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Conservation as Mutualism: A Case Study of Thulo Syafru



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Asia, Nepal, Rasuwa District, Thulo Syafru

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Abstract

This study examined the opinions, perceptions, and knowledge of residents of Thulo Syafru, a small village in the buffer zone of Langtang National Park, Nepal, regarding conservation efforts spearheaded by the Department of National Parks and Wildlife Conservation and the World Wide Fund for Nature. 26 community members were interviewed along with key figures in community leadership and the two aforementioned organizations. Thulo Syafru is an essential location for red panda conservation, leading to many conservation efforts being focused in the area. Overall, people expressed very positive opinions regarding red pandas and their protection, positive attitudes about conservation, and appreciation of the World Wide Fund for Nature. Responses regarding the Department of National Parks and Wildlife Conservation were mixed between appreciative thoughts and complaints regarding restriction of harvesting natural resources.

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Introduction

Conservation is one of the most pressing and global challenges that we currently face. It has been suggested for many years now that the current epoch be called the Anthropocene: characterized, in part, by the sixth mass extinction of species known to have occurred on this planet. Human population growth and development has caused a cascade of issues and conflicts with ecosystems to arise as we have overtaxed resources, unleashed environmental pollutants, destroyed and fractured habitat, and altered species regimes. We find ourselves now in a critical state where our interaction with the environment must be adjusted, but frequently the largest burden and impact to lifestyle falls on groups who are living rurally – most directly interacting with the environment – with low levels of development and economic power.

As urged by previous work, these communities should be considered a part of the ecosystem – they interact directly with it and are affected by it, as well as causing effects to it.¹ In an essay on how human communities must be considered integrally linked with ecosystems, John Bennet argues that to truly achieve sustainable living in a world with ever-increasing human population and environmental degradation, we must not only recognize our part in the ecosystem but also create a base-level shift in our culture to prioritize natural preservation rather than only instant gratification of exploiting resources.¹ When such shifts are being asked of communities, case studies have suggested that

conservation efforts and lifestyle changes are much more effective and far-reaching when people are given decision-making power and self-governance.³ People may not have deeply scientific understanding of the ecosystems of which they are a part, but they often do have valuable knowledge about the reality and functionality of the area, and their input is essential in determining if conservation programs will be effective or not.³ This emphasizes that conservation must not be a solely scientific and policy-based field, but rather interdisciplinary and including anthropological mindsets.¹ Furthermore, conservation often is not a utopian solution for people – even though the net effect may be positive and beneficial in myriad ways (including health, economy, social dynamics, etc), every system of living comes with costs and when new, unfamiliar costs are introduced, people may resist them in favor of familiar costs that they have been desensitized to (e.g. environmental and resource degradation). Such costs of conservation often involve restrictions on harvesting resources and changes in land management. Previous efforts suggest, though, that if people have some control and autonomy over programs and community lifestyle changes, they may be more likely to accept these new restrictions as part of the “package deal,” since they themselves have weighed the costs and benefits and agreed upon a new course of action in efforts to achieve the rewards of sustainable living.³ Thus, conservation organizations provide the important role of providing information and suggestion, mediating work and interactions with regulatory bodies and governments, and facilitating support.³

This study examined the community of Thulo Syafru in Langtang National Park, Nepal, which has been the focus of significant conservation programming, especially centered around endangered red pandas (*Ailurus fulgens*) which live in the area. The national park is under the authority of the Nepal government’s Department of National Parks and Wildlife Conservation, and has been receiving significant attention from the World Wide Fund for Nature.

Langtang National Park

Roughly 85% of Nepal’s population lives in rural areas, relying on the natural resources around them.¹⁰ After the passing of the National Parks and Wildlife Conservation Act in 1973, a system of national parks and protected areas began to be formed in Nepal – first came Chitwan National Park, then Sagarmatha National Park, and third, Langtang National Park (LNP).⁵ Now, 23.23% of the landmass of Nepal is within protected areas.¹⁰ LNP, established in 1976, is comprised of 1,710 sq km across Nuwakot, Sindhupalchowk, and Rasuwa districts.² It borders China, and represents an area of significant biological diversity – indeed, it contains flora and fauna from two major biogeographical regions, the Indo-Malayan and Palearctic.² This means an unusually high level of biodiversity, and many endangered species are represented in the area. Some of the species of greatest concern and attention from LNP are red pandas, snow leopards (*Uncia uncia*), Himalayan black bear (*Selenarctos thibetanus*), musk deer (*Moschus chrysogaster*), Assamese macaques (*Macaca assamensis*), and clouded leopards (*Neofelis nebulosa*).^B

LNP, along with many other protected areas in Nepal, established a buffer zone in 1998.² The buffer zone is 418.3 sq km (the rest of the park remained as a “core area” with full restrictions) and allows more flexibility with harvesting of resources via a permit system. The buffer zone is comprised of

21 buffer zone user committees (BZUC).^B Each BZUC elects unpaid leadership positions from the communities within them, including a single chairperson for each, every 5 years.^{B, C} These 21 chairpeople all work together to form the buffer zone management committee (BZMC), which works closely with LNP to make decisions regarding the management of the buffer zone.^E There is a further breakdown of subgroups and subcommittees within each BZUC, with buffer zone user groups (BZUG), community forest user groups (CFUG), and others, all of which allow people some level of management (under the authority of LNP) in the area surrounding them, as well as providing feedback to LNP regarding issues or activities in the area.^D With this hierarchical system of committees, communities within the buffer zone are able to elect voices to represent them to the national park, and these representatives coordinate with the national park to try to find mutualistic solutions. 30 – 50% of revenue from the park (from tourist entry fees, harvesting permit fees, hotel fees, etc) is given to the BZUCs to be used for sustainable development programs in their communities.^{2, B, C, E} It should be noted that areas which included both fully protected lands and community-managed lands (which is comparable to the core area and buffer zone paradigm) have been found to be beneficial in regards to biodiversity with areas under different management regimes harboring different species; of specific interest is that red pandas were found to survive well in community-managed lands.⁹

An important anecdote which was discovered during interviews concerns the impetus for the formation of LNP. According to the accounts of two lamas who were participants in the interviews, and with the story corroborated by the chairperson of Suryakunda BZUC as well as staff of LNP, there was a well-regarded lama in the village of Langtang who was disturbed by the hunting of wildlife, especially for medicinal trade. After gathering the support of several other lamas in the area, he appealed to the government of Nepal for help with protecting these animals, as the killing of them was contradictory to Buddhist philosophy. This was part of the reason for the formation of LNP.^{C, E} As there is criticism of national parks being formed in developing countries without the permission of people living there, this was a very interesting point of background. That being said, people as a whole in the area were still largely unhappy with the formation of the national park, but that discontent has since significantly lessened.^{B, E, F}

World Wide Fund for Nature Nepal

The World Wide Fund for Nature (also World Wildlife Fund, and most commonly referred to as WWF) is an international NGO which works for nature conservation around the globe. They have offices in many different countries, including Nepal. Funding for WWF Nepal comes primarily from other WWF offices: WWF US, WWF UK, and WWF Finland being the largest supporters.^G WWF Nepal started work in Langtang National Park in 2007 to focus on species and livelihood support programs.^F The government of Nepal and thus LNP have limited funding to assist with development, so WWF Nepal provides support and funding in this regard, as well as spearheading new conservation plans in coordination with LNP.^F Two main species of focus for WWF Nepal in LNP are the red panda and the snow leopard.^A

WWF Nepal has been testing a new program, the Sustainable Community Initiative (SCI), in two locations – one in Chitwan National Park, and one in LNP.^D In LNP, the SCI is involving the communities

of Thulo Syafru and Brabal, both of which are in the Suryakunda BZUC. As Suryakunda BZUC also contains essential red panda habitat, it has been the recipient of the greatest funding from WWF out of all of the 21 BZUCs.⁶ The SCI is a 3 year program which has reached the halfway point at the time of writing, and aims to create sustainably-functioning communities on the premise of three pillars: social aspects, economic aspects, and ecological aspects.^F If discrimination is reduced on the basis of ethnic group, gender, status, etc. and people are more equally empowered and have equal decision-making power and access to resources they will be more functional as a community; if people are financially stable and have self-sustaining, profitable livelihoods and proper living conditions and facilities they will be able to prioritize conservation; and if natural resources are preserved, impacts on the environment is reduced, development is ecologically-friendly and sustainable, and wildlife populations are maintained, ecosystems will remain healthy and functional and benefit both the world and the local community.^F Since Thulo Syafru is part of this SCI, they have been the recipients of many programs and facilities from WWF Nepal, which aim to help develop the village and the living condition of people and provide them with sustainable livelihoods, as well as preserving the red panda populations around them.^F The ultimate goal of the SCI is that after the 3 year period of initializing this program, the community will be able to continue on their own, managing these programs and sustainable practices themselves, and exist sustainably on all three pillars.^F

Working together LNP and WWF Nepal have also established several community-based anti-poaching units (CBAPU), which train members of local communities to patrol forests where endangered species are found to deter poaching activity, intercept poachers, remove traps, monitor wildlife populations, and report back to both LNP and WWF Nepal.^{E, F} They patrol jointly with national park staff (for enforcement of regulations) and with the Nepal army (for protection).^E Thulo Syafru is one of the communities which has a CBAPU, which patrols several times per year to monitor and protect red pandas.^C WWF Nepal has given them significant support, especially in terms of supplying materials: cameras, binoculars, GPS units, sleeping bags, clothing, rain jackets, dishware, etc.^F

Red Pandas

The red panda is a unique mammal; it is in order Carnivora but is the sole living member of the family Ailuridae. Previously having been classified with both procyonids (raccoons and relatives) and ursids (bears), genetic analysis has shown them to be their own distinct lineage. Red pandas are on CITES Appendix I and listed as endangered by the International Union for the Conservation of Nature's (IUCN) Redlist, due to a decline greater than 50% of the population in the last three generations (18 years), with projected continuing declines.⁴ Threats and causes of decline include habitat fragmentation, habitat degradation, and poaching (for fur, meat, medicinal use, and potentially increasing demand in the pet trade).⁴ Habitat fragmentation is particularly problematic as red pandas have highly specialized diets; like the similarly named (though unrelated) giant panda (*Ailuropoda melanoleuca*), they subsist almost entirely on bamboo. The diet of red pandas in LNP has been shown to consist of over 90% *Thamnocalamus aristatus*, a local bamboo species known in the area as *Jhapra*.⁸ They supplement their diet in minor amounts with other plants and mushrooms,⁸ having adapted to an herbivorous diet despite their carnivorous ancestry and dentition and thus being one of only a few "herbivorous

carnivores.” However, this nearly complete reliance on a single bamboo species poses a difficulty, especially when paired with habitat fragmentation; bamboo will remain non-reproductive for many years and then the entire population of an area will flower at once, followed by a total die-off.⁴ This necessitates movement by red pandas to find new areas of bamboo in order to survive, but if they are restricted in their movements by habitat fragmentation, their chances of survival are drastically reduced.⁴ A further threat is that red pandas are highly susceptible to canine distemper virus, which is lethal to them and there is currently no effective inoculation for red pandas.⁴ If canine distemper virus from domestic dogs (either kept or feral) spreads to red panda populations, the results could be catastrophic; and as humans encroach further into the forest bringing dogs with them, the chances of this increase.⁴



A young dog in Thulo Syafru; canine distemper virus poses a serious risk to red pandas if it is introduced by dogs.

With a global population estimated at less than 10,000 individuals with a declining trend as threats increase, conservation action is essential for preserving red pandas.⁴ While there are many philosophies on how to prioritize species for conservation, one mode of thought is that species which represent greater genetic uniqueness (few close relatives who would be able to fill the same ecological niche) are of greater priority – the red panda, as belonging to a monospecific family, represents a highly unique animal. IUCN has recommended that there are 4 main priorities for red panda conservation:⁴

1. Protecting against habitat loss
2. Reducing habitat degradation
3. Reducing red panda deaths
4. Improving awareness

WWF Nepal and LNP, between their combined efforts of conservation programs, sustainable livelihood initiatives, and restrictions on resource use, have been addressing all four of these points.

Methods

Thulo Syafru was the village selected for the primary work of this study. It is part of the Suryakunda Buffer Zone User Committee, which includes the villages of Thulo Syafru, Brabal, Sanu Barku, Thulo Barku, and Syafru Besi. Thulo Syafru was chosen at the suggestion of WWF, as it is the focus of a number of conservation initiatives, including having a community-based anti-poaching unit (CBAPU) and a Sustainable Community Initiative (SCI). There are 155 households in Thulo Syafru with approximately 700 residents, about 400 of whom are currently in Thulo Syafru. Other residents are abroad or elsewhere in Nepal, primarily for work or education. The village is Tamang, one of the many ethnic minority groups of Nepal. The residents are primarily Buddhist, though about 20 households attend a single Christian church. Most residents have farms and engage in agriculture for their livelihood, while the largest source of income from the village comes from tourism. Many guesthouse owners have their own fields, but many residents without guesthouses also sell their crops to help supply the kitchens of the guesthouses for tourists and travelers coming through.

Additionally, Thulo Syafru along with the rest of LNP was heavily affected by the 7.8 magnitude Gorkha earthquake in 2015. Of the 155 houses, 150 of them experienced significant or total damage.^c Very few have been repaired since, and at the time of writing most people were still living in temporary shelters of wood, sheet metal, and tarps, many still in their fields (where people took refuge away from unsafe buildings in the immediate aftermath of the earthquake).

Interviews were conducted with 30 residents of Thulo Syafru, 26 of whom provided complete interviews from which data for this study was gathered. The 4 incomplete interviews were disregarded for analysis. A translator was hired from the village, which proved advantageous as she had personal familiarity with residents which made approaching people to request interviews easy. Respondents were chosen somewhat randomly by walking through the village and seeing who was available, with efforts made keep a diverse sample in terms of age, gender, and amount of education. The average age of participants was 50.7, with a range from 20 to 84. Education ranged from no formal education to a Bachelor's degree. 16 men and 10 women were interviewed – women were often busy and declined interviews more often than men.

Residents were approached primarily in their homes or in their fields and were asked if they were willing to participate. If they expressed interest, the project was explained in more depth and

informed consent was orally obtained before the interview was taken. Some people continued work (e.g. cooking, processing crops) while being interviewed, while others stopped their activities. Interviews lasted approximately 50 minutes on average, with a wide range of 24 to 104 minutes, depending on how lengthy and meandering people's answers were. Sometimes this time was increased by interruptions of children, animals, chores, etc. All respondents were asked the same set of 37 questions, with the exception of occasional and spontaneous additions of questions when they raised interesting points. Almost all the interviews were conducted with the help of the translator (between Tamang and English), as most respondents spoke limited or no English. Some respondents who spoke English were still interviewed with the help of the translator, for when there was difficulty with expressing abstract concepts. During the interviews, sometimes answers were received which did not correspond to the question asked, likely due to issues of translation or understanding. An attempt was made to clarify and re-ask the question; if this did not resolve the issue, the response was simply taken even if it still did not fully answer the question.

Some respondents were asked additional questions beyond the scripted set if they held a position of particular interest, e.g., a leadership position within the village or being a member of the Community-Based Anti-Poaching Unit. Additionally, some unscripted interviews were held opportunistically with residents if they become engaged in conversation about the subjects covered in this study and were offering information of interest. Oral consent was obtained from them as soon as they began sharing information of specific interest, and then the conversation was continued. These interviews are not included in the full analysis of interviews as these respondents were not asked the same set of questions, but rather the information has been used in a supplementary fashion.

Staff of both LNP and WWF Nepal were also interviewed, to provide a greater understanding of issues and points raised by community members. These interviews were often done in English, or with a different translator (usually a staff person from WWF Nepal) from Nepali to English. Each interview had a different set of questions and was more flexible, as the aim was not a standardized form from which responses could be compared, but simply information-gathering.

Additionally, 5 tourists were interviewed during this study about their perceptions of LNP. This was supplementary to the focus of this study, and while it was hoped there would be time to interview more, this goal was not achieved. Since the sample size was so small any formal analysis of these interviews was withheld, but information from them has occasionally been used in an anecdotal and supplementary fashion.

All participants were kept anonymous as a general policy, with the exception of job and position titles which have a range of identifying ability.

Results

Interview Questionnaire – Community Member

1. What is conservation?

Every interviewee had an answer for this question, with varying depth of understanding displayed. Some interviewees balked at first, and were reassured that this was not an exam and there were no wrong answers, after which they always provided one.

Protection of the forest/trees/environment: 22 people

Protection of wildlife: 9 people. 1 person specifically mentioned rare animals.

Reducing landslides and floods: 6 people

Protection of natural resources: 6 people. Answers included clean air (often using the word “oxygen,” clean water, food for themselves or for animals/livestock, and stones.

Planting trees: 4 people. This may have been people thinking of reforestation efforts but they did not specify, just saying that conservation meant planting trees.

Conservation is a positive thing: 2 people. This was offered with no prompting about whether conservation was good or bad.

Conservation attracts tourists: 1 person (different from the 2 who said conservation was positive). They said it boosts the economy by bringing more tourists.

Protecting ecosystems: 1 person. This person had completed grade 12.

Growing crops and using livestock: 1 person. This woman had completed no education.

2. Do you think it is important? Why?

25 out of the 26 interviewees said that conservation is important – the 1 other interviewee said it was both important and not important, citing restrictions on harvesting wood which she needed for heating in the cold winter months, but also a positive effect of reducing landslides. Common or notable answers included:

Greater abundance or quality of natural resources: 11 people. Resources mentioned included clean air, clean water, food (for themselves or animals), wood, medicinal plants, and shade.

Prevention of landslides and/or floods: 8 people.

Increase or preservation of natural beauty: 5 people. One interviewee said that nature is beautiful, “like heaven”

Specific mention of ecosystems or connectivity between humans, wildlife, and the environment: 6 people. 5 of these people had completed grade 10 or above, and the other was the chairperson who is involved in conservation programming. It’s notable that of the 7 people interviewed who had completed grade 10 or above, 5 of them mentioned an ecosystem concept, and no one (with the exception of the chairperson) with less education mentioned an ecosystem concept. One of these respondents said that without the forest, humans would not

be able to survive here – they would face “extinction.” Additionally, 2 of these 6 people included mention of global warming and climate change in their answer. A third person also mentioned climate change, though not an ecosystem concept – they also had completed grade 10.

Future generations: 2 people mentioned the need to preserve resources for the use of future generations. One of these people had a bachelor’s degree while one had no formal education.

Attracting tourists: 3 people.

Health: 2 people. One (who had completed grade 10) said people live longer when there is clean air and water, and the other (who had completed no formal education) said there was less disease when conservation was practiced.

3. Do most people think conservation is important?

Yes, most people: 13 people

Depends on education/awareness: 8 people said that if people were educated (or had received specific education regarding conservation) then they understood and thought it was important. If they were uneducated and didn’t understand, then they did not think it was important. Age was cited as a distinguishing factor – younger people were perceived as being educated while older people were not.

No: 1 person. Notably, this was the same person (and the only person) who had said that conservation was only important in some ways, but not in others.

Not sure: 1 person.

A few: 1 person. They cited urbanization leading to massive pollution and deforestation, and a focus on development and money at the cost of the environment. He said a few people were very dedicated and working to promote conservation. He had completed grade 12.

Some: 1 person said only some do, without providing a distinguishing factor like education.

1 person gave an unclear response, simply listing more ways in which conservation is advantageous.

The science teacher from the local school was one of the interviewees and mentioned that conservation is covered in the school curriculum.

4. Does conservation affect you?

Positively: 10 people, all of whom cited the preservation of resources which they needed (clean air, clean water, wood, food) and 4 of whom cited natural beauty.

Neutral or mixed: 7 people

Negatively: 4 people, 2 of whom said more animals are eating crops and 2 of whom said permits for harvesting wood are expensive.

No effect: 3 people. One man said urban areas were more affected by and needed conservation more than rural areas like the study site. Two women simply said there was no effect.

Not sure/no answer: 2 people

Specific points raised:

Conservation increases tourism: 3 people. 2 of them added that while this is good for their economy, it has also increased the amount of trash.

More animals raiding crops: 4 people. Wildlife is not allowed to be killed in Langtang National Park and people said this had caused them to become more numerous, and also meant they could not be killed to stop them from eating crops.

Increased development and population created the need for conservation: 2 people. One older man (82 years) said that before, when there were fewer people, no conservation was necessary. Now that there are more people, conservation is needed to balance out their impact.

Fewer landslides: Only 1 person cited this as a way conservation affected them, even though many people mentioned this in why they thought conservation was important.

5. Do you participate in conservation?

Yes: 20 people

Specific points:

Informally raising awareness: 11 people. These people indicated that they encouraged their fellow villages to protect the forest and otherwise engage in conservation by following conservation programming/laws, and/or spread the information they had as to what conservation was and why people should care. A science teacher mentioned teaching his students, and a health worker mentioned informing people about trash and pollution.

Direct involvement with WWF: 3 people. 1 was the chairperson who helps to lead conservation programming, 1 was a current member of the CBAPU, and one was the chairperson of the SCI started by WWF in Thulo Syafu.

Attend meetings or programs hosted by LNP or WWF: 3 people (not including those directly involved)

Proper trash management: 2 people. 1 was a member of the local mother's group, and indicated that the mother's group had helped to construct a dumping site for trash.

No: 6 people. 5 of these people were women, meaning only 5 out of 10 women said they participated while 15 out of 16 men said they participated. The one man who said he didn't was 74 years old and said he hadn't known about it before (presumably, when he was younger), or else he would have become involved and it would have benefitted him.

6. Does conservation affect tourism?

It attracts tourists: 22 people. 4 of these people specifically mentioned that tourists come to see rare animals, and 1 person mentioned red pandas as an example of such an animal. 1 person mentioned that tourism only became regular and substantial after the national park was created. After that, business and development greatly increased.

No effect: 2 people. One of them said tourism had declined drastically after the earthquake, but had been starting to decline even before it happened.

Not sure: 2 people.

7. Do you want more tourism here?

Yes: unanimous from all 26 interviewees. People commonly mentioned that tourism is what brought money and was their main source of income. 2 people mentioned that this was true not just of Thulo Syafru, but that Nepal as a whole depended on tourism. 1 person also said that tourism helped to increase education for children, though they did not elaborate on how.

8. What do you think are the best ways to increase tourism?

People tended to either be very unsure about this answer or enthusiastic and assertive in their answers. Some expressed well-thought out ideas.

Not sure: 5 people

Protecting wildlife and advertising their presence: 16 people. Answers included increasing wildlife numbers so that it is more likely for tourists to see them, and many people specifically mentioned this with rare animals. 5 people mentioned red pandas.

Advertise and share culture: 13 people. People seemed eager to expose tourists to their Tamang culture and thought this would be a good way to improve the tourist experience. 1 person suggested a museum to show cultural heritage and tradition would be good and encourage tourists to stay longer, instead of just passing through.

Provide more information to tourists: 5 people. Suggestions for this included giving more information about the area and wildlife to guesthouses to share with tourists, creating a museum, creating a documentary about the village, more sign posts along the trails in the area, and utilizing the newly-built red panda information center.

Improving facilities: 5 people. 2 of them suggested better quality of roads and trails. Other suggestions included improving the local health clinic, repairing earthquake damage, increasing the amount of English and other languages spoken, and increasing the availability of wifi, hot showers, and other domestic comforts.

Environmental sanitation: 5 people suggested reducing trash and pollution in the area.

One suggestion by a trekking guide was more complex – to create trekking packages with local guides to cater specifically to some of the aforementioned ideas. He suggested a trekking package of approximately 5 days to take tourists into red panda habitat and to try to give them the opportunity to see red pandas and other wildlife. He also suggested a cultural trekking package, which would allow people to explore the village in more depth and see local traditions such as dances, to meet shamans, and to see and learn about local trades such as metalsmithing.

9. Do you like red pandas? Why?

Yes: Unanimous among all 26 interviewees. No one expressed any dislike of red pandas and their affirmations of liking them were usually quick and decisive.

They are beautiful/cute: 15 people

They are a rare animal: 7 people

It is special to have them here: 6 people commented that they are not found many other places, and they are proud to have them here. They value that their home is one of the few places red pandas live.

They attract tourists: 6 people said that having red pandas here helps to boost tourism, as people hear that they live here and come hoping to see them.

They don't harm anything: 6 people said they liked red pandas because they don't cause any damage to their property or crops, as some wild animals do.

They attract aid: 2 people. 1 person said it was red pandas which had been the primary reason the forest had been protected. 1 person said red pandas had attracted NGOs wanting to protect them, which then also offered programs to the village to help with development.

10. What do you know about red pandas?

Not sure: 2 people, both women

Eat bamboo: 16 people. 2 people added that they also supplement their diet with other foods, specifically mentioning mushrooms and rhododendron. 2 people said they eat only the young bamboo shoots. 2 people said that they alternate with drinking water one day and eating bamboo the next day.

Comparison to a dog or cat: 6 people likened red pandas, either in appearance or behavior, to dogs or cats.

Live further uphill: 5 people said they live at higher elevation in the mountains.

Migrates altitudinally: 3 people mentioned that they move to higher elevation in the summer, and to lower elevation in the winter.

Rare animal: 3 people said that they are a rare animal.

Need undisturbed areas: 2 people

Knowledge is recent: 2 people said that previously, most villagers knew very little about red pandas. After LNP and NGOs such as WWF started providing education and raising awareness, people learned more about red pandas and learned to value them.

A number of other interesting anecdotes were mentioned just once. One person who had formerly been on the CBAPU noted that red pandas use fallen logs to sleep on, but when females have young they stay in tree hollows. He also added that red pandas use latrines. A couple of other people estimated their size, one person saying they were about a foot long, another saying they weighed 3 – 4 kg. Someone said they are poached because they will sell for a significant price, for fur or other body parts.

11. Do red pandas benefit you? How?

Attracts tourists: 19 people. Every person who said red pandas benefitted them included the idea that they attract tourists and thus boost the local economy.

Brings fame to the area: 3 people

Attracts NGOs: 3 people said that red pandas have attracted NGOs like WWF which help. 1 of these people said that it was because of red pandas that LNP was established.

No effect: 6 people. Many added that while there is no particular benefit, there is also no harm.

Negative effect: 1 woman cited the fact that she is not allowed to graze her cattle in the parts of the forest that are red panda habitat, and that these are the best grazing areas. She has other places to graze her cattle, they are just not as ideal. Notably, she still said that she liked red pandas because they didn't harm anything and were beautiful. She was also the one person in the study who said she only thought conservation was partially important.

2 people also added that because of the benefits red pandas bring, they would like to see the population increase.



Cows trample the young bamboo shoots that red pandas rely on and thus are damaging to their habitat, so they are not allowed in the areas red pandas are found in. Additionally, cows may be accompanied by guard dogs, which carry the risk of canine distemper virus.

12. Do you do anything to help red pandas?

Raise awareness: 12 people indicated that they shared what they knew with fellow villagers and/or tourists, and encouraged people not to harm red pandas

No personal involvement: 7 people said they had no involvement.

Current or former involvement with the CBAPU/WWF: 5 people had been or were currently formally involved with the CBAPU.

Supported the CBAPU: 9 people said that while they were not a part of the CBAPU, it was helpful to red pandas and they usually indicated that they approved of its work.

Attend WWF programs: 3 people (who were not formally associated with WWF or the CBAPU) said that they attended awareness programs and trainings that WWF offered.

Would like to know more: 2 people added to their answer that they would be interested in knowing more about red pandas and how to help them.

13. Have you ever seen a red panda?

Yes: 17 people. Most indicated that they had only seen one once or a few times in their life. Other comments added included that it is very lucky to see one, that some people didn't know what they were before awareness about red pandas started being raised by organizations like WWF, and that if WWF was not here to arrange the CBAPU the red pandas would be significantly lower in number.

No: 6 people had never seen a red panda.

Only a dead one: 3 people had seen a dead red panda recovered by the CBAPU.

14. Does being in LNP affect your life or livelihood? How?

Positively: 3 people only mentioned positive effects

Negatively: 13 people mentioned only negative effects

Mixed: 5 people listed both positive and negative effects

No effect: 5 people said the national park had no effect on their lives

Specific points raised:

The forest and wildlife are protected: 6 people cited this as an action taken by the national park which positively affected them

Permits are required for harvesting resources (mainly wood): 14 people mentioned this. It was repeatedly stated that people felt the permits were too expensive, and also that sometimes they were not able to obtain permits when they wanted to. Some people mentioned that if they tried to harvest timber without a permit, there were fines. Multiple people mentioned that they felt that especially in the wake of the earthquake, with much repair work for houses that needed to be done, the permits for timber should at least be temporarily waived or at least reduced in price.

More animals are raiding crops: 5 people. This complaint seemed to be two-pronged. Firstly, animal populations were perceived to have increased with the advent of the national park, so there are more animals now entering fields and eating crops. Secondly, the national park bans killing of wildlife, so people cannot rid their fields of pest animals by killing them, but rather have to chase them away which is often ineffective.

15. Do you like living in LNP? Why?

This question occasionally had to be clarified as some people originally answered that it was simply where their home was and they liked their village – there was nothing to be done about whether they liked LNP or not. The question was rephrased if necessary to asking if people liked that their home happened to be in LNP.

Yes: 15 people

Mixed, yes and no: 8 people

No: 2 people

Not sure: 1 person

Specific points:

Environment is protected/lots of natural beauty: 17 people mentioned this as a reason why they liked living in LNP.

The national park attracts tourists: 2 people mentioned this as a reason why they liked living in LNP.

Permits for harvesting resources are too expensive/too restrictive: 6 people mentioned this as a reason why they didn't like living in LNP. This was the sole reason cited by both people who said fully that they did not like living in LNP.

Also of note, 2 people added that they liked the national park because it had caused a shift from no conservation practice prior to its existence, to conservation practice now. The implication was that this was essential for the sustainability of the community. Additionally, 1 person mentioned that they were proud to be able to say that they were from LNP and that it had a good reputation.



Many people cited appreciation for the natural beauty that has been preserved in Langtang National Park

16. Overall, is LNP a good thing or a bad thing?

This question was added in part way through the study, so the first 5 interviews did not include this question. The answers are out of 21 total respondents.

Good: 12 people. A few people stipulated that up until now, it has been good, but the future cannot be told.

A mix of good and bad: 6 people.

Bad: 2 people.

Not sure: 1 person.

Specific points:

It protects the environment: 5 people cited this as a reason the park was good.

It attracts tourists: 2 people cited this as a reason the park was good.

The permits for harvesting resources are expensive/restrictive: 5 people cited this as a reason the park was bad.

17. Before LNP was created, did Thulo Syafru practice conservation?

Yes/to some extent: 5 people

No: 17 people

Not sure: 4 people

Specific points:

More trees were cut down before: 6 people said this, most saying that people cut as many as they wanted.

Animals were hunted: 3 people

Informal community agreements: 3 people said that there was a practice of primarily harvesting dead trees and leaving live ones for future use, which they classified as conservation.

Population growth: 2 people said that while conservation wasn't practiced before, it was not necessary then because there were fewer people. Now that there are more people, conservation has become necessary.

People didn't know about conservation: 2 people said there was no conservation because people didn't know what conservation was or why it was necessary.

One person also made a point that while people may have wanted to preserve the forest before, they needed the resources (primarily wood) from it and didn't have any other options. Now, through development and conservation programming, there are alternative options for people so conservation has become possible.

18. Did the creation of LNP change this?

Restrictions were placed on harvesting wood: 11 people

Forest became protected: 9 people. These people reported that the forest became thicker and that natural beauty increased.

Conservation (and awareness of it) started: 5 people said that the creation of LNP caused conservation to start, or that people became aware of what conservation was and why it was important.

New organizations came: 2 people. They referenced organizations which had provided assistance to communities, including WWF Nepal and United Nations Development Program.

More tourists came: 2 people. There were a few mentions elsewhere in the interview process, as well, that there had been very few tourists before LNP; once the official status of national park was applied to the region, regular tourist traffic began.

No change: 1 person

Not sure: 1 person

19. Have you noticed changes in the environment after conservation programs started?

No: 2 people. Everyone else mentioned changes of some sort except for 1 person who gave an unclear answer.

Increase in trees: 15 people said they had seen an increase in the number of trees or the thickness of the forest.

Increase in animal populations: 4 people said animals had become more numerous – especially the species which raid crops.

Reduction in landslides and floods: 8 people said there were fewer incidents of landslides and floods, with one woman estimating there had been an 80% reduction in landslides.

Many other points were mentioned individually – that traps left by poachers were now removed, that there were fewer forest fires due to dumping sites for trash (as opposed to previous, unregulated burning), there was less pollution, more reliable rainfall, and a general increase in resource availability. There was some discord about reforestation/afforestation efforts: some people said there were programs that were planting trees, other people said there were no planting efforts. A number of people again mentioned the restrictions on cutting trees as a policy change.

20. How much do you interact with the park service?

A lot: 4 people

Some/a little: 18 people

Not at all/minimally: 4 people

Specific points:

Just to get permits for harvesting resources: 11 people

Attend meetings and/or trainings offered by LNP: 3 people

21. How much do you interact with WWF?

A lot: 6 people

Some/a little: 10 people

Not at all/minimally: 10 people

Specific points:

Attend meetings and/or trainings offered by WWF: 7 people

One person mentioned that while he doesn't have any direct interaction with WWF, he appreciates their work and would like the chance to learn more about them and to interact with them more.

22. Does the national park listen to people/the village?

Yes: 10 people

Sometimes: 10 people

No: 4 people

Not sure: 2 people

Many people who said they did listen spoke very positively, saying the national park engaged in discussion with the community. 2 people who said they did not listen expressed the feeling that the national park would pretend to listen to them but in reality ignore them.

23. Does WWF listen to people/the village?

Yes: 16 people

Sometimes: 3 people

Not sure: 7 people

Like the national park, many people who said WWF listens spoke positively and said that they engaged in discussion with the community, listened to proposals that were made to them and gave helpful suggestions. Notably, no one felt that WWF never listened. Additionally, one person specifically mentioned the project manager for WWF in LNP as being a helpful point of contact and listening well to the community.

One woman, in regards to both LNP and WWF, said that she felt only young people were involved with decision-making and that old people were left out (she was 61).

24. What do you like the most about the park service?

They protect the environment: 18 people

They raise awareness: 2 people. One specified that they had provided signage in the park about conservation and illegal trade in flora and fauna

They provide security: 3 people. Answers included security in the village (because of the army presence) which kept people safe as well as stopping poachers, and the fact that the national park keeps track of all visitors entering the park which they said helps to stop out poachers.

Nothing: 4 people said there was nothing they liked about the national park; they were dissatisfied with it.

1 person had no response to this question.

Of the 4 people that said there was nothing they liked about LNP, none of them had significant interaction with it. 3 of them said they only interacted when they needed to get permits, and 1 person said they never interacted.

25. What do you like the most about WWF?

They have provided facilities: 19 people. Facilities mentioned included drinking water, iron flag poles, clothes (cultural dress), the community building and red panda information center, dumping sites for trash, irrigation, cement stairs, gas fuel, assistance with growing medicinal herbs, repairs to local stupas, help constructing a new monastery, help with repairing the school and health clinic, assistance to the CBAPO, and general funding and new ideas for projects, especially those that helped to save rare animals.

They protect the environment: 6 people

They provide education and training: 4 people

They listen to local people well: 3 people

Not sure: 2 people. Both of these people had said they had no interaction with WWF. One stipulated that he had the impression they did good work, though, as he had seen their logo on many things around the village.

An additional comment that was made by the chairperson, who has extensive interaction with WWF, was that it is a good organization to work with because there is no corruption in it, unlike many other organizations.

26. What do you like the least about the park service?

Nothing: 3 people had nothing negative to report.

Permits for collecting resources: 15 people. Timber was nearly the sole mention here. Especially given that the village is still dealing with the ramifications of the earthquake, with a majority of people still living in temporary houses over a year and a half after the fact, people were agitated about restrictions on harvesting timber. The most common and most essential complaint was the factor of money. People have to pay for their timber, and nearly everyone mentioned that they felt it was very expensive, and not always feasible for poor people. Some mentioned that there had been suggestions to buy other materials or timber from outside the national park, but this was met with the same frustration of not having the financial means to do this. There was a general sentiment that the national park was not listening to the needs of the people in the aftermath of the earthquake. A few people said they were frustrated that permits for collecting timber were restricted to small windows of time. 1 person was gentler in their criticism, saying that the national park was less strict than it used to be and the community was gaining more say in how these resources were managed.

They don't do enough: 5 people. The main point given was people feeling that the national park is not present enough, and does not patrol regularly in the area. There was mention that this led them to be unaware of issues such as how many animals are raiding crops. 1 person complained that they don't do enough to manage trash or attract more tourists.

They don't listen: 4 people specifically mentioned that they felt the national park is inflexible and/or overly strict, not taking into account what people are asking for.

Funds aren't handled well at the village level: 1 person said that while LNP gave grants to the community, once they were handed over they were not always managed well within the community.

27. What do you like the least about WWF?

Nothing: 18 people had nothing negative to report.

Not sure: 3 people felt they didn't have enough interaction with WWF to say (all had declared they had no interaction with WWF)

They don't do enough: 2 people desired more interaction. 1 said WWF did not visit regularly enough, and 1 said that not all villages in LNP had all the information WWF had provided to Thulo Syafru – they would be more effective if all villages were fully informed.

Funds aren't handled well at the village level: 2 people expressed concern about the difficulty community members can face when trying to manage the large grants from WWF.

Programs are mostly talking: 1 person said they wanted more information from WWF and in a greater variety of interesting formats – she specifically mentioned wanting more offerings in the information center about animals, and that sharing that information in formats such as videos might add interest.

28. Are the WWF programs helpful to you? Which have been the best?

Yes: Unanimous among the 26 interviewees. Many people responded that all programs had been equally helpful. Iron flagpoles and drinking water were the most common programs specifically mentioned. When people mentioned the flagpoles, they often described that they were happy because they no longer had to spend the time, energy, and money (for the permit) to harvest a wooden pole from the forest each year. It made it easier for them to protect the forest. A similar point was made about the dumping site – it made it easier for people to keep the environment clean and free of trash. Red panda/rare animal conservation was the next most commonly mentioned action that people thought of as being the “best.”



WWF Nepal provided assistance with repairing damage to stupas in Thulo Syafru, as well as aid with rebuilding the single monastery which was destroyed

29. Are there new programs you want?

A great variety of answers were given – everyone except for 2 people had at least one suggestion for something they wanted. A brief summary of the ideas suggested follows:

Funds or assistance in repairing houses: 5 people

Free permits for harvesting wood: 3 people. While this does not have to do with WWF per se, some people used this chance to bring up this point again, requesting that LNP cancel the fee for harvesting timber.

Extending the cement stairs: 3 people. People were generally pleased with the cement stairs which had been provided and they came up several times over the course of the interviews. These 3 people wished for more stairs to be built, with 1 specifically saying they would like the stairs to go all the way from the lower part of the village to the upper part of the village (approximately a 20 or 30 minute walk). This path is difficult in the monsoon – in fact, the school is currently building a small hostel so that students coming from the upper village can stay in the lower part of the village for school week if they wish, so that they do not have to traverse this path in slippery and sometimes dangerous conditions.

Admission to the red panda forest: 3 people brought up this idea, which already seemed quite thought-out. All of them mentioned in some fashion that they wanted to charge tourists a small, extra fee to go in and see red pandas. Additions to this idea included having a fence around the area they are found in to keep people out, and having a guided program to bring people camping in the forest and help them to find red pandas. The general idea seemed to be two-pronged – to regulate who was going into the forest to protect them from poachers, and also to increase the funds generated by tourism.

Projector in the information center: 3 people. While WWF had brought in a portable projector for a meeting, these people suggested having a projector which was dedicated to the information center would be useful, as then community people could use it for their own purposes and whenever they wanted.

More help with repairing the monastery and stupas: 2 people. People were grateful for the help that had been given thus far with repairing religious structures – these people requested the continuation and an increase in that help. 1 woman wanted prayer wheels added to the upper stupa.

Help with repairing the road: 2 people. The road to Thulo Syafru was built after the earthquake to help facilitate with repairs, but had been damaged and made impassable by landslides during the monsoon. This was hindering repair efforts as it was a minimum 2-hour, uphill walk to the village – according to the chairperson, needing porters to carry in construction supplies could double the cost of those materials. With people already struggling financially, this had put a halt on many repair efforts. By the time of writing, however, the village had coordinated and was making significant progress on repairing the road on their own and the work was nearly completed.

An observation tower: 2 people. Since many tourists come to see the views, 2 community members suggested enhancing this opportunity by building a small observation tower with binoculars, so tourists could get the best views possible.

Improvements to the health clinic: 2 people mentioned wanting help with healthcare in the village – new ideas and planning for long-term health, improved facilities in their health clinic, and more staff with more advanced training. 1 person mentioned specifically that this would be helpful since there are many older people in the village, many tourists coming through who sometimes need medical assistance, and increased prenatal care for women.

Extending the drinking water system: 2 people. The drinking water pipes were very popular among many people, but had not reached to the lower extent of the village. These two people were glad the program had been implemented but wanted full coverage of the village so that they could benefit as well.

Homestay program: 2 people suggested that in addition to the guesthouses, a homestay program should start in the village.

Ideas with only 1 person suggesting:

- A gift shop associated with the information center. Many guesthouses have individual gift shops but this person suggested having a communal gift shop which could benefit the whole village – she said she had seen such a shop in Chitwan National Park and thought it was a good idea.
- Fixed times for the CBAPU to monitor red pandas. This person was not on the CBAPU, but thought their work was important and wanted a more rigorous schedule to increase protection for the red pandas.
- Assistance with the school. No specific ideas were provided, but this person said that any programs benefitting the school would be appreciated.
- A new trekking route. One man proposed a new trekking trail be built (the existing trail is in poor condition and used mostly by locals) from Thulo Syafru to Mangchen Gompa to Buldigang to Nadangche to Lauribinayak. Thulo Syafru and Lauribinayak are already on established trails – this new route would add the three middle locations as more accessible places which tourists could see, and might help increase the amount of tourism overall.
- A new directory map. There is currently a large printout from Google Earth serving as a map in the village at main trail junction. It was unclear if this person wanted an entirely different and new directory map for tourists, or just an improved/upgraded version of the existing one.
- English classes for adults. While children learn English in school, there are many adults in the village who did not attend school when they were children and speak minimal English. English is usually the best language through which to connect with tourists, so improving English comprehension in the village could presumably assist with tourism.
- Computer classes for villagers, especially for women. 1 woman mentioned that she thought it would be beneficial to provide local women with the opportunity to learn to use computers – while some people in the village have laptops, many do not. This woman also suggested having a laptop in the information center for community use, and also potentially as a learning tool to teach people basic computer literacy.
- A fence around the fields. This was the same point brought up extensively later in the interview – many animals are raiding crops, and some villages in LNP (including the nearest neighboring village to Thulo Syafru – Brabal) have had fences built around their fields to keep problematic wildlife out. This reduces human/wildlife conflict without causing any harm to the wildlife.

- Statues of animals. 1 person said that there are many statues of people (in general – did not specify an area) and that animals, especially the wildlife which is unique and notable to LNP, should be celebrated in the same way. He suggested a statue specifically of a red panda.
- Any novel ideas. This person did not have specific ideas, but was eager for any new and innovative ideas or technology WWF could provide for how to increase sustainable development in the village. A few other people mentioned in their answers that in general, any new programs would be appreciated as they had been grateful for everything that had been provided thus far.

No ideas: 2 people did not have any suggestions for new programs.

30. Are there existing programs you don't want?

While this question was asked in the context of WWF, a few people weighed in on LNP as well.

No: 21 people said they were satisfied with all the programs, often specifically saying that all of them are good and appreciated.

Modifications to existing programs: 4 people said they liked the existing programs but simply wanted some alterations. One woman said the drinking water pipes had not yet reached her house, which was farther downhill. She wanted it to reach the whole village so she didn't have to carry her water. Another woman said that the iron flagpoles provided were only 5 meters tall, while the flag she had was 7 meters – she wants an 8 meter pole. One person said they wanted more stairs to be built, and another said they wanted more information/transparency on the budgets for programs.

Not sure: 1 person, who reported minimal interaction with WWF.

Permit fees from the national park: 6 people took this opportunity to again raise the permit fees for harvesting wood, saying they thought that LNP should either reduce the price of the fee or make it free.

31. Which wild animals do you think are the most important?

For questions 31 through 34, people were not prompted with any species or given any animals to choose between. Rather, the intent was to see which species came to mind most readily for people.

Red panda: 24 people. The only two people who did not specifically mention red pandas said that they thought all animals were important and did not pick any species individually. There may have been an interfering factor in that people had been exposed to the series of red panda questions prior to this one: it may have increased the likelihood of people thinking of red pandas. Regardless, it is significant that everyone in the study either said that all animals are important or specifically mentioned red pandas.

Himalayan monal (Lophophorus impejanus): 8 people

Pheasants (subfamily Phasianinae): 8 people

Musk deer: 7 people

Snow leopard: 4 people. The snow leopard is now found in the vicinity of Thulo Syafru, but is found in other, nearby areas of LNP and is a high-profile animal which has also been targeted in conservation programming.

Birds (as a general taxa): 3 people

Nepal grey langur (Semnopithecus schistaceus): 1 person

Golden jackal (Canis aureus): 1 person, who said it was important because it killed crop-raiding animals such as deer.

All animals are important: 2 people

The prevailing attitude was that animals which didn't cause any damage, or which attracted tourists, were most important.

32. Which wild animals do you think are least important?

Wild boar (Sus scrofa): 21 people

Assamese monkey: 17 people

Indian muntjac (Muntiacus muntjak): 15 people

Nepal grey langur: 13 people

Himalayan black bear: 5 people

Indian crested porcupine (Hystrix indica): 3 people

Felids: 3 people. Some people mentioned "tigers," however *Panthera tigris* is not found in LNP. Upon asking for descriptions (spotted or striped, color, etc) people continued to give descriptions consistent with *Panthera tigris* and not common or clouded leopards. It was unclear if they were confused about which species were present, if they were thinking of leopard species, or if they were including *Panthera tigris* just as an animal that they were aware of, even though it does not live in their vicinity. Additionally, when people mentioned leopards it was difficult to determine if they were referring to common or clouded leopards. Thus, all mentions of felids were grouped together. The same was done for question 34.

Rodents: 1 person

All animals are important: 3 people

The prevailing attitude was that animals which cause harm to crops, livestock, or humans were not important.

33. Which wild animals do you like the most?

Questions 33 and 34 were asked with the intention of seeing if there was a differentiation in people's concept of importance and liking of wildlife.

Red panda: 16 people

Pheasants: 10
Himalayan monal: 6 people
Musk deer: 5 people
Birds (as a general taxa): 4 people
Blue sheep (Pseudois nayaur): 2 people
Assamese monkey: 1 person
Snow leopard: 1 person
Any animals which don't cause damage: 3 people
All animals: 2 people

The prevailing attitude was, again, that species which didn't cause damage were favored. There was a slightly greater emphasis on animals perceived as beautiful and a slightly lesser emphasis on conservation priority species (snow leopard, red panda, and musk deer).

34. Which wild animals do you like the least?

Wild boar: 17 people
Assamese monkey: 14 people
Indian muntjac: 11 people
Nepal grey langur: 10 people
Himalayan black bear: 6 people
Felids: 4 people
Herpetofauna: 2 people. Specific mentions included frogs and snakes, the reasoning given was fear of these animals.
Indian crested porcupine: 1 person
Rodents: 1 person
Mongoose (species unclear): 1 person
Eagles (species unclear): 1 person
Any animals which cause damage: 1 person
Like all animals: 1 person

The prevailing attitude was, again, animals which cause damage to crops, livestock, or people were less favored.

35. Do you think predators (carnivores) are important?

The word "predators" was not understood by any English-speaking local people – the word "carnivores" was known by most people who had a grasp of English, though. The vast majority of the time this question was translated into Tamang, anyways, but first an understanding of the vocabulary was established between myself and my translator.

No: 13 people. People repeatedly said that they killed livestock and thus were not important.

Yes: 9 people. Reasoning given included that they control other animals which raid crops (3 people), they are part of the ecosystem (2 people), and that all animals should be preserved (2 people). Both people who mentioned ecosystems had completed at least grade 12. Of the 9 people, 5 of them had completed at least grade 10 and 2 of them had completed at least some university work. 4 people had no education. There were only 2 people with education at grade 10 or above who did not answer “yes” – one said predators were not important and one said that they were conditionally important.

Conditionally: 4 people said carnivores are important only when they not harming livestock.

36. Do you get compensation for damage from animals?

1 person provided no response to this question, so answers are out of 25 people.

No: Unanimous among all 25 people

Has heard it's available but no one has gotten it: 9 people said they had heard compensation was provided, but had not personally received any and didn't know of anyone who had. A few people said that this was written in a rulebook for LNP and expressed frustration that that was not the reality.

One person expressed frustration that there was no compensation whatsoever, saying that even if someone was killed by an animal there was no compensation.

37. Do you want compensation/a different solution?

3 people provided no response to this question, so answers are out of 23 people.

Monetary compensation wanted: 13 people. 1 person specified that they wanted the money to be handled by the village, not the national park.

A fence around agricultural fields: 2 people

Both monetary compensation and a fence: 8 people

Discussion

Community Interviews

Questions 1 – 5: Conservation

People's understanding of conservation seemed to be mostly functional and relevant to their lives, and accurate in a simple context – not overharvesting the forest, having natural resources preserved, and reducing the damaging occurrences of landslides and floods. The fact that people were

generally aware of it is important and suggests that education about conservation has had at least some effect – everyone was able to provide an answer, in varying levels of specificity, and talk about some aspect of conservation. Even more significantly, there was an overwhelming response that conservation is important with 25 out of 26 interviewees saying that it is. A higher level of education corresponded with a more complex understanding of ecosystem concepts, but even people without formal education still were identifying ways in which it was important to their lives. This is essential and encouraging for continuing conservation efforts in the area – as multiple staff of LNP and WWF said, conservation cannot happen without people’s cooperation.^{E,F} The first step to this is having people understand and value conservation, and this seems to have already been achieved. Even people who later said that they were frustrated about restrictions of living in the national park still said that conservation was important.

Based on the results of this study, people seem to have underestimated what other people thought about conservation. Only half of the interviewees said that most people thought conservation was important, while nearly all of the people surveyed did actually think it was important, which is an interesting disparity. Additionally, many people said that uneducated people didn’t think conservation was important, despite a number of the people making this statement having no formal education themselves (and many people with no education answering in the interviews that they did think conservation was important). This may represent a false reading from the sample – a larger sample size might reveal a greater portion of people who don’t value conservation. Alternatively, people may say that conservation is important but not treat it as important in their actions, leading others to develop the perception that people don’t think it is important. Or, it may be as this data set shows – that people in Thulