in the same problematic ways as colonial texts. Wainwright's book begins with a discourse analysis of the colonial and development literature that, for roughly 100 years, described, ordered, and solidified the Maya of Belize as objects in need of Western development, eschewing any possibility of Mayan self-determination. Belize was a British colony from 1862-1981. Using Participatory Action Research (PAR), Wainwright facilitated local knowledge production with the Maya of Belize. However, this participatory project was not completely detached from the colonial research that preceded it. To address this, Wainwright scrutinized his work like a colonial text. Robbins et al. (2010) summarize this process:

> "Wainwright invites the reader to consider how the topics of his or her own research might be put under the kind of scathing critical scrutiny that Mayanism receives in Decolonizing Development. How is my own work, the reader is prodded to ask, precisely ordered in this same problematic way?" (p. 345)

Asking this question helped me wrestle with the aporia of post-colonial research. It also enabled me to better understand how my research perpetuated imperialism and neo-colonialism.

Overall, Wainwright's message is a cautiously optimistic one: Yes, we can say something about the world and slowly make it better, but no, we are never divorced from oppressive structures of domination and control. His conclusion is aligned with Ghandi's (1998), who wrote that "postcolonialism diversif[ies] its mode of address and learn to speak more adequately to the world which it speaks for" (p. 3). That being said, some voices in the postcolonial literature are skeptical about the possibility of "speaking more adequately to the world which it speaks for", especially the worlds inhabited by marginalized people. Wainwright sheds light on the ways in which structures of oppression, be it colonialism or neo-colonialism or patriarchy, permeate any emancipatory attempts to undo said structures; this doesn't mean we shouldn't try—we cannot not try—but that we should be aware of these structures of oppression and the nefarious ways in which they pervade our attempts to undo them.

2.4.7 Gayatri Chakravorty Spivak: The subaltern cannot speak

Gayatri Chakravorty Spivak is deeply skeptical of those who produce knowledge about other cultures. Spivak is so skeptical that she denies its possibility in "Can the Subaltern Speak?" (1988). Furthermore, in *Outside in the Teaching Machine*, she questions the intentions of academics who identify as marginalized, including herself (1993). Simultaneously existing in the periphery and at the center of cultural

imperialism, her trenchant critique of knowledge production is a hypercritical voice in postcolonial theory. Although I disagree with some of Spivak's conclusions, her work has prodded me to reflect critically on my research. By not taking Spivak's critique to its logical conclusion—abandoning research on other cultures, especially the marginalized within those cultures—but listening and thinking deeply about her work, I've learned to read with persistent skepticism towards practices that represent others, especially the marginalized.

In Spivak's seminal essay "Can the Subaltern Speak?" she examines the relationships between Western researchers' claims to objectivity, the commodification of knowledge, and Western imperialism. Ultimately asking and answering the question, can the subaltern speak? Spivak's research investigated the Indian rite of Sati, a sacrificial practice whereby wives were burned alive on their husband's funeral pyre. In this case, the wives were the subaltern. Synonymous with marginalized, a subaltern is a person of inferior rank, subordinated within a society based on caste, class, gender, age, sexual orientation, etc. The focus of the essay is not what Western scholars wrote about the practice and the subaltern, but how they did so and to what ends. She argues knowledge shares similarities with other commodities. And as a commodity, the producers of knowledge have a vested interest in its production. Data mined in the Global South, then taken back and processed in the West, is then sold to Western readers for the benefit of the Western writer. Westerners who produce knowledge about the Global South, do so to benefit Western interests—knowledge production is never innocent. So can the subaltern

speak? Could the women destined to burn in their husband's funeral pyre speak? Spivak's answer is an emphatic no. Even well-intentioned researchers ultimately speak on the subaltern's behalf, rendering their voices silent. The British colonialists, for example, who researched and ultimately outlawed the Sati ritual could be seen as benevolent, saving the lives of Indian women. Perniciously though, Spivak argues it helped secure British colonial power in India and write Hindu culture out of law, denying its legitimacy, driving it underground. For Spivak, Western research on the Sati ritual was a self-defeating project; supposed to save women, it succeeded only in entrenching their subordination.

Spivak is critical of those in academia who claim marginalized identities and speak for the subaltern, because they believe themselves members of the subaltern. In *Outside in the Teaching Machine* (1993), Spivak is concerned by the valourization of marginality, and academia's drive to identify, represent, and inhabit those margins. Spivak argues marginality in academia is not a pure universal space. She sees herself as simultaneously at the center of culture imperialism, because she is part of the social and academic elite, and pushed to the margins based on her gender and nationality. Emphatically, she inhabits neither the center nor the margin. As a self-described indigenous elite her claim to marginality comes from the center. As such, the same problem of the commodification of knowledge applies to her as it does to Western researchers who investigate the marginalized. Even she cannot speak for the subaltern. What Spivak is gesturing towards is the heterogeneity inherent to groups essentialized by a label such as marginalized.

In “Can the Subaltern Speak”, Spivak (1988) poses two important questions. How can scholars avoid the inevitability of presenting themselves as representatives for the subaltern? And, should scholars abstain from representation? Asking myself these questions helped me reflect critically, avoiding the easy slide into the ultimately unrealistic position of an impartial, objective, apolitical knower and representer of marginalized people. In short, this lesson taught me to question the objectivity of knowledge flowing from the object (marginalized person) through the subject (me).

2.4.8 Postcolonial theory and Nepal

Nepal was invaded by the British East India Company 46 years after its unification by the Gorkhali King Prithvi Narayan Shah. The so-called Anglo-Nepalese War lasted two years, from 1814 to 1816. When the Sugauli peace treaty was ratified in 1816, Nepal ceded a third of its territory but retained its autonomy (Whelpton, 2005). Therefore, what is now considered Nepal was never under Western colonial control. If Nepal was never a Western colony, is engaging with postcolonial theory appropriate?

Imperialism and neo-colonialism exert power through direct and indirect control of the political, economic, and cultural spheres of subjugated territories (Nkrumah, 1965). Postcolonial theory provides a lens through which the alarming complexity of these indirect and direct means of control, marshaled by dominant states, perpetuates geo-political asymmetries of power in the political, economic, and cultural spheres. Singh & Houtum (2004) argue PAs are a Western neo-colonialist

tool of control being used to exert power over less powerful states. Unquestionably, the international conservation discourse has influenced the trajectory of PAs in Nepal. Were it not for this discourse, conservation in Nepal may be much different. Importantly, the international conservation discourse is Western in origin, and dominated by Western states and institutions (Adams & Hutton, 2013; Roe, 2008). Constitutive of the international conservation discourse are the reports, studies, and theses that textually codify a world in need of conservation.

Said (1978) elucidated that colonial power inscribed itself through discourse, by textually essentializing the colonies as places in need of the paternalistic care of the colonizer. I believe at the moment I engage in the textural inscription of the HDC in Nepal I am unwittingly engaged in neo-colonialism—codifying of another place in need of conservation. Therefore, my research, which produced a textural account of another culture, falls within the purview of the postcolonial theory.

I believe that because of my subject position, a white male western researcher working within a large academic institution, and the research context, Nepal, a country with less geopolitical purchase than Canada, framing the research within the purview of postcolonial theory is justifiable. Accordingly, I should be aware of the entrapments, faults, and failures that occur when working from a position of power in a place of relative powerlessness. Postcolonial theory enabled a more nuanced, critically reflective understanding of the ways in which my research perpetuated imperialism and neocolonialism in their multifarious (dis)guises.

2.4.9 Reflections

Colonial rule required particular forms of knowledge that essentialized difference based on skin type and geography, and fabricated a need for paternalistic interventions by enlightened countries. Postcolonial theory would have us ask, in what ways is today's knowledge ordered similarly to the past? And how are marginalized voices rendered silent by knowledge produced by Western researchers?

I do not wish to join the ranks of Orientalist scholars. Postcolonial theory offers insights on how to speak more adequately about the world and enables one to probe deeper into a text's implicit and explicit values, beliefs, and ideas. Echoing Wainwright, we should ask ourselves in what ways are PAs justified similarly to colonial interventions? Engaging with postcolonial theory is necessary in HDC research for two reasons: (1) PAs are a Western idea and (2) PAs are operating in a postcolonial world, often because biodiversity and poverty hotspots overlap.

3. Research Setting

The CNP BZ stretches across four districts— Chitwan, Nawalparasi, Parsa and Makawanpur—covering an area of 750 km^2 with a population of 260,000 people (UNESCO & IUCN, 2007). There are 34 VDCs in the CNP BZ—Bachhauli is only one of them. Bachhauli VDC is not unique in that conservation initiatives impact the lives of its residents. With a population of ten thousand people, why investigate the HDC in Bachhauli? The polarizing presence of conservation in Bachhauli makes it a unique research site. In this chapter, I discuss Bachhauli's geography, climate, and ecology—factors that have resulted in a simultaneity of competing land uses. I also describe the histories, institutional structures, and social impacts of conservation initiatives operating in and around Bachhauli.

First, I must address a few caveats about the HDC literature. Bachhauli and 33 other VDCs constitute the CNP BZ. Because of the BZ's breadth, the HDC research is geographically scattered, and few studies focus on Bachhauli exclusively. Therefore, my description of the research setting necessarily drew from research done outside the research site, but within the CNP BZ. The article selection criteria for this chapter was the article's relevance to my research topic (especially the negative social impacts of conservation), the inclusion of Bachhauli in the study, date of publication, and number of citations.

Additionally, when I examined Bachhauli's demographic information, I was forced to use data not aggregated at the scale of Bachhauli's administrative unit, the VDC. Nepal's Census and Living Standards Survey, as well as the UNDP's Human

Development Report, published scant information at the VDC scale, Nepal's second smallest administrative unit. Due the scarcity of data, in my description of Bachhauli I mostly relied on data aggregated at higher levels of Nepal's administrative hierarchy. Therefore, an understanding of Nepal's administrative subdivisions, and Bachhauli's place within them, is necessary to contextualize the selection and presentation of demographic data used in this section. Nepal is grouped into three ecological belts running north to south: The Mountains, the Hills, and the Terai. Nepal is also divided into five development regions: Eastern, Central, Western, Mid-Western, and Far-Western (Figure 4). Within the development regions are districts, of which Nepal has 75. Chitwan district is located at the intersection of the Terai ecological region and Central development region (Figure 5). Within each district are VDCs, which are each composed of nine Wards—Nepal's smallest administrative unit. Bachhauli is a VDC composed of nine Wards, part of Chitwan District, located in the Central Terai of Nepal. In this chapter, whenever possible, I cite data aggregated at Bachhauli's administrative unit.

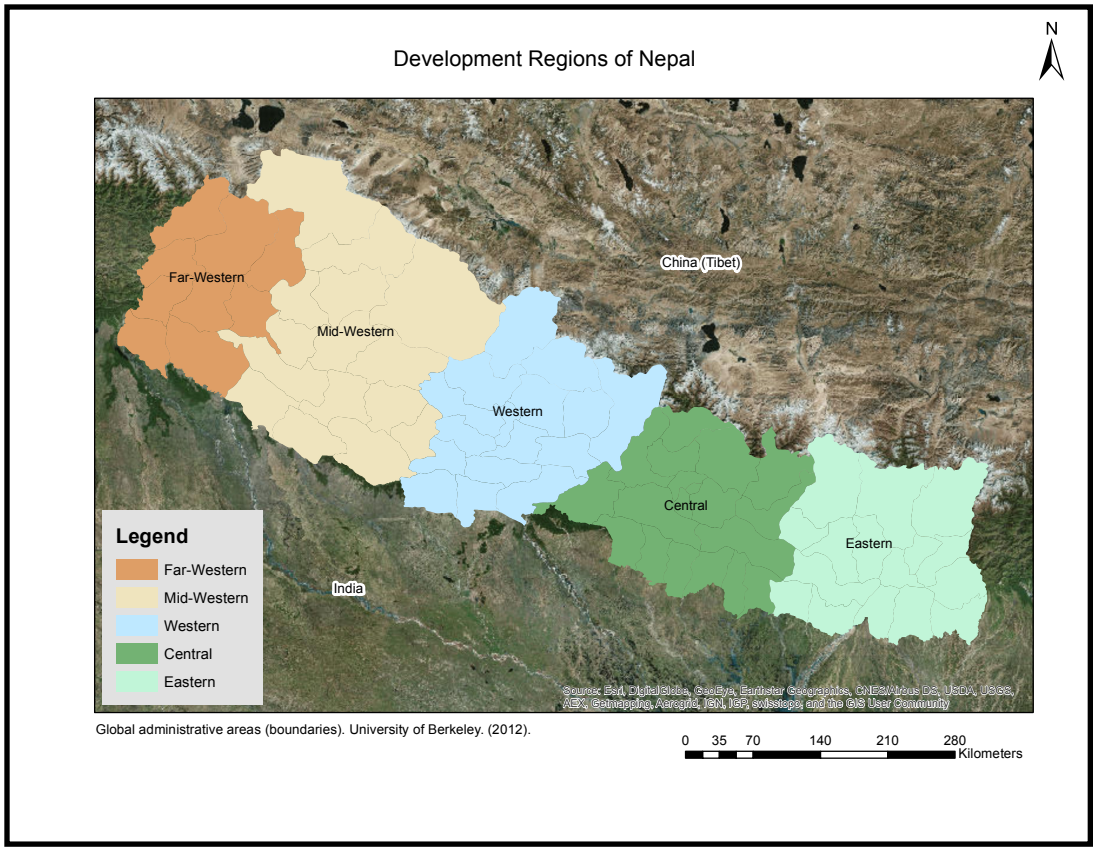

Figure 4. Development Regions of Nepal. Source: Author.

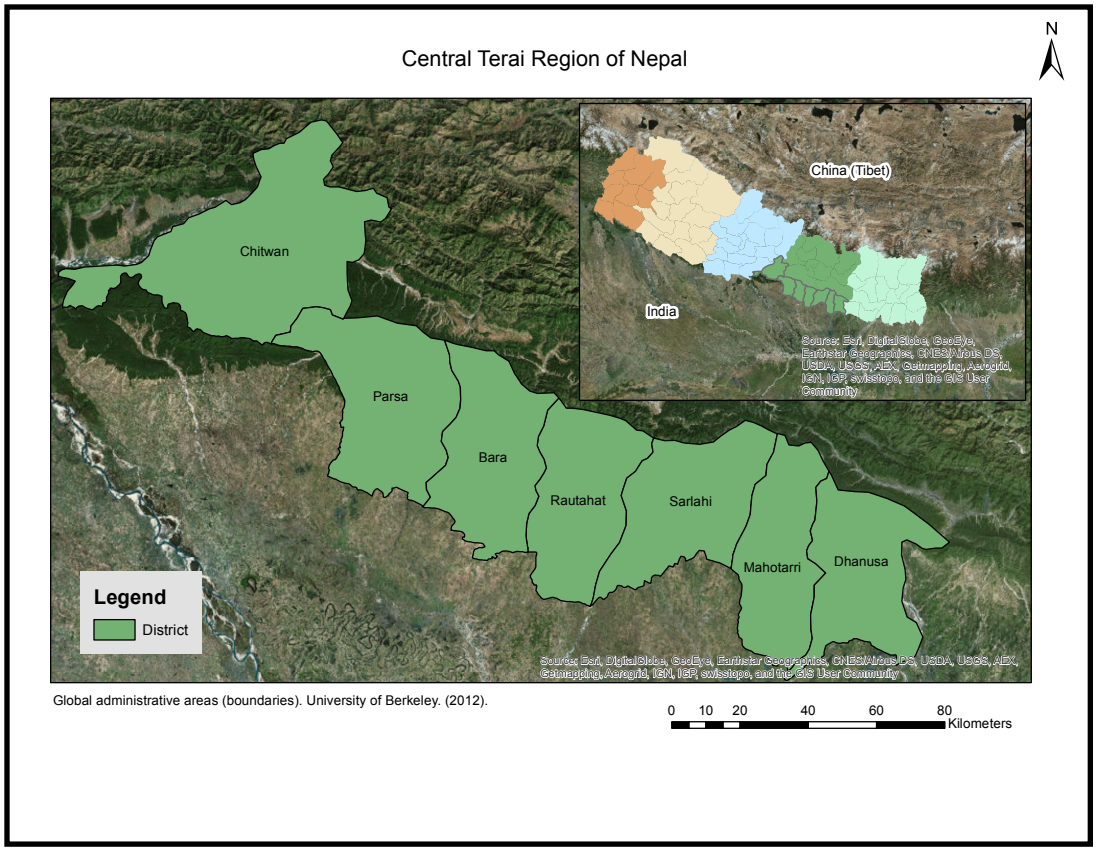

Figure 5. The Central Terai Region of Nepal. Source: Author.

3.1 Climate

Chitwan District has a sub-tropical monsoon climate. 80% of Chitwan's annual 2600 millimeters of rain falls in the monsoon season between June and September. Temperatures in the region climb to highs of 39 degrees Celsius in the summer (from February to May) and drop to eight-degree lows in the winter season (November to February). The average annual temperature is 17.4 degrees Celsius (CNPO, 2015). Mature Sal forests, grasslands, diverse flora and fauna, and vast expanses of agricultural fields producing cereals, oilseed, vegetables, fruits: All are found in Chitwan and all owe their existence to the region's subtropical climate. This confluence of biodiversity and agricultural productivity results in tradeoffs and, ultimately, conflict between conservation and agricultural-based livelihoods.

3.1.1 Biological diversity

The Terai's sub-tropical climate supports deciduous Sal (*Shorea robusta)* forests, riverine, and grassland ecosystems (Baidya, Bhuju, & Kandel, 2010). These habitats, in turn, support 993 species of flora, 58 species of mammals, 543 species of birds, 56 species of herpetofauna, and 124 fish species in Chitwan (UNESCO & IUCN, 2007). Importantly, this region supports a variety of endangered species: Greater one-horned rhinoceros (*Rhinoceros unicornis*), Royal Bengal tiger (*Panthera tigris tigris*), Asiatic elephant (*Elephas maximas*), Gaur (*Bos gaurus*), Gangetic dolphin (*Platanista genetic*). This biological diversity prompted the creation of Chitwan National Park in 1973 and justifies the continuation of conservation initiatives (CNPO, 2015). In

addition to supporting endangered species, the region's climate makes Chitwan an agriculturally productive area.

3.1.2 Agriculture

Agriculture is the primary source of wage and non-wage employment in Nepal: Agriculture accounts for 64% of Nepal's labour force. In the Central Terai this number is slightly elevated, 70% of the Central Terai's total workforce engages in wage and non-wage agricultural work as their primary source of employment (CBS, 2011b). The Central Terai's sub-tropical monsoon climate and soils rich in alluvial deposits from the three major river systems—the Rapti, Narayani, and Reu—combine to make for high agricultural potential in the area (Bista et al., 2010). The Terai accounts for only 17% of Nepal's land mass but is home to 49% of its agricultural land (CBS, 2011b). This is all to say, in the Central Terai, where Bachhauli is located, agriculture is important.

3.2 Land-Use Competition

Chitwan's climate supports ecological communities valued by conservationists and land with agricultural potential valued by farmers. Baidya et al.'s (2010) study of land use dynamics from 1978 and 1999 reveals the extent to which conservation and agriculture have competed for land-use in the CNP BZ. In 1978, forests were the dominant land use, covering 45% of the CNP BZ. By 1999, agriculture was the dominant land use, 54% of the BZ, and forest cover decreased to 37%. Forests and

agriculture do, however, compete for much more than the BZ's total percent land-use cover. What lives in forests—rhino, elephant, boar, deer—feed on crops, resulting in conflict between agricultural-based livelihoods and biodiversity conservation. Farms in the Central Terai are not large-scale, high-technology, lucrative operations (CBS, 2011b). Rather, most are small-scale, low-tech, subsistence farming operations; and there is a relationship between rural areas, agriculture and poverty (CBS, 2011c; UNDP, 2014a). This is necessary context for understanding the research setting and the social impacts of conservation, especially the adverse effects, like crop damage caused by park-protected wildlife.

3.3 Agricultural-based Livelihoods, Poverty, and Marginalization

In Nepal, rural poverty is 1.8 times higher than urban poverty, and there is a 20% urban-rural HDI gap (UNDP, 2014a). The Living Standards Survey (CBS, 2011c) reported the poorest fifth of Nepal's households were predominantly farmers (88%), whereas 94% of the richest quintile received wages from non-agricultural sectors. Although within the richest quintile 50% of households farmed in some capacity. So not all Nepalese involved in agriculture are poor—but households where the primary source of income is farming are, by and large, poor (CBS, 2011c). In the Central Terai, household income is less in rural than in urban areas. Agriculture in Nepal and the Central Terai is at a low level of mechanization, only one percent of farmers own a tractor or power tiller, farm sizes tend to be small, and farmer's are more likely to be illiterate than non-farmers (CBS, 2011b).

In Nepal and the Central Terai, there is a relationship between agricultural-based livelihoods and poverty. Furthermore, the correlation between poverty and discrimination was discussed in the Literature Review. The incidence of poverty is higher for marginalized groups than for dominant groups. No data on agriculture, poverty, or discrimination was available for Bachhauli from the Nepali Census or the Living Standards Survey. However, national and regional trends show the existence of a relationship between agricultural livelihoods, poverty, and marginalized groups. The conservation initiatives in the Central Terai, including CNP, operate in predominantly rural areas, areas with high incidences of poverty (CBS, 2011c). The park-protected wildlife that raid crops, raze buildings, and end the lives of people living in the CNP BZ affect those with mostly agricultural-based livelihoods. This is the economic, social, and cultural context within which conservation is operating in Bachhauli. Drawing on the HDC literature, I examine three conservation initiatives —CNP, the BZ, and Buffer Zone Community Forests (BZCF)—and their social impacts on those with agricultural and non-agricultural-based livelihoods. I begin by examining CNP, its model of conservation, its success in conserving biodiversity, and its social outcomes.

3.4 Chitwan National Park

CNP has been successfully preserving the region's biodiversity. CNP's tiger population rebounded from 46 individuals in 1977 to 110 breeding adults in 2012 (Islam, Joshi, & Sato, 2012). Its one-horned rhino population reached a 40-year peak

of 544 individuals in 2000 (CNPO, 2015). CNP's captive breeding effort has rescued the Gharial crocodile from near extinction. Since 1981, a total of 671 captively bred Gharials have been released (CNPO, 2015). CNP's successes have been achieved under the protectionist "fortress conservation" approach, a legacy of the protectionist phase of conservation during which CNP was formed.

3.4.1 Governance

Unequivocally, CNP's management structure is top-down, with no decision-making powers in the hands of local people. The CNPO's five year management report (2015) states: "The [management] plan is based on a holistic approach and envisages bottom-up planning process" (p. xviii). The use of the word "envisages" is an interesting choice, as the word means, "to contemplate or conceive of as a possibility or a desirable future event" (Oxford University, 2005). CNPO chose "envisage" because its governance model is a top-down and expert driven. Since 1975, the enforcement of CNP's regulations, which includes no trespassing and fines for natural resource extraction and poaching, has been undertaken in partnership with Nepal's military (CNPO, 2015). The five-year management plan states, "Present achievements would not have been achieved had the army was not deployed in this park for protection [*sic*]" (CNPO, 2015, p. 10). To protect biodiversity and enforce CNP rules and regulations a battalion is deployed across 27 posts within CNP. CNP takes its priority, biodiversity conservation, seriously:

> "Since the park is designated to ensure the viable population of wildlife, viz. Rhinoceros, Tiger, etc., the heart and soul of this plan lies in maintaining the

> present wildlife population of the park through stringent protection and appropriate management measures." (CNPO, 2015, p. 24)

The ICUN classifies CNP's 932 km² core protected area as a category two PA (UNESCO & IUCN, 2007). The primary objective of a category two PA is "to protect natural biodiversity along with its underlying ecological structure and supporting environmental processes and to promote education and recreation" (IUCN, 2015, p. 1). Focusing on protecting biological diversity has worked well for CNP; virtually all wildlife populations in the park have risen (CNPO, 2015). But there have been consequences of increased populations of rhino, tigers, and other park-protected wildlife. Namely, high wildlife populations have engendered continuing park-people conflict and resulted in adverse social impacts for some people living in the park's periphery.

3.5 CNP's Social Impacts

Park-people conflict is not a new phenomenon in the periphery of CNP. 22 years ago, Nepal & Weber (1993) reported the values, objectives, and priorities of park authorities and people were widely divergent. Nepal and Weber (1995) identified five major causes of park-people conflict in CNP: illegal removal of natural resources from the park, illegal hunting and fishing, livestock grazing in the park, crop damage, and threats to human and animal life from park-protected wildlife. In this section, I examine the contemporary HDC literature that has investigated park-people conflict and its social impacts in the area surrounding CNP.

My literature review of the HDC in CNP BZ included 27 sources—mostly peer-reviewed academic articles, but also CNP reports, dissertations, and theses. Although the population of the CNP BZ is heterogenous, the subjectivities of the authors of the HDC literature were starkly homogenous. Of the 61 authors from the literature cited, 25 were Westerners (41%), 24 were high caste Nepali men (40%), two were Hill Janajati men (3%), one male author was from a low caste group (1.5%), and 9 authors were from non-Western countries (14.5%). Nepali Women and Terai Janajati were not represented in the authorship of this literature. The implications of the exclusion of women and Terai Janajati, as well as the gross underrepresentation of other marginalized groups, in the HDC literature on the CNP BZ is fleshed out in the Discussion chapter.

3.5.1 Natural Resource Restrictions

Although natural resource extraction from CNP is illegal, *de facto* the practice is commonplace. This illegal practice includes the collection of fodder, thatch, and firewood from CNP, as well as grazing livestock, fishing and hunting within the park. Straede & Treue (2006) completed a year long study on the economic value of natural resources collected legally and illegally from CNP, BZCF, and national forests. Their study examined the value and effect on livelihoods that these natural resources had on 18 households located in and around the park. The authors conclude that a gap exists between landless, land poor, and land rich people's natural resource requirements and their ability to collect natural resources through legal means.

Straed & Treue's (2006) study, which included households in Bachhauli, found landless and land poor participants acquired the majority of their fuelwood illegally from CNP. This study was, however, too small to make generalizations (*n*=18). They concluded:

> "The substantial economic importance of RCNP [Royal Chitwan National Park] to local communities, and especially the high economic returns to labour of collecting products from the wild (two to four times higher than the income from casual labour), presents a plausible explanation why villagers often resist or circumvent conservation efforts of protected areas and, hence, why park-people conflicts occur in RCNP." (Straed & Treue, 2006, p. 263)

The Nepali Census reports 1,169 of the 2,321 households in Bachhauli use wood as their primary source of cooking fuel (CBS, 2014). BZCFs in Bachhauli provide firewood to members at a reduced rate. However, the cheapest option for firewood collection (provided that one does not get caught by the Nepali army and fined) is illegally collecting wood from the CNP forest. This gathering of illegal natural resources, for firewood, fodder, and food, has been documented by many researchers (Straede & Treue, 2006; Straede & Helles, 2002; Paudel, 2002; Nepal & Weber, 1995).

The need for natural resources is such that even those with positive attitudes towards conservation act in ways incongruent with conservation objectives. Nepal & Spiteri (2011), whose research study area included Bachhauli, found that even people who support conservation, acted in ways incongruent with conservation objectives—by collecting natural resources illegally from CNP. Therefore, individuals with positive attitudes towards conservation act in ways incongruent with conservation objectives when there are economic benefits to doing so or if it is necessary to do so.

3.5.2 Crop damage

Crop damage caused by park-protected wildlife is another adverse social impact in the primarily agriculture periphery of CNP. Crop damage by park-protected wildlife has been documented since CNP's inception (Mishra, 1982). The extent of the damage caused by park-protected wildlife and its cost to farmers are unknown. No systematic, rigorous, or longitudinal study on crop damage has been undertaken in the CNP BZ. Therefore, I relied on information from case studies with small sample sizes and limited generalizability. That being said, the widespread occurrence of crop damaged is mentioned in nearly every study on the HDC in the CNP BZ, in the CNPO management report (2015), and in the UNESCO-IUCN evaluations (2003 & 2007).

Lamsal (2012) investigated the impact of crop damage in 16 VDCs in the BZ, not including Bachhauli. Because the head of the household, the patriarch, was interviewed, the external validity of the sample is unlikely. In the survey Methods chapter, I explain why this sampling practice may cause a systematic sampling bias. Nonetheless, Lamsal (2012) reports people living within two kilometers of CNP, Barandabhar national forest, or a BZCF experience the most severe crop damage. Lamsal (2012) also reports crop damage attributed to rhinoceros was more frequent than any other animal, and caused the highest value of crop damage.

Spiteri and Nepal (2008) surveyed 189 households in eight VDCs, including Bachhauli. 85% of their respondents reported they grew crops, and 90% of these farmers experienced crop damage from park-protected wildlife. In a study using the

same survey data, Karanth and Nepal (2011) report 58% of respondents identified damage caused by wildlife as a major problem with conservation. Also documented in the literature is the occurrence of damage to houses from park-protected wildlife, though this issue has not received much attention (Budhathoki, 2012). Other researchers investigating the HDC in the Terai report crop damage from park-protected wildlife is prevalent and impacts the livelihoods of farmers, especially the poor (Karki, 2013; Agrawal & Gupta, 2005; Baral & Heinen, 2007).

3.5.3 Fatal people-wildlife interactions

Sadly, some interactions between people and park-protected wildlife are fatal. Budhathoki (2012) reports that between 1997 and 2009 interactions between individuals and CNP park-protected wildlife resulted in 424 human casualties. Gurung et al. (2008) collected data on tiger caused human fatalities over a 35 year period, from 1979-2006. Prior to 1998, an average of one person each year was killed by a tiger; since 1998, the average has risen to seven fatalities per year. A confluence of factors, Gurung et al. (2008) argue, explains this increase in tiger related deaths. Both tiger and human populations have risen, increasing the likelihood of interactions. Gurung et al. (2008) also believe tigers' increased use of reforested, healthy, and protected BZCFs has led to the observed rise in fatal tiger-human interactions. Sadly about half of those killed by tigers were grass and fodder collectors, generally the poor people who enter CNP illegally to collect the fuel, fodder, and food they need (Gurung et al., 2008). Generally, in the event of a death

attributed to park-protected wildlife CNP monetarily compensates the family of the victim. However, for the grass and fodder collectors entering CNP illegally there is no compensation for their families if they are killed (Budhathoki, 2012). The inadequacy of CNP's compensation scheme is examined in the Discussion chapter. Natural resource restrictions, park-protected wildlife caused crop damage, human fatalities—these adverse social impacts paint a bleak picture of consevation, but this isn't the whole story.

3.6 Tourism

CNP's presence, with its exotic and rare wildlife, supports a vibrant tourist economy. Tourism has enjoyed a meteoric rise in its contribution to the region's economy since the establishment of the first safari lodge, Tiger Tops Jungle Lodge, in 1965. Approximately 1,000 tourists visited the park during its first year in 1973; this number rose to 147,000 in 2010 (CNPO, 2015).

CNP generates a significant amount of its revenue, 93% in 2006, from the entry permits tourists buy to enter the park. Over 70 hotels operate in the CNP BZ (UNESCO & IUCN, 2007). The benefits from tourism are, however, geographically concentrated—this is what makes Bachhauli VDC so unique. There are nine tourists entry checkpoints in the BZ. From these checkpoints, visitors can enter the CNP on foot, by jeep, or on elephant back. CNP issues 75% of all entry permits from the entry checkpoint in Sauraha, the main tourist town in Bachhauli. Even though Bachhauli's total population of 10,443 and size, approximately 19 km^2, is but a

fraction of the BZ's total population and size, it reaps the largest share of tourist benefits (Litpon & BhatHeenai, 2014). 60 of the 70 hotels in the BZ operate in Bachhauli (UNESCO & IUCN, 2007). Bookbinder et al. (1998) report 72% of hotel employees and 74% of nature guides are locals, but 61% of hotel ownership is non-local (as cited in Spiteri & Nepal, 2008). So even though employment opportunities for locals exist, non-local hotel ownership, and outside tourists bookings, result in much of the money generated by tourism being funneled away from Bachhauli. Upadhyay (2013) concludes CNP's presence engenders economic inequality in Bachhauli: Those with less income, mostly farmers, face park-protected wildlife damage, and those who benefit from tourism are already wealthy. The presence of conservation is polarizing in Bachhauli; there is a high concentration of benefits derived from tourism and costs that stem from park-people conflict. This concentrated confluence of benefits and costs makes Bachhauli a unique site in which to research the HDC.

3.7 The Buffer Zone

CNP's decision to actively address the HDC has many causes: The salience of CNP's adverse social impacts, calls by academics to address them, and the international conservation discourse's third phase. The embodiment of CNP's engagement with the HDC is the BZ, established in 1996. Although adverse social impacts of conservation abound, the BZ has, with the help of tourism, distributed conservation derived benefits to people living in the periphery of CNP.

The National Parks and Wildlife Conservation Act's fourth amendment in 1993 ushered in the BZ model in Nepal. By 1996, the CNP BZ was established. It spans 34 VDCs and four districts, with a total human population of 260,000. The BZ channels 30-50% of the park's revenue to conservation and development activities. There are three levels of management in the BZ governance model: Park, Sector, and Settlement. The Park level consists of a Buffer Zone Managment Committee (BZMC), which is composed of 21 chairpersons from each of the 21 Buffer Zone User Committees (BZUC), the sector level of management. Bachhauli's BZUC is the Mirgakunja. Buffer Zone User Groups (BZUG) are the Settlement level of BZ management, of which there are 1779 in the CNP BZ and 131 in the Mirgakunja BZUC (CNPO, 2015).

CNP allocates 30-50% of its revenue, from the sale of park entry permits and fines, to the BZMC. The BZMC then re-allocates that money to each BZUC. BZUCs then disburse this money according to guidelines designed to ensure investment in a variety of conservation and development projects. This includes community development (30%), conservation program (20%), income generation and skill development (20%), conservation education (10%), and administration (10%). Initiatives funded by the BZ include a wildlife damage relief scheme, conservation education and outreach programs, training workshops, low-interest microloans, infrastructure investment, including the installation of fences around PAs, and biogas system subsidies. However, the money disbursed by CNP comes with strings attached. Budhathoki (2004) reports management decisions at the BZMC, and

BZUC levels are to a large extent in the hands of the National Park. CNP must approve all financial decisions before they are made by the BZMC and the BZUCs.

The committee composition of the BZ reflects national trends in discrimination, discussed in the Literature Review. Budhathoki (2004) reports that 75% of CNP's BZMC members were from high castes. No women sat on the BZMC and only 15% of the BZUC chairpersons were Terai Janajati. Marginalized people (women, low caste, poor) are involved at the BZUG level, but as one moves up the BZ hierarchy, the representation of these marginalized groups diminishes. To my mind, the BZMC and BZUCs make-up is symptomatic of the systemic discrimination present in Nepali society. In 2007, the BZMCs of the four Terai PAs, including CNP, totaled 144 committee members. Between these four BZMCs, only one woman and one Dalit was represented (Paudel et al., 2007).

3.8 Buffer Zone Community Forests

Buffer Zone Community Forests (BZCF) is another conservation initiative tangentially related to CNP and its BZ. There are 47 BZCFs in the CNP buffer zone, two of which are found in Bachhauli—Baghmara and Jankauli (CNPO, 2015). BZCFs are governed by an elected council of 13 committee members who make decisions regarding sustainable forest management and development initiatives (Jones, 2007). But, the autonomy of BZCFs is restricted by an operational plan vetted by CNP. Without an operational plan approved by CNP, BZCFs cannot be handed over to

communities (CNPO, 2015). CNP provides technical support and the BZUC provides financial aid to BZCFs. To summarize, the BCZFs have limited autonomy.

3.8.1 Jankauli

Jankauli BZCF is 60 hectares in size and located in the southeastern sector of Bachhauli; it has 950 members (CNPO, 2015). Apart from a handful of master theses, this BZCF is virtually absent from the human and ecological academic literature on CNP. According to a prominent local conservationist, this BZCF is dysfunctional and not very active (personal communication, October 20, 2014). I tried many times but was never able to organize a rendezvous with any of Jankauli's committee members. Baghamara, on the other hand, is a BZCF that has received considerable attention in the HDC literature.

3.8.2 Baghmara

In 1995, 215 hectares of forest at the Western extent of Bachhauli was handed over to Baghmara BZCF (Baghmara BZCF, n.d.). Its 956 members are residents of Wards 1,2,3, and 4 (Sharma, Chalise, & Solanki, 2011). The Baghmara BZCF is widely considered a success story (Jones, 2007). This success has stemmed from reinvesting its tourism revenue in ecological restoration and development projects. Annually, Baghmara BZCF nets approximately 7,000,000 Nepali Rupees (NR) ($87,500 CAD) from elephant rides, jungle walks, and boats tours (Baghmara BZCF, n.d.). Baghmara funds infrastructure development, biogas and firewood subsidies, scholarships, as

well as various training workshops (cycle repairs, craft making for women, and apiculture training). Baghamara is also a leader in inclusive and representative governance. Jones (2007) reports Baghmara's committee is made up of five Tharu (three of whom are women), three Tamang (one of whom is female), one Newar, one Lama, and three Brahmins[4]. Baghmara is considered by many and by most standards exemplary of the BZCF model of participatory conservation (Jones, 2007).

3.9 Summary

To summarize, Bachhauli is part of the CNP BZ, straddled by two BZCFs (Baghmara to the West and Jankauli to the East), and is due North of CNP, separated by the Rapti River (Figure 6). Conservation has a polarizing presence in Bachhauli. The Mirgakunja BZUC and BZCFs fund development initiatives, and conservation-based tourism contributes substantially to the local economy—the benefits of conservation. Residents also experience crop damage, destruction of property, and loss of life from park-protected wildlife—the costs of conservation.

[4] The inclusion of marginalized groups was due to the input of an NGO, the National Trust For Nature Conservation, during the election of the committee (Jones, 2007, p. 573)

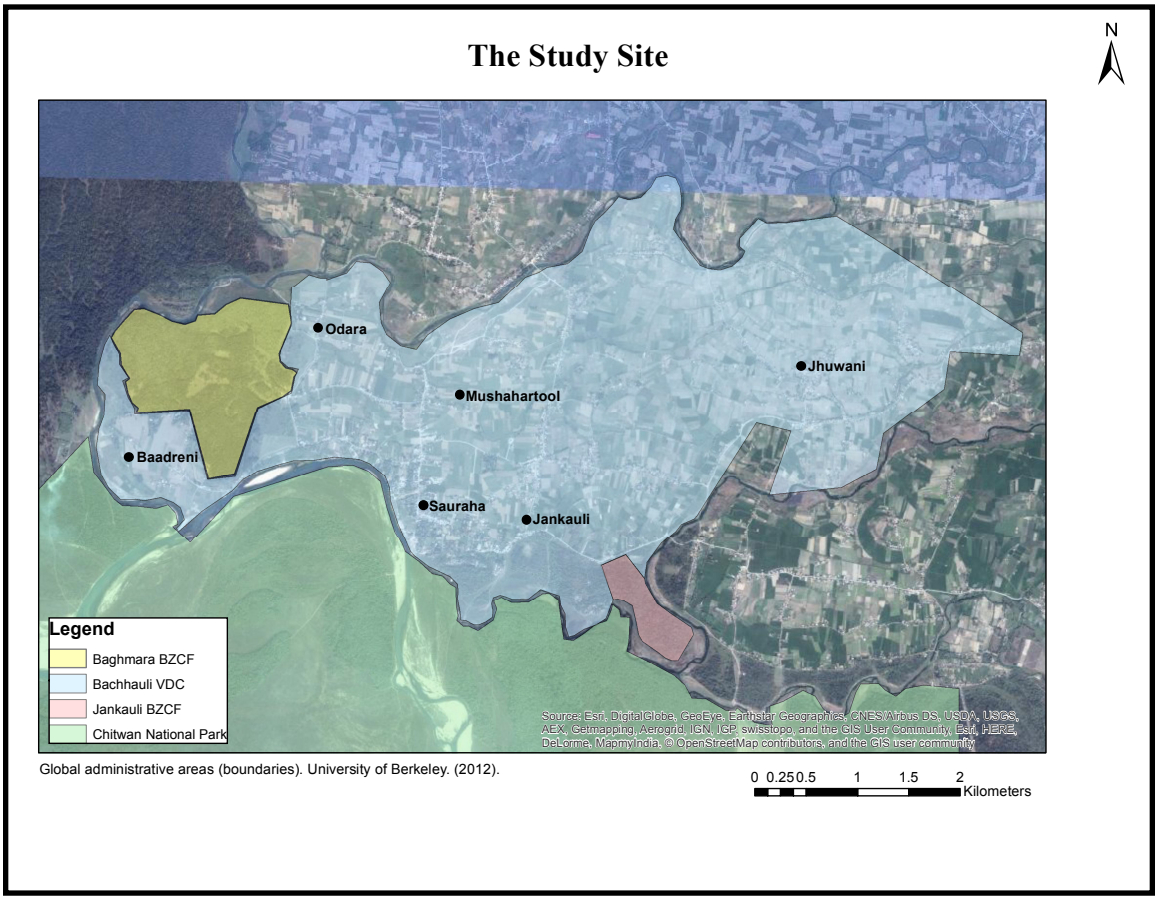

Figure 6. Bachhauli VDC with names of villages pertinent to the research. Source: Author.

4. Mixed Methods

By examining the photovoice and survey results together, I explored the HDC from multiple perspectives. In this case study, I used a divergent parallel mixed methods research (MMR) design. Multiple factors drove the need for this MMR design: The scope of the research topic, ontological and epistemological commitments, and the dearth of qualitative and PAR research in the HDC literature on CNP. In separate chapters, I discuss the methods and results of the photovoice and survey projects. In the Discussion chapter, the results from both methods are examined together. But how are results from disparate methods examined conjunctively? The answer to that question is the subject of this chapter.

In this case study, distinct methodologies, with disparate methods, were used to investigate the HDC. In this section, I explain the fundamental characteristics of MMR; examine arguments for and against multiple method commensurability; bolster my argument for MMR by explaining my ontological and epistemological positioning; explicate the need of MMR for investigating the HDC; and finally, I describe the MMR design employed in this study.

4.1 Mixed Methods Research

MMR is a methodology: It is the overarching strategy that shapes the research problem, its scope, and the choice of methods used (Baum, MacDougall, & Smith, 2006). In contrast, a research method is a technique used to collect and analyze data. MMR incorporates two or more methods to explore a research

problem. GISciencists (Jung & Elwood, 2010), feminist researchers (Nightingale, 2003), and political ecologists (Robbins, 2003) have all used MMR. MMR has three fundamental characteristics: methodological eclecticism, paradigm pluralism, and diversity accommodation (Teddlie & Tashakkori, 2010).

4.1.1 Methodological eclecticism

Methodological eclecticism is the fundamental concept upon which all other MMR characteristics are wrought. It is the use and integration of qualitative and quantitative methods to investigate a phenomenon (Teddlie & Tashakkori, 2010). This integration of multiple methods is a contested idea (Philip, 1998). The incompatibility thesis argues the incommensurability of incorporating qualitative and quantitative methods because they are supported by different research paradigms with disparate assumptions at the level of epistemology and ontology. For example, a qualitative method from the constructivist research paradigm, which assumes knowledge is a social construction, cannot be used in conjunction with a quantitative method from a positivistic research paradigm, which assumes unbiased knowledge can be collected about a knowable world. This incommensurability of qualitative and quantitive methods stems from differing fundamental assumptions about what can be known and how.

4.1.2 Paradigm pluralism and critical realism

MMR's pragmatic defense against the incompatibility thesis is that research paradigms with differing epistemological and ontological orientations can coexist; this is called paradigm pluralism. Teddlie & Tashakkori (2010) describe paradigm pluralism as the belief that "a variety of paradigms may serve as the underlying philosophy for the use of mixed methods" (p. 9). Additionally, they contend, "We believe that contemporary MMR is a kind of "big tent" and that it is both unwise and unnecessary to exclude individuals from the MMR community because their conceptual orientations are different" (Teddlie & Tashakkori, 2010, p. 9). I find the 'big tent' argument unconvincing. I do, however, think paradigm pluralism is justified by taking a Critical Realist stance on epistemology and ontology. From the Critical Realist perspective, reality exists independent of our experience. But knowledge about this externally real world is partial and socially constructed (Forsyth, 2013; Robbins, 2004; Forsyth, 2001). Therefore, knowledge about reality is partial and coloured through a subjective lens. This perspective aligns, in part, with Donna Haraway's (1991) concept of partial or situated knowledge. Haraway questions the stance of the objective, omniscient, impartial observer in research, proposing all knowledge is partial and linked to the context within which it is created. Critical Realism departs from Haraway at the ontological level, however, when she posits that no one truth exists. MMR's paradigm pluralism and Critical Realism converge in that they both value multiple ways of knowing the world. Critical Realism posits knowledge about the world is partial; MMR uses multiple means of investigating the

world, exposing a plurality of socially constructed and partial meanings. MMR's paradigm plurality dovetails conceptually with Critical Realism's epistemological stance.

4.1.3 Divergence and diversity

Convergence and divergence are two MMR approaches for evaluating results produced by two or more different research methods. Transforming qualitative results into numeric data, then comparing the transformed qualitative results with results from a quantitative method is an example of Creswell et al.'s (2011) merging technique—a convergence MMR approach. In contrast, a divergent MMR approach examines the differences and similarities produced by qualitative and quantitative methods, without transforming either data set—essentially giving neither method epistemic privilege. Teddlie & Tachakkori (2010) argue, "this emphasis on divergent results often provides greater insight into complex aspects of a phenomenon, which can then lead to more in-depth investigation of previously unexplored aspects of that phenomenon" (p. 9). I used the divergent approach for evaluating the results produced in the photovoice and survey projects. No rigid framework in the divergent assessment of qualitative and quantitative results was used. Instead, I used my discretion to make meta-inferences from the qualitative and quantitive results. This MMR case study was neither a qualitative nor quantitative dominant study (Venkatesh, Brown, & Hillol, 2013). Both qualitative and quantitative methods were given equal status.

Divergence was the approach for examining the results produced by both methods. However, the photovoice and survey projects were undertaken independently, in parallel. Qualitative data was collected using the best practices relevant to the PAR methodology and photovoice method, and analyzed by its measures of validity. Independently, a survey was undertaken, analyzed and judged by its standards and best practices. This independent analysis of the same phenomena is the parallel approach to MMR (Teddlie & Tachakkori, 2010).

4.3 Summary

In summary, I investigated the HDC at a personal and population level, all within a divergent parallel MMR framework. In the Methods and Results chapters, the photovoice project and the survey are examined independently, parallel to each other. In the Discussion chapter, the results from the photovoice project and survey are brought together in a divergent and equal treatment of both studies' results. Exploring the consistencies and tensions between the photovoice and survey results rendered a multifaceted, nuanced, but indefinite understanding of the HDC in Bachhauli.

5. Qualitative Method

Engaging with postcolonial theory requires research be done differently, "a postcolonial approach argues for the need for a radical reconstruction of history and knowledge production, demanding attention to a diversity of perspectives and priorities" (McEwan, 2002, p. 128). Putting postcolonial theory into practice, however, has not been articulated with much specificity in the postcolonial literature (Wainwright, 2008). Searching for a methodology that dovetailed conceptually with postcolonial theory led me to PAR. Many have researched the HDC in the CNP BZ, but PAR methods have not been used. Lipton & Bhattarai (2014), Jones (2007), and Straede & Helles (2002) have all called for more bottom-up, participatory conservation processes. Surprisingly, none of them have used participatory approaches to generate knowledge about the HDC in the CNP BZ. Almost without exception, scholars from marginalized groups are absent from the HDC literature on the CNP BZ—nearly all have been Westerners or high caste Nepali male researchers. Additionally, this HDC literature is silent and uncritical of the politics of knowledge production. Motivated to fill the qualitative research gap, informed by postcolonial theory, and driven to address social justice issues in Bachhauli, I initiated a PAR project to explore and amplify marginalized people's experiences of conservation.

This chapter begins by tracing the history and examining the features of this atypical qualitative approach to research. After this brief interlude, I explain the research design—the participants, procedure, and data analysis. This PAR project wasn't entirely participatory; in this chapter I explain how this happened and the

implications. This chapter ruminates on the methodological minutia of this project because in PAR, the process is as critical as the product (Grimwood, 2015).

5.1 History of PAR

The researcher's role in the social construction of knowledge; the link between critical consciousness and social action (as articulated by Paulo Freire); and a widespread acknowledgment of the vast material and social inequalities was the backdrop for the emergence of PAR (Brydon-Miller et al., 2011). In the 1970s, Marja-Liisa Swantz's participatory research with Tanzanian villagers and Orlando Fals Borda's *investigation yaccion* in Latin America were the first PAR projects. Since its inception, PAR has developed into a respected methodology with widespread use. More than 2,500 universities teach PAR, multiple handbooks on qualitative methodologies discuss its practice, the 1998 UN Convention on the Right of the Child championed PAR approaches, and Canada's National Aboriginal Health Organization includes its tenets (Brydon-Miller et al., 2011). Reason & Torbert (2001) (as cited in Grimwood, 2015) have referred to the aughts in the social sciences as the "action turn." The burgeoning interest in PAR is tied to its unique approach to knowledge production.

5.2 What is PAR?

PAR is an orientation to inquiry. Unlike a survey, there is no stringent methodological framework, and no strict protocols for data collection or analysis

(Grimwood, 2015). PAR is a fluid methodology, accommodating whatever theories and methods the research context requires (Brydon-Miller et al., 2011). It has an eclectic mix of methods which includes photovoice, participatory diagramming, participatory mapping, and participatory GIS. Shared by all these methods is a collaborative approach to research that is uniquely PAR. In conventional research, participants are passive. In PAR, participants are actively engaged in the research process, from problem definition through to data analysis, and social action (Pain, 2004). PAR empowers people to reflect and change their reality; it is, as Fals Bonda describes, "research that involve[s] investigating reality in order to transform it" (as cited in Brydon-Miller et al., 2011, p. 388). PAR focuses on participant collaboration, political engagement, and a commitment to action on issues of social justice (Brydon-Miller et al., 2011). A commitment to PAR means facilitating action that addresses participants self-identified problems. In short, the primary goal of PAR is to "move from a situation of injustice towards envisioning and enacting a more just world (as defined by the co-researchers)" (Brydon-Miller et al., 2011, p. 389). In this way, PAR is unreservedly political. To summarize, PAR is not a prescriptive methodology, rather, it is an orientation to inquiry with methods, theories, and features that are malleable to the context within which they are applied.

5.2.1 PAR features

Fundamental features are formative in every PAR project. Grimwood's (2015) inventory of PAR features includes eight items: (1) Iterative and responsive processes

of planning-acting-reflecting for change, (2) attention to power relations, ethics, and issues of representation, (3) collaboration between professional and community/organization researchers in all stages of research, (4) reciprocity in terms of research benefits, (5) eclectic methods tailored to specific circumstances, (6) theoretical and applied outcomes that bind the knowledge-action nexus, (7) emergent project dimensions and depth (e.g., degrees of participation), and (8) criterion of success based on participant/community understanding, change, and transformation.

Methodological choices were informed by the PAR features described above and were responsive to participant needs—not a rigid procedural protocol. This Method chapter underscores the interplay between PAR features, participant input, contextual restrictions, and my role as the researcher. In the Results and Discussion chapters, this project is evaluated using PAR features, postcolonial theory and, crucially, participant feedback. Attention to power relations, ethics, and issues of representation is a PAR feature, but I found the PAR literature lacked theoretical depth on these matters. PAR encourages connecting social theory with practice (Brydon-Miller et al., 2011). In fact, connection social theory and practice is feature of PAR—making theoretical and applied outcomes that bind the knowledge-action nexus. So I turned to the theory that motivated this methodological choice to inform decisions in the research process. In the next section, I examine the research design, participants, procedures, and data analyses used.

5.3 Participants

Three interpreters participated, to varying degrees, in the PAR project. I trained each interpreter on research ethics, PAR methodology, the photovoice method, the unstructured interview process, and the denaturalized transcription method. The interpreters used snowball sampling to select participants, based on participant selection criteria I provided. Ultimately, I relied on their judgment for participant selection. This project's intention was to explore and amplify marginalized people's experiences of conservation in Bachhauli. Based on the literature review, I compiled a list of marginalized identifiers: Dalit, Janajati, women, poor, low educational achievement, farmers, and people with physical disabilities. An affiliation with a marginalized identity was the selection criteria for inclusion in the study. Table 2 shows a necessarily reductionist breakdown of the participants chosen using the snowball sampling method. All participants gave oral or written consent to participate, as outlined in the ORE #19813.

Table 2
PAR participant descriptions

Name	Caste/ Ethnicity	Gender	Occupation	Village	Notes
Bishal Bahadur	Dalit	Male	Farmer	Sauraha	Non-literate, 50s
Nina Paudel	Brahmin	Female	Tourist Guide	Sauraha	Literate, 30s
Sarjit Pariyar	Dalit	Male	Shopkeeper	Sauraha	Literate, 20s
Nabin Barji	Dalit	Male	Forest Guard	Sauraha	Non-literate, 40s
Dipendra Neupane	Brahmin	Male	Shopkeeper	Sauraha	Literate, 40s
Heena Magar	Hill Janajati	Female	Farmer	Jankauli	Non-literate, 40s
Hari Damai	Dalit	Male	Tailor	Jankauli	Non-literate, 50s, physical disability
Kamala Gurung	Hill Janajati	Female	Farmer	Jankauli	Non-literate, 50s
Shristi Tamang	Hill Janajati	Female	Shopkeeper	Baadreni	Literate, 30s
Saroj Chaudhary	Terai Janajati	Male	Forest Guard	Baadreni	Non-literate, 40s
Sang Darai	Terai Janajati	Female	Farmer	Baadreni	Non-literate, 30s
Birsha Darai	Terai Janajati	Female	Farmer	Baadreni	Literate, 20s
Raju Tamang	Hill Janajati	Male	Forest Guard	Odara	Non-literate, 50s
Gopal Dhami	Hill Janajati	Male	Tourist Guide	Jhuwani	Literate, 20s
Ram Majhi	Dalit	Male	Construction	Mushahartool	Literate, 20s

5.4 Procedure

The photovoice project spanned more than a year, from pre-field preparations to post-field reflection and analysis. I completed two visits to the research site in 2014, from early May to late June and from early October to mid-December. The photovoice project had five phases: pre-field preparation, first field visit, preparation for second field visit, second field visit, and finally, post-field reflection and analysis. In this section, I proceed chronologically through the five research phases and examine the various procedures used during each phase.

5.4.1 Pre-field preparation

Collaboration between participants and the researcher in all stages of the research is an integral feature of PAR. (In the spirit of PAR, from this point onwards participants will be referred to as co-researchers—whether they were truly co-researchers is discussed in the Qualitative Results chapter.) Research ethics approval was sought before going into the field. The eventual co-researchers had no input in this process, and therefore no collaboration occurred in this formative research phase. So, had the PAR project already failed in the nascent pre-field preparation phase? As Grimwood (2015) describes, in theory PAR entails co-researcher participation in all research stages; in practice, "the degree of participation achieved is a function of the character of the problems and environmental conditions under study, the aims and capacities of the research team, and the skills of the professional researcher" (p. 13). Full participation is rarely, if ever, achieved in PAR (Brydon-Miller

et al., 2011). This project was no different. PAR is not an all or nothing methodology. PAR projects with degrees of co-researcher involvement in the researcher process, like mine, are acceptable. During this phase, I also made the decision to use the photovoice method.

5.4.1.1 Photovoice

Photovoice is a PAR method where co-researchers use photography to document, reflect, and ultimately share their lived experiences (Wang & Redwood-Jones, 2001; Given et al., 2011). Developed by Wang & Buris (1997), this method has been used extensively in the research fields of public health, mental health, rural development, and more recently, in conservation research (Beh et al., 2013). In this method co-researchers are given cameras and asked to take pictures that reflect their everyday experiences. After the photos are developed, the co-researchers reflect and explain the meaning of these pictures in a focus group or interview. Co-researchers then decide how to share their photos and insights with others to address social justice issues. The action component of photovoice projects is often a photo exhibit (Hergenrather et al., 2009). For co-researchers, especially marginalized people, photovoice provides an opportunity to share experiences and meanings, and tell stories that often fail to reach broader audiences. Photovoice empowers co-researchers by enabling them to interpret and speak about their experiences. Benefits for co-researchers in photovoice projects can include an increase in self-esteem,

discovering strengths and capabilities, and empowerment (Genoe & Dupuis, 2013; Hergenrather et al., 2009; Palibroda et al., 2009).

Generally, photovoice brings co-researchers together in focus groups to discuss the meanings of photos, identify and interpret shared themes, and make decisions (Wang & Redwood-Jones, 2001). However, I was worried about within-group power dynamics with respect to gender and its potential to stifle co-researchers' ability or willingness to speak openly and honestly about their personal experiences. To avoid potential within-group issues I decided to engage co-researchers one-on-one. I believed building trusting relationships with co-researchers would be easier working one-on-one than in a group setting. In the pre-field preparation phase, I decided on the implementation of the photovoice method: There would be one-on-one unstructured interviews with co-researchers; the interviews would be translated and transcribed, then coded using thematic analysis; and co-researchers would decide individually on the course of action, if any, to address issues of social justice in their community. Even though these components of the research process were planned prior to field work, keeping with PAR's orientation to research as an iterative and responsive process, I acknowledged the possibility of changing any aspect of the research project. Therefore, any part of the photovoice project's implementation plan was open to change based on collaboration with co-researchers.

5.4.2 First field visit

Interpreters were hired based on recommendations from the Terai Arc Landscape Office in Sauraha and Arian Spiteri, Dr. Nepal's previous Master's Student who investigated the HDC in the CNP BZ. Co-researchers were chosen using the snowball sampling method. Co-researchers were individually trained in the photovoice method, their participatory role, and photography ethics. To participate, each co-researcher gave informed consent, as per the ORE #19813. After this was completed, co-researchers were given a disposable single use film camera. A total of 20 participants gave consent to participate in the project and were given cameras.

Interpreters informed co-researchers I was interested in the impact of conservation in their lives, but they were encouraged to take pictures of any aspect of their life. Co-researchers took between one day and two weeks to take pictures. When the camera was collected, a date was set for the unstructured interview. At this point, five co-researchers ceased their participation in the photovoice project; their photos were not used in the exhibit or in the thematic analysis. Interpreters conducted unstructured interviews with the remaining 15 co-researchers.

Questions in unstructured interviews are spontaneously generated, reflexive to the interaction between the interviewer and interviewee (Valentine, 1997). Interpreters were encouraged to ask questions spontaneously during the interviews. Although, interpreters were provided with an interview aid (Dunn, 2005). The aid contained themes, topics, and broad questions that could be used by interpreters over the course of the interview. The goal of these unstructured interviews was to

better understand the social reality of the co-researcher from the co-researcher's perspective. Non-directive lines of questioning were used to elicit the meanings co-researchers ascribed to their photos. All unstructured interviews were taped with the co-researchers' permission. The co-researchers could, at any time, ask that the recording equipment be turned off. The length of recorded interviews ranged from 30 to 90 minutes. All co-researchers were given their personal photos, but I retained a copy of each photo. After the first round of unstructured interviews, every co-researcher was asked how they would like to proceed with the project.

In the pre-field preparation phase, I naively planned to finish the photovoice project during my first visit to Bachhauli—in two months. I quickly realized this was impossible. I asked all 15 co-researchers if they would continue participating in the photovoice project upon my return to Bachhauli in October 2014. All agreed, although some expressed their displeasure with this interruption. At the same time, the co-researchers were asked how they would like to proceed with the action component of the project. All agreed a photo exhibit should be held with local decision-makers in attendance. A list of decision-makers drafted by co-researchers included CNP park staff, Mirgakunja BZUC staff and chairperson, BZCF committee members, local politicians, WWF Nepal, and the National Trust for Nature Conservation. Co-researchers also decided that the photo exhibit should include their photos accompanied by text from their interviews. To facilitate the inclusion of text in the photo exhibit, the co-researchers' interviews were translated and transcribed. A denaturalised transcription method was used. In the denaturalised

transcription process grammar was corrected and non-verbal interview noise was removed (e.g., pauses, stuttering, Mms, Uh uh, etc.) (Oliver, Serovich, & Mason, 2005).

5.4.3 Preparation for second field visit

During the first field visit I came to appreciate the busyness of the co-researchers' lives. The planned date for my return to Bachhauli was October, which coincided with the rice harvest. Selecting excerpts from the interviews that would accompany the photos in the exhibit would be a tedious process. I didn't want to burden the co-researchers, especially the ten co-researchers that were farmers, with this time-consuming process. Before I left, I suggested to the co-researchers that I could compile a personalized document that included select photos and quotes from their interviews. All co-researchers agreed to this idea and gave me specific instructions to include particular photos, ideas, themes in their personalized document. In preparation for the second field visit, I used thematic analysis to explore themes in the co-researcher interviews. The method of thematic analysis I used is explained in the data analysis section of this chapter. The thematic analysis was used to create a document for each co-researcher that contained photos and excerpts from the interview based on their selection of salient pictures and themes. These personalized documents were completed before the second field visit and were used as aids during the rounds of interviews undertaken during the second field visit.

5.4.4 Second field visit

When I returned to Bachhauli in October another round of interviews was undertaken to determine the photos and text the co-researchers wanted to include in the photo exhibit. The co-researchers chose photos and text using, as an aid, the personalized documents created using thematic analysis. The interpreters read these personalized documents to the co-researchers. During this process some co-researchers took the opportunity to choose different photos to include in the exhibit than those originally identified by them as salient during the first visit. Additionally, many added to pre-existing text, or created entirely new descriptions, to accompany their photos in the exhibit.

After confirming a site, graciously hosted by the National Trust for Nature Conservation at their Center for Biodiversity Conservation, co-researchers decided a date for the exhibit. Invitations were delivered in-person to the CNP headquarters in Kasara, the Mirgakunja BZUC Office in Sauraha, the Baghmara Community Forest Office in Odara, the Jankauli Community Forest Office in Jankauli, the Terai Arc Landscape project and WWF office in Sauraha, and at various hotels operating in Bachhauli. The second field visit culminated in a co-researcher curated photo exhibit on December 6th, 2014. The exhibit is entitled *Local Photography, Local Perspectives: A Novel Look at Conservation* and is available in Appendix A. The exhibit lasted one day and was open to the public. During the exhibit, interviews were conducted with the co-researchers and invitees in attendance. Seven of the 15 co-researchers did not

attend the exhibit, and some co-researchers who attended wanted to express their thoughts about the photovoice project in a different space. Final interviews were completed with these co-researchers after the exhibit. Final interviews with co-researchers were recorded, then translated and transcribed by the interpreters.

5.4.5 Post-field research reflection and analysis

After returning to Canada, a second round of thematic analysis was undertaken. The photos and text included in the exhibit were used to help refine themes from the first thematic analysis. How this thematic analysis was undertaken, and the evaluation of the photovoice project, are described in next section.

5.5 Data and Project Evaluation

Thematic analysis is a qualitative method used to identify, analyze, and report themes or patterns in a data set (Bazeley, 2007). The data set was made-up of the co-researchers' transcribed interviews, their photos, and the text that accompanied the photos in the exhibit. Themes in the thematic analysis did not "emerge". Braun & Clarke (2006) argue the language of themes emerging, or being discovered, is misleading because it implies a passive and not an active account of the thematic analysis process. I generated themes based on salient photos and text selected by co-researchers for the photo exhibit. Although co-researcher selected photos and text guided the process, ultimately I decided which photos and text to include in the Qualitative Results chapter. This clearly positions myself as an active searcher of

meaning, not a passive receptor. This admission coincides with PAR's and postcolonial theory's importance of acknowledging the researcher in the research process, which has implications for the representation of the co-researchers' experiences of conservation. The themes captured patterned responses and meanings ascribed the question, "How do marginalized people experience conservation in Bachhauli?" In my case, the selection of themes was initiated by the importance ascribed by the co-researchers to certain photos and text.

For identifying, coding, and analyzing themes I used a surface or semantic level of thematic analysis (Braun and Clarke, 2006). In semantic thematic analysis, only the explicit or surface meanings of the co-researchers' interviews were investigated. The thematic analysis did not look beyond what co-researchers said. In a latent or interpretive thematic analysis, the researcher digs beneath the surface meaning of the text and hypothesizes causal mechanisms to explain statements.

In the Qualitative Results chapter I use descriptors like "some participants", "many participants", and "a majority of participants" to suggest themes in the data. I did not, however, do a content analysis. Lastly, I do not shy away from including contradictions in the data set. Between co-researchers, diverse experiences of conservation were expressed.

The success of the photovoice project was judged using co-researcher feedback, and by reflecting on the praxis of PAR features throughout the photovoice project. In the Discussion chapter, I engage in a postcolonial theoretical critique of the photovoice project.

6. Qualitative Results

I coded over 200 pages of translated and transcribed interviews, 156 photos, and the photo exhibit using semantic thematic analysis in NVivo, a qualitative data analysis software. I identified 12 themes and consolidated them into three categories, entitled "Identities and Livelihoods", "Living with Conservation", and "Speaking Up". Living in the shadow of CNP, the co-researchers experienced multifarious social impacts of conservation. The thematic analysis revealed a heterogeneous array of marginalized experiences of conservation. Before I delve into the themes, I want to make a qualification: The photos and quotes presented here offer but a glimpse into the co-researchers' lives. These photos and quotes do not provide a totalizing, unobstructed view. This chapter concludes with an assessment of the photovoice project, as judged by the participants and evaluated by its use of PAR features.

The order of quotes and photos in this chapter mirrors the coding process: I began coding by searching for themes in the photo exhibit. I assumed the photos and quotes chosen by co-researchers for inclusion in the exhibit included the most important ideas they wanted to share. From these salient quotes and photos I identified themes, then mined the interview transcripts for excerpts that shared connections with these photo exhibit themes. I identified 12 themes: caste, gender, education, farming, conservation related employment, natural resources collection, benefits from conservation, crop damage, fear of wildlife, addressing crop damage, ameliorating conservation and villager relations, and ending discrimination. In the organization of the results, I begin with quotes and photos from the exhibit and

explain the themes I ascribed to them. Then I present other co-researcher photos and excerpts from the unstructured interviews that share connections with those themes. Additionally, I share themes not present in the photo exhibit but identified in the interviews transcripts. When this is the case I will be forthright.

6.1 Identities and Livelihoods

Marginalized is a convenient catch-all, but to think it accurately describes a person's lived experience is false. In reality, social identities interact in many ways to produce a "marginalized" person's lived experience. To appreciate the co-researchers' diversity of experiences with conservation, I examined how identity and livelihood shaped the lives of the co-researchers.

6.1.1 Caste

Thirteen of the co-researchers were Dalits, the lowest caste, colloquially referred to as "untouchables", or Janajati, the ethnic groups living in the Terai. Of these co-researchers, many spoke about the relationship between their caste identity and discrimination. In the unstructured interview, Ram reflected on discrimination when asked why he took a photo of his village (Illustration 1). Ram's sentiment that caste-based discrimination has decreased but persists was shared by many low-caste co-researchers.

> "As compared to the past, the problem of being treated as untouchables seems to have reduced but the problem still exists. It has not eradicated completely. In the past, people did not eat the food that we had touched. This has changed. But I think they see that we have not been able to do anything for

> ourselves, we have not been able to progress and this leads them to view us as low class community and they try to dominate us...No one stops us but we feel that we are inferior to other communities. We are viewed as low class people."



Illustration 1. Ram's village. Photo by Ram Majhi.

In this excerpt Ram discussed food; here he was referring to the Hindu concept of purity. Purity is a desired enlightened state in Hindu culture that is achieved through daily practices and rituals (Whelpton, 2005). A high caste Hindu's purity can be polluted by interacting with the untouchable castes, the Dalits. Traditionally, a high caste Hindu becomes polluted if they eat food prepared, touched, of made in the presence of an "untouchable". Hari, a Dalit man, shared his experience of the discriminatory practice of purity:

> "There is discrimination here. The people living right next to us eat from our kitchen but the neighbors living right across the house do not eat the food

> that we have touched. There are people who treat us nicely but there are others who act as if they are disgusted by us."

By refusing to eat the food made by Hari and his family, high caste Hindus reinforce a discriminatory practice that views him and his family as polluted, by virtue of their caste. Co-researchers expressed the persistence of caste-based discrimination, even if many acknowledged its effect on their lives was waning. Notably, caste-based discrimination was not mentioned by the two high caste co-researchers. But even the high caste co-researchers experienced discrimination based on their social identity. Nina, a tour guide and high caste Brahmin, faced many challenges entering the guiding profession because of her gender.

6.1.2 Gender

Six of the 15 co-researchers were female. To participate in the photovoice project, most of the female participants sought approval from their husband, father-in-law, or father. Of the five co-researchers that ended their participation after the unstructured interview, two were female, and both did so at their husband's request. The literature is unambiguous about the prevalence of gender-based discrimination in Nepal's predominantly patriarchal culture. That being said, getting the female co-researchers to explain the role of gender in their lives was difficult. In some female co-researchers' interviews there was little or no mention gender-based discrimination. However, Shristi, a Janajati shopkeeper, shared this when describing her photo of a rooster (Illustration 2): "Some people do listen to the opinion of girls but the majority of people don't acknowledge our voices."



Illustration 2. Rooster at road. Photo by Shristi Tamang.

Kamala, a Janajati farmer, highlighted the lack of employment opportunities for women: "There are no employment opportunities for women. If they could help us get some skills, then we could make a living using that skill. I wish that we could work and earn something for the family too." This was echoed by Shristi as well:

> "I think that the women of this area should be given some vocational trainings so that they can make a living without going to the jungle. I know how to weave woolen clothes and shoes which I could teach other women of this area. If these skills could be transferred to other women of this area, then their dependency on the forest would decrease."

Nina was one of two female co-researchers who's livelihood depended on tourism. A high caste Brahmin, she owns and operates a tour guide office in Sauraha. This achievement is all the more exceptional in light of the gender-based

discrimination she experienced entering the profession in 2009. At that time there were 300 tour guides working in Sauraha; she was the only women. She recounted her experience:

> "This was considered a man's job, it was natural for the men not to trust me. The men gave me a salary even if I didn't go into the jungle. They didn't want me in the jungle. I didn't want to take the salary without working. I struggled a lot... Slowly they started giving me a couple hours of work each day, then a half day, then finally a whole day. At this point they started calling me brother."

Even as a high caste Brahmin navigating employment was difficult for Nina. Now she owns and operates a tour guide office in Sauraha. In the unstructured interview, she pointed to the achievements of another entrepreneurial woman in Bachhauli:

> "This building is under contract by a female [Illustration 3]. This is important. She's the only female contractor here....I respect the women contractor a lot because she works three times more than a normal man works. It's tragic in our society that we can't bring women like this out into the limelight. I took this picture because it's a solid answer to those who question the abilities of women in our society."



Illustration 3. Building being built by a female contractor in Sauraha. Photo by Nina Paudel.

6.1.3 Education

In the interviews with the eight uneducated, non-literate, co-researchers I noticed a pattern. These uneducated co-researchers would hedge their statements by mentioning that they were uneducated. Take Raju's statement for example:

> "I am an uneducated person who cannot predict the future so I have no idea what would bring about positive changes. I'm a simple person so sometimes I feel as if I want a lot of things but I don't know which of these things would bring about positive change."

Although, some, like Hari perceived that caste or gender or education weren't, in isolation, the only reason he faced discrimination:

> "I have experienced that [discrimination] even within our own caste, those who are economically prosperous have different situations than us. The way society treats them is different than the way we are treated. So, I have felt that the main reason behind this discrimination is also my poor economic condition. Also, education plays an important part in ending the discrimination. I am not educated as times were different and I did not get the opportunity to study."

Hari's quote gets at the concept of intersectionality and reminded me the co-researchers could experience discrimination from multiple axes. As an external force, discrimination restricted the agency of co-researchers. For example, the women who did not participate in the photovoice project may have wanted to, but they had to respect their husband's decision. Discrimination was also internalized and self-restricting. For example, when non-literate co-researchers hedged their statements, discounting the value of their ideas because of their educational status. Exploring the multifaceted sources of discrimination and their effects on co-researchers' lives was beyond the scope of this study. My intention was to highlight that caste, gender, education, and class all impacted the lives of the co-researchers.

6.1.4 Farming

Five of the co-researchers identified as farmers and an additional six others were involved in farming. For those co-researchers with agricultural-based livelihoods their descriptions of farming often revolved around the crops they planted. Birsha described the importance of rice in her life:

> "I do not need to tell you about the importance of rice to farmers. We consume it, we sell it, and use the money to re-invest in farming....In a year we have three crops, first rice, then mustard or corn, and then rice again."

The linkage between farming and life was often shared, like in Sang's quote: "Without paddy farming the farmers would go under. We have to do this to feed ourselves. There are so many advertisements telling us not to use the pesticide, but we have no choice."

Of the five self-identified farmers, three were landless. This means they neither owned the land they lived on nor the land they farmed. Being landless meant little choice of where and how to live. Ram spoke of this problem:

> "The main problem of my village is that we do not have our own land. The houses that we are living in right now were made by an American organization. As we don't have our own land, we have to live in these houses made by them. One family lives in one room so we don't have any space to keep our belongings...In my village, there are many problems regarding space for living and sleeping. We also have problems fetching enough food for all of us."

Farming was especially difficult for the landless farmers. Heena described how farming arrangements between landowners and landless people work:

> "People in my area don't have their own land, and even if they do own land, it's small...Most of the landless people usually rent others' land for cultivation. When we rent somebody's land we are supposed to split the harvest but in my case I don't split the harvest I pay them money."

Heena pays all the upfront costs required to get a crop to harvest. She must buy the seed, pay the tractor to till the land, buy the fertilizer, and do all the manual labour from planting to harvest. The owner of the land does not contribute in any way, other than providing the land. If anything goes wrong, like park-protected wildlife destroys her crop, all the money invested by Heena is lost, and she is still required to pay the landowner for renting the land.

Often, the co-researchers with agricultural-based livelihoods would begin talking about farming but end up recounting stories about rhinos or boars or elephants—and the crop damage they caused. The lives of the co-researchers with agricultural-based livelihoods were inextricably linked to crop damage caused by park-protected wildlife. Kamala's photo (Illustration 4) and its description, from the photo exhibit, is exemplary of this tethering between her livelihood and crop damage:

> "This is a picture of a paddy field. I wanted to show the life of the farmers through this picture. We grow rice, harvest it, consume it, and sell it in the market. It is so difficult to be a farmer, work hard all day and still wake up all night. Chase elephants all night, banging the tin utensils. What can we do? If we want to get the harvest then we have to sacrifice our sleep."



Illustration 4. Rice field. Photo by Kamala Gurung.

Also inextricably linked to conservation were the co-researchers whose livelihoods depended on direct employment in a conservation agency (three co-researchers) or through conservation-based tourism (five co-researchers). The overlap between identity, livelihood, and conservation in the lives of these co-researchers meant they occupied shared ground between the categories *Identities and Livelihoods* and *Living with Conservation*. Gopal, a tourist guide, described his identity in this way: "My identity is not so much separated from that of CNP. I grew up knowing the animals as a kid." Recognizing this deep connection between identity, livelihood, and conservation, the descriptions of these co-researchers' lives were nestled between the categories *Identities and Livelihoods* and *Living with Conservation*.

6.1.5 Conservation related employment

Conservation-related tourism directly supported the livelihoods of five co-researchers. Nina and Gopal worked as tourist guides, and Shristi, Sajit, and Dipendra operated shops catered to tourists. In this photo (Illustration 5) and description, included in the photo exhibit, Shristi described the impact of tourism:

> "The tourists are returning from the breeding center after watching the baby elephants. The shops that you can see in the picture sell honey and other souvenirs like elephant and rhino dolls. These tourists come to the shops here, including mine, for beverages and we have been able to generate income because of conservation"



Illustration 5. Tourists returning from the Elephant Breeding Center in Baadreni. Photo by Shristi Tamang.

Three of the co-researchers were employed with two conservation agencies, CNP and Baghmara Community Forest. All three were guards for these conservation initiatives. One of these men augmented his full-time employment by working as a tailor. His livelihood brings attention to those employed in low-paying jobs within conservation agencies. Asked if his salary was enough to provide for his family he responded:

> "Twelve thousand rupees [$148 CAD per month] is not enough at all. In the present context, it is nothing. People who earn 40-50 thousand [$495-619 CAD] a month think that they do not earn well, what is twelve thousand compared to what they earn? If we go to buy vegetables or clothes in the market, we cannot even get a bag full of clothes for 50-60 thousand rupees [$0.62-0.75 CAD]. There are many problems. What can I do with the salary of twelve thousand? It can only meet one end of our needs."

For those employed by conservation agencies, their work responsibilities sometimes clashed with the needs of people they knew. One of these co-researchers shared that his job preventing illegal natural resource harvesting conflicted with his family's livelihood needs:

> "I always find villagers entering the forest to get grasses...but what can I do about it? There are lots of farmers in the area, even I am a farmer and I need it too. So there's nothing I can do about it. When there is plenty of rainfall the grass that grows in the village is sufficient, but during the dry season everyone depends on the forest for getting grasses... I sympathize with them but sometimes I get angry. The truth is even my family cannot survive without the grass and wood. We also enter the forest for different kinds of vegetables. When I need these things I cannot stop others from entering the forest for the same reasons. Even my family members enter the jungle all the time."

6.2 Living with Conservation

The co-researchers' descriptions of their identities and livelihoods were inextricably linked to conservation and its impact on their lives. This overlap made detaching these two categories impossible. In coding the interviews, I found it was difficult for farmers, those part of the local tourism industry, and those working for conservation agencies to talk about their lives without implying some connection to conservation. In this category, *Living with Conservation*, I examine themes related to co-researchers' experiences of conservation.

6.2.1 Natural resource collection

Some co-researchers collected natural resources illegally to meet their livelihood needs. These co-researchers made no explicit or implicit mention of their illegal natural resource collection in the photo exhibit; a deft move given the exhibit was attended by multiple conservation agencies. In the unstructured interviews, however, co-researchers described at length their natural resource needs, their inability to fulfill them without resorting to illegal extraction, and their reluctance to engage in this illegal activity. When asked why she collected firewood from CNP, Kamala responded she needed to collect firewood to meet her family's livelihood needs:

> "This is because even we face the problems of scarcity of firewood and we need firewood in order to cook our meals. So, we are forced to go to the jungle and steal the firewood behind the back of the army. If we are lucky, we are able to escape the army's attention but if they do catch us, they take away our Hasiya and Namlo [grass cutting tools], make us pay fines and burn the firewood we collected." She continued, **"** ...we do not get good wood in the community forest so we go to inside CNP to get some wood...We go inside the CNP to steal the wood. It's the truth, we do go to steal. We try to bring in wood behind the back of the army but when we do get caught then we have to pay the fine. The fine is usually 3-5 hundred rupees [$3.71-6.20 CAD]... I go into CNP and have paid fine so many times."

Almost all the co-researchers who collected natural resources illegally from CNP and the BZCFs articulated that they did not want to do so and that being in the forest was not a pleasant experience. Asked if she would rather not collect natural resources from the forest, Kamala responded:

> "Of course, at least then we would not have to be scared of everything in the jungle every time. Sometimes I feel like I can't breath due to fear and I feel like I will die in the jungle. It really feels like I will die. I have to watch out for the army, I will be sweating so much. The rhinos, elephants or snakes may attack us when we are hiding."

Another co-researcher, Sang, has stopped going to the forest to collect grasses because it was so difficult. Instead, she has made a deal with hotels in the area to cut and collect the grasses on their grounds.

In Bachhauli, conservation agencies have initiated programs that have reduced people's reliance on natural resources from CNP. Ram, Birsha, and Sang all received firewood from Baghmara BZCF. For Birsha, however, the amount of firewood provided by Baghmara was often not enough: "Not that we don't get firewood, the community forest [Baghmara] provides us with it, but they have to understand that it's not enough for us." Raju explained this tension from his perspective as forest guard:

> "One side is constantly asking me to participate actively in conservation and not allow villagers to enter inside the forest, while the villagers are constantly speaking about their right to enter inside the forest and get grasses, wood, firewood, timber, and to graze cattle in the forest."

6.2.2 Benefits from conservation

Conservation authorities are aware that their policies and practices limit natural resources collection and negatively impact the lives of people living in Bachhauli (CNPO, 2015). To addresses these natural resource needs, and other conservation related issues, the CNP, the Mirgakunja BZUC, and BZCFs support multiple development initiatives. Benefits from conservation also stem from conservation-based tourism and, as one co-researchers shared, the aesthetic beauty of the area.

Many of the co-researchers talked about CNP, the BZUC, and BZCFs' various development initiatives that addressed the negative impacts of conservation

in Bachhauli. While coding the interviews I noticed the co-researchers involved in tourism or directly employed by conservation agencies spoke at great length about these benefits. For example, below is Nabin Barji's photo and explanation of the benefits of conservation from the photo exhibit (Illustration 6):

> "The buffer zone has been providing grass to us for our cattle. The community forests have been giving wood. In case of funerals or any other religious ceremonies where wood is needed, the community forest provides the wood at cheap prices. They have helped in installing biogas at places. It's not only the buffer zone which has helped in the biogas project, it's the joint effort of various organizations such as the Terai Arc Landscape Project, National Trust for Nature Conservation and Chitwan National Park. This is a wonderful initiation"



Illustration 6. Firewood from BZCF. Photo by Nabin Barji.

Likewise, consider Gopal's description of the BZ's various initiatives (Illustration 7):

> "30-50% of CNP's total income goes to the buffer zone. Buffer zone has been utilizing the money well and there are many benefits. The Mirgakunja buffer zone committee has helped install biogas plants with the help of various other organizations. There is compensation for the losses incurred by the farmers due to the wild animals. They have also been providing various trainings to the villagers."



Illustration 7. Biogas system. Photo by Gopal Dhami.

CNP's compensation scheme is discussed later in the theme "Crop Damage." The benefits from conservation did not reach all co-researchers. Hari, a Dalit man, was barred from participating in his local buffer zone user group (BZUG) because he couldn't pay the initiation fee. Hari included the following text and photo (Illustration 8) to communicate this experience in the photo exhibit:

"I wanted to be a member of the buffer zone user group committee here. But I was asked to pay five to six thousand rupees [$62-74 CAD] to be a member of that committee. I told them that I will pay as much as I can but that was a huge amount and I was not able to pay it. They told me as long as I would not pay them that money I would not be entitled to receive any loans or other facilities provided by the committee. Mirgakunja [BZUC] has told me recently that according to a new directive from CNP even if someone living in the area of a committee has not paid the same amount as the old members they will be considered to be the member of that committee. With this directive I am hopeful even my family will get to enjoy the benefits from the committee."



Illustration 8. A tailor's sewing machine. Photo by Hari Damai.

Although co-researchers not involved in tourism or directly employed in conservation did benefit from conservation funded development initiatives. Birsha benefited from having biogas installed in her house: "Since we cannot go to the jungle anymore for fuel, the buffer zone has helped us to find an alternative source of

fuel." Raju, a forest guard, believed initiatives like biogas subsidies have assuaged the conflict between villages and conservation authorities:

> "The level of conflict between these two groups has certainly decreased considering what it was in the past. The buffer zone has allocated a time and place for villagers to cut grasses. Instead of providing firewood we are providing grants for biogas."

Five co-researchers directly benefited from tourism. Sajit, described the importance of conservation-based tourism in Bachhauli using a photo (Illustration 9) and text:

> "This is a tourist area. The villagers here show these tourists around, we provide various services to these people and the tourists pay a lot of money for these services. This money helps the villagers to make a living. Many changes in the lives of the villagers have been brought about by these tourists. Yes, CNP exists and that's the reason we exist."



Illustration 9. Elephant used for jungle tours. Photo by Sajit Pariyar.

However, living in the shadow of conservation and the wealth brought in by tourism was difficult for some co-researchers who lived in poverty. Bishal expressed feeling excluded from the benefits of tourism:

> "This is a tourist area, if only these authorities would protect us against the wildlife then we could actually benefit from living in a touristic area. Many things including the environment gets better in touristic areas. All the hotel owners have made a fortune from tourism, but I'm not educated and cannot speak in English so I don't benefit from tourism. Even the tourists do not care about poor people like us, they hover around the hotel owners who can speak in English with them. All the hotels are getting rich and we the poor people who work hard have to continue with our hardships."

All co-researchers acknowledged they benefitted from conservation, although not all benefited to the same degree. For some, especially those who directly benefited from conservation through employment and tourism, the benefits of conservation had a substantial positive impact on their lives. But even those who benefited, like Nina and Saroj, experienced tragic losses because of park-protected wildlife: Both of these co-researchers lost loved ones in fatal interactions with rhinos. Nina shared her story of loss:

> "I was studying in my intermediate level and one day my mom went into the forest to get some wood. We depended on wood for cooking and we used the forest for feeding our animals. But one day, a rhinoceros killed my mother inside the forest. My family situation became pathetic and I had to quit my education because the family became my responsibility.... No one was responsible for what happened to us, the rhinoceros which killed my mother is an innocent animal, it does not understand the concept of killing someone, it did not plan to kill my mother. I've never held any grudge or had a feeling of revenge towards animals. The death of my mother was just a mishap and a really sad moment in my life, but I don't hold the animal responsible."

With the earnings from her tourist office, Nina supports those, like her, who have been negatively impacted by conservation. She has been donating 15% of her office's

profits to families negatively impacted by park-protected wildlife. In the exhibit, Nina chose the photo in Illustration 10 and this quote to explain how her office is contributing to the community:

> "This house belongs to one of the wildlife victims. The husband was injured by a rhino and later he passed away because of the incident. She [the wife] has four children and the situation is that she is working and providing for her four children. My office provided the people of this house with clothes and mattresses once."



Illustration 10. House of family who lost a loved one. Photo by Nina Paudel.

6.2.3 Crop Damage

Every co-researcher mentioned crop damage from park-protected wildlife. For some, especially the farmers, crop damage was identified as the most negative impact

conservation had in their lives. For example, take Bishal's submission to the photo exhibit:

> "The main problem that we face is the wild animals. Can you see the paddy field right next to my house? This was all destroyed by a wild elephant. This is the reason why I took these pictures. You can actually see the elephant foot print in this picture (Illustration 11)."



Illustration 11. Elephant foot print in rice field. Photo by Bishal Bahadur.

Bishal was not the only co-researcher to experience crop damage during the two weeks he had a camera. Sajit, who during the interview stated, "My throat is sore today because I was up all night chasing a wild elephant yesterday", explained his motivation for taking this picture of crop damage (Illustration 12):

> "I took this picture because I wanted to show the effects of living near the CNP. We live near CNP so the wild animals from CNP enter and destroy our crops. Sometimes the wild elephants come and finish our crop, yesterday a

wild elephant entered the fields. Sometimes the wild boars destroy our crops. Even when these wild animals destroy our crop, we are not supposed to harm them. We have to chase them away ensuring that they are not harmed."



Illustration 12. Crop damage caused by a wild elephant. Photo by Sajit Pariyar.

Heena, a landless farmer, also experienced crop damage during the two week period she took pictures. She explained why she took the picture in Illustration 13:

"Can you see that the field is now a grassland? I did not get any harvest from this because the boars destroyed it all...we were supposed to be compensated for our loss but we haven't received any compensation so far. I have no harvest to pay for the rent of the land or to feed my animals. Had the animals not destroyed the crop the land would have provided enough corn to fill the back of a tractor, which would last us for a whole year. This year I used four gatthas (0.152 hectares) of land and I did not harvest anything."



Illustration 13. Crop damage caused by wild boars. Photo by Heena Magar.

CNP's Wildlife Damage Relief Scheme (WDRS) compensates those living in the BZ who experience specific types of damage caused by select park-protected wildlife. Heena explains her attempt to get compensation for her loss from the WDRS:

> "The buffer zone asks us to go to Kasara [CNP headquarters], then Kasara asks us to go back to the buffer zone office. So we are sick of being tossed around to different offices and we no longer demand for compensation, we just let it go. My pain, no one can know my pain."

Heena's complaint that CNP's WDRS is inadequate was echoed by many co-researchers. Even Raju, a forest guard, viewed the WDRS as inadequate: "Mirgakunja has been providing a small amount of seed for the damage, but the villagers don't want to go through a lot of trouble for a small amount of seed."

Park-protected wildlife damaged much more than co-researchers' crops; a wild elephant destroyed part of Bishal's house. Bishal include a photo (Illustration 14) and description of that event in the photo exhibit:

> "My house has been attacked three times [by elephants] and the wall has been destroyed completely. My mud walls have turned to bamboo walls. It cost me 800 rupees ($9.95 CAD) just to make this part of the wall. It may seem like a small amount but it is very difficult to earn 800 rupees . So, who is going to help me with that money? And also, who can guarantee the elephant won't attack again once I rebuild the wall."



Illustration 14. Damaged wall in state of partial repair. Photo by Bishal Bahadur.

Bishal explained the elephant destroyed these walls to get at his family's stored rice. Others expressed fear at the thought of animals entering their village and hurting their loved ones.

6.2.4 Fear of wildlife

Many expressed fear at the thought of wildlife entering their village and hurting their loved ones. Shristi expressed she was scared of wild elephants:

> "The main problem we face is the troubles caused by the wild elephants. When I first came here after getting married, a wild elephant snatched an eight-month-old baby from his mother's lap and killed it. I am really scared of the wild elephants after that incident. When I delivered my baby, the wild elephants had entered the village as well and I was really scared and I ran outside holding my baby."

In most cases, the WDRS disburses compensation in the event of a human death attributed to park-protected wildlife. However, Bishal and Heena expressed the impossibility of replacing a human life with money: "If someone dies that's the end. What can money do for the dead?" (Bishal) and "My son is precious and priceless, no amount of compensation would bring him back" (Heena).

I feel privileged to be entrusted with the co-researchers' stories of loss and grief. But the co-researchers did not want to simply re-tell the stories of their past; they wanted to share their ideas and visions for the future. Co-researchers expressed that they were excited for the opportunity to share their ideas for addressing the negative impacts of conservation in Bachhauli. Ultimately, the co-researchers and I hoped that their ideas would influence conservationists in realizing more equitable distribution of conservation benefits and to mitigate the costs of conservation in Bachhauli.

6.3 Speaking Up

I borrowed the title of this category from the final section in the photo exhibit. In this section, co-researchers with suggestions or messages for decision-makers had the opportunity to express themselves. Many co-researchers expressed to me that they hoped their ideas would influence the conservationists attending the photo exhibit. From this section of the photo exhibit I identified three themes: addressing crop damage, ameliorating conservation and villager relations, and ending discrimination.

6.3.1 Addressing crop damage

Farmers and non-farmers alike expressed the need to address crop damage. Some co-researchers called for the construction of more electric fences. However, most co-researchers, like Bishal, were dismissive of this idea due to the fencing system's ineffectiveness against both large and small park-protected wildlife:

> " ...when the fences were first installed it did restrict the movement of wildlife, but without regular maintenance most of the wires now are damaged due to rust and rusty wires cannot shock animals. That's the reason wild boars enter into our village all the time and the elephants too. And once they enter the village they charge straight at our crops."

Even with regular maintenance, electric fences are rendered useless due to frequent power cuts to the area because of Nepal's load shedding schedule. Kamala explained the effect of load shedding on the electric fences' effectiveness:

> "Although they have electric wires and fences, the elephants have found a way to get through it. So although they have installed wires, it is very difficult for us [farmers] due to frequent power cuts. Every day, they repair the wires that

> the elephants have smashed but everyday the elephants smash the wire as soon as there is no electricity."

Fair compensation was the most common co-researcher suggestion for addressing crop damage. Heena, a farmer who experienced crop damage during the photovoice project, made a compelling argument that highlighted the need for compensation:

> "There was a meeting on the conservation of wildlife and I attended it. Everyone talked about conserving the wildlife and my point is that we all know how important it is to conserve wildlife. We know we should not harm or kill these animals, but is the concept of conservation applicable only to animals? What about conserving us and our crops and livestock? Who is going to conserve and protect us? If we are helping the CNP to conserve their wildlife, shouldn't they be conserving our efforts and crops. Conservation efforts should be mutual and good for both sides. We have not harmed their animals even when they have destroyed our entire crops. So if we are holding up on our side how about CNP holding up their end of the bargain and compensating us for our losses."

Nina, a non-farmer, identified a connection between compensation for crop loss, mitigating conflict between conservation authorities and local people, and successful biodiversity conservation: "For the sake of conservation firstly, the authorities should minimize the conflict between people and wildlife. Everyone whose crop has been damaged, they need to get fair compensation from the authorities."

Many farmers like Kamala expressed that they simply wanted to harvest their crops, and reap the livelihood security that accompanied a successful harvest. In the *Speaking Up* section of the photo exhibit, Kamala included this text to accompany the photo in Illustration 15:

> "I wish they would keep the animals inside the jungle so that we can sleep soundly at night. I wish they would always have the electricity flowing in the wire and fences that surrounds the jungle. These are the things that are in my heart. I wish we could bring the harvest home."



Illustration 15. Crop damage. Photo by Kamala Gurung.

6.3.2 Ameliorating conservation and villager relations

Many co-researchers were unaware or misinformed about the array of conservation agencies and their initiatives. Birsha expressed that the confusion and misinformation surrounding these conservation agencies (CNP, BZUC, and BZCF) and their initiatives could be clarified if conservation agencies engaged in more outreach with local people:

> "It would be nice if these people in authority could come to our village and talk to the villagers, ask them not to take more than they need from the jungle. They have to communicate the reasons behind the rules. Then I think

everybody would follow the rules. So I think the officials should sit with the villagers."

Raju, a forest guard, echoed Birsha's statement about the importance of conservation authorities disseminating information to local people. Raju included this photo (Illustration 16) and the following text in the photo exhibit:

> "Those who are actively dedicated towards conservation should be responsible for increasing the level of awareness. They have to reach every village and every section of every village to gather people and disseminate information. If someone is ignorant it's their responsibility to educate these people about the importance of conservation."



Illustration 16. Baghmara BZCF signs. Photo by Raju Tamang.

Speaking to the importance of an amicable park-people relationship, another forest guard, Nabin Barji, included this photo (Illustration 17) and text in the exhibit:

> "The villagers and [conservation] authorities should come together, discuss ways to solve the problems, and they should work together. There are many ways to improve the situation. The relation between CNP and villagers should

be like that of nail and flesh. Villagers need CNP and CNP is needed by the villagers. They should try to get along."



Illustration 17. Domesticated elephant transporting log. Photo by Nabin Barji.

6.3.3 Ending discrimination

Ram was the only co-researcher to include in the exhibit a photo and quote that explicitly addressed caste-based discrimination. Through this photo (Illustration 18) and text, Ram expressed that conservation authorities have a role to play in ending discrimination.

> "As compared to the past the problem of being treated as untouchables seems to have reduced but the problem still exists. It has not eradicated completely. No one stops us but we feel that we are inferior to other communities. I wish that the buffer zone and community forest would extend its help for my community to support us to achieve what we are not able to achieve on our

own. I feel that if given opportunities even my community could progress the way other communities are progressing."



Illustration 18. Ram's village. Photo by Ram Majhi.

Ram's photo (Illustration 18) and quote should be familiar. I intentionally included this photo and quote twice; I did this to underscore the changing meanings co-researchers ascribed to their photos. The meaning Ram imbued this photo with changed subtly from the unstructured interview to the photo exhibit. In the unstructured interview, the photo's description primarily dealt with the plight of Ram's community. Ram edited this description for inclusion in the photo exhibit, ultimately altering the photo's tone and message. By elucidating the trajectory of a photo and its meaning from the unstructured interview to the photo exhibit, I hoped to showcase the shifting meaning of a co-researcher's photo.

6.4 The Exhibit and Participant Feedback

The exhibit *Local Photography, Local Perspectives: A Novel Look at Conservation* was held at the National Trust for Nature Conservation's Biodiversity Center in Sauraha on December 6th, 2014. In attendance were eight of the 15 co-researchers: Sajit Pariyar, Sang Darai, Birsha Darai, Nabin Barji, Nina Paudel, Heena Magar, Kamala Gurung, and Gopal Dhami. Hari Damai, who has a physical disability, expressed he didn't feel comfortable attending, and sent his son in his place. Notable invitees in attendance included: staff from International Non-Governmental Organizations (INGO), CNP staff, National Trust for Nature Conservation staff, BZCF chairpersons, and an international team of ecology researchers. The exhibit was open to the public; an estimated 150 people viewed the photo exhibit.

Many co-researchers and invitees expressed that the exhibit was a good way to get the voices of those impacted by conservation heard. When asked to what she thought about the exhibit Heena responded: "Until today, we haven't shown the views that are in our hearts. Now people coming from afar, like foreign tourists, got a chance to see the photos and what is written. I feel very happy." And Nina:

> "A new thing has started. This photo exhibition has clearly depicted problems of daily life and the social problems of people living in the surroundings of CNP. This [photo exhibit] has made clear the kinds of problems which do not come in the surface."

After viewing the exhibit Birsha was asked how she felt:

> "How do I feel? It is very good because everyone has talked about themselves. Despite not having their own land, some are farming and running their household, some are shopkeepers. But it is difficult for all because of the damage caused by the wild elephant."

A BZCF chairperson in attendance had this to say about the exhibit:

> "In this exhibition, people's views can be clearly seen, their complaints and queries too. I think people's thinking will come around, people will see what conservation will do if we continue this [the exhibit]. If we are able to get other people's voice of this kind."

This chairperson was also impressed by the novel research method and compared it to the other ways researchers have investigated the HDC in the BZ:

> "There is a saying that when surveys and studies are carried out, only limited people are included, opinions are not taken from real victims, but from the voices that are more powerful. Therefore, their views are represented every time...But the reality is that, real opinions will come if opinions are taken from the victims."

One of the co-researchers, Gopal, thought the photovoice project would end up much like other research done in the area: "When this project started off, I thought this is just like before, collecting information then leaving. But at least it is displayed. I feel good that our messages are being broadcasted." Asked if he thought the exhibit would influence decision-makers, Gopal had this to say: "Definitely, it will. Because our problems, everything is becoming transparent. Because of this, I think the authorities will feel responsible."

A project manager for an INGO working in Bachhauli reflected on the exhibit:

> "This thing [the exhibit] has shown that such issues are not addressed by today's conservation body, and the national park's rules and policies. Because of this, even if the benefits of conversation to the local community are not seen at the moment, for its long term importance and benefits, the national park should give reasonable compensation in the right manner for loss caused to the local crops. This will create a win-win situation. If this happened, participation from the local community in conservation would be good and easy. Conservation and local community would come together."

All co-researchers interviewed thought their participation in the photovoice project was worthwhile. Many, like Heena, were glad their participation in the exhibit was not a waste of their time: “It didn't go to waste...The things that I said are important. My sayings are written here, my photos are pasted here... Not just me, all guests have seen my photos. I think something will happen.” However, some co-researchers expressed they hoped for more. After seeing the exhibit Sajit replied: “Yes, this effort will bring about change but more changes would be made if the exhibit was bigger and better, this is my thinking.” Kamala too expressed her hope that more would come from the exhibit:“Ya, I am very happy but wish it could be better.” And Hari’s son: “It’s good, and the opinions expressed by everyone are good too. It would be much better if it could have been telecasted on local TV channels, rather than only to the people at the exhibit.”

Some co-researchers expressed they were disappointed by the lack of interactions between them and the invitees at the exhibit. Although the invitees and eight co-researchers were present together at the exhibit at the same time, myself and the interpreter present noticed only a few short interactions between these two groups. Even though invitees were looking into the lives of co-researchers, few reached out and talked to them. In short, the co-researchers appeared happy they participated in the photovoice project, but some expressed their participation really would not affect much change. Invitees expressed that they enjoyed the exhibit, thought it was valuable, and learned from it. That being said, I can't say with any certainty if the exhibit will influence the conservation work the invitees do. I did,

however, receive emails from a couple invitees with instructions to send them the photovoice exhibit digitally. My hope is that the conservationists in attendance will reflect on the things shared in this exhibit when making decisions about the future of conservation in the CNP BZ.

6.5 Praxis of PAR Features

Upon my return to Canada, I reflected on the praxis of the PAR features outlined in the Qualitative Method chapter. This exercise was another way to assess the photovoice project.

6.5.1 Iterative and responsive processes of planning-acting-reflecting for change

The co-research curated photo exhibit was an example of the project's iterative process of planning-acting-reflecting for change. In this process, co-researchers shared their experiences in unstructured interviews. Then, during the second field visit, they reflected on what they shared in the first round of interviews and refined the messages they wanted decision-makers to hear. This reflection process culminated in the photos and quotes included in the exhibit, the action component of the project. The photovoice project was necessarily iterative and responsive to the needs of co-researchers. All co-researcher suggestions were taken into consideration. Although, temporal restrictions meant some suggestions could not be incorporated into the project. This project would have benefitted from a longer research period.

6.5.2 Attention to power relations, ethics, and issues of representation

Instead of groups discussions, one-on-one interviews were held with co-researchers. I worried gendered power imbalances would stifle women's participation in group discussions. However, the problem of imbalances of power reared itself during the individual interviews. At the beginning of the first round of interviews I perceived that some co-researchers seemed reserved and spoke little in the presence of the only male interpreter. The female interpreter who translated and transcribed the male interpreter's interviews told me she felt he was inadvertently intimidating the female co-researchers. She believed this interpreter did not create a safe and inviting space for the female co-researchers. The female interpreters re-did three interviews with these female co-researchers. The results were staggering. The female co-researchers spoke at length about issues that in their previous interviews they had only one-word responses to. I hypothesized that because of the male interpreter's gender, high caste, and possibly other factors, he was not able to create a safe space within which these female co-researchers could share their experiences.

Teaching the co-researchers photography ethics, as per the ORE #19813, was difficult and unsuccessful in some cases. The co-researchers were instructed not to take identifiable pictures of anyone (including the photographer) and pictures of illegal activities (including pictures taken while trespassing inside PAs). Pictures of non-identifiable parts of the body were appropriate. These rules were in place to ensure that unethical photography was not condoned by the photovoice project:

Namely, that co-researchers would take photos of people without their consent. A number of photographers did, however, take photos of illegal activities and people that could be easily identified. These photos were not used in the exhibit. The implications of adhering to the Waterloo Office of Research Ethic's photography ethics is unpacked in the Discussion Chapter.

6.5.3 Collaboration between professional and community/organization researchers in all stages of research

Co-researchers participated in most, but not all, of the research stages. The pre-field planning phase was the least collaborative research stage. During the pre-field planning phase I chose the research scope (HDC), the PAR method, and the project timeline. Logistical and institutional constraints limited inclusion of the co-researchers in this phase. The study's framework needed to be detailed in advance to ascertain research ethics approval. Therefore, strictly speaking the participants were not co-researchers in all parts of the research process. It may be that the label "co-researchers" is a misnomer in the context of this project. This being said, the co-researchers choose to have a photo exhibit, and they curated it. The co-researchers also had input on the exhibit's location and the invitees. And the research process was flexible to each co-researcher's willingness to participate to varying degrees. In these ways, there were emergent degrees of co-researcher participation—another feature of PAR. This research would not have happened without their involvement, trust, and thoughtfulness.

6.5.4 Reciprocity in terms of research benefits

It was difficult to judge the degree to which co-researchers benefitted from their participation. I certainly benefited from this project. I'll likely receive a Master's degree for my involvement in the photovoice project, enabling upward class mobility. The same is not likely to happen for the co-researchers. Additionally, no changes to conservation-related rules, policies, or programs have been attributed to the photovoice project. Although the photo exhibit was a powerful means of informing conservation decision-makers about the co-researchers' lived experiences, no material change in co-researchers lives can be directly attributed to their involvement. The only material benefit to co-researchers were the copies of their photos they received.

However, I believe this project benefitted co-researchers in intangible ways. During the second field visit, the interpreters observed changes in the co-researchers. Many co-researchers remarked at how articulate and intelligent they sounded when the interpreters read to them excerpts from their unstructured interviews. Other co-researchers reflected on how proud they were of the things they said. The interpreters reported to me that they felt the co-researchers were more confident than before. One interpreter told me how proud she was to be participating in this project because it was helping people see the value of their lives and legitimizing their experiences. The PAR literature talks about the intangible benefits co-researchers gain from their participation in photovoice projects—an

increase in self-esteem, discovering strengths and capabilities, and empowerment (Genoe & Dupuis, 2013; Hergenrather et al., 2009; Palibroda et al., 2009). I truly believe this project had benefits beyond influencing changes to conservation policies, and that the co-researchers benefited in intangible, but important, ways.

6.5.5 Eclectic methods tailored to specific circumstances

In Bachhauli, 31% of females and 24% of males over the age of 5 are non-literate (CBS, 2014). From the literature review, I knew that non-literacy was higher for people from marginalized groups. Eight of the 15 co-researchers were non-literate. Photovoice was chosen over other PAR methods because I believed it would enable more meaningful participation of non-literate people.

6.5.6 Theoretical and applied outcomes that bind the knowledge-action nexus

In the Discussion chapter, I reflect on the theoretical and applied outcomes of the photovoice project in a postcolonial critique. A theoretical and applied outcome of this photovoice project was a schematic outline for a postcolonial research ethic; something I think could help Western people, like me, who research in Non-Western contexts.

6.5.7 Criterion of success based on participant/community understanding, change, and transformation.

No explicit criterion of success was discussed with the co-researchers, other than their participation would result in a photo exhibit attended by conservation decision-makers. Although it was hoped—by myself, the interpreters, and the co-researchers—that the decision-makers in attendance would be influenced to change conservation policies and practices to address the needs of the co-researchers, at this time I cannot say for certain if this will/has happen(ed).

6.6 Summary

The photovoice project sought to explore the experiences of marginalized people impacted by conservation in Bachhauli. I learned the experiences of marginalized people share commonalities but are also startlingly different. The social impacts of conservation impinged on the lives of co-researchers in multifarious ways. Positive and adverse social impacts alike were experienced by the co-researchers living in the periperhy of CNP. Even those whose livelihoods depended on conservation-based employment experienced trauma and loss caused by park-protected wildlife. The photo exhibit, *Local Photography, Local Perspectives: A Novel Look at Conservation,* endeavored to communicate the co-researchers' experiences to local conservation decision-makers; the hope was to facilitate the co-researchers in seeking their definition of social justice. Although I believe the co-researchers benefited intangibly, the extent to which the photovoice project facilitated social

change by influencing conservation decision-makers is unknown. Examining the praxis of PAR features, I learned PAR features in theory and practice differ. That being said, PAR's fluidity enabled the photovoice project to be reactive to the needs and wants of the co-researchers.

7. Quantitative Method

The photovoice project (*n*=15) gathered rich qualitative data from marginalized people living in Bachhauli VDC. However, the photovoice project's major limitation was the generalizability of its results. Were the experiences shared by the co-researchers exceptional or are they shared by a few, or some, or many of the other 10,000 people living in Bachhauli? Are the negative social impacts of conservation only affecting marginalized people, like the co-researchers, or do they impact Bachhauli residents from all walks of life equally? A semi-structured survey was administered to investigate the impacts of conservation, and its spatial distribution, at the VDC level. Over 2 months, the survey was pre-tested (*n*= 17) and undertaken in full (*n*= 218). In this chapter I detail the survey design: The choice of sampling unit, the sampling frame, and the measurement instrument. This chapter ends with descriptions of the descriptive and inferential statistical tests used in the analysis of survey data.

7.1 Methodological Design

The survey's ideal methodological design would have included respondents from all of Bachhauli's nine Wards, individuals as the sampling unit, and a random sampling procedure stratified by caste and ethnicity. Due to the challenges of surveying in Bachhauli, the actual survey design deviated from the ideal. Barber et al. (1997) documented these challenges: In Chitwan District uniquely identifying household markers—house numbers, telephone numbers, postal codes—do not exist;

no complete sampling frame for households or individuals is available; and poor infrastructure hinders accessibility. In this section, I explain the deviations from the ideal survey design. A discussion of these deviations, and their implications for the survey's external validity is examined theoretically in this chapter; and, empirically in the next.

7.1.1 Sampling Unit and Frame

A sampling unit can be individuals, households, or businesses, whatever the researcher's interest. The complete set of a given sampling unit is the sampling frame. Ideally, individual residents of Bachhauli would have been the sampling unit. Then, from a sampling frame that included all people eligible to be surveyed, individuals would have been randomly sampled, stratified by caste and ethnicity. This ideal sampling plan would have ensured a representative sample of Bachhauli's population. In this section, I explain the constituent pieces of the ideal sampling plan—sampling unit, sampling frame, and sampling procedure. I examine why these features are important, the approaches to surveying taken by other researchers in Nepal, and the necessary but justifiable deviations of my survey sampling plan from the ideal.

My literature review of HDC in CNP's BZ included 27 textual sources. Of these 27 sources, 12 used surveys[5], nine of which were published in peer reviewed

[5] (Adhikari et al., 2013), (Carter et al., 2013), (Nepal & Spiteri, 2011), (Karanth & Nepal, 2011), (Dhakal, Nelson, & Smith, 2011), (Spiteri & Nepal, 2008), (Mclean & Stræde, 2003), (Stræde & Helles, 2002), (Nepal & Weber, 1995), (Upadhyay, 2013), (Lamsal, 2012), (Spiteri, 2006)

academic journals. Six of the nine peer-reviewed articles that used a survey explicitly stated they sampled the head of the household[6]. In short, the majority of HDC survey research in CNP's BZ used the household as the sampling unit[7]. However, systematic sampling biases are likely when researchers use the household sampling unit, especially when the "head of the household" is used as a proxy for the entire household. I believe this selection criteria hides the potential heterogeneity of attitudes/perceptions/beliefs within a household, potentially compromising the generalizability of a survey's results.

When the sampling selection criteria was the "head of the household" men were surveyed more often than women in the HDC literature on the CNP BZ (Lamsal, 2012[8]; Mclean & Straede, 2003[9]; Upadhaya, 2013[10]; Straede & Helles, 2002[11]; Baral & Heinen, 2007[12]; Sah & Heinen, 2001[13]). The salient argument of feminist political ecologists is that experiences with the environment are gendered (Rocheleau, Thomas-Slayter, & Wangari, 1996). Therefore, when the "head of the

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[6] (Dhakal, Nelson, & Smith, 2011), (Nepal & Spiteri, 2011), (Karanth & Nepal, 2011), (Nepal & Weber, 1995), (Spiteri & Nepal, 2008), (Stræde & Helles, 2002)

[7] Nine of 12 surveys used this sampling unit if you combine peer reviewed and graduate student survey sampling methods.

[8] Respondent breakdown by gender: 60.5% men, 39.5% women

[9] Respondent breakdown by gender: 71.4% men, 28.6% women

[10] Respondent breakdown by gender: 91.5% men, 8.5% women

[11] Respondent breakdown by gender: 75% men, 25% women

[12] Respondent breakdown by gender: No breakdown of survey respondents by gender, however "Socially, women had subordinate roles and less power indecision-making, and men were usually household heads; thus there was unequal gender representation in the survey" (p. 70).

[13] Respondent breakdown by gender: 86.5% men, 13.5% women

household" is surveyed, especially in patriarchal societies like Nepal, a systematic sampling bias occurs which silences women's gendered experiences of the environment. Moreover, any number of differences could be observed between the "head of the household" and other household members. The "head of the household" is likely not an accurate proxy for the entirety of the views within a given household. This sampling unit practice expunges the views of women, youth, in-laws, and others of inferior rank in the household hierarchy.

Unfortunately, in Bachhauli no sampling reference frame for individuals or households exists. Many HDC researchers in Nepal have faced this dilemma and used various techniques to overcome it. Mehta & Kellert (1998) used voting records; Baral & Heinen (2007), BZUG member lists; Nepal & Spiteri (2008), purposive sampling. Using these sampling techniques may, however, lead to systematic sampling biases. Voting is not compulsory in Nepal, and although voter turnout in the 2013 election was high (78%) creating a sampling reference frame from voting records could lead to a systematic sampling bias. Likewise, creating a sampling reference frame from BZUG member lists is not inclusive. In the photovoice project none of the co-researchers were BZUG members; one participant attempted to join a BZUG but was unable to pay the initiation fee. A systematic sampling bias, excluding the poorest members of Bachhauli, would likely result from creating a sampling frame from BZUG's membership lists. Purposive sampling was not appropriate because the research aimed to be representative of Bachhauli's population and make generalizable statements about the impact of conservation on people's lives.

Instead, I intended to Barber et al.'s (1997) method for creating a sampling frame: I picked a geographical area of interest (Bachhauli), visited randomly selected households, then I would have compiled the names of all the individuals living in those households, and then from that list (the sampling frame) randomly select the requisite number of individuals (the sampling unit). I initiated this process by creating a sampling reference frame from which households could be randomly selected.

To avoid systematic sampling biases in the household sampling process, I created a household sampling reference inspired by Kondo et al.'s (2014) random spatial sampling method. Kondo et al.'s (2014) sampling frame used a list of all the GPS coordinates within their research site. They randomly selected GPS coordinates, located those randomly selected GPS coordinates in the field, then administered their survey to the households nearest the sampled coordinates. Large land owners are more likely to be sampled than smaller land owners using Kondo et al.'s (2014) method—which could potentially lead to the under-sampling of non-agricultural households, urban households, and households with less agricultural land. Bachhauli has urban and rural settlements, as well as landless people farming other people's land. Using the sampling method described by Kondo et al. (2014) would have likely led to an under-representation of Bachhauli's urban population, landless, and land poor. Instead, on a satellite image, I placed a geo-spatially referenced marker on every household in Bachhauli. Figure 7 shows the map without markers; Figure 8, with the spatially referenced markers.



Figure 7. Satellite image taken on May 23, 2014. Source: Google Earth.

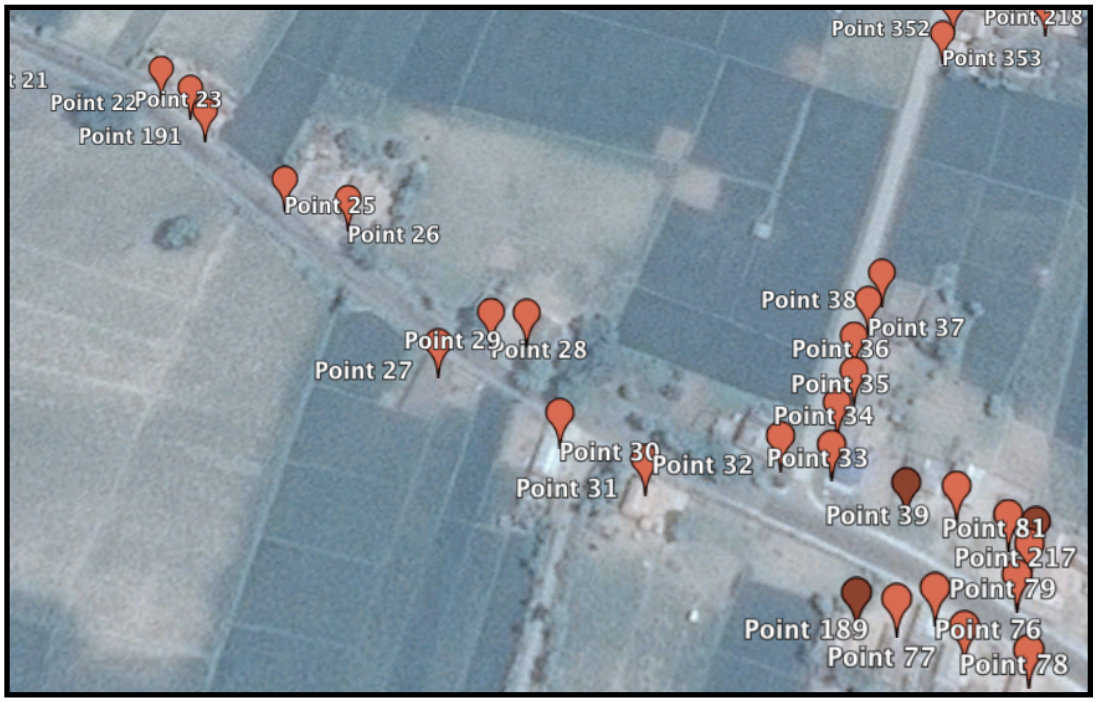

Figure 8. Satellite image with spatially referenced markers. Source: Google Earth.

This was an iterative process. I completed the initial identification of households in Canada. In my second and final visit to Bachhauli, I ground-truthed the placement of select markers to ensure non-households were not included in the household sampling frame. My sampling frame totaled 2,203 households; Nepal's Central Bureau of Statistics reports the existence of 2,321 households in Bachhauli (CBS, 2014). The difference between the census household number and my own is likely due to my under identification of household in villages, where it was difficult to differentiate distinct households. I attempted no further iterations, as I was unable to identify more households on the satellite image. Once the household sampling frame was complete, 225 households were randomly selected without replacement. Of the 225 households initially selected, 193 households were randomly selected, without replacement, to ensure a confidence level of 95% with a 7 point confidence interval based on a total population of 10,905 living in Bachhauli (CBS, 2014). The remaining 25 households were used as the holdout sample. This holdout sample tested the predictive power of the decision tree classification, logistic regression, and nearest neighbour statistical models.

Prior to field work, the intention was to follow Barber et al.'s (1997) survey sampling method, a similar method was followed by Carter et al. (2013). Unfortunately, during the pre-test (n=17) I quickly realized this was a time intensive technique, because it required at least two visits, often more, to each household. I was not able to completely follow the ideal sampling method for three main reasons: (1) I could only work with one translator at a time, (2) Bachhauli's geographical size,

and (3) time constraints. Households randomly selected from the household sampling frame were surveyed. Instead of sampling the "head of the household", I attempted to systematically alternate between sampling males and females over the age of 18 at the sampled households. Seemingly, there was no way to stratify the sample based on caste and ethnicity. Therefore, no special measures were taken to ensure a representative sample based on Bachhauli's caste and ethnicity composition. The implications of this decision are discussed in the Quantitative Results chapter.

7.1.2 Measurement Instrument

A semi-structured survey (Appendix B) was the measurement instrument used to collect information from individuals at randomly selected households in Bachhauli. Interpreters used a protocol to administer the survey. The survey and the protocol received ethics clearance from University of Waterloo Office of Research Ethics (ORE #20089). The dependent variable used in the decision tree classification, logistic regression and nearest neighbour analyses was a multiple-measure indicator of survey respondents' perceived overall impact of conservation on their lives. In this section, I examine the measurement and internal validity of the questions used to elicit the respondents' perceived overall impact of conservation.

The underlying assumption of a survey is that through a series of statements or questions it is possible to access a respondent's internal set of perceptions towards an object (Lovelace & Brickman, 2013). A question or statement that measures what it intends to measure has measurement validity (Newing, 2001). If my statements had

measurement validity, then they were accurate measures of respondents' real perceptions of the overall impact of conservation on their lives.

Conservation is complex. The presence of conservation impacts the lives of people living in Bachhauli in various ways: CNP restricts access to natural resources; park-protected wildlife damages crops, destroy assets, hurts and kills people; conservation-based tourism contributes to the local economy; Baghmara BZCF provides biogas subsidies; BZUGs offer loans with low-interest rates to members; there are many more ways that the presence of CNP, its BZ, and BZCFs, which together make up conservation initiatives in Bachhauli, could impinge on a person's life.

Multiple-indicator measures are made up of indicators that each measure a discrete aspect of a complex phenomenon. Newing (2001) suggests using a multiple-indicator measure as a proxy for a complex phenomenon. For example, one could ask multiple questions (indicators) which each measure a discrete aspect of conservation, then bring those measures together as a proxy for the underlying phenomenon, which in my case would by the overall impact of conservation on people's lives. I chose not to use a complex multiple-indicator measure and instead used a relatively simple multiple-indicator measure based on two questions. I was simply interested in whether respondents perceived that conservation had an overall negative or not negative impact on their lives. I did not want to know the extent to which specific constituent dimensions of conservation impacted the overall effect conservation had on people's lives. Also, I wanted to ensure the multiple-indicator measure's

measurement validity. A complex multiple-indicator measure with a high degree of measurement validity would require indicator measures that addressed most, if not all, of the different ways in which conservation could effect a Bachhauli resident's life.

Conservation is an exceedingly complex phenomena that impacts people's lives in multifarious ways. I did not feel confident that I would capture all these impacts; if a respondent is impacted by conservation in way *x*, and impact *x* was not measured by an indicator, then the multiple-indicator measure would not have measurement validity, unbeknownst to the researcher. Finally, a multiple-indicator measure assumes equal weighting across all indicators. For example, a multiple-indicator measure made up of 10 indicators assumes each of its indicators contributes 1/10th to the final multiple-indicator measure. The complex multiple-indicator measure assumes value homogeneity across all its indicators. I would argue however, a subsistence farmer experiencing wildlife crop damage may perceive crop damage as contributing more to the overall negative impact of conservation on their life than a wealthy hotel owner with a vegetable garden experiencing an "equal" amount of crop damage. In short, the complex multiple-indicator measure does not account for the potential heterogeneity of values attached to respondents' subjective experiences of conservation related impacts. To address this issue, my survey used two statements on a five point Likert response scale. A five point Likert response scale was used because this number of scale points is shown to allow for reliable mapping of attitudes toward an object (Lovelace & Brickman, 2013). Additionally, a

"don't know" response option was included to limit random responses. The statements were, "overall conservation has a negative impact on my life," and "overall conservation has a positive impact on my life." Again, the purpose of these statements was to probe respondents' perception of the overall impact of conservation on their life. It was not to investigate the constituent parts of conservation impacts; nor the extent to which the multifarious impacts of conservation impinge on respondents' overall perception of conservation in their lives. This approach's simplicity leaves space for the respondents to reflect on the various ways conservation impacts their lives and allows each respondent to assign a subjective weight to the importance of those impacts. Unfortunately, this mental process of subjective valuation is hidden; this is the drawback of a simple multiple-indicator measure. However, this limitation ensures the questions asked to measure the overall impact of conservation on people's lives have measurement validity. I would rather asks simple questions, producing simple but reliable results, than ask complex questions which fail to measure what they purport to measure, thereby producing unreliable results. The survey questions' measurement validity was also assessed by pre-testing the survey in the field. The pre-test (n=17) confirmed the survey questions were understandable, and measured what they purported to measure. The results from the pre-test were not included in the final analyses.

Internal validity is the degree to which answers between questions that ostensibly measure the same phenomena are answered consistently. The internal validity between two or more questions determines the appropriateness of combing

the answers from those questions into a multiple-indicator measure (Newing, 2011). To evaluate internal validity, Cronbach's alpha determined the internal consistency between the responses of the two measures of respondents' perception of the overall impact of conservation on their lives.

7.2 Procedure

During the pre-field phase, from August 1st to October 12th, 2014, the survey was drafted and approved by the Waterloo Office of Research Ethics (ORE #20089). From

October 13th to 19th, I trained two Nepalese translators to administer the survey using the Waterloo Ethics Research Office approved survey protocol. During this time the placement of select spatially referenced household markers were ground-truthed. The pre-testing phase of research was completed by the start of November. From November 4th to December 8th, 2014 the surveys were administered to respondents from the randomly selected households. In the Winter of 2015 all survey data was digitized in Microsoft Excel and analyzed using the *R* statistical software.

7.3 Data Analysis

In this section, I explain the selection of statistical tools used to analyze the survey data, how they work, and what their indices mean. Descriptive statistics, chi-square (X^2) test of independence, decision tree classification, logistic regression, and nearest neighbor classification analysis were the tools used to analyze the survey data.

7.3.1 Descriptive Statistics

Descriptive statistics are numbers that describe data from a sample. Measures of central tendency, mean, median, and mode, were used to explore trends in the survey. Measures of normality, skewness and kurtosis values, were computed to determine the sample data's distribution. Descriptive statistics are limited, however, in that they cannot infer statistical significance. A sample statistic that is statistically significant is likely, with a known probability of error, to reflect the population from which the sample was taken (Leon-Guerrero & Frankfort-Nachmias, 2010). Inferential statistical tests analyzed the statistical significance of the survey sample statistics.

7.3.2 X^2 test of independence

The X^2 test of independence is an inferential statistical test that evaluates whether a statistically significant relationship exists between two variables (Leon-Guerrero & Frankfort-Nachmias, 2010). The X^2 test was used to evaluate differences between the sample's and the population's demographic variables—gender, age, caste/ethnicity, and education. Determining whether the demographic breakdown of the sample's respondents was significantly different than known population parameters, from census data, was used to assess the survey's generalizability. The X^2 test's null hypothesis is that no relationship exists between two variables; the variables are statistically independent. The significance level was set at 0.05, as is the trend in the

literature (Huck, 2008; Frankfort-Nachmias & Leon-Guerrero, 2010). When the X^2 statistic plotted on the appropriate X^2 distribution results in a p-value less than 0.05, the null hypothesis is rejected. The major limitation of the X^2 test is the substance, or strength, of the relationship between variables is not tested. This test only evaluates whether a statistically significant difference between variables exists. To address this limitation, a logistic regression analysis evaluated the strength of independent variables' influence on a dependent variable. Before logistic regression analysis was performed, however, a holistic understanding of the trends in the sample data was sought to make more informed decisions in the logistic regression model selection process.

7.3.3 Decision tree classification

I used decision tree classification to explore trends in the data. Decision tree classification is a statistical tool that uses information from one or more independent variables to classify respondents into subgroups based on membership in dependent variable groups (Cooksey, 2007). This classification tool was used to explore trends in the data, examine relationships between and within variables, and ultimately, its results influenced variable re-coding and variable inclusion in the logistic regression model building process. Following Therneau & Atkinson's (1997) suggestions, the models produced by the decision tree were tested against a holdout sample to evaluate their predictive power and assess model over-fitting.

7.3.4 Logistic regression

Logistic regression is a multivariable parametric test that uses multiple independent variables to explain or predict membership in a dichotomous dependent variable group (Stevens, 2012). It was used to examine the relationships between variables—occupation, education, experience of crop damage—and respondents who perceived conservation had an overall negative impact on their lives. The external validity of the logistic regression model was tested with a holdout sample.

Logistic regression is part of the generalized linear model family. The binary values of the dependent variable are logit transformed into an S-shaped curve (Logistic curve) which represents the ratio of the probability of an event (0 or 1) occurring (Hair et al., 2010). The logistic regression uses the maximum likelihood method as a means of model estimation. Stated simply, the maximum likelihood method uses an iterative process that maximizes the likelihood of an event occurring to find the most likely estimates for the coefficients of the independent variables (Hair et al., 2010).

The number of independent variables a logistic regression model can handle is a function of the survey sample size. Cooksey (2007) suggest a ratio of 30 cases for each independent variable predictor included in the model. With a sample size of 193, the logistic regression model could handle a maximum of six predictors. But how does one choose which predictors to include in the model whilst preserving degrees of freedom? Babyak (2004) explains:

> "One obvious approach to preserve degrees of freedom is to reduce the number of predictors in the model. As we have learned, however, removing a

> predictor by peeking at its relation with the response, either through a mechanized procedure or by hand, generates problems. Ideally, we would select a limited number of predictor variables based on our substantive knowledge and maintain them in the model regardless of how it turns out. Sometimes, however, we do not have enough information to make reasonable a priori choices about predictors and are left with using the data at hand to choose variables to include in the model. However, the number of covariates the model predicts, not simply the number of independent variables, matters in determining the minimum sample size required to run a Logistic Regression." (p. 419)

I relied on the substantive knowledge gleaned from the decision tree classification results and an Akaike Information Criterion (AIC) test to choose which independent variables to include in the model. Alternatively, a principal component analysis could have been used to identify salient variables.

The AIC corrected for small-sample sizes was used to determine the goodness of fit for potential models. Alternative model selection processes include automated stepwise regression, forward, and backward stepwise model selection. Stepwise model selection processes increase the likelihood of model over-fitting; therefore, they were not used (Babyak, 2004). The AIC model selection process determines the optimal model based on two criteria 1) model fit and 2) the number of parameters. The results from the decision tree classification analysis and researcher judgement were used to design candidate models chosen for the AIC test (Mazerolle, 2004).

The model with the lowest AIC score was chosen and used in a logistic regression analysis. The statistical significance of the coefficients for a chosen independent variable, determined by the maximum likelihood method, was evaluated using the Wald Statistic. If an independent variable's regression coefficient was

statistically significant, then the directionality of the relationship (positive or negative) and the magnitude of its effect on the binary response variable was evaluated (Hair et al., 2010). Statistically significant (p<0.05) regression coefficients were transformed to represent the odds that a respondent with membership in an independent variable category would report conservation had an overall negative impact on their life. A holdout sample assessed the external validity of the final logistic regression model.

7.3.5 Nearest neighbour

Nearest neighbour analysis examines the scale at which like phenomenon occur. The k-nearest neighbour classification *R* package was used to evaluate the spatial distribution of perceptions of conservation's overall impact in Bachhauli Wards 1,2,3,5,6, and 7. First, respondents were put into a training group (n=193) or a testing group (n=25). Then, using the GPS coordinates taken at surveyed households, each respondent's household location with the variable measuring the perceived overall impact of conservation was placed on a map of Bachhauli. 1 km^2 grids were drawn inside Bachhauli, and the GPS coordinate at the center of each grid was recorded. Using the center of each grid as a starting point, the nearest neighbor algorithm searched the five closest respondents, tallied the respondents' dependent variable responses and determined, by majority vote, the dependent variable response representative of the 1 km^2 grid. The 1 km^2 grid was coded as either an area where conservation had a negative or positive overall impact. Iteratively, I repeated this

process at smaller and smaller scales. This process continued until a high level of predictive success was achieved against the training set. The grid size started at 1 km^2, was then reduced to 0.5 km^2, and finally to 0.25km^2.

The nearest neighbour's predictive ability was tested by its success at accurately predicting the training set respondents' perceived overall impact of conservation based on the geographical location of their households (Sutton, 2012). A high predictive ability suggests a strong relationship between residents' perceptions and geographical location. The spatial clustering of like phenomena can be examined with other tools. Carter et al. (2013) used Moran's I, a measure of spatial autocorrelation, to investigate spatial clustering of attitudes towards tigers in the CNP BZ. I elected to use nearest neighbour because its representation of spatial phenomena is visually more appealing than Moran's I.

8. Quantitative Results

Two questions drove the survey research: (1) Is there a relationship between perceived impacts of conservation and demographic variables and (2) how are the perceived impacts of conservation spatially distributed in Bachhauli? Decision tree classification examined trends in the survey data, informed variable re-coding and the creation of a multiple-indicator measure. This exploratory analysis influenced the logistic regression model selection process; decision tree classification revealed relationships between respondent characteristics and the multiple-indicator measure, which was used as the dependent variable in the logistic regression analysis. The logistic regression analysis found a relationship between respondent characteristics and perceived negative conservation impact. A nearest neighbour analysis addressed the second research question, which too relied on the multiple-indicator measure created in the exploratory analysis, and concluded there may be spatial clustering of similar perceived impacts of conservation in Bachhauli. Before explicating the research questions let's look at the sample's external validity.

8.1 External Validity of Sample

A survey with external validity has sample statistics representative of the population parameters. A X^2 test assessed whether the values of the sample's demographic composition for gender, age, caste and ethnicity were significantly different than Nepal's 2011 census enumeration of those same variables (CBS, 2014). There was no significant difference between the survey and the census with respect

to gender and age (X^2 = 1.43, p = 0.23, and X^2 = 2.86, p = 0.7). However, the X^2 test revealed a significant difference between the sample statistic's and population parameter's respective values for caste and ethnicity (X^2 = 13.26, p = 0.01). In the survey, the sample's respondent composition was 44% high caste and 33% Terai Janajati. In the census, the composition of Bachhauli's enumerated population was 28% high caste and 52% Terai Janajati (CBS, 2014). The census data, however, was complied at the VDC level—not by Ward. Not every Ward in Bachhauli was sampled in the survey, only Wards 1,2,3,5,6, and 7. The survey's geographical scope may have caused the observed high proportion of high caste respondents relative to the census enumeration. The survey included Sauraha, a tourist hub and urban area where a high proportion of respondents were from high castes. The Wards not sampled—4,8,9—were rural wards; in Chitwan, there is a higher proportion of high caste people living in urban VDCs than in rural VDCs (CBS, 2011a). The composition of caste and ethnic groups in Bachhauli Wards 1,2,3,5,6,7 may be different than the VDC's; however, I could neither affirm nor deny this because the composition of caste and ethnic groups is not reported in the census by Ward. This discrepancy could have also been caused by either a sampling error or systematic sampling bias. Regardless of its source, the discrepancy was accounted for in the interpretation of the results. The discrepancy between survey and census was not believed to invalidate the survey's external validity.

8.2 Variable Analysis

To answer the research questions, a dependent variable that measured the overall impact of conservation on a respondent's life was required. Decision tree classification results were used to create a multiple-indicator measure of perceived overall conservation impact. A respondent's perceived impact of conservation was elicited by two survey statements. Both statements were asked on a five point Likert scale that ranged from strongly agree to strongly disagree. Given the high internal consistency between them (Cronbach's α=0.8750345), a composite multiple-indicator measure was created from these two statements. Any score less than six represented that the respondent perceived conservation had an overall negative impact in their life. A cumulative score of six represented conservation neutrally impacted the respondent. A score greater than six meant conservation had an overall positive impact on the respondent's life. The distribution of the multiple-indicator measure, hereby referred to as the variable "impact", is shown in a box and whisker plot (Figure 9). 75% of respondents reported being positively or neutrally impacted by conservation, only 25% reported they perceived conservation had an overall negative impact on their life. The median score was eight.

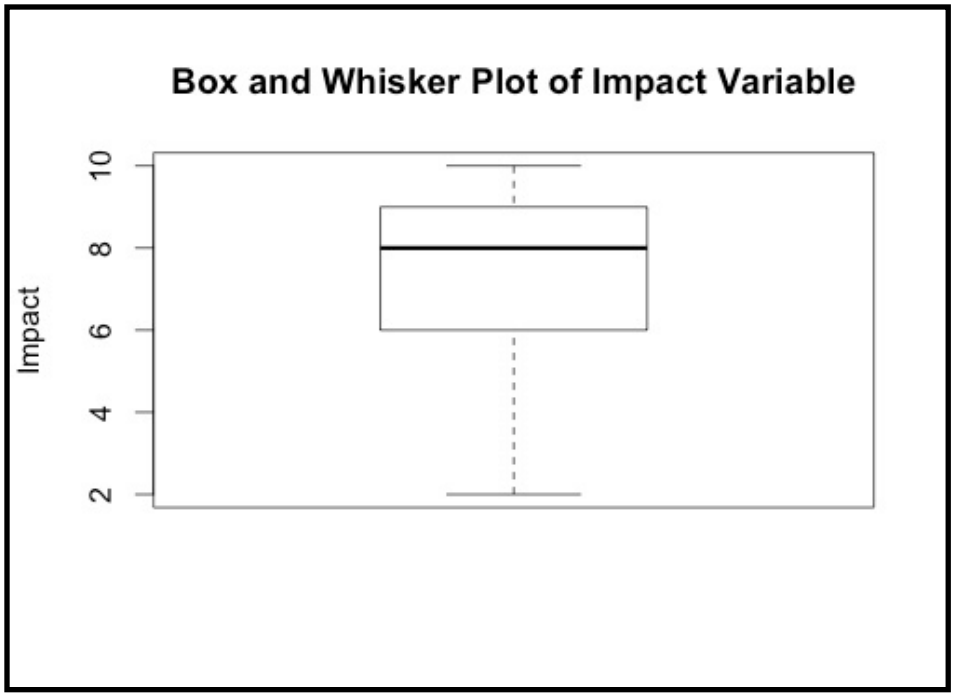

Figure 9. Box and whisker plot for the variable impact. Source: Author.

The impact variable was tested for normality. Results from the Shapiro Wilkes test (W= 0.8886036, *p*= 1.292601e-11) rejected the null hypothesis that this multiple-indicator measure was normally distributed. Because the impact variable's distribution did not sufficiently approximate the normal distribution statistical tests assuming normality were not used.

8.3 Decision Tree Results

The decision tree model with the highest predictive success against the holdout sample (82%) included the independent variables occupation, experience of crop damage, education, and a dichotomized dependent impact variable. Figure 10 is an aid for interpreting the decision tree in Figure 11.

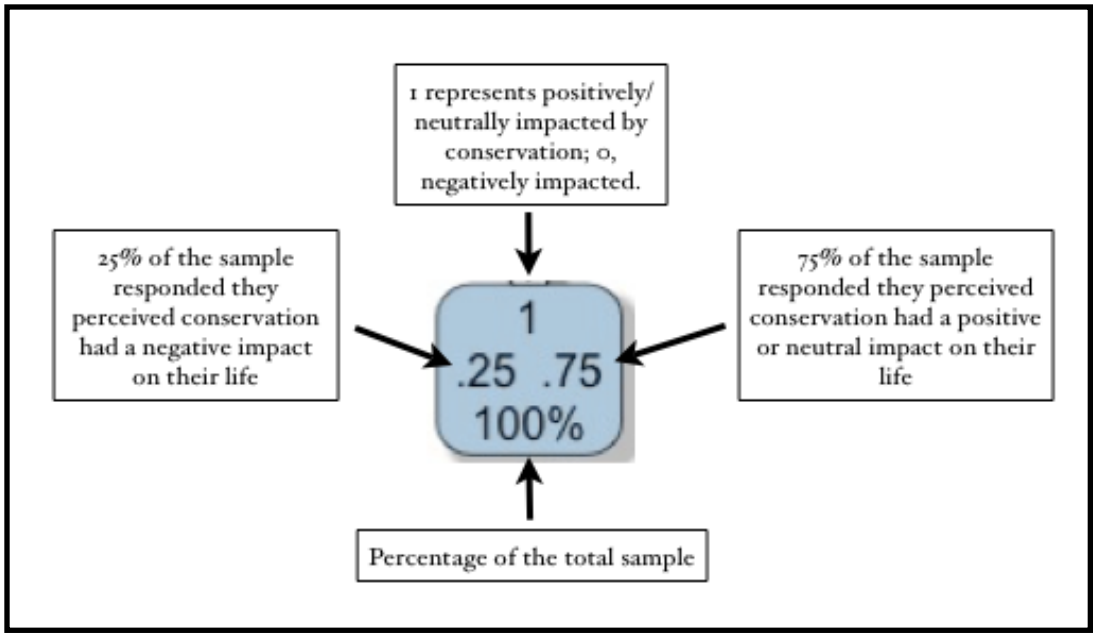

Figure 10. Key for interpreting the decision tree. Source: Author.

Figure 11 displays the decision tree model, and is followed by a description of the results.

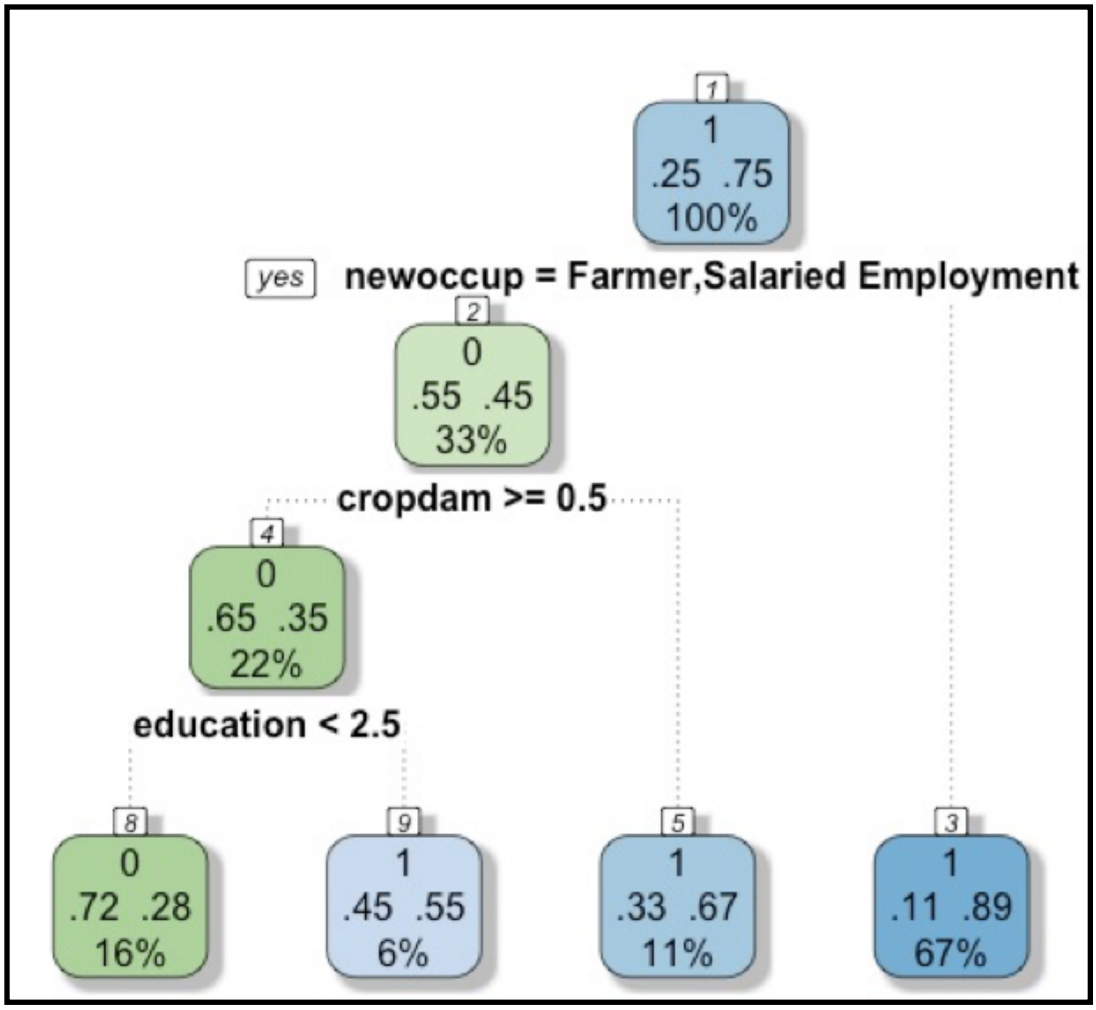

Figure 11. Decision tree results. Source: Author.

Beginning at the root node of Figure 11, 25% of respondents reported being overall negatively impacted by conservation and 75% reported being overall positively or neutrally impacted. 89% of respondents whose occupation was not farming or salaried employment, 67% of the survey sample, reported conservation having an overall positive or neutral impact in their life (Node 3). For people whose occupation was farming or salaried employment, 33% of the survey sample, 45% reported being positively or neutrally impacted and 55% reported being overall

negatively impacted by conservation (Node 2). 67% of respondents not experiencing wildlife crop damage, 11% of the sample, reported conservation had an overall neutral or positive impact in their life. However, of the respondents who experienced crop damage, 22% of the sample, 65% reported conservation had a negative impact on their lives. Furthermore, 72% of respondents who experienced crop damage and had Primary (grades one to five), or Lower Secondary (grades six to eight), or no formal education, 16% of the sample, reported conservation had an overall negative impact on their lives. This decision tree had implications for the logistic regression analysis, namely, the results identified salient variables and justified variable re-coding.

Recall, a logistic regression has limitations. One such limitation is that the logistic regression requires a dichotomous dependent variable. Initially, the dependent variable impact was an ordinal scale variable. The decision tree results demonstrated a decision tree with impact as an ordinal level variable had less predictive success with a holdout sample than a decision tree with the impact variable dichotomized (73% v. 82%). Therefore, the decision tree results justified re-coding the impact variable.

Another logistic regression limitation is complexity. The number of independent variables and their levels that a logistic regression can accommodate is a function of the cases fed into the model. To accommodate the original coding of the occupation and education variables, originally eight and five level nominal variables respectively, the sample size required to create a reliable logistic regression model

would have needed to be 450 cases; I collected 218 surveys. Therefore, these variables needed to be re-coded to accommodate for the limitation of the sample size. The decision tree classification reported a relationship that supported re-coding the occupation and education variables. Recoding variables is discouraged because information is lost when variables are collapsed. However, the decision tree results elucidated important relationships within and between these dependent and independent variables that justified re-coding.

8.4 Logistic Regression Model Selection

The model with the independent variables occupation, experience of crop damage, education, and a dichotomized impact variable had the lowest AICc value (175.61). The model with the second lowest AICc value (176.73) was 0.57 times as probable as the first model to minimize information loss (Mazerolle, 2004). Therefore, the model with the lowest AICc value was chosen for logistic regression analysis. Additionally, this model's independent variables—occupation, experience of crop damage, and education—have all been identified as salient factors by other researchers investigating the HDC in the CNP BZ (Carter et al., 2013; Lamsal, 2012; Straede & Treue, 2006).

After the model was selected, the collinearity and multicollinearity between independent variables was tested. Collinearity is the correlation between two independent variables and Multicollinearity is the correlation between three or more independent variables. Both Collinearity and Multicollinearity effect estimated

logistic coefficients (Huck, 2008). This results in high predictive powers for independent variables that in and of themselves do not possess much predictive power, but because they share a relationship with another variable possessing a high predictive power it appears as though they do (Hair et al., 2010). To avoid this issue, a researcher should choose independent variables that have high associations with the dependent variable and low collinearity or multicollinearity between themselves. Multicollinearity was assessed in my model using variance inflation factors (VIF). A high VIF value is considered to be higher than 10 (O'Brien, 2007). The VIF values for occupation, eduction, and crop damage were 1.13, 1.20, and 1.10 respectively. The results indicated multicollinearity was not high between the independent variables in the model.

8.5 Logistic Regression Results

The logistic regression results showed statistically significant relationships between all three independent variables—no experience of crop damage (p= 2.89e-05), low educational achievement (p=5.13e-3), occupation as a farmer (p=2.95e-4) —and the dependent variable (Table 3). Respondents who did not experiences crop loss were 6.32 times more likely to report they perceived their life was not overall negatively impacted by conservation than those who experienced crop damage. Respondents whose education was at a Lower Secondary level or lower (equivalent to a grade eight education or lower) were 3.99 times more likely than respondents with a high educational achievement to report conservation had an overall negative

impact on their life. Respondents whose occupation was farming were more likely to report conservation had an overall negative impact (Odds Ratio=4.66). The results of X^2 test showed a significant difference (p=6.97e-14) between the designed model and the null model (a model with no independent variables)—indicating the model had practical significance.

Table 3
Results of logistic regression between respondent characteristics and perception of conservation impact.

Coefficients	*B*	*SE*	*z-value*	*p*	*Odds*
Crop Damage (no crop damage)	-1.84	0.44	-4.18	0.000	6.32
Education (low)	1.38	0.49	2.80	$x < 0.001$	3.99
Occupation (farmer)	1.54	0.43	3.62	0.000	4.66

Note: B = regression coefficient, *SE* = standard error, *p* = significance, *Odds* = odds ratio.

A holdout sample (n=25) tested the predictive accuracy of the training set's logistic regression model (n=194). The covariate coefficients from the training set's model successfully predicted 82% of the holdout set.

8.6 Nearest Neighbour Results

A nearest neighbour model examined the impact variable's spatial distribution in Bachhauli Ward 1,2,3,5,6, and 7 (Figure 12). Results showed the 0.25 km^2 grids had the highest predictive accuracy (64%) against a holdout sample (n=25). From the results of this analysis, I concluded there may be spatial clustering of overall conservation impacts in Bachhauli.

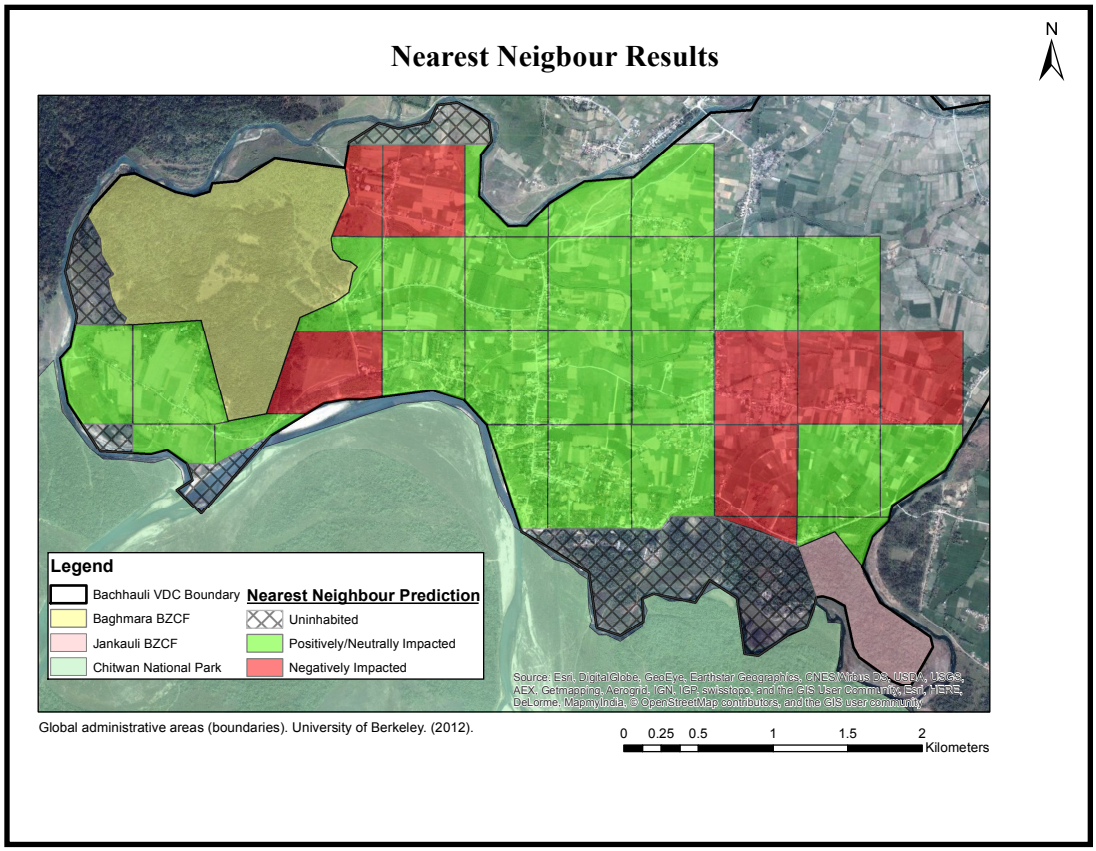

Figure 12. Nearest neighbour prediction of perceived impacts of conservation. Source: Author.

8.7 Summary

Based on the logistic regression's statistical significance and its predictive accuracy, I rejected the null hypothesis that no relationship existed between demographic variables and whether respondents reported that overall conservation had a negative impact on their lives. Alternatively, for residents of Bachhauli Wards 1,2,3,5,6, and 7, the results indicated a relationship between respondent characteristics and perceiving conservation as having an overall adverse impact on one's life in. Moreover, the nearest neighbour model indicated that the distribution of perceived impacts of conservation may be spatially clustered in Bachhauli.

9. Discussion

This MMR case study investigated the HDC in Bachhauli VDC. In this chapter, I consider the study's overarching research question, "How are conservation initiatives operating in and around Bachhauli impacting its human population?" As discussed in the Mixed Methods chapter, the qualitative and quantitative results were evaluated divergently. Divergently examining the qualitative and quantitative results necessitated digging deeper into the data sets generated by both methods. Therefore, some information included in this chapter was not previously presented. In this chapter, I examine the MMR study's overarching research question by unpacking the three MMR sub-questions: (1) Are the benefits and costs of conservation equally or disproportionately distributed across marginalized and privileged groups, (2) how effective are conservation initiatives designed to mitigate the adverse social impacts of conservation in Bachhauli, and (3) what are the challenges for a Westerner conducting research in a Non-Western context? The Discussion is followed by the Conclusion chapter, which provides a summary of the study's findings, discusses its limitations, suggests areas for future research, and proposes policy recommendations.

The social costs of conservation were the central focus of my research. I firmly believe utilitarian justifications for conservation are unethical. Irrespective of its benefits, if conservation causes suffering to those already facing discrimination, those socially, politically, and/or economically marginalized, then conservation is unjustifiable. The adverse social impacts engendered by conservation are not

vindicated by its accomplishments for the greater good. Therefore, an understanding of conservation's adverse social impacts was the focus of this research. Nonetheless, I examined, schematically, some beneficial outcomes of conservation in Bachhauli.

9.1 Distribution of Conservation Costs and Benefits

The first of three sub-question posits the existence of a stratified Nepali society, a society where social identities—caste, gender, economic status—engender discrimination and privilege. Examining the HDI, political representation, and poverty in Nepal, a relationship between achievement in these categories and social identity was evident. Emphatically, I am not proposing identity deterministically begets outcomes in the social, political, economic spheres. Marginalized people have been successful in these spheres of Nepali society. For example, one of the co-researchers, Nina, has navigated gender-based discrimination to become financially successful and widely respected within the male-dominated tourist guide industry in Sauraha, Bachhauli. Conversely, privileged Brahmins do live in poverty, although less frequently than other caste and ethnic groups (UNDP, 2014a). The literature investigating discrimination in Nepal is clear: Discrimination exists, it impinges on people's lives in multifaceted ways, and it begets disparity between distinct social groups.

9.1.1 Distribution of the political benefits of conservation

In Nepal, a symptom of discrimination is the underrepresentation of marginalized people in the political sphere. This national trend is observed in the management of CNP. The authors of CNP's five-year management plan were all high caste Hindus. The report's five reviewers, which included the current Director General and a retired Director General of the DNPWC, CNP's Chief Conservation Officer, and two Nepali University Professors, were either high caste Hindus or from the politically and economically powerful Newar ethnic group (CNPO, 2015). Furthermore, all authors and reviewers were men. In Bachhauli, the Mirgakunja BZUC chairperson is a high caste Hindu man. Paudel et al. (2007) report high caste men make up a disproportionate percentage of BZUC chairpersons in the Terai.

In this vacuum of political homogeneity, Baghmara BZCF is a torrent of inclusion. The diversity of Baghmara's committee members—women, low caste, and Terai Janajati—is all the more impressive compared to the stark homogeneity of the decision-makers in the CNP, BZMC, and BZUCs. Based on my research, the share of conservation initiatives' political benefits is disproportionately distributed across marginalized and privileged groups. High caste men, the dominant social identity in Nepal, occupy the lion's share of conservation decision-making positions. It appears conservation in Bachhauli, with the exception of Baghmara, further entrenches the political power of the privileged.

9.1.2 Perceived overall impact of conservation

The survey administered in Bachhauli Wards 1,2,3,5,6, and 7 found 75% of respondents perceived conservation had an overall positive (53%) or neutral (22%) impact on their lives. The remaining respondents (25%) reported conservation had an overall negative impact on their lives. To answer the first sub-question, "Are the benefits and costs of conservation equally or disproportionately distributed across marginalized and privileged groups?", I examined the identities and livelihoods of respondents who reported they were overall negatively impacted by conservation.

The logistic regression found a significant relationship between low educational attainment and perceived impact of conservation. Respondents whose education achievement was Lower Secondary or lower were 3.99 times more likely to report conservation had an overall negative impact on their life. Of the respondents perceiving their lives were negatively affected by conservation, 83% had low educational attainment.

The UNDP's Human Development Report (2014a) explains the urban-rural HDI gap reflects discrepancies between income and educational achievement between urban and rural areas. Additionally, low educational attainment limits opportunities in the economic and political spheres. The limiting effects of low educational attainment was observed in Bachhauli; there was a relationship between respondents' occupation and education level. Although 70% of respondents grew crops, only 31% identified farming as their primary occupation. 85% of those identifying as farmers reported educational achievement below a Lower Secondary

level. Only 15% of farmers had an education level higher than Lower Secondary. In the photovoice project, no co-researchers explicitly framed their agricultural-based livelihood as a choice. I would argue the co-researchers' low educational achievement (four of the five farmers were non-literate) limited their choice of profession, and in an area with high agricultural productivity, farming was the default livelihood. This livelihood "choice" was, like education level, predictive of perceived negative impacts of conservation.

Farmers were 4.66 times more likely to report conservation had an overall negative impact on their lives. Of the 53 respondents who said their lives were overall negatively impacted by conservation, 70% were farmers. Of the 117 who reported their lives were overall positively impacted, only 16% identified as farmers. This finding is consistent with the results from the thematic analysis. Co-researchers with agricultural-based livelihoods reported their livelihoods were threatened by park-protected wildlife; co-researchers employed primarily in non-farming activities reported mostly benefits of conservation, from tourism or employment with conservation agencies. However, even those that benefited from conservation, whose livelihoods depended on it, experienced trauma related to conservation. Nina and Saroj, for example, owed their livelihoods to conservation-based tourism, but had lost loved ones, a mother and father, to park-protected wildlife.

In the survey, I employed no measure of poverty—this was a major limitation. However, two proxies for poverty were measured—education and occupation. In Nepal, higher levels of educational achievement are negatively correlated with

poverty (CBS, 2011c; UNDP, 2014a; DID & WB, 2006). 65% of Nepalese living below the poverty line were either non-literate or had zero years of schooling; only 3.5% of Nepalese with high school degrees live below the poverty line (CBS, 2011c). A correlation between farming and poverty exists as well. Self-employed farmers and wage-farmers both have incidences of poverty higher than the national average, 27% and 47% respectively. Furthermore, landless households and households with less than 1 hectare of agricultural land have incidences of poverty higher than the national average (CBS, 2011).

That conservation was perceived negatively by people with the lowest education and by farmers, both of which are strongly correlated with poverty, indicates the possibility that conservation costs are a burden disproportionately shouldered by the economically marginalized in Bachhauli. Comparing this conclusion to the HDC literature on the BZ of CNP is difficult, because the relationship between poverty and conservation impacts has not been investigated. That being said, the conclusion that education is an important variable in understanding the HDC has been reported elsewhere. Carter et al.'s (2013) examination of attitudes towards tigers found clusters of negative attitudes where people had less formal educational attainment. However, Upadhyay (2013) found no statistically significant relationship between education and attitudes towards park, park staff, or BZ initiatives. Similarly, Spiteri & Nepal (2008) found no relationship between education and benefits from conservation and development initiatives. Whether a relationship exists between education and conservation is contested in

the HDC literature. However, Carter et al. (2013), Upadhyay (2013), and Spiteri & Nepal (2008) did not investigate how conservation was perceived to negatively impact the lives of people living in the BZ; they investigated attitudes, participation, and reception of benefits from conservation respectively. At its root, there is a lack of comparability between this and previous studies. This problem makes comparing my research to previous HDC research in the CNP BZ difficult.

Poverty is a multi-dimensional and complex concept requiring sophisticated measures of monetary and non-monetary indicators of poverty (Agrawal et al., 2006). No rigorous conceptual frameworks for examining poverty have been utilized by HDC researchers in CNP, including myself. Therefore, from the HDC literature undertaken in the CNP BZ I could neither corroborate nor contradict my provisional conclusion that there is a relationship between poverty and the negative impacts of conservation. In the context of the international HDC literature, the relationship between poverty and PAs is disputed. Agrawal et al. (2006) reviewed the international HDC literature investigating poverty and biodiversity conservation. Because of the scant longitudinal data, disparate methodologies employed between studies, and schematic measures of poverty, Agrawal et al. (2006) could not conclude, on way or another, whether poverty alleviation and biodiversity were reconcilable.

9.1.3 Distribution of conservation impact between caste groups

The logistic regression analysis did not include a variable for caste. Descriptive statistics and decision tree classification results indicated the perceived impacts of

conservation were equally distributed across caste groups. Table 4 shows within caste group proportion of respondents' perceived impact of conservation.

Table 4
Perceived impact of conservation by caste

Caste	Negative	Neutral	Positive
High Caste Hindu	21%	28%	51%
Low Caste Hindu	22%	25%	53%
Hill Janajati	25%	25%	50%
Terai Janajati	30%	11%	59%

These results confounded me. Caste-based discrimination and its corollary, inequitable distribution of material and non-material goods, was identified by many reputable sources. Why did my analysis of the distribution of conservation impacts fail to identify a correlation between conservation impacts and caste?

An excerpt from a co-researcher's interview helped me contextualize the absence of a correlation between perceived conservation effects and caste:

> "There is discrimination here. The people living right next to us eat from our kitchen but the neighbors living right across the house do not eat the food that we have touched. There are people who treat us nicely but there are others who act as if they are disgusted by us."

In this quote, Hari referred to discrimination from his high caste neighbours. Hari lives adjacent to Jankauli BZCF, an area where many landless live. Additionally, in this area the nearest neighbour analysis found a clustering of perceived negative conservation impacts. Hypothetically, Hari's high caste neighbours could have been landless, uneducated, farmers, and experienced any number of negative conservation impacts. Their privileged caste-status does not preclude them from being uneducated

or farmers or from experiencing adverse conservation impacts like crop damage from park-protected wildlife. The assumptions of this thought experiment are validated by the survey results. A high proportion of low educational achievement was observed across all caste groups. 62% of high caste Hindus had educational attainment at Lower Secondary levels or lower. For low caste Hindus and Hill Janajati, 81% and 71% of respondents didn't achieve higher than Lower Secondary level of education. Terai Janajati were the only group where the majority of members (56%) surpassed a Lower Secondary level of education. Similarly, the proportion of farmers within the four caste groups were similar—36% for high caste Hindus, 22% for low caste Hindus, and 37% for Terai Janajati—with the exception the Hill Janajati group, only 5% identified as farmers. The variables education and occupation were predictors of perceived negative impacts of conservation. As such it is likely that if surveyed, Hari's hypothetical neighbors would have reported that overall conservation had an adverse impact in their lives, even though they are high caste Hindus.

Just because the proportion of respondents who perceive conservation has an overall negative impact in their lives is distributed evenly between castes does not mean those conservation impacts are felt equally. Caste may not be inconsequential in the distribution of conservation impacts, if adverse conservation impacts compound pre-existing caste-based discrimination. This point highlights a serious study limitation: The survey only examined whether a person's life was overall negatively, neutrally, or positively impacted by conservation. The survey did not examine the degree to which someone is negatively impacted, nor how conservation

impacts compounded pre-existing non-conservation related phenomena—like caste-based discrimination. It is not that caste-based discrimination does not play a role in the lives of those experiencing impacts from conservation, rather, the survey was not designed to examine the complex and multi-faceted lived experiences of Bachhauli's residents.

9.1.4 Baghmara BZCF and benefits from conservation

In Bachhauli Wards 1,2,3,5,6, and 7 conservation was perceived to have an overall positive impact on the human population: 53% of survey respondents perceived conservation had an overall positive effect on their lives. From the co-researchers, I learned Baghmara BZCF has been successful in distributing conservation benefits to its members. Co-researchers received subsidies for firewood, biogas, and septic tank installation among other benefits. In the survey, only 16% of respondents who were members of Baghmara BZCF reported their life was overall negatively impacted by conservation. In contrast, 29% of respondents with no BZCF membership and 26% of Jankauli BZCF members reported their lives were overall negatively impacted by conservation. My conclusion is that Baghmara is helping redistribute the benefits of conservation generated from tourism, making a positive difference in its members' lives. This conclusion corroborates Jones' (2007) research findings that Baghamara BZCF positively impacts its members.

9.1.5 Summary

Based on this research, I have but a provisional and partial answer to the question, "Are the benefits and costs of conservation equally distributed across marginalized and privileged groups?" My research indicates conservation's impacts may be disproportionately negatively impacting people with low educational attainment, farmers, and those living in poverty in Bachhauli. However, conservation does provide benefits to residents of Bachhauli, especially those involved in tourism, employed by conservation agencies, and/or members of a BZCF. Lastly, only one conservation initiative, Baghmara BZCF, is effectively re-distributing conservation-based benefits back to its community. My findings are both corroborated and contradicted by the HDC literature on the CNP BZ. However, my research investigated residents' perceptions of the overall impact of conservation on their lives—a research question not previously examined by HDC researchers in the CNP BZ.

9.2 Conservation Initiatives

The co-researcher curated photo exhibit and survey results underscored the salience of crop damage caused by park-protected wildlife. Crop damage was mentioned by every co-researchers. In the survey, crop damage was the strongest predictor of perceived overall impact of conservation. Respondents who did not experience crop loss were 6.32 times more likely to report their life was overall neutrally or positively impacted by conservation. Additionally, the HDC literature

identified crop damage as one of the key drivers of park-people conflict (CNPO, 2015; Lamsal, 2012; Nepal & Weber, 1995). Given its prominence in the photovoice project, survey, and HDC literature, I examined the research question "how effective are conservation initiatives designed to mitigate the adverse social impacts of conservation in Bachhauli" by investigating conservation agencies' initiatives for addressing crop damage.

9.2.1 Fencing

CNP has employed various preventative strategies for mitigating crop damage caused by park-protected wildlife, including village resettlement, and the installation of guarding towers and fences. CNP's primary preventative strategy is its 340 km long fencing system, composed of sporadically electrified fences, barbed wire, and trenches. CNP began building fences in the mid-1990s (Budhathoki, 2012). According to the majority of Bachhauli's residents, the current fencing system has failed to prevent park-protected wildlife from roaming where they please. 65% of survey respondents disagreed that the fences installed around PAs kept park-protected wildlife out of their village. When asked if they thought fences in their area were effective, 67% of respondents disagreed.

There was no consensus among respondents, nor the co-researchers, about the effectiveness of fences in Bachhauli. Some co-researchers, like Sang, praised their effectiveness:

> "We used to have many problems with animals but now the situation has changed. They have put wires and electric fences to restrict the movement of

> animals inside the jungle. We have many facilities compared to the past. For the past ten years we haven't had many problems with animals."

Conversely, other co-researchers like Kamala expressed the fences failed to restrict wildlife movement:

> "Although they have electric wires and fences, the elephants have found a way to get through it. So although they have installed wires, it is very difficult for us [farmers] due to frequent power cuts. Every day, they repair the wires that the elephants have smashed but every day the elephant smash the wire as soon as there is no electricity."

So are fences effective or not? The discrepancy can be explained by the fencing system's discontinuous effectiveness along the perimeter of Bachhauli. The heat map in Figure 13 shows survey respondents in the Western extent of Bachhauli (Ward 1) responded overwhelmingly that fences were effective; this is also where Sang lived and farmed. In the Western region of Bachhauli, Baghmara BZCF built and maintains the fences; and from my experience the fences in this area were well-maintained and their coverage complete—there were no visible holes or gaps. In contrast, the fences at the Eastern extent of Bachhauli were poorly maintained, falling over, and had large sections missing. The condition of this section of fence may explain why survey respondents and co-researchers, like Kamala, living in this area reported the fences were ineffective (Figure 14).

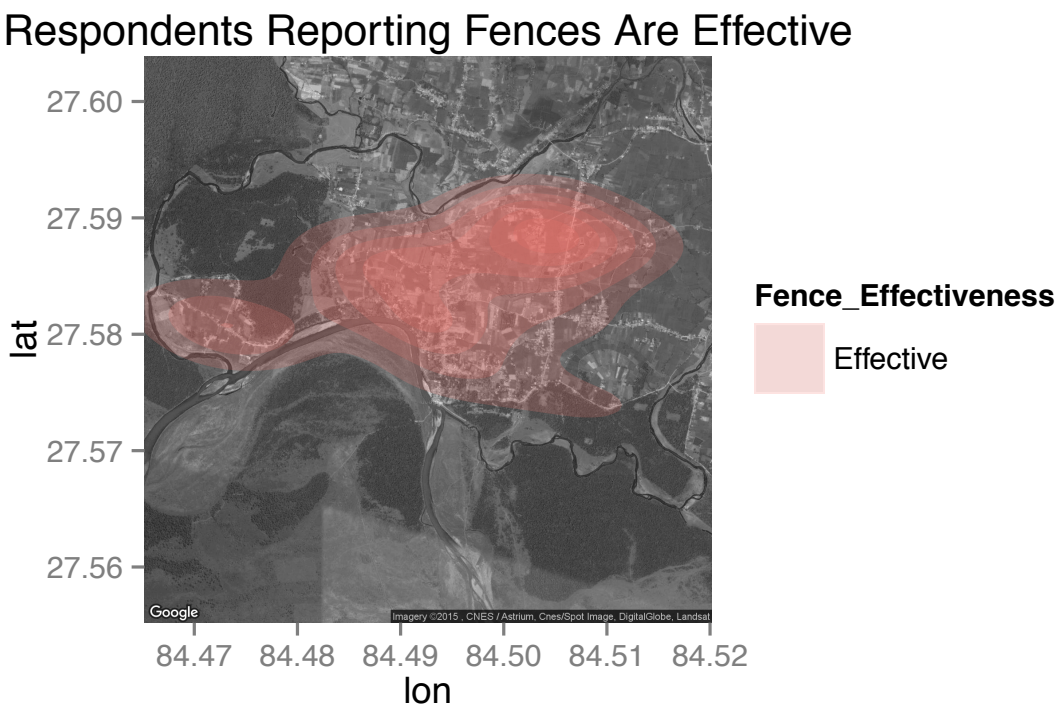

Figure 13. Heat maps showing the distribution of survey respondents who reported the fences were effective. Source: Author.

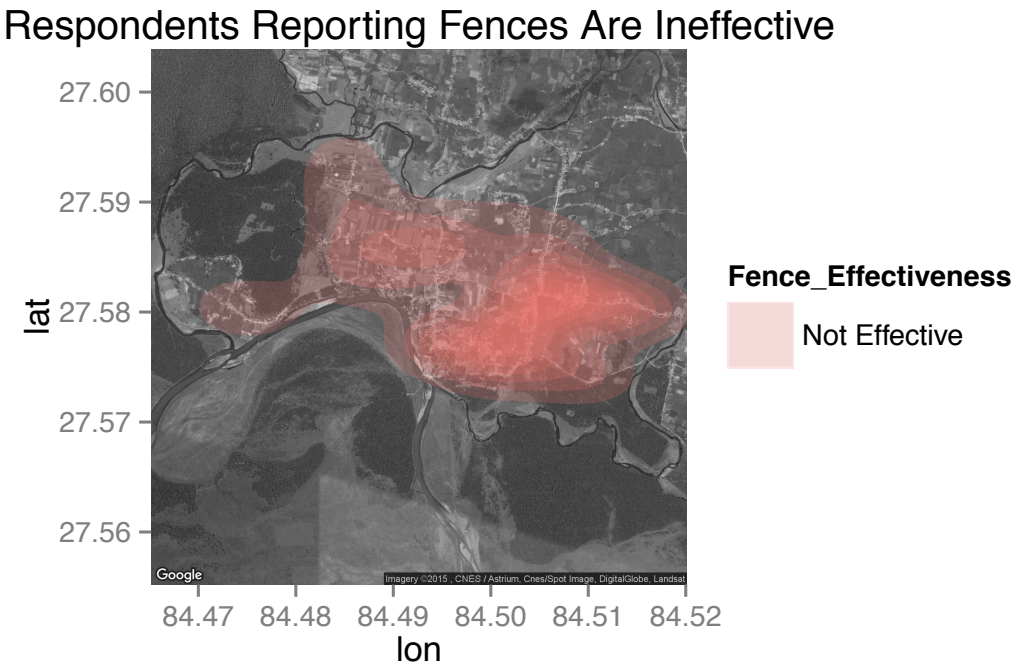

Figure 14. Heat maps showing the distribution of survey respondents who reported the fences were ineffective. Source: Author.

But even in Ward 1, where the fencing system was "effective", park-protected wildlife continued to damage crops. Shristi, a co-researcher living in Ward 1, took this picture of a boar in a farmer's field near her house (Illustration 19):

> "You can see the crops in this picture which are grown near the river side. The crop in the picture is maize...They [pointing to the wild boar in the picture] are very troublesome. They can cut the maize as easily as we cut the maize with the sickle."



Illustration 19. Boar in field. Photo by Shristi Tamang.

Preventing park-protected wildlife from entering villages, where they consume crops, demolish assets, and end villagers lives, would alleviate this aspect of park-people conflict in Bachhauli. Ideally, fences would protect people from park-

protected wildlife; in reality, they do not. Complementing preventative measures is the CNP's Wildlife Damage Relief Scheme (WDRS). Before the formalization of the WDRS, CNP managed a less comprehensive compensation scheme. Initiated in 1990, this first compensation scheme only provided compensation for human fatalities (Budhathoki, 2012). In 2008, at the DNPWC's 24th Warden Seminar, a nationwide compensation scheme was drafted. In 2009, CNP, along with the rest of Nepal's National Parks, introduced the WDRS, a more comprehensive and generous compensation initiative.

9.2.2 The wildlife damage relief scheme

From 1990 to 2009, 2,400 compensation claims were processed by CNP; an average of 126 claims per year. In 2010, CNP's WDRS received 212 claims: 9 human deaths, 26 human injuries, 95 cases of livestock loss, 31 houses destroyed, and 41 cases of damaged fruit orchards or vegetable gardens (Budhathoki, 2012). I was surprised CNP recorded so few wildlife claims, given the size of CNP's BZ, the prevalence of protected wildlife damage I observed throughout the research process, and the documentation of widespread wildlife damage in the HDC literature. In this next section, I postulate the WDRS receives so few claims because of its visibility, accessibility, and inadequate compensation.

One cannot benefit from the WDRS if one does not file a claim; and one cannot file a claim if one does not know the WDRS exists. While many co-researchers experienced wildlife damage, few knew about the WDRS. For example, a

wild elephant damaged Bishal's house, a type of wildlife damage eligible for compensation. However, he was unaware of the compensation scheme. Bishal is not alone; the WDRS was unfamiliar to 67% of survey respondents. The scheme's inconspicuousness in Bachhauli may be responsible for the low number of claims. Additionally, the byzantine compensation process may deter those who are aware of the program's existence and in need of its services.

Co-researchers aware of the WDRS complained about its inaccessibility. Heena explained the difficulty she faced attempting to get compensation. Other co-researchers, including one who worked for a conservation agency, bemoaned the WDRS's laborious bureaucratic process. From the survey, 63% of respondents who knew about the WDRS disagreed with this statement, "The application process for receiving compensation is accessible." After investigating the WDRS's claim process, I am flabbergasted that 37% of the survey respondents who knew about the WDRS thought its process was accessible.

The WDRS is mired in multiple layers of bureaucracy. Although CNP manages the compensation scheme, any one claim can involve up to nine governmental and non-governmental institutions. The institutions involved and their respective roles are displayed in Figure 15.

i. Ministry of Finance – release of the compensation fund.
ii. Ministry of Forests and Soil Conservation/Department of National Parks and Wildlife Conservation – coordination with Ministry of Finance to release compensation fund as requested by the park office.
iii. Park Office – coordination and implementation of compensation scheme as a lead agency.
iv. Local Police office – certification of incident particularly human casualties.
v. Local government agencies such as Village Development Committee/Municipality – certification of incidents
vi. Local hospital – certification of death, post-mortem report, medical report etc
vii. Local Buffer Zone Users Committee – certification of incident and coordination with park office on the behalf of victims.
viii. Local agriculture/veterinary offices - certification of livestock and crop losses
ix. Regional Directorate of the Forests – monitoring and evaluation of the compensation scheme.

Figure 15. Governmental and non-governmental institutions involvement in the WDRS. Source: (Budhathoki, 2012).

Budhathoki (2012) reports the compensation process—from filing a claim to receiving compensation—takes, in most cases, at least six months. Legal, intra- and inter-institutional coordination are cited as the barriers for efficient and timely compensation payouts. Budhathoki (2012) reports "both park staff and wildlife victims are not happy with the existing compensation procedures" (p. 6). Recall the 212 claims filed in 2010. That year, Nepal's Ministry of Finance delayed releasing compensation funds to CNP. As a result, 166 of the 212 claims went uncompensated. However, nearly all the claimants that filed compensation claims for death received compensation that year. Compensation is, according to Budhathoki (2012), expedited in the case of a human fatality. The CNPO (2015) states claimants reporting a human death receive compensation within seven days of submitting a claim. However, if a person is inside CNP illegally and killed by park-protected wildlife then they are not eligible for compensation. Gurung et al. (2008) report grass and fodder collectors accounted for half of the tiger related fatalities from 1979-2006. None of the families

in these cases would have received compensation for the loss of their family members.

The WDRS's process is lengthy and cumbersome. This process would be especially difficult for anyone who is non-literate. But what about the value of the compensation? And what types of wildlife damage are eligible for compensation? Unfortunately, the compensation doled out by CNP may be inadequate. Claims eligible for compensation includes loss of life, serious injury, livestock loss, destruction of assets and orchards, as well as stored grain loss caused by park-protected wildlife. However, some damages inflicted by wild animals, namely crop damage, are currently ineligible for compensation.

The compensation scheme's budget is approximately 4 million Nepali Rupees (NR) ($50,315 CAD) per year. This represents a substantial increase compared to the average amount of compensation funds available prior to 2009; from 1990 to 2008 an average of 850,000 million NR ($10,692 CAD) per year of compensation was awarded by CNP. However, the compensation awarded by the WDRS is so low that many co-researchers expressed filling a claim was not worth the hassle. Again, co-researchers who experienced crop damage were ineligible to receive compensation for their loss. In the case of death, a victim's family receives a one-time payout of 150,000 NR ($1915 CAD). In Nepal, if a person is unlawfully killed in a vehicle collision or riot the family receive 500,000 NR ($6237 CAD) in compensation from the Government of Nepal. Budhathoki (2012) reports the WDRS payout schedule is as follows:

•In case of serious injury a victim receives 50 000 NR ($638 CAD)
•In case of normal injury a victim receives a maximum of 5 000 NR ($64 CAD)
•In case of livestock loss a family receives a maximum of 10 000 NR ($128 CAD)
•In case of destruction of fruit orchards a family receives a maximum of 5 000 NR ($64 CAD)
•In case of destruction of stored grains, a family receives a maximum of 5 000 NR ($64 CAD)
•In case of destruction of building, a family receives a maximum of 4000 NR ($51 CAD)

9.2.3 Summary

Budhathoki's (2012) assessment of the WDRS concludes, "the existing compensation amounts are not only inadequate in comparison to losses, and many damages inflicted by wild animals are also not incorporated in the current compensation scheme e.g. crop losses" (p. 8). Echoing Budhathoki's conclusion, 56% of respondents disagreed that the WDRS's compensation was fair. Of the respondent's who knew about the WDRS, 70% disagreed with the following statement, "Generally speaking the Wildlife Damage Relief Scheme is an effective initiative." In the photovoice project, nearly all co-researchers—farmers, those employed in conservation and tourism—expressed their dissatisfaction with the WDRS.

In the logistic regression crop damage caused by park-protected wildlife was the strongest predictor of respondents' perceptions of conservation impacts. In the photovoice project, many co-researchers shared the hardships they experienced because of crop damage. Clearly the preventative measures, fences in particular, fail to protect villagers in Bachhauli from park-protected wildlife. Additionally, CNP's WDRS, in its current form, is an ineffective corrective mechanism. Although

conservation initiatives are attempting to mitigate the adverse social impacts of conservation, they are failing to curb park-protected wildlife damage in Bachhauli. The shortcomings of preventative and corrective initiatives can be blamed, in part, on the limited, strained budget of CNP (Budhathoki, 2012). Pandit, Dhakal, & Poyakov's (2015) economic analysis concluded most of the economic benefits in CNP are captured by visitors—nationals and non-nationals alike—while the costs of wildlife conservation and park management befalls CNP and its adjacent communities. Their analysis revealed doubling the park entry fee for tourists would decrease attendance a modest 19% or less, but increase park revenue 61% or more (Pandit et al., 2015). Tourists' willingness to pay to enter CNP is far greater than the current CNP entrance fee. Increasing the park entrance fee would generate more income for CNP, which could then be used to better fund preventative and corrective conservation initiatives.

9.3 Politics of Knowledge in Conservation Research

Conservation is not an apolitical force that simply and neatly protects the non-human world for the betterment of all people. There are winner and losers. The winners are those who value the protection of biodiversity, those employed in conservation, and those who benefit from tourism; the losers are those displaced by conservation, those whose access to natural resources is restricted, and those whose crops are destroyed, livestock killed, assets demolished, and loved ones lost to park-protected wildlife. The benefits and costs of conservation are, in some cases, and

especially in the Global South, unequally distributed and disproportionately negatively impact society's most marginalized (Adams & Hutton, 2013; Fisher & Christopher, 2007). In Bachhauli, there is evidence to support the claim that the costs of conservation disproportionately impact those with low educational achievement, farmers, and people living in poverty (as defined by Nepal's CBS). Additionally, initiatives designed to mitigate the adverse social impacts of conservation, fencing and the WDRS in particular, are failing.

9.3.1 CNP and the conservation discourse

So who or what is to blame for the observed adverse social impacts of conservation in Bachhauli? One could blame the ineptitude of local conservation agencies, the actions of local people, or the possibly irreconcilable nature of conservation and human development. However, the research undertaken in CNP and the international conservation discourse should, in part, be held accountable for the observed adverse social impacts of conservation in Bachhauli. The Literature Review demonstrated how the international conservation discourse has guided the trajectory of CNP, the BZ, and BZCFs. Not only was CNP gazetted during a time of rapid PA expansion, but its policies and practices reflected the paradigmatic model of conservation in the international conservation discourse at that time—"fortress conservation" (Naughton-Treves et al., 2005). In lockstep with the conservation discourse's merging of conservation and development agendas, CNP adopted a ICDP of its own, the BZ. And when the conservation discourse heralded

participatory approaches to conservation as a means to achieve "win-win" scenarios, CNP facilitated a participatory form of conservation governance, the BZCF. CNP's changing policies and practices have not occurred in the vacuum; rather, CNP is bound to the international conservation discourse.

By way of influencing CNP park policies and practices, the international conservation discourse has, for better and for worse, impacted Bachhauli's human population. For example, CNP staff acknowledge its "fortress conservation" model was influenced by the prevailing conservation paradigm (CNPO, 2015). Adopting this model of conservation has had adverse social impacts—displacement, natural resource restrictions, and park-people conflict (Dhakal et al., 2011; Straede & Treue, 2006; Nepal & Weber, 1995). Importantly, the international conservation discourse's origins, its underlying ideologies, and its institutions are Western. Political ecologists argue similarities exist between Orientalism, the discourse investigated by Said, and the conservation discourse (Robbins, 2004). For political ecologists, a problematic relationship exists between the international discourse, whose canon and institutions are primarily Western, and the PAs that impact the lives of people, especially in the Global South. Singh & Houtum (2004) go so far as to argue conservation is but a tool of neo-colonialism, wielded by Western powers to exert control over less powerful states. Whatever the conservation discourse is, operating globally it exerts an influence on local conservation institutions—on their policies, practices, and ultimately, their outcomes. Undeniably, the conservation discourse has exerted itself in Bachhauli.

9.3.2 Discourse and knowledge production

As we learned from Said (1978), influenced by Foucault, constitutive of discourses, like Orientalism and the international conservation discourse, are processes of knowledge production. Therefore, investigating how knowledge is produced within the conservation discourse is important for understanding the discourse's effects, and the re-enforcement of asymmetrical power relations. Put simply, HDC research has impacted the international conservation discourse's trajectory, guiding the development of PA policies and practices, which in turn, have had adverse social outcomes. To date, no one in the CNP academic literature has interrogated the politics of their knowledge production. Researchers in CNP have not, as postcolonial scholar Wainwright (2008) implores, asked themselves in what ways is their analysis ordered in the same way as colonial texts. In this section, I examine how my research attempted, but ultimately failed, to research in a way compatible with postcolonial theory—a theoretical perspective that can help guide Westerners, like myself, to research more ethically in non-Western contexts. Finally, I explain why I believe this failure to realize a research project fully committed to postcolonial theory is a necessary, albeit troubling, compromise if one wants PA research, policies, and practices to address issues of social justice. Facing the politics of knowledge is a major challenge—yet essential—for Westerners conducting HDC research in a Non-Western context.

Western academic knowledge production has had pernicious effects: The Orientalist discourse justified colonial interventions, propagated racist tropes, and essentialized difference (Said, 1978). As Wainwright's (2008) analysis reveals, avoiding the pitfalls of Orientalist style discourses remains a major challenge for Westerners researching in non-Western contexts. From the postcolonial literature review, I complied tenets of postcolonial theory. I used these tenets as criteria in the selection process for a research method. I believed a research method that employed these tenets of postcolonial theory would help enable me to research more ethically as a Westerner in Nepal:

- Subject position matters: Act in ways that combat imperialism while recognizing my role in perpetuating it.
- Embrace diversity: Expose a diversity of realities.
- Amplify not interpret: Do not represent the other, but allow the other to speak.
- Research as partnership: Research should be produced in dialogue with those being studied.
- Action: Move beyond analysis and into action. Facilitate action that addresses issues of social justice and equity.

Photovoice dovetailed conceptually with these tenets of postcolonial theory. Photovoice embraces and legitimizes a diversity of perspectives. Photovoice amplifies voices: Instead of speaking for a person, community, culture, photovoice attempts to allow people to speak for themselves. In photovoice, research is a partnership: Ideally, photovoice takes a non-hierarchical approach that involves participants in the entire research process, from problem definition to data analysis through to action. Finally, the goal of a photovoice project is to facilitate positive social change by empowering participants from marginalized groups to communicate

their experiences, needs, and ideas to decision-makers. In contrast, the research undertaken in CNP embodies few of the aforementioned qualities.

9.3.3 The state of knowledge production on the CNP BZ

The top-down HDC research on the CNP BZ—whose authorship is overwhelmingly Western and high caste Nepali men—is inherently problematic but has failed to identify itself as such. This body of HDC literature reinforces the epistemic privilege of Western and high caste male Nepali researchers. In my review of the HDC literature on the CNP BZ, the researcher's subject position was never examined critically, PAR methods were not used, and postcolonial theory was never mentioned. In short, there is a dearth of engagement with the politics of knowledge production in the HDC literature on the CNP BZ. Spivak (1988) is skeptical that representation of marginalized people is possible through privileged conduits—Westerners, men, and the social elite. The marginalized cannot speak when a person of privilege decides what matters, for whom, and why. Through the sieve of a researcher, even an altruistic one, Spivak argues marginalized voices are altered irreconcilably to serve ends that are not their own. In surveys undertaken in the CNP BZ, the researcher decides what questions are important, reports and interprets answers to those questions, which in turn influences the policies and practices of CNP. I think the prevalence of uncritical survey research in CNP is inadvertently muzzling marginalized voices. People in the periphery of CNP have had limited agency in

deciding what issues get research attention, how they are framed, and ultimately, what issues get attended to.

9.3.4 Alternative means of knowledge production

PAR aims to devolve the epistemic privilege inherent in traditional research practices; participants are intimately involved in all or most stages of the research, selecting and framing issues that matter to them. Therefore, the knowledge produced in participatory process reflects more clearly the needs, wants, and perceptions of local people. In turn, conservation policies influenced by this kind of research would be more sensitive to the needs, wants, and perceptions of heterogeneous communities than knowledge produced by starkly homogenous experts could ever hope to be.

This is not to say PAR, like the photovoice project, enables the marginalized to speak uninhibited. Like Spivak, I remain skeptical of my ability to truly represent the marginalized consciousnesses of the co-researchers. The photography ethic employed in this research was one of the ways in which co-researchers' experiences were effaced. (Moreover, a predetermined photography ethic is an example of the co-researchers not fully participating in the research process, leading one to question the extent to which the co-researchers were co-researchers.) The Waterloo Office of Research Ethics required I instruct co-researchers not to take photos of illegal activities. Therefore, a Western set of values—the University of Waterloo's photography ethic—impinged on the agency of Non-Westerners—the Nepali co-

researchers. Because photos of illegal activities were explicitly forbidden, illegal but important co-researcher experiences may be missing from this thesis.

Any number of other factors could have exerted a constraining force on the co-researchers, leading to a false representation of their needs, wants, and perceptions. In this study my (mis)interpretations, or the interpreters' (mis)translations, could have resulted in any number of distortions of the co-researchers' lived experiences. PAR is not a panacea. But I believe it better enables those currently excluded from the HDC literature to be heard.

9.3.5 Justifying the survey method

A mindful reader may wonder how my survey was reconciled with postcolonial theory. In short, these disparate approaches were not reconciled. Surveys, and by extension my research, are inherently problematic at the same time I believe they are a necessary tool for realizing a more just conservation future. This is because PAR, like the photovoice project, is limited by its scope. From the photovoice project, I could not discern whether the experiences shared by the 15 co-researchers were exceptional or shared by a few, or some, or many of the other 10,000 people living in Bachhauli. Were these negative social impacts disproportionately impacting marginalized people, like the co-researchers, or did they hurt people from all walks of life equally? The photovoice project was incapable of answering these questions. But they were important questions to ask and to seek provisional answers to.

9.3.1 Summary

My survey and engagement with postcolonial theory were irreconcilable; this was the failure I alluded to earlier. The survey was not a partnership. The survey privileged my position as a researcher. I determined what questions to ask and how. The survey did not amplify local voices in the same way as a photovoice project; it was more of an interpretive exercise. And the survey did not empower people to realize their own ideas of social change through action. However, the information gleaned from this survey was valuable. It showed empirically crop damage caused by park-protected wildlife was a problem in Bachhauli, especially for those with low educational attainment, farmers, and people living in poverty. As conservationists, I believe we cannot shirk our responsibility for mitigating the adverse social impacts of conservation. A survey, incompatible with postcolonial theory, elucidated important trends in the social impacts of conservation in Bachhauli. What concerns me is not that surveys are used, but that they are wielded uncritically. In the next chapter, I summarize the major findings of this study, reflect on its limitations, and recommend areas for future research. Finally, I provide a provisional answer to the overarching research question that guided this study.

10. Conclusion

Displacement, natural resource restrictions, crop damage, human fatalities, and the reification of social inequality—all are adverse social impacts of conservation examined by the existing HDC literature (Adams & Hutton, 2013). This MMR case study investigated the HDC in Bachhauli, a VDC polarized by the presence of conservation. Using qualitative and quantitative methods, I examined marginalized people's experiences of conservation and the distribution of perceived impacts of conservation in Bachhauli VDC. This study's original contribution to the HDC research on the CNP BZ was the utilization of PAR, a participatory method of knowledge production. Additionally, a critical orientation to HDC research, informed by postcolonial theory, probed the problematic interplay between my subject position and research context. This chapter highlights four main findings from this MMR case study, discusses the research limitations, and suggests areas for future research, and proposes policy recomendations.

10.1 Main Findings

10.1.1 Perceived impacts of conservation

The survey results indicate a relationship between perceived overall conservation impact and respondents' educational attainment, primary occupation, and experience of crop damage caused by park-protected wildlife. Furthermore, because low-educational attainment and agricultural-based livelihoods are correlated with high incidence of poverty, it is possible to infer a relationship between living in

poverty in Bachhauli and perceiving conservation has an overall negative impact on one's life.

10.1.2 Ineffective preventative and corrective conservation initiatives

Fences installed around the perimeter of Bachhauli are largely ineffective at stopping park-protected wildlife from roaming into agricultural fields and villages. Co-researchers reported that even the newly installed electric fences failed to protect their crops from park-protected wildlife; likewise, the majority of survey respondents reported the fences were ineffective. Moreover, CNP's corrective initiative, the WDRS, is failing to provide accessible, timely, and fair compensation for damage caused by park-protected wildlife. Importantly, compensation for crop damage is not covered by the WDRS. Given the prominence of crop damage in predicting survey respondents' perceived overall impact of conservation, addressing this shortcoming in the WDRS may help mitigate the adverse social impacts of conservation in Bachhauli.

10.1.3 Social identities, representation, and conservation outcomes

The knowledge produced by HDC researchers influences PA policies and practices, which in turn impinges on the lives of those living in the CNP BZ. In stark contrast to Nepal's heterogeneity, a homogenous group of researchers—Westerners and high caste Nepali men—have investigated the HDC in the CNP BZ. Who does research matters; our subjectivities colour our understanding and framings of issues.

Additionally, the homogeneity of conservation decision-makers in the CNP BZ is problematic. Conservation initiatives in the BZ serve a diverse population, but their management is homogenous, disproportionately representing privileged social identities in Nepal. The prevalence of socially privileged groups in conservation research and decision-making positions has a role in the reification of discrimination in Nepal. I believe the political disenfranchisement of marginalized groups in Nepal is further entrenched by conservation institutions operating in the CNP BZ—with the exception of Baghmara BZCF.

10.1.4 A problematic necessity

Research by Westerners, myself included, that use quantitative research methods, such as the survey conducted in this case study, are problematic but necessary in the BZ of CNP. Although I would argue from a postcolonial theory perspective that PAR projects are less problematic than surveys, PAR is limited in that its sample sizes are small. Research on the HDC cannot neglect trends at broader scales, trends only survey research can efficiently measure.

10.2 Research Limitations

10.2.1 Survey limitations

Three major limitations undermine the survey data that supports the finding that the perceived costs of conservation are disproportionately shouldered by the uneducated, farmers, and poor of Bachhauli. First, the survey did not sample all of

Bachhauli's nine Wards. Therefore, the survey results are only representative of the Wards sampled. Second, the survey's representativeness is uncertain. The sample's proportion of respondents from the four major caste groups was significantly different than the values reported in the 2011 Nepali census. A systematic sampling bias resulting in an unrepresentative sample of the four major caste groups may have occurred. Moreover, the survey did not employ a rigorous or culturally specific measure of poverty. Without a more sophisticated and nuanced measure of poverty, I can only infer people living in poverty are disproportionately impacted by the adverse social impacts of conservation.

Additionally, this study found no relationship between caste and the distribution of perceived conservation impacts. The survey was, however, limited in that it did not investigate the degree to which respondents were impacted by conservation. It is possible the adverse social impacts of conservation compound caste-based discrimination, making life even harder for marginalized groups living in Bachhauli.

10.2.2 Limitations in my analysis of preventative and corrective conservation initiatives

My research focused on people's perceptions of the existing preventative and corrective conservation initiatives in Bachhauli; my research did not investigate the type of preventative and corrective measures preferred by people living in Bachhauli. I strongly believe residents of Bachhauli, and of the CNP BZ, should be meaningfully

included in all future discussions pertaining to the future of preventative and corrective conservation initiatives.

10.2.3 A preliminary analysis of conservation and discrimination

My examination of the exclusion of marginalized groups in the HDC literature and in conservation decision-making was but a superficial look. Investigating the barriers to more inclusive conservation research and governance, and a nuanced study of the implications of political marginalization was beyond the scope of this research. Furthermore, prying open the implicit and explicit values, beliefs, and ideas of the HDC research was not undertaken using discourse analysis.

10.2.4 Generalizability

The conclusion that my research is a problematic necessity (at the moment) is based on reflections from this case study. Other non-Western[14] contexts within which Westerners do research may or may not be confronted with the issues I was met with. Therefore, it may be inappropriate to extrapolate my conclusion to other research settings.

[14] Or Western colonial states, like Canada, where indigenous populations are studied by settlers.

10.3 Recommendations for Future Research

10.3.1 Conservation impacts and poverty

Investigating who reaps the benefits and who shoulders the costs of conservation is necessary for understanding how conservation's social impacts can be more equitably distributed. It is fundamentally unjust that the negative externalities of conservation primarily impact the uneducated, farmers, and the poor of Bachhauli, at the same that wealthy tourists benefits from the protection of biological diversity. Future research should examine the relationship between poverty and the distribution of conservation costs and benefits in Bachhauli and the rest of the CNP BZ.

10.3.2 PAR and re-imagining PA initiatives

More research is required to investigate the types of mitigative measures people living in the BZ want CNP, the BZMC, and BZCFs to pursue. Using PAR, future research should investigate alterations, or alternatives, to existing preventative and corrective conservation initiatives. Involving those impacted by conservation in the research investigating ways to mitigate its adverse impacts would, to my mind, facilitate more contextual, effective, and democratically designed conservation initiatives.

10.3.3 Investigating the effects and drivers of political representation and marginalization

Presently, CNP research is top-down, privileging the voices of experts, Westerners, and the social elite in Nepal. I believe the uncritical use of survey research (re)produces discrimination against the marginalized groups. To be sure, I am not calling for a complete rejection of surveys and other top-down knowledge production processes. In short, embracing a hybrid of top-down and bottom-up knowledge production processes is what I believe to be a fruitful place of inquiry for academics, conservationists and the people living in Bachhauli. Inhabiting this liminal zone, I believe a conservation future that fosters local autonomy, positive social change, and biodiversity protection is possible. Additionally, investigating the possibility of a PAR survey method would be an interesting topic of future research. By broadening the scope of PAR projects, it would be possible to investigate broader trends in society more inclusively.

Examining the barriers for marginalized people's participation in conservation governance is another important future research topic. An in-depth institutional ethnography, similar to Jones' (2007) examination of Bachhauli BZCF, is required to investigate the drivers and effects of political marginalization in the region's conservation initiatives.

10.3.4 The praxis of postcolonial theory

Throughout my research I reflected on the praxis of postcolonial theory. The application of postcolonial theory in empirical research methods has received little attention. Investigating the possibility of a postcolonial research ethic is a topic of research that, if brought to fruition, could help Westerners research more sensitively in non-Western contexts.

10.4 Policy Recommendations

Firstly, more inclusive and participatory research processes are required to examine issues, and solutions to those issues, identified by the community of Bachhauli. Moreover, conservation decision-making processes too need to become more transparent, inclusive, and participatory.

The conservation agencies—CNP, BZUCs, BZCFs, INGOs—serve a diverse population; the staff of these agencies, at all levels of management, needs to reflect this diversity. Affirmative action should be considered by all governmental and non-governmental conservation agencies working in the CNP BZ.

Farmers who experience crop-damage caused by park-protected wildlife are currently ineligible for compensation under the WDRS. This shortcoming needs to be addressed by CNP. Funding the inclusion of crop damage into the WDRS could be made possible by raising the CNP tourist entry fee. Doubling the park entry fee would decrease attendance slightly, but increase park revenue substantially (Pandit et

al., 2015). With more revenue, CNP could better fund preventative and corrective initiatives.

Lastly, Western researchers like myself have skills to offer conservation agencies and the people of the CNP BZ—if that is what these parties want. However, no initiatives exist to help bridge the cultural gap between Western researchers and the socio-cultural context of Nepal. With support and guidance from governmental and non-governmental programs, Western researchers in Nepal could be more culturally sensitive, specific, and relevant.

10.5 Summary

In Bachhauli, marginalized people bear the brunt of conservation costs; although conservation initiatives like Baghmara BZCF are effectively redistributing conservation benefits. However, existing preventative and corrective initiatives are failing to mitigate adverse social impacts and equitably redistribute the benefits of conservation. These failures call into question CNP's commitment to achieving the dual objectives of biodiversity conservation and human development. Additionally, more critical and participatory knowledge production practices are required to better and more ethically understand the HDC in Bachhauli.

CNP has been successful at conserving the biodiversity endemic to the Terai. Conservation-based tourism in Bachhauli has contributed substantially to the local economy. However, conservation continues to adversely impact the lives of those who live adjacent to CNP—especially the uneducated, farmers, and poor—meaning

that conservation is not an unqualified success. Conservation agencies working in and around CNP should strive to reconcile their priorities for biodiversity conservation with the equitable distribution of conservation benefits. Only when the negative externalities stemming from conservation are rectified will conservation be considered a success.

Finally, in this thesis I wanted explore the following contradiction: My research is inherently problematic at the same time I believe it is necessary to realize a more just conservation future for the people living in Bachhauli. With my bread cast unto the waters, now I turn to you. Is the space created by this contradiction productive and positive, or unethical and doomed to misrepresentation? Perhaps truth lies somewhere in-between.

References

Adams, W. M., Aveling, R., Brockington, D., Dickson, B., Elliott, J., Hutton, J., ... Wolmer, W. (2004). Biodiversity conservation and the eradication of poverty. *Science (New York, N.Y.)*, *306*(5699), 1146–1149. doi:10.1126/science.1097920

Adams, W. M., & Hutton, J. (2013). People, Parks and Poverty: Political Ecology and Biodiversity Conservation. *Conservation and Society*, *5*(2), 147–183.

Adhikari, K. R., Tan, Y. C., Lai, J. S., Chen, Z. S., & Mishra, V. S. (2013). Improving farmers' access to irrigation in the buffer zone: An effective way to conserve biodiveristy in the chitwan national park. *Irrigation and Drainage*, *62*(5), 592–603. doi:10.1002/ird.1765

Agrawal, A., & Gupta, K. (2005). Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai. *World Development*, *33*(7), 1101–1114. doi:10.1016/j.worlddev.2005.04.009

Agrawal, A., & Redford, K. (2009). Conservation and displacement: An overview. *Conservation and Society*, *7*(1), 1. doi:10.4103/0972-4923.54790

Agrawal, A., & Redford, K. (2006). Poverty, development, and biodiversity conservation: Shooting in the dark?. *Ann Arbor MI*, *48109*(734), 647-5948.

Babyak, M. A. (2004). What You See May Not Be What You Get: A Brief, Nontechnical Introduction to Overfitting in Regression-Type Models. Psychosomatic Medicine, 66(3), 411–421. doi:10.1097/01.psy.0000127692.23278.a9

Baidya, N. G., Bhuju, D. R., & Kandel, P. (2010). Land Use Change in Buffer Zone of Chitwan National Park, Nepal between 1978 and 1999. *Ecoprint: An International Journal of Ecology*, *16*(0), 79–86. doi:10.3126/eco.v16i0.3478

Balmford, A., Green, R. E., & Jenkins, M. (2003). Measuring the changing state of nature. *Trends in Ecology and Evolution*, *18*(7), 326–330. doi:10.1016/S0169-5347(03)00067-3

Baral, N., & Heinen, J. T. (2006). The Maoist people's war and conservation in Nepal.

Baral, N., & Heinen, J. T. (2007). Resources use, conservation attitudes, management intervention and park-people relations in the Western Terai landscape of Nepal. *Environmental Conservation*, *34*(01), 64. doi:10.1017/S0376892907003670

Barber, J. S., Shivakoti, G. P., Axinn, W. G., & Gajurel, K. (1997). Sampling Strategies for Rural Settings: A Detailed Example from Chitwan Valley Family Study, Nepal. *Nepal Population Journal*.

Baum, F., MacDougall, C., & Smith, D. (2006). Participatory action research. *Journal of Epidemiology and Community Health*, *60*(10), 854–857. doi:10.1136/jech.2004.028662

Bazeley, P. (2007). *Qualitative Data Analysis with NVivo*. *Sage Publications* (Vol. 2nd). doi:10.1080/14780887.2014.992750

Beh, A., Bruyere, B. L., & Lolosoli, S. (2013). Legitimizing local perspectives in conservation through community-based research: a photovoice study in Samburu, Kenya. *Society & Natural Resources*, (September), NA. doi: 10.1080/08941920.2013.805858

Bhuju, U. R., Shakya, P. R., Basnet, T. B., & Shrestha, S. (2007). *Nepal biodiversity resource book: protected areas, Ramsar sites, and World Heritage sites*. International Centre for Integrated Mountain Development (ICIMOD).Retrieved from http:// lib.icimod.org/record/22642/files/c_attachment_183_1664.pdf

Bista, P., Ghimire, R., Shah, S. C., & Pande, K. R. (2010, November). Assessment of soil fertility management practices and their constraints in different geographic locations of Nepal. In *Forum geografic* (Vol. 9, No. 9, pp. 41-48).

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. doi: 10.1191/1478088706qp063oa

Brechin, S. R., Wilshusen, P. R., Fortwangler, C. L., & West, P. C. (2002). Reinventing a Square Wheel: Critique of a Resurgent "Protection Paradigm" in International Biodiversity Conservation 1. *Society & Natural Resources*, (15), 17–40.

Brechin, S. R., & Wilshusen, P. R. (2011). Society & Natural Resources: An International Journal Beyond the Square Wheel: Toward a More Comprehensive Understanding of Biodiversity Conservation as Social and Political Process, (October 2012), 37–41.

Budhathoki, P. (2004). Linking communities with conservation in developing countries: buffer zone management initiatives in Nepal. *Oryx*, *38*(03), 334–341. doi:10.1017/S0030605304000584

Budhathoki, P. (2012). *Nepalese Compensation Scheme-Chitwan National Park*. Retrieved from http://pubs.iied.org/pdfs/G03731.pdf

Brydon-Miller, M., Kral, M., Maguire, P., Noffke, S., & Sabhlok, A. (2011). Jazz and the banyan tree: Roots and riffs on participatory action research. In N. K. Denzin & Y. S. Lincoln (Eds.), The Sage handbook of qualitative research (4th ed.) (pp. 387–400). Thousand Oaks, CA: Sage.

Carter, N. H., Riley, S. J., Shortridge, A., Shrestha, B. K., & Liu, J. (2013). Spatial Assessment of Attitudes Toward Tigers in Nepal. *Ambio*. doi:10.1007/s13280-013-0421-7

Castleden, H., Garvin, T., & First Nation, H. a a. (2008). Modifying Photovoice for community-based participatory Indigenous research. *Social Science and Medicine*, *66*(6), 1393–1405. doi:10.1016/j.socscimed.2007.11.030

Central Bureau of Statistics. (2011a). Nepal Living Standards survey 2010/11, *1* (November).http://cbs.gov.np/nada/index.php/catalog/37

Central Bureau of Statistics. (2011b). Nepal Living Standards Survey 2010/11, *2* (November).http://cbs.gov.np/nada/index.php/catalog/37

Central Bureau of Statistics. (2011c). *Poverty in Nepal*. http://cbs.gov.np/nada/index.php/catalog/37

Central Bureau of Statistics. (2012). National Population and Housing Census 2011. Retreived from http://countryoffice.unfpa.org/nepal/drive/Nepal-Census-2011-Vol1.pdf

Central Bureau of Statistics. (2014). Chitwan: National Population and Housing Census 2011. Retrieved from http://cbs.gov.np/wp-content/uploads2014/04/35%20Chitwan_VDCLevelReport.pdf

Chitwan National Park Office. (2015). *Chitwan National Park and It's Buffer Zone: Management Plan 2013-2017 [sic]*. Retrieved from http://www.chitwannationalpark.gov.np/

Cooksey, R. W. (2007). *Illustrating statistical procedures: For business, behavioural and social science research*. Tilde University Press.

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, *43*(6), 1241–1299. doi:10.2307/1229039

Creswell, J. W., Klassen, A. C., Plano Clark, V. L., & Smith, K. C. (2011). Best practices for mixed methods research in the health sciences. Bethesda (Maryland): National Institutes of Health.

Creswell, J. (2013). Qualitative, quantitative, and mixed methods approaches. In *Research design* (pp. 1–26). doi:10.2307/3152153

Deguignet, M., Juffe-Bignoli, D., Harrison, J., MacSharry, B., Burgess, N., & Kingston, N. (2014). *2014 United Nations List of Protected Areas*. *Unep-Wcmc*. Retrieved from http://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/263/original/2014_UN_List_of_Protected_Areas_EN_web.PDF?1415613322

Department for International Development, & World Bank. (2006). *Unequal Citizens: Gender, Caste and Ethnic Exclusion in Nepal* (Vol. 60). doi:10.1007/BF00330411

Dhakal, N. P., Nelson, K. C., & Smith, J. L. D. (2011). Resident Well-Being in Conservation Resettlement: The Case of Padampur in the Royal Chitwan National Park, Nepal. *Society & Natural Resources*, *24*(6), 597–615. doi:10.1080/08941921003709633

Dunn, K. 2005. Interviewing. In *Qualitative Research Methods in Human Geography.* Oxford University Press.

Escobar, A. (1994). *Encountering development: The making and unmaking of the Third World*. Princeton University Press.

Frankfort-Nachmias, C., & Leon-Guerrero, A. (2010). *Social statistics for a diverse society*. Pine Forge Press.

Ferraro, P. J., Hanauer, M. M., & Sims, K. R. E. (2011). Conditions associated with protected area success in conservation and poverty reduction. *Proceedings of the National Academy of Sciences of the United States of America*, *108*(34), 13913–13918. doi:10.1073/pnas.1011529108

Fisher, B., & Christopher, T. (2007). Poverty and biodiversity: Measuring the overlap of human poverty and the biodiversity hotspots. *Ecological Economics*, *62*(1), 93–101. doi:10.1016/j.ecolecon.2006.05.020

Baghmara Buffer Zone Community Forest. (n.d.). Baghmara Buffer Zone Community Forestry User Group. Retrieved from http://www.g3forest.org/userfiles/file/G3/CaseStudies/GACFCasestudies/Baghmara-Buffer-Zone-Community-Forest-User-Group1.pdf

Forsyth, T. (2001). Critical Realism and Political Ecology. In *After Postmodernism: An Introduction to Critical Realism* (pp. 146–154). Retrieved from http://eprints.lse.ac.uk/4760/\n/home/napoletano/Dropbox/sndref/alpha/F/Forsyth2001.pdf

Forsyth, T. (2013). Critical political ecology: The politics of environmental science. Routledge.

Foucault, M. (1980). *Power/knowledge: Selected interviews and other writings, 1972-1977*. Pantheon.

Genoe, M. R., & Dupuis, S. L. (2013). Picturing Leisure: Using Photovoice to Understand the Experience of Leisure and Dementia. *Qualitative Report*, *18*(11), 1–21. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=snh&AN=86666585&site=ehost-live

Ghandi, L. (1998). *Postcolonial theory: A critical introduction.* Columbia University Press.

Given, L. M., Opryshko, A., Julien, H., & Smith, J. (2011). Photovoice: A participatory method for information science. *Proceedings of the ASIST Annual Meeting*, *48*. doi:10.1002/meet.2011.14504801209

Grimwood, B. (2015). Participatory Action Research: Democratizing Knowledge for Social Justice and Change. Manuscript submitted for publication.

Gurung, B., Smith, J. L. D., McDougal, C., Karki, J. B., & Barlow, A. (2008). Factors associated with human-killing tigers in Chitwan National Park, Nepal. *Biological Conservation*, *141*(12), 3069–3078. doi:10.1016/j.biocon.2008.09.013

Hair, J. F. (2010). Multivariate data analysis. Pearson Prentice Hall.

Haraway, D. (1991). A Cyborg Manifesto. *Simians, Cyborgs and Women: The Reinvention of Nature*, 312. doi:10.3917/mouv.060.0163

Hergenrather, K. C., Rhodes, S. D., Cowan, C. a., Bardhoshi, G., & Pula, S. (2009). Photovoice as community-based participatory research: A qualitative review. *American Journal of Health Behavior*, *33*(6), 686–698. doi:10.5993/AJHB.33.6.6

Horvath, R. (1972). A Definition Of Colonialism. *Cultural Anthropology*, *13*(1), 45–57.

Huck, S. W., Cormier, W. H., & Bounds, W. G. (2008). *Reading statistics and research*. New York: Harper & Row.

Islam, K., Joshi, D., & Sato, N. (n.d.). Tiger Conservation in Chitwan National Park , Nepal: An Analysis of Social , Ecological and Management Perspectives.

International Union for Conservation of Nature. 2015. IUCN Protected Areas Categories System. Retrieved from http://www.iucn.org/about/work/programmesgpap_homegpap_quality/gpap_pacategories/

Jackson, A. Y., & Mazzei, L. A. (2011). *Thinking with theory in qualitative research: Viewing data across multiple perspectives*. Routledge.

Jones, S. (2007). Tigers, trees and Tharu: An analysis of community forestry in the buffer zone of the Royal Chitwan National Park, Nepal. *Geoforum*, *38*(3), 558–575. doi:10.1016/j.geoforum.2006.10.010

Jung, J. K., & Elwood, S. (2010). Extending the qualitative capabilities of GIS: Computer-aided qualitative GIS. *Transactions in GIS*, *14*(1), 63–87. doi:10.1111/j.1467-9671.2009.01182.x

Karanth, K. K., & Nepal, S. K. (2011). Local Residents Perception of Benefits and Losses From Protected Areas in India and Nepal. *Environmental Management*. doi:10.1007/s00267-011-9778-1

Kondo, M. C., Bream, K. D., Barg, F. K., & Branas, C. C. (2014). A random spatial sampling method in a rural developing nation. *BMC Public Health*, *14*(1), 338. doi:10.1186/1471-2458-14-338

Kwame, N. (1965). Neo-Colonialism: The last stage of imperialism. *London.* Thomas nelson and Sons.

Lamsal, S. (2012). *The park-people conflict in the Chitwan National Park with reference to the Asiatic one-horned rhinoceros (Rhinoceros unicornis)*. Norwegian University of Science and Technology. Retrieved from http://www.rhinoresourcecenter.com/index.php?s=1&act=refs&CODE=note_detail&id=1381977832

Lipton, J. K., & Bhattarai, U. (2014). Park Establishment , Tourism , and Livelihood Changes: A Case Study of the Establishment of Chitwan National Park and the Tharu People of Nepal, *3*(1), 12–24.

Lovelace, M., & Brickman, P. (2013). Best practices for measuring students' attitudes toward learning science. *CBE Life Sciences Education*, *12*(4), 606–617. doi:10.1187/cbe.12-11-0197

Maddison, A. (2001). The World Economy. doi:10.1787/9789264189980-en. Retrieved from http://theunbrokenwindow.com/Development/MADDISON%20The%20World%20Economy--A%20Millennial.pdf

Mazerolle, M.J. (2004). Making sense out of Akaike's Information Criterion (AIC): its use and interpretation in model selection and inference from ecological data. Retrieved from http://avesbiodiv.mncn.csic.es/estadistica/senseaic.pdf

McEwan C (2002) Postcolonialism. In Desai V, Potter RB (eds) The Companion to Development Studies,127–31. Arnold, London.

Mclean, J., & Stræde, S. (2003). Conservation, Relocation, and the Paradigms of Park and People Management--A Case Study of Padampur Villages and the Royal Chitwan National Park, Nepal. *Society & Natural Resources*, *16*(6), 509–526. doi: 10.1080/08941920309146

Mehta, J. N., & Kellert, S. R. (1998). Local attitudes toward community-based conservation policy and programmes in Nepal: a case study in the Makalu-Barun Conservation Area. *Environmental Conservation*, *25*(4), 320–333. doi: 10.1017/S037689299800040X

Mishra, H. (1982). Human Needs Balancing in Nepal's Royal Chitwan. *Ambio*, *11*(5), 246–251.

Myers, N., Mittermeler, R., C, M., da Fonseca, G., & Kent, J. (2000). Biodiverity Hotspots for Conservation Priorities. *Nature*, *403*.

Naughton-Treves, L., Holland, M. B., & Brandon, K. (2005). The Role of Protected Areas in Conserving Biodiversity and Sustaining Local Livelihoods. *Annual Review of Environment and Resources*, *30*(1), 219–252. doi:10.1146/annurev.energy.30.050504.164507

Nepal, S. K., & Weber, K. E. (1993). *Struggle for existence: park-people conflict in the Royal Chitwan National Park, Nepal*. Bangkok: Division of Human Settlements Development, Asian Institute of Technology.

Nepal, S. K., & Weber, K. E. (1995). The Quandary of Local People-Park Relations in Nepal's Royal Chitwan National Park. *Environmental Management*, *19*(6), 853–866.

Nepal, S. K., & Spiteri, A. (2011). Linking Livelihoods and Conservation: An Examination of Local Residents ' Perceived Linkages Between Conservation

and Livelihood Benefits Around Nepal ' s Chitwan National Park. *Environmental Management*, *47*, 727–738. doi:10.1007/s00267-011-9631-6

Newing, H. S. (2011). *Conducting research in conservation: a social science perspective*. *Social Anthropology*. Routledge.

Nightingale, A. (2003). A Feminist in the Forest: Situated Knowledges and Mixing Methods in Natural Resource. *ACME: An International E-Journal for Critical Geographers*, *2*(1), 77–90.

O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality and Quantity*, *41*(5), 673–690. doi:10.1007/s11135-006-9018-6

Oliver, D. G., Serovich, J. M., & Mason, T. L. (2005). Constraints and Opportunities with Interview Transcription: Towards Reflection in Qualitative Research. *Social Forces; a Scientific Medium of Social Study and Interpretation*, *84*(2), 1273–1289. doi:10.1353/sof.2006.0023

Oxford University. (2005). New Oxford American Dictionary, 2nd edition. NY: Oxford University Press.

Pain, R. (2004). Social geography: participatory research. *Progress in Human Geography*, *28*(5), 652–663. doi:10.1191/0309132504ph511pr

Palibroda, B., Krieg, B., Murdock, L., & Havelock, J. (2009). *a Practical Guide To Photovoice: Sharing Pictures , Telling Stories and Changing Communities*. *Communities*. doi:10.1002/pmic.200900278

Pandit, R., Dhakal, M., & Polyakov, M. (2015). Valuing access to protected areas in Nepal: The case of Chitwan National Park. *Tourism Management*, *50*, 1–12. doi: 10.1016/j.tourman.2014.12.017

Paudel, N. S. (2002). Conservation and Livelihoods Integrating People and Nature: A Perspective for Environmental Conservation and Livelihoods in the Context of Nepal. *Journal of Forest and Livelihood*, *2*(1), 62–67.

Paudel, N. S., Budhathoki, P., & Sharma, U. R. (2007). Buffer Zones: New Frontiers for Participatory Conservation? *Journal of Forest and Livelihood*. doi:10.3126/jfl.v6i2.2324

Philip, L. J. (1998). Combining quantitative and qualitative approaches to social research in human geography -- an impossible mixture? *Environment and Planning A*, *30*(2), 261–276. doi:10.1068/a300261

Raghuram, P., & Madge, C. (2006). Towards a method for postcolonial development geography? Possibilities and challenges. *Singapore Journal of Tropical Geography*, *27*(3), 270–288. doi:10.1111/j.1467-9493.2006.00262.x

Reeves, S., Albert, M., Kuper, A., & Hodges, B. D. (2008). Why use theories in qualitative research? *BMJ (Clinical Research Ed.)*, *337*(September), a949. doi: 10.1136/bmj.a949

Robbins, P. (2003). Beyond Ground Truth: GIS and the Environmental Knowledge of Herders , Professional Foresters , and Other Traditional Communities, *31*(2).

Robbins, P. (2004). Political ecology: A critical introduction. In *Critical Introductions to Geography*. John Wiley & Sons.

Robbins, P., Jan, N., Moore, S., Secor, A. J., & Wainwright, J. (2010). Reading Joel Wainwright's Decolonizing Development: Colonial Power and the Maya. *Political Geography*, *29*(6), 343–351. doi:10.1016/j.polgeo.2010.06.002

Rocheleau, D., Thomas-Slayter, B., & Wangari, E. (1996). Gender and Environment. A Feminist Political Ecology Perspective. In *Feminist Political Ecology. Global Issues and Local Experience* (pp. 3–23).

Roe, D. (2008). The origins and evolution of the conservation-poverty debate: a review of key literature, events and policy processes. *Oryx*, *42*(04), 491. doi: 10.1017/S0030605308002032

Saberwal, V. K., & Kothari, A. (1996). The Human Dimension in Conservation in Developing Countries. *Society for Conservation Biology*, *10*(5), 1328–1331.

Sah, J. P., & Heinen, J. T. (2001). Wetland resource use and conservation attitudes among indigenous and migrant peoples in Ghodaghodi Lake area, Nepal. *Environmental Conservation*, *28*(04), 345–356. doi:10.1017/S0376892901000376

Said, E. (1978). *Orientalism*. New York: Vintage.

Said, E. W. (1985). Orientalism reconsidered. *Race & Class*, *27*(2), 1–15. doi: 10.1177/030639688502700201

Sharma, B. K., Chalise, M. K., & Solanki, G. S. (2013). Large wildlife population in Baghmara Buffer Zone Community Forest, Nepal. *Ecoprint: An International Journal of Ecology*, *18*, 55-62.

Singh, J., & Houtum, H. Van. (2004). Post-colonial nature conservation in Southern Africa: same emperors, new clothes?, 253–263.

Spiteri, A. (2006). *Evaluating Community Incentives For Biodiversity Conservation In Protected Areas In Nepal*. University of Northern British Columbia.

Spiteri, A., & Nepal, S. K. (2008). Distributing conservation incentives in the buffer zone of Chitwan National Park , Nepal. *Environmental Conservation*, *35*(1), 76–86. doi:10.1017/S0376892908004451

Spivak, G. C. (1988). Can the Subaltern Speak? *Marxism and the Interpretation of Culture*. doi:10.1353/aiq.2003.0026

Spivak, G. C. (1993). *Outside in the teaching machine*. Routledge.

Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences*. Routledge.

Stræde, S., & Helles, F. (2002). Park-people conflict resolution in Royal Chitwan National Park, Nepal: buying time at high cost? *Environmental Conservation*, *27*(04), 368–381. doi:10.1017/S0376892900000424

Straede, S., & Treue, T. (2006). Beyond buffer zone protection: a comparative study of park and buffer zone products' importance to villagers living inside Royal Chitwan National Park and to villagers living in its buffer zone. *Journal of Environmental Management*, *78*(3), 251–67. doi:10.1016/j.jenvman.2005.03.017

Sutton, O. (2012). Introduction to k Nearest Neighbour Classification and Condensed Nearest Neighbour Data Reduction, 1–10. Retrieved from http://www.math.le.ac.uk/people/ag153/homepage/KNN/OliverKNN_Talk.pdf

Teddlie, C., & Tashakkori, A. (2010). Overview of contemporary issues in mixed methods research. In *Sage handbook of mixed methods in social & behavioral research* (pp. 1–44).

Thapa Karki, S. (2013). Do protected areas and conservation incentives contribute to sustainable livelihoods? A case study of Bardia National Park, Nepal. *Journal of Environmental Management*, *128*, 988–99. doi:10.1016/j.jenvman.2013.06.054

Therneau, T. M., & Atkinson, E. J. (1997). An Introduction to Recursive Partitioning Using the RPART Routines. *Program*, 1–52. Retrieved from https://cran.r-project.org/web/packages/rpart/vignettes/longintro.pdf

United Nations Educational Scientific and Cultural Organization & International Union for the Conservation of Nature. (2003). UNESCO – IUCN Enhancing Our Heritage Project: Monitoring and Managing for Success in Natural World Heritage Sites Initial Management Effectiveness Evaluation Report: Table of Contents, (August). Retrieved from whc.unesco.org/document/6957

United Nations Educational Scientific and Cultural Organization & International Union for the Conservation of Nature. (2007). UNESCO-IUCN Enhancing Our Heritage Project: Final Management Effectiveness Evaluation Report Chitwan National Park, Nepal, (October). Retrieved from https://cmsdata.iucn.org/downloads/chitwan_eoh_second_assessment_oct07.pdf

United Nations Educational Scientific and Cultural Organization. 2015. Retrieved August 27th from http://www.unesco.org/new/en/social-and-human-sciences/themes/international-migration/glossary/discrimination/

United Nations Development Programme. (2014a). *Nepal Human Development Report 2014: Beyond Geography, Unlocking Human Potential*. Retrieved from http://hdr.undp.org/sites/default/files/nepal_nhdr_2014-final.pdf

United Nations Development Programme. (2014b). Nepal Annual Report 2014. Retrieved from http://www.np.undp.org/content/dam/nepal/docs/reports/UNDP_NP_UNDP%20Nepal%20Annual%20Report%202014.pdf

Upadhyay, S. (2013). *Wildlife Damages, Mitigation Measures and Livelihoods Issues around Chitwan National Park, Nepal.* Norwegian University of Life Sciences. Retrieved from http://brage.bibsys.no/xmlui/bitstream/handle/11250/187979/Saroj Thesis UMB.pdf?sequence=1

Valentine, G. (1997). Tell me about...: using interviews as a research methodology. *Methods in human geography*, *2*, 27-54.

Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidlines for conducting mixed methods research in information systems. *MIS Quarterly*, *37*(1), 21–54. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=85634550&site=ehost-live

Wainwright, J. (2008). *Decolonizing Development: Colonial Power and the Maya*. *Decolonizing Development: Colonial Power and the Maya*. Blackwell Publishing Ltd.

Wang, C., & Burris, M. A. (1997). Photovoice: concept, methodology, and use for participatory needs assessment. *Health Education & Behavior: The Official Publication of the Society for Public Health Education*, *24*(3), 369–387. doi: 10.1177/109019819702400309

Wang, C. C., & Redwood-Jones, Y. a. (2001). Photovoice ethics: perspectives from Flint Photovoice. *Health Education & Behavior: The Official Publication of the Society for Public Health Education*, *28*(5), 560–572. doi: 10.1177/109019810102800504

West, P., Igoe, J., & Brockington, D. (2006). Parks and Peoples: The Social Impact of Protected Areas. *Annual Review of Anthropology*, *35*(1), 251–277. doi:10.1146/annurev.anthro.35.081705.123308

Whelpton, J. (2005). *A history of Nepal*. Cambridge University Press.

World Bank. 2014. Gross Domestic Product. Retrieved from http://databank.worldbank.org/data/download/GDP.pdf

Appendix A: *Local Photography, Local Perspectives: A Novel Look at Conservation*

लोकल फोटोग्राफी, लोकल पर्स्पेक्टब्रिस्: अ नोवेल 'लूक्' एट कन्सर्वेसन

Local Photography, Local Perspectives: A Novel Look at Conservation







हामी सबै आज यहाँ समझ्दारी र मुल्याङ्कन्को यात्रा सुरु गर्नका लागी जम्मा भएका छौं । हामी तपाँईहरु सँग हाम्रो सम्रक्षणका कथाहरु र हाम्रो छोराछोरीकोलागी उज्ज्वल भवश्ियको साझेदारीको कल्पना बाँड्न चहान्छौं । प्रदर्शनीमा देखाइएको चत्रिहरुको माध्यमबाट हामी तपाँईलाई हाम्रो जीवनको यथार्थ देखाउन चहान्छौं। तर प्रत्येक देखाइएको चत्रिको पछाडी धेरै अद्रश्िय चत्रिहरु छन्। हाम्रो जविनलाई एउटा चत्रि अथवा एउटा वाक्यमा दर्शाउन सकिँदैन। यो प्रदर्शनी प्रस्थान्को एक वन्दिू हो भनेर अगाडी बढनू सबै भन्दा राम्रो सुरुवात हुन सक्छ। रमाइलो गर्नुहोला।

भवदीय,

हामी फोटोग्राफरहरु।

We are gathered here today to embark on a journey of understanding and appreciation. We hope to share with you our stories of conservation, and the bright futures we envision for us and our children. As you navigate through the exhibit we hope to bring you into our lives and show you our worlds. However, keep in mind that for every picture shown countless others are unseen. Our lives are not reducible to a single photograph or quote. It may be best to think of this exhibit as a point of departure. Enjoy.

Sincerely,
The photographers

फोटोग्राफरहरु

The Photographers

“म तीनवटा बच्चाहरुको हजुराआमा हो। म एउटा कसिान हो तर म अरूको जग्गा अध्यायमा लएिर कसिानी गर्छू। जे गरेर भएपनि आफ्नो परविारको पालनपोषण त गर्नै पर्यो। मलाई केहि पनि काम नगरि बस्न मन पर्दैन तर आजकल मेरो घूँडाले मलाई काम गर्न दँदैन।”

“My name is Kamala. I’m a proud grandmother to three kids. I’m a farmer but I rent another’s land. I have to provide for my family no matter what. I don’t like staying idle but my knees stop me these days.”

“यो एउटा धानबारीको फोटो हो। यो चत्रिको मार्फत म एउटा कसिानको जविन दर्शाउन चहान्छू। हामी धान रोप्छौं, बाली भत्रियाउँछौं, केहि आफ्नो लागि प्रयोग गर्छौं र केहि बजारमा बेच्छौं। कसिान भएर काम गर्न धेरै गार्हो छ, दनि्भरि खेतमा काम गर्नु पर्छ अनि रात भरि पनि सुत्न पाइँदैन। रात भर टनिको भाँडा ठटाउँदै जङ्गली हात्ती धपाउन पर्छ। के पो गर्न सकनि्छ र? यदि बाली भत्रि्याउन मन छ भने रातको नदि्रा त त्यागनै पर्छ।”

“This is a picture of a paddy field. I wanted to show the life of the farmers through this picture. We grow rice, harvest it, consume it, and sell it in the market. It is so difficult to be a farmer, work hard all day and still wake up all night. Chase elephants all night, banging the tin utensils. What can we do? If we want to get the harvest then we have to sacrifice our sleep.”



“मेरो परिवारलाई हेर्नको लागि मैले मेरो पढाई त्याग्न पर्यो। अहिले म भवन निर्माण गर्ने काम गर्छु। मेरो कान्छो भाइहरुले आफ्नो पढाई पूरा गर्न सकून भन्ने मेरो इच्छा छ।”

“My name is Ram. I had to give up my studies so that I could support my family. Now I work in construction. I hope my younger brothers will complete their studies.”

“यो तस्वरिमा मेरो तीनवटा भाइहरु घोलमा माच्छा पक्डिँदै छ। हामी मुस्सहरहरु पुस्तौँ देखि माच्छा पक्डने काम दगर्दै आएका छौँ। हाम्रो पुस्ताहरुले माच्छा मार्ने कामलाई नै आफ्नो पेशा बनाएका थिए र हामी पनि यहि पेशालाई नै अपनाउँछौ। यि केटाहरुले ढढयिा लिएर माच्छा मार्छन्। यसरी समातिएको माच्छा हामी तरकारी बनाउनका लागि प्रियोग गर्छौँ।”

“This is a picture of three of my brothers fishing in the ghol [fish pit]. We, the Mussahars, have been fishing for generations. Our ancestors used fishing as an occupation and we continue to fish. These boys have taken a dhadiya [fishing net] to fish in the pit. These fishes are used to make curry for us.”



“म संरक्षणमा चाँसो राख्ने साधारण मान्छे हूँ। म इन्टरमा पढ्दै गर्दा एक दिन मेरो आमा जङ्गलमा काठ लिनको लागि जानुभयो। उहाँलाई त्यहाँ एउटा गैँडाले हानेर मारिदियो। मेरो आमाको निधन मेरो जीवनको एक्दमै दुखद क्षण थियो तर म त्यस घटनाको लागि त्यो जनावरलाई जिम्मेवार मान्दिन। त्यसलाई कसैको हत्या गर्नु भनेको के हो थाहा छैन। अहिले म एउटा नेचर गाईडको रुपमा काम गर्छू। मैले मेरो अफिस बाट कमाएको केहि रकम म जङ्गली जनावरको मारमा परेका मान्छेहरुलाई दिन्छू।”

“My name is Nina . I’m an ordinary person interested in conservation. I was studying in my intermediate level and one day my mom went into the forest to get some wood. In the forest she was killed by a rhino. The death of my mother was a really sad moment in my life, but I don’t hold the animal responsible. It does not understand the concept of killing someone. Now I work as a nature guide. A portion of my guiding office’s profits goes to help the victims of damage inflicted by wildlife.”

“यो तस्वरिमा तपाँईहरु मेरो घर देख्न सक्नु हुन्छ। म यहि बारीमा जन्मएिकी हूँ। त्यतखिेर राम्रो बाटो थएिन, बजिूली थएिन र मान्छेहरु सदैब जङ्गली जनावरको त्राशमा बाँच्नू पर्ने अवस्था थियो। त्यतखिेरको अवस्थामा जनावरहरुले सबै बालीनाली खाइदनि गर्थे।”

“Here you can see my house. I was born in the fields you can see in this picture. At that time there was no road, no electricity, and people lived in constant fear wild animals. Wild animals destroyed everyones’ crops in those days.”



“म एउटा परश्रिमी ब्यक्तहिो। मलाई मेरो अपङताको बहाना बनाएर कोठाको कुनामा बस्न मन छैन। मेरो बालबच्चाको आवश्यक्ता पूरा गर्नका लागमि मेरो सलिाईको सहायता लन्छि। मेरो छोराछोरीको भवश्यि उज्ज्वल होस भन्नका नमित्ति मैले धेरै मेहेनत गर्दै छू।”

“My name is Hari. I am a hardworking person. I don’t choose to sit in a corner of a room and let my disability be an excuse to be lazy. I use my skills as a tailor to allow my kids to have the things that they need. I have been working to make my children’s futures bright.”

“मेरो अपाङतले गर्दा मलाई हड्डिूल गर्न गाह्रो पर्छ त्यसैले मेरो साइकल मेरो लागअित्यन्त जरुरी छ। मेरो साइकलनै मेरो खुट्टा हो। साइकल बनिा म पाँच मनिेट भन्दा धेरै हँड्नि सक्दनि। साइकल्को सहायताले म दन्भिर हँड्नि सक्छू।”

“As I cannot walk due to my disability my cycle is very important to me. My cycle is my leg. Without my cycle I would not be able to walk for more than 5 minutes. I can travel all day long in my cycle.”



“म दुईवटा बच्चाको बुवा हूँ। म मेरो समूदायको वकिाशको कार्यमा सहायता पुर्याउन चहान्छू।”

“My name is Dipendra. I’m the father of two kids and I want to help aid in developing my community.”

“मेरो एउटा सानो पसल छ र एउटा "एक्स आरमी रेस्टुरेन्ट" भन्ने रेस्टुरेन्ट पनि छ। म पहिला नेपाली सेनामा थिएँ। पर्यटकहरुले यो गाउँमा घुमेर आँफैले गाउँको वारेमा अन्वेषण गरून भन्ने मेरो इच्छा छ।”

“I own a small shop and restaurant called ‘Ex-Army Restaurant’. I used to be in the Nepali Army. I wish tourists would take time to explore the village on their own.”



“मलाई घरको काम गर्न मन पर्छ। मलाई साथीहरुसङ्ग समय बिताउन मन लाग्छ। मलाई मेरो दिदीको छोराको धेरै माया लाग्छ र म उसङ्ग दिनि भरि खेलेर बस्छू।”

“My name is Birsha. I love to help in the household work and I enjoy spending time with my friends. I love my sister’s kids and I play with them all the time.”

“मेरो आमालाई मुटूको रोग छ त्यसैले गर्दा उहाँको हेर्चाहा गर्नुपर्ने भएकोले मलाई स्कूल जान गार्हो छ। यो तस्वीरमा महलिाहरु साक्षरता कक्षामा बसरिाखेको देख्न सकन्छि। मलाई यो कक्षा महत्वपूण लागेर यो तस्वरि खचिेको हो। जुनसुकै उमेरको मान्छेको लागि पनि शिक्षा अत्यावश्यक छ, मेरो आमा पनि यस कक्षामा पढन जानू हुन्छ। मलाई यो देखेर खूशी लाग्छ।”

“I have to take care of my mother who has a heart condition, so going to school is quite difficult for me. In this picture you can see women sitting for the literacy classes. I think this is important and that’s the reason I took the picture. Education is really important despite their age, even my mom is taking the classes and I’m really happy for her.”



“म चतिवन राष्ट्रयि नकिुञ्जमा नेचर गाइडको रुपमा काम गर्छू। मैले सेवा दनि पर्यटकहरु सङ्ग मेरो भावनात्मक सम्बन्ध बन्ने गरेको छ।”

“My name is Gopal. I work in Chitwan National Park and I’m a nature guide. I feel attached to the tourists I serve.”

“मेरो पहचिान राष्ट्रयि नकिुञ्ज भन्दा अलग छैन। सानै देखि नै म जनावरहरुको माझमा हुर्केको हूँ।

“फोटोग्राफरहरु” धारा अन्त”

“My identity is not so much separated from that of CNP. I grew up knowing the animals as a kid.”



“म एउटा होटलमा काम गर्छू। थोपा थोपा मलिर समुद्र बन्छ भन्छन्। मेरो बचिारमा हामी सबै जना एकजूट भर्यौं भने हाम्रो समस्याहरुको समाधान पक्कै हुन्छ।”

“Hello my name is Sang. I work at a hotel. They say small droplets can combine to form an ocean. I think uniting everyone’s voices could solve the problems we have.”

“यो फोटोमा हामीहरुले मेरो घर नजकिैको होटलबाट घाँस काट्दै गरेको देख्न सक्नुहुन्छ। हामीलाई जङ्गल जानू भन्दा होटलमा नै घाँस काट्न मन पर्छ कनिभने जङ्गल जान गार्हो छ। खासगरेर मलाई मेरो शरीरले जङ्गल जान दँदैन। यदि जङ्गलमा मेरो गैंडासङ्ग जम्का भेट भयो भने, म रुख चढ्न पनि सक्दनि र चाँडै भाग्न पनि सक्दनि। केहि गरेर गैंडा भेटहिालें भने, "ल आइज, तैंले जति्छस कि मैले" भनेर भन्छू।”

“In this picture we are cutting grasses we took from the hotels near my house. We prefer the hotel grounds because going into the jungle is difficult. Especially me, as my body doesn’t allow me to enter inside the jungle. If I encountered a rhino inside the jungle I would not be able to climb a tree or run fast. If I see a rhino I say ‘bring it on, let’s see who wins’.”



“म एउटा कसिान हूँ र मेरो एउटा सानो गाढा पनछि। म दुई वटा छोराको आमा हूँ। मेरो छोराहरु अन्मोल र अमूल्य छन्, सन्सारको कुनै पनपैसाले मेरो छोराहरु फर्िता ल्याउन सक्दैन।”

“My name is Heena. I’m a farmer and a small cart owner. I’m a mother to two sons. My sons are precious and priceless, no amount of money would bring them back.”

“म बस्ने ठाउँको मान्छेहरुको आफ्नो जग्गा छैन, हुने हरुको पनसानो जमनि छ। धेरै जस्तो जग्गा नहुने मान्छेहरुले अरुको जग्गा अध्याय गरेर बाली उब्जाउछन्। अरुको जग्गा यसरी अध्यायमा लाँदा आधा बाली जग्गा धनीलाई दनि परछ तर म चाँहबाली दन्नि तर जग्गाको भाडा दन्छि।”

“People in my area don’t have their own land, and even if they do own land it’s small. Most of the landless people usually rent land for cultivation. When we rent somebody’s land we are supposed to split the harvest but in my case I don’t split the harvest I pay them money.”



“म यहाँको स्थानयि बासन्दिा हूँ र म अहलिे स्नातक तहको पहलिो बर्षमा पढ्दै छू। म यहाँको पर्यटन उद्ध्योगमा काम गर्न चहान्छू। हामलिे देख्ने सानो कुराहरुमा धेरै ठूलो कुराहरु लुकेका हुन्छन्।”

“My name is Sajit and I’m a local resident in my first year of a bachelor’s degree. I want to get into the tourism industry here. Bigger things are hidden in the smaller things that we see.”

“कहलिेकाहीं मान्छेहरुले मलाई ठूलो काम गर्नु मन छ भन्छन तर मलाई हामीले सबै प्रकारको कामहरु गर्न पर्छ जस्तो लाग्छ। यो मान्छे माहूत हो। ऊ आफ्नो हात्तकिो लागि खानेकुरा तयार गर्दै छ। माहूतले धेरै परश्रिम गर्छ र हात्तहिरु छन्; हात्तहिरु छन र पर्यटकहरु यहाँ आउँछन्; पर्यटकहरु छन र नकिुञ्ज छ; नकिुञ्ज छ र त्यसै कारणले हामी, गाउँले हरु बाँच्न सकेका छौं।”

“Sometimes people say that they would like to do a big job, but I feel that people should do all kinds of jobs. This guy is a mahout. He is preparing food for the elephant. Mahouts work hard and that’s why elephants exist; elephants exist and that’s why the tourists are here; tourists are here and that’s why CNP is here; and CNP exists and that’s why we, the villagers, are surviving.”



“म सङ्ग भएको सबै कुरा मैले आफ्नै मेहेनतले पाएको हो। म परश्रिमी र लगनशील छू त्यसैले गर्दा मेरो परविारको आवश्यक्ता पूरा गर्न सक्छू।”

“Namaste! I am Shristi. I live in Baadreni. I have achieved everything on my own. I’m hardworking and consistent so I can provide for my family.”

“जब म यहाँ पहलिो चोटि आएको थएिँ, यहाँ थोरै मान्छे थएि र कुनै पसल थएिनन्। अहलि यहाँ धेरै मान्छेहरु छन र केहलि यहाँ पसल राखेका छन्, मेरो पनि पसल छ।”

“When I first came here there were less people and no shops. Now there are more people and some people have opened shops. Even I have a shop here.”



“म ६ वटा बच्चाहरुको बुढो बुवा हुँ। मेरो ५ वटा छोरी छन्। म एउटा कसिान हुँ, एउटा दर्जी पनि हुँ र म मेरो कसिानीमा ट्र्याक्टर प्रयोग गर्छु।”

“My name is Bishal. I’m an old father of six children, five daughters. I’m a farmer, tailor, and I work with a tractor.”

“बहिान बहिानै आफ्नो घर अगाडि थुप्रै कसिमिका चराहरु देख्न पाइन्छ। मलाई यो चाहीँ सार्है मन पर्छ।”

“We get to see different kinds of birds right outside our house in the morning. I like that.”



End of “The Photographers” section.

नोटः केही फोटोग्राफरहरुले गुमनाम रहने इच्छा ब्यक्त गरेका छन्। उहाँहरुको फोटो र उद्धरणहरु अन्य फोटोग्राफरहरुको काम सँगसँगै प्रदर्शनीमा समावेश गरिएको छ।

Note: Some photographers wished to remain anonymous. Their photos and quotes are included alongside the other photographers’ work in the following sections of the exhibit.

संरक्षण सङ्ग बाँच्दा

Living With Conservation



"यो एउटा पर्यटन क्षेत्र हो। यहाँका गाँउलेहरुले पर्यटकहरुलाई घुमाउछन अनि थुप्रै सेवाहरु दिन्छन्। यस सेवाको लागि पर्यटकहरुले थुप्रै पैसा खर्च गर्छन्। यो पैसा गाँउलेहरुको लागि आयआर्जनको श्रोत बनेको छ। पर्यटनले गर्दा यहाँ धेरै परिवर्तनहरु आएका छन्। हो, राष्ट्रयि निकूञ्ज छ र हामी छौं।"

"This is a tourist area. The villagers here show these tourists around, we provide various services to these people and the tourists pay a lot of money for these services. This money helps the villagers to make a living. Many changes in the lives of the villagers have been brought about by these tourists. Yes, CNP exists and that's the reason we exist."—Sajit



“यि पर्यटकहरु हात्तमा ब्रिडिङ्ग सेन्टरमा हात्तिको बच्चाहरु हेरेर फर्कँदै छन्। चित्रमा देखिने साना पसलहरुमा मह र गैडा अनि हात्तिको मूर्तिहरु पाइन्छ। यि पर्यटकहरु यहाँको पसलहरुमा सामान किन्न आउँछन अनि मेरो पसलमा पनि चिसो पिउन आउँछन्, त्यसैले संरक्षणले गर्दा हामी जस्तो साना ब्यवसाईहरुले आम्दानीको बाटो पाएका छौं।”

“The tourists are returning from the breeding center after watching the baby elephants. The shops that you can see in the picture sell honey and other souvenirs like elephant and rhino dolls. These tourists come to the shops here, including mine, for beverages and we have been able to generate income because of conservation”—Shristi



“यस क्षेत्रमा जनावरहरुले गर्दा नै गाईडहरुले रोजगारीको अवसर पाएका छन्। यदि यि जनावरहरुले हामीलाई यति धेरै मद्दत गरेका छन भने, हामीले पनि यिनिहिरुलाई केहि दिनि हाम्रो कर्तब्य हो। त्यसैले मैले आफूलाई सोधें, मैले यि जनावरहरुलाई के दिनि सक्छु? त्यसपछि मैले मेरो अफसिको फाइदाको १० प्रतशित संरक्षणको कार्यका लागि दिनि थालें। म वन्यजन्तूबाट प्रभावति मान्छेहरुलाई मद्दत गरनुको साथै गरबि परविारको वधि्यार्थीहरुलाई पढ्ने सामाग्री उपलब्ध गराउने काममा पनि संलग्न छु। साथै यहाँका महलिा समूहहरुलाई पनि मद्दत गर्दै आएको छू।”

“In the guiding profession the wild animals provide us with employment opportunities. If they can help us in so many ways then it’s our duty to give something in return to the animals. So I asked myself what can I do for these animals? Then I decided to give 10% of my office’s profit for conservation efforts. I help the victims of damage inflicted by wildlife, provide school materials to children of poor families, and support different women’s groups in this area.”—Nina



“यो बन्यजन्तुबाट पीडति एक जना मान्छेको घर हो। यहाँ बस्ने महलिाको श्रीमानलाई गैंडाले घाइते बनाएको थयिो र पछत्यिहकिारणले उहाँको नधिन भयो। उहाँहरुको चार वटा सन्तान छन र अहलिको अवस्थामा उहाँको श्रीमतीले काम गर्दै ती बच्चाहरुको पालनपोषण गर्दै हुनुहुन्छ। मेरो अफसिबाट एक चोटहिामीले यो घरलाई कपडा र डस्नाहरु दएिका थयिौं।”

“This house belongs to one of the wildlife victims. The husband was injured by a rhino and later he passed away because of the incident. She [the wife] has four children and the situation is that she is working and providing for her four children. My office provided the people of this house with clothes and mattresses once.”—Nina



"यो बारी अब घाँसे मैदान जस्तो भएको देख्नू भयो? बर्धेलले सबै बाली खाइदएिर मैले यसपाली एउटा बाली पनि भित्र्याउन पाइन। हामीले क्षतपुिर्त ति पाउन पर्ने हो तर अहलि सम्म केहि पनि क्षतपुिर्त पाएका छैनौं। यसपाली अध्यायको भर्पाइ दनि अनि मेरो वस्तुभाउलाई खुवाउनलाई मसङ्ग केहि नि बाली छैन।"

"Can you see the field is now a grassland? I did not get any harvest from this [field] because the boars destroyed it all. We were supposed to be compensated for our loss but we haven't received any compensation so far. I have no harvest to pay for the rent of the land or to feed my animals."—Heena



“पहलिा हामीलाई जनावरको धेरै समस्या थयिो तर अहलिे परस्थितिि बदलएिको छ। अहलिे तनीहरुले जनावरको आवतजावत समिति गर्नका लागि इलेक्ट्रकि तार र जाली लगाएका छन्। पहलिाको तूलनामा अहलिे हामीलाई धेरै सुबधिाहरु छन्। बगित १० वर्षमा हामीलाई जनावरको खासै समस्या छैन।”

“We used to have many problems with animals but now the situation has changed. They have put wires and electric fences to restrict the movement of animals inside the jungle. We have many facilities compared to the past. For the past 10 years we haven’t had many
problems with animals.”—Sang



“इलेक्ट्रकि तार बार त छ, तर हात्तीहरुले त्यो नाँघेर जाने बाटो पत्ता लाइसके। तारहरु ठाउँ ठाउँमा लगाइएता पनि लोड्शेडङ्गले गर्दा हामी कसिानहरुलाई धेरै गार्हो छ। हरेक दनि तनिीहरूले हात्तीले भत्काएको ठाउँमा तार मर्मत गर्छन तर फेरि बजिुली जाने बत्तिकै हात्तीले त्यो तार भत्काइहाल्छ।”

“Although they have electric wires and fences, the elephants have found a way to get through it. So although they have installed wires, it is very difficult for us [farmers] due to frequent power cuts. Every day, they repair the wires that the elephants have smashed but everyday the elephant smash the wire as soon as there is no electricity.”—Kamala



“मेरो घरलाई हात्तलि तीन पटक आक्रमण गरसिक्यो। माटोको भत्िताहरु बाँसको भत्िताहरुमा परणित भएका छन्। भत्िताको यतभिाग बनाउनलाई मात्र मलाई ८०० रुपैंया चाहयिो। सुन्दा थोरै रकम जस्तो लागे पनत्यतपिैसा कमाउन गार्हो छ। मलाई त्यतरिकम पाउन कसले मद्दत गर्छ त खै? मैले त्यो भत्िता फेरबिनाँए भने पनहिात्तीले फेरपिनत्यो भत्िता भत्काउँदैन भन्ने ग्यारेनटी कस्ले लन्िछ?”

“My house has been attacked three times [by elephants] and the wall has been destroyed completely. My mud walls have turned to bamboo walls. It cost me 800 rupees just to make this part of the wall. It may seem like a small amount but it is very difficult to earn 800 rupees. So, who is going to help me with that money? And also, who can guarantee the elephant won’t attack again once I rebuild the wall.”—Bishal



“मलाई पनि यहाँको बफर जोन उपभोक्ता समितिको सदस्य बन्ने मन थियो। तर मलाई यो समितिको सदस्य बन्नको लागि ५ देखि ६ हजार रकम दिनुपर्छ भनियो। मैले उहाँहरुलाई मैले जति सक्छू त्यति दिन्छू तर उहाँहरुले भन्नु भएको रकम दिनि मलाई गार्हो हुन्छ भनें। उहाँहरुले मलाई मैले त्यो रकम नदिए सम्म म त्यस समितिले दिनि कुनै पनि किर्जा वा अन्य सुबधिाको लाभ लनि पाउँदनि भन्नुभयो। मलाई म्रगि कुञ्जले हालसालै के भन्नुभएको छ भने, नकिुञ्जको नयाँ प्रावधान अनुसार, कुनै पनि ब्यक्तले पहलिाको सदस्य जति नै रकम नबुझाएपनि ऊ त्यो ठाउँमा बस्ने भएमा स्वतः ऊ त्यो समितिको सदस्य बन्ने छ। यो प्रावधानले गर्दा अब मेरो परविारले पनि यस समितिको सुबधिाहरु भोग गर्न पाउँछ भन्नेमा म आशावादी छू।”

“I wanted to be a member of the buffer zone user group committee here. But I was asked to pay five to six thousand rupees to be a member of that committee. I told them that I will pay as much as I can but that was a huge amount and I was not able to pay it. They told me as long as I would not pay them that money I would not be entitled to receive any loans or other facilities provided by the committee. Mirgakunja has told me recently that according to a new directive from CNP even if someone living in the area of a committee has not paid the same amount as the old members they will be considered to be the member of that committee. With this directive I am hopeful even my family will get to enjoy the benefits from the committee.”—Hari



“राष्ट्रयि नकिुञ्जको आम्दानीको ३०-५०% रकम बफर जोनलाई जान्छ। बफर जोनले यो रकम राम्रो सङ्ग उपयोग गरेको छ र धेरै सुबधिाहरु दँदै आएको छ। म्रगि कुञ्ज बफर जोन उपभोक्ता समतिलि अरु बभिन्नि संसंस्थाको मद्दतले गोबर ग्याँस राख्नलाई मद्दत गरेको छ। जङ्गली जनावरले पुर्याएको क्षतकिो लागि पनि क्षतपिूर्तकिो प्रबन्ध छ। गाउँलेहरुको लागि बभिन्नि ट्रेनङ्गि पनि आयोजना गरएिको छ।”

“30-50 % of CNP’s total income goes to the buffer zone. Buffer zone has been utilizing the money well and there are many benefits. The Mirgakunja buffer zone committee has helped install biogas plants with the help of various other organizations. There is compensation for the losses incurred by the farmers due to the wild animals. They have also been providing various trainings to the villagers.”—Gopal



"बफर जोनले हामीलाई हाम्रो गाईवस्तूको लागि घाँस दिँदै आएको छ। सामूदायकि वनले हामीलाई दाउरा दनि गरेको छ। क्रयिाकाच र अन्य धार्मकि कामहरुको लागि पनि सामूदायकि वनले हामीलाई सस्तो मूल्यमा दाउरा बेच्ने गरेको छ। उहाँहरुले ठाउँठाउँमा गोबर ग्याँस राख्न पनि मद्दत गर्नु भएको छ। गोबर ग्याँस परयिोजना बफर जोनको मात्र नभएर अन्य थुप्रै संगठनहरूको संयुक्त प्रयासले सम्भव भएको हो। TAL, NTNC र CNP लगायतका संस्थाहरुले यस कार्यक्रमको लागि मद्दत गरेका छन्। यो एउटा राम्रो सुरूवात हो।"

"The buffer zone has been providing grass to us for our cattle. The community forests have been giving wood. In case of funerals or any other religious ceremonies where wood is needed, the community forest provides the wood at cheap prices. They have helped in installing biogas at places. It's not only the buffer zone which has helped in the biogas project, it's the joint effort of various organizations such as Terai Arc Landscape Project, National Trust for Nature Conservation and Chitwan National Park. This is a wonderful initiation."—Anonymous



“टन्न पानी पर्ने बेलामा गाउँमा नै पर्याप्त घाँस हुन्छ, तर सुख्खा बेलामा सबैजनाले घाँसको लागि चतिवन राष्ट्रयि नकिुञ्जको जङ्गलमा नै भर पर्नु पर्छ।”

“When there is plenty of rainfall the grass that grows in the village is sufficient, but during the dry season everyone depends on the Chitwan National Park forest for getting grasses.”
—Anonymous



“सामूदायकि वनले हामीलाई गोबर ग्याँस राख्न अनुदान दिने गरेको छ। त्यहाँबाट गाउँलेहरुको गाईवस्तू चराउनको लागि सजलिो होस भनेर घाँसे मैदान पनि दिने गरएिको छ। गाउँलेहरुले सधैँ जङ्गली जनावरको कारणले बाली हानी भएको गुनासो पोखेकाले अहलि बाघमारा सामूदायकि वनले गाउँलेहरुको क्षतकिो लागि क्षतपूर्ति दिने नर्णिय गरेको छ। साँच्चकिै मारमा परेका र बाली नोक्सान भएका कसिानलाई थोरै नै रकम भएपनि क्षतपूर्ति दिने नर्णिय समतिलि गरेको छ।”

“The community forest has been giving grants to install biogas. They have also been providing grasslands where the villagers can easily get grasses for their cattle. Villagers have been complaining constantly about the damages to their crops caused by wild animals, so the Baghmara Community Forest has just recently decided to compensate people for these losses. Even if it’s a small amount the committee has agreed that at least a small amount of compensation should be given to those whose crops are damaged.”—Anonymous



“बगितमा एउटा अमेरकिी संस्थाले मेरो सामूदायको बच्चाहरुलाई पढाउनलाई मद्दत गरेको थयिो। तर यो संस्थाले आफ्नो मद्दत रोक्यो। अहलिे बाघमारा सामूदायकि वनले यहाँको बच्चाहरुलाई पढ्नको लागि मद्दत दरिाखेको छ।”

“In the past an American organization was helping the children of my community to get an education. But this organization stopped their support. Now the Baghmara community forest is helping these children to get an education.”—Ram



“जङ्गल र संरक्षति इलाकाको नजकि बस्नु धेरै राम्रो हो। हामीले स्वच्छ हावा पाउँछौँ, दनि्भरी हरयिाली देख्न पाइन्छ, वातावरण प्रदुषति छैन, यो ठाउँ काठ्माडौँ भन्दा धेरै राम्रो छ। यहाँ धेरैशान्तछि, काठ्माडौँमा त बार्है काल होहल्ला मात्र हुन्छ। काठ्माडौँ र चतिवनमा धेरै अन्तर छ तर मलाई चतिवन मन पर्छ।”

“It’s very good to stay near the jungle and conservation area. We get fresh air, we see greenery all day, the environment is not polluted, it’s way better than Kathmandu. It’s quieter here were as Kathmandu is so noisy 24/7. Kathmandu and Chitwan are entirely different but I love Chitwan.”—Birsha

End of “Living With Conservation” section

बोल्ने प्रयास

Speaking Up



"संरक्षणको लागि सक्रिय रूपमा समर्पित मान्छेहरुले नै जागरूकताको स्तर वृद्धि गर्ने जिम्मेवारी लिनुपर्छ। तिनीहरू हरेक गाउँमा र हरेक गाउँको हरेक कुनामा पुगेर मानिसहरू जम्मा गरि जानकारी प्रसार गर्न सक्नु पर्छ। यदि कोहि अनभिज्ञ छ भने, यस्ता मानिसहरूलाई संरक्षणको महत्त्वको बारेमा शिक्षित बनाउने उनिहरूको जिम्मेवारी हो।"

"Those who are actively dedicated towards conservation should be responsible for increasing the level of awareness. They have to reach every village and every section of every village to gather people and disseminate information. If someone is ignorant it's their responsibility to educate these people about the importance of conservation."—Anonymous



“पहलिाको तुलनामा अछूत भनेर गरनि दूर्व्यवहारको समस्यामा कमि आएता पनि यो समस्या अझै पनि छ। यो समस्या नर्मिूल भएको छैन। कसैले पनि हामीलाई रोकेको छैन तर हामी आफूलाई नै हामी अन्य समूदाय भन्दा तुच्छ छौं भन्ने अनुभुति हुन्छ। बफर जोन र सामूदायकि वनले हामीलाई दनि मद्दतमा केहि विस्तिार गरदिएि हामीले आफैंले प्राप्त गर्न नसक्ने कुराहरु पनि हासलि गर्न सक्ने थर्यिौं। हामीले पनि अवसर पाएको खन्डमा मेरो समुदायले पनि अन्य समुदायहरूले प्रगति गरे जस्तै प्रगति गर्न सक्छ भन्ने मलाई महसुस हुन्छ।”

“As compared to the past the problem of being treated as untouchables seems to have reduced but the problem still exists. It has not eradicated completely. No one stops us but we feel that we are inferior to other communities. I wish that the buffer zone and community forest would extend its help for my community to support us to achieve what we are not able to achieve on our own. I feel that if given opportunities even my community could progress the way other communities are progressing.” — Ram



फोटोग्राफर: “केही मानसिहरूले केटी मान्छेको राय सुन्ने गर्छन तर बहुमतले अझै हाम्रो आवाज स्वीकार गर्दैन।” **साक्षात्कारकर्ता:** “तपाईंलाई कहलिकाहीं बोल्न पर्छ जस्तै महसुस हुन्छ?" **फोटोग्राफर:** "हुन्छ।" **साक्षात्कारकर्ता:** "यदि म नकिुज्ज वा सामुदायकि वनको मान्छे भएको भए र तपाईंको राय सुन्न इच्छुक भएको भए के-के कुरा भन्नु हुन्थ्यो?” **फोटोग्राफर:** “म तपाईंलाई जनावर संरक्षण गर्नुस तर यी जनावरलाई हाम्रो बारीमा छरिर हाम्रो बाली नाश गर्न बाट रोक्नुस भन्थें।”

Photographer: “Some people do listen to the opinion of girls but the majority of people don’t acknowledge our voices.”
Interviewer: “Do you sometimes feel like speaking up?”
Photographer: “Yes.”
Interviewer: “What are the things that you would like to say if I was someone from the CNP or community forest and was willing to hear your opinions?”
Photographer: “I would tell you to conserve the animals but at the same time I would tell you to stop these animals from entering into our fields and destroying our crops.”
—Shristi



“मैले यस क्षेत्रको कसिानहरुको बाली जनावरहरूले कसरी नाश गररिाखेको छन भनेर देखाउन मात्र खोजेको हो। यदि गाउँले र जनावरहरू दुवैको संरक्षण गर्ने हो भने यस मामलामा तारबार वस्तिार गर्न र स्थायी तारबार स्थापति गर्न आवश्यक छ।”

“I just wanted to show how the animals have been destroying the fields and crops of farmers in this area. In this case the fences need to be expanded and more permanent fences should be installed so that both the animals and the villagers can be conserved.”—Nina



“राष्ट्रयि नकिुञ्जले यी प्रश्नहरुको उत्तर खोज्ने प्रयास गर्नू पर्छ: “जनावरहरु गाउँमा कनि पसेको हो? बाली नाश हुँदा गाउँलेलाई कस्तो असर पर्छ? जनावरलाई गाउँमा पस्न नदनिलाई के गर्न सकन्छि?” राष्ट्रयि नकिुञ्जले यस्तो वातावरणको सर्जिना गर्नु पर्छ जहाँ गाउँलेहरु जनावरको त्राशबाट मूक्त भएर बाँच्न सकून्।”

“The CNP should try to find answers to these questions: Why are these animals entering the villages? What are the effects of the destruction of crops by wild animals to the villagers? What can be done to stop the wild animals from entering the villages? I think the CNP has to create an environment where the villagers are free from the fear of these wild animals.” —Sajit



“यस तस्वीरमा तपाईंले हात्तीको खुट्टाको छाप वास्तवमै देख्न सक्नुहुन्छ। जब तारबारहरु पहलि स्थापति गरियो, त्यतखेर वन्यजन्तूको आवतजावत रोकएिको थयिो तर नयिमति मर्मतसम्भारको अभावमा यी तारहरु खयिाले क्षतग्रिस्त भएक छन र खयिा लागेको तारले जनावरलाई झट्का दनि सक्दैन। त्यसैले गर्दा जङ्गली हात्ती र बर्धैल हाम्रो गाँउमा सँधै छरि्ने गर्छन्। गाँउमा पस्ने बत्तिकै उनहिरु सधै हाम्रो बालीतर्फ आउने गर्छन्।”

“You can actually see the elephant foot print in this picture. When the fences were first installed it did restrict the movement of wildlife, but without regular maintenance most of the wires now are damaged due to rust and rusty wires cannot shock animals. That’s the reason wild boars enter into our village all the time and the elephants too. And once they enter the village they charge straight at our crops.”—Bishal



“जनावरलाई जंगल भत्रि नै राखदिएि हुन्थ्यो भन्ने इच्छा लाग्छ। त्यसो गरे राती हामी आनन्दले सुत्न पाउने थर्यिौं। जङ्गल वरपरको तारमा सँधै बजिुली भैदएि हुन्थ्यो भन्ने नइिच्छा लाग्छ। मेरो मनमा लाग्ने कुराहरु त यनिै हुन्। आफूले लगाएको बाली भत्रि्याउन पाइयोस भन्ने इच्छा लाग्छ नि।”

“I wish they would keep the animals inside the jungle so that we can sleep soundly at night. I wish they would always have the electricity flowing in the wire and fences that surrounds the jungle. These are the things that are in my heart. I wish we could bring the harvest home.”—Kamala



“बन्यजन्तू संरक्षण गर्न कति जरूरी छ भन्ने हामी सबैलाई थाहा छ। यि जनावरलाई हानी पुर्याउन हुँदैन, मार्न हुँदैन भन्ने हामीलाई थाहा छ, तर के संरक्षणको अवधारणा जनावरको लागि मात्रै लागू हुन्छ? हाम्रो, हाम्रो बालीको अनि हाम्रो वस्तूभाउको संरक्षण चाँहि गर्न पर्दैन? हामीले नकिुञ्जको बन्यजन्तु संरक्षण गर्न मद्दत गरे पछि, उनहिरुले हाम्रो प्रयास, हाम्रो बालीको संरक्षण गर्नु पर्दैन? हामीले संरक्षणको सम्झौतको हाम्रो पक्ष पूरा गरे पछि, नकिुञ्जले पनि आफ्नो पक्ष पूरा गरेर हामीलाई क्षतपिूर्ती दनि पर्ने हो।”

“We all know how important it is to conserve wildlife. We know we should not harm or kill these animals, but is the concept of conservation applicable only to animals? What about conserving us and our crops and livestock? If we are helping the CNP to conserve their wildlife shouldn’t they be conserving our efforts and crops? So if we are holding up on our side how about CNP holding up their end of the bargain and compensate us for our losses.” —Heena



“जङ्गली हात्ती गाउँघरमा प्रवेश गर्ने एउटा मुख्य कारण चाँहि पाल्तु हात्ती हो। तिनीहरूले होटलको सम्पत्ति, घर, कसिानहरूको बालीनाली सबै नाश गर्छन र बाटो हँिडरिहेका मान्छेलाई पनि मार्ने गर्छन्। यदि होटल ब्यवसायीहरुले यी सबै हात्तीहरुलाई गाँउबाट टाढा राख्न सके हामीहरुलाई जङ्गली हात्तीबाट हुने समस्या न्यून हुन्थ्यो।”

“One of the main reasons why the wild elephants enter in the villages is to mate with these domesticated elephants. They destroy the hotel property, houses, they eat the crops of the farmers and they also kill people walking on the way. If the hotel owners could keep all these elephants in one place away from the villages then the problems we have because of the wild elephants could be minimized.”—Dipendra



“पर्यटकहरुले "हामीले पार्कको प्रवेश शुल्क तरि वापत के सूबधिाहरु पाउँछौँ?" भनेर सोद्धा हामी गाइडहरुलाई गार्हो पर्छ। पर्यटकहरुले तनिीहरूले नकिुञ्जलाई तर्िने पैसा कहाँ जान्छ भनेर जान्नु आवश्यक छ। गाइडहरु जानकारी प्रसारको माध्यम हुन्, तर तनिीहरूलाई नै यो पैसा कहाँ जान्छ भन्ने थाहा छैन। गाइडहरुलाई सबै कुराको जानकारी हुन जरुरी छ।”

“It is difficult for the guides to answer the guests when they ask questions like ‘what are the benefits of the park entrance fee?’ Tourists need to know where the money they pay to the CNP goes. The guides are a medium of information dissemination and they themselves are not aware {of where the money goes]. Nature guides need to be updated as well.”—Gopal



“आधकिारीक मान्छेहरु हाम्रो गाउँमा आएर यहाँको मान्छेहरुलाई, चाहनि भन्दा बढी कुरा जङ्गलबाट नलनिू भनेर भनदिएि राम्रो हुन्थ्यो। नयिम पछाडकिो कारणको जानकारी दनि जरूरी छ। त्यसो गर्न सकएिमा सबैले नयिमको पालना गर्थे जस्तो मलाई लाग्छ। त्यसैले आधकिारीक मान्छेहरुले गाउँलेहरू संग बसेर छलफल गर्ने बारेमा वचिार गर्नु पर्छ।”

“It would be nice if these people in authority could come to our village and talk to the villagers, ask them not to take more than they need from the jungle. They have to communicate the reasons behind the rules. Then I think everybody would follow the rules. So I think the officials should sit with the villagers.”—Birsha



"यो समस्या समाधान गर्न गाउँलेहरूले र संरक्षण अधिकारीहरू सँगै काम गर्नु पर्छ र यसको बारेमा छलफल गर्नुपर्छ। यो अवस्था सुधार गर्ने धेरै तरिकाहरू छन्। निकुञ्ज र गाउँलेहरुको सम्बन्ध नङ्ग र मासुको जस्तो हुन पर्छ। गाउँलेलाई निकुञ्जको अनि निकुञ्जलाई गाउँलेको आवश्यक्ता छ। दुबैले एक अर्का सङ्ग सहकार्य गर्ने कोशिश गर्नु पर्छ।"

"The villagers and [conservation] authorities should come together, discuss ways to solve the problems, and they should work together. There are many ways to improve the situation. The relation between CNP and villagers should be like that of nail and flesh. Villagers need CNP and CNP is needed by the villagers. They should try to get along."—Anonymous

Photos Taken At Exhibit By Author







Appendix B: The Survey

UNIVERSITY OF WATERLOO

Survey of CNP Buffer Zone Residents' Attitudes Toward Conservation

Date:_____ Village:_____ GPS Coord:_____

Conservation as an Abstract Idea (Q.1-6), conservation impacts (Q.7-14), and specific conservation practices (Q16-23)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Don't Know
1. It is important to protect the forest	❒	❒	❒	❒	❒	❒
2. It is important to protect the wild animals	❒	❒	❒	❒	❒	❒
3. I am not willing to sacrifice some degree of natural resource access to protect the wild animals	❒	❒	❒	❒	❒	❒
4. I am not willing to sacrifice some degree of natural resource access to protect the forest	❒	❒	❒	❒	❒	❒
5. Protecting the forest for future generations is not important	❒	❒	❒	❒	❒	❒
6. Protecting wild animals for future generations is not important	❒	❒	❒	❒	❒	❒
7. I'm not negatively affected by conservation. *If respondent answers "disagree" ask the following: What are the negative effects of conservation you experience?	Agree ❒	Disagree ❒		Don't Know ❒		
	Comments:					
8. I'm not positively affected by conservation. *If respondent answers "disagree" ask the following: What are the positive effects of conservation you experience?	Agree ❒	Disagree ❒		Don't Know ❒		
	Comments:					
9. Overall conservation has a negative impact on my life	❒	❒	❒	❒	❒	❒
10. Overall conservation has a positive impact on my life	❒	❒	❒	❒	❒	❒
11. I don't benefit from the activities of the Mirga Kunja Buffer Zone User Group Committee	❒	❒	❒	❒	❒	❒
12. I don't benefit from the activities of my local community forest	❒	❒	❒	❒	❒	❒
13. I'm satisfied with the management of CNP	❒	❒	❒	❒	❒	❒
14. I'm not satisfied with the management of the Mirga Kunja Buffer Zone User Group Committee	❒	❒	❒	❒	❒	❒
15. I'm satisfied with the management of my local Community Forest	❒	❒	❒	❒	❒	❒
16. I am not satisfied with the preventative measures taken to protect my village from wild animals	❒	❒	❒	❒	❒	❒
17. The fences installed around conservation areas keep wild animals outside of my village	❒	❒	❒	❒	❒	❒
18. I am not satisfied with the current effectiveness of fences installed in the area that I live	❒	❒	❒	❒	❒	❒
19. I'm aware of CNP's Wildlife Damage Relief Scheme	Yes ❒ No ❒ (If respondent answers "No" proceed to Q.23)					

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20. Compensation given out by the Wildlife Damage Relief Scheme is not fair	❐	❐	❐	❐	❐	❐
21. The application process for receiving compensation is accessible	❐	❐	❐	❐	❐	❐
22. Generally speaking the Wildlife Damage Relief Scheme is an effective initiative	❐	❐	❐	❐	❐	❐
23. People should not be compensated for damage caused by protected wild animals	❐	❐	❐	❐	❐	❐
24. An effective compensation scheme would have the following components [Prompts: compensation for what type of damage, value of compensation relative to damage, least amount of compensation they'd be willing to accept, the application process, who should pay for the compensation, who should organize the compensation scheme]:						

Livelihood and Demographic Questions

25. Do you grow crops?	Yes ❐	No ❐	Unsure ❐	If "No" skip question 26.	
26. Have wild animals damaged your crops in the past two years?	Yes ❐	No ❐	Unsure ❐		
27. Do you have livestock?	Yes ❐	No ❐	Unsure ❐	If "No" skip question 28.	
28. Have wild animals injured or killed your livestock in the past two years?	Yes ❐	No ❐	Unsure ❐		
29. Have you received compensation for wildlife damage (crops, livestock, asset, human life) through CNP's Wildlife Damage Relief Scheme?	Yes ❐	No ❐	Unsure ❐	If so please specify the nature of the wildlife damage:	
30. How often do you collect natural resources from CNP?	Summer	Specify:			
	Winter	Specify:			
31. Does your family receive any direct benefits from tourism?	Yes ❐	No ❐	Unsure ❐		
32. Gender	Male ❐	Female ❐	Other ❐		
33. Education	None ❐	Primary ❐	Lower Secondary ❐	Secondary ❐	University ❐
34. Region of origin (Bachhauli)	Birthplace ❐	Moved to Bachhauli ❐			
35. Caste/Ethnicity	Higher Caste Hindus ❐	Lower Caste Hindus ❐	Hill Tibeto-Burmese ❐	Terai Tibeto-Burmese ❐	Other:
36. Age	Please Write:				
37. Occupation	Please Write:				
38. Are you a member of a Community Forest?	Baghmara ❐	Jan Khauli ❐	No ❐		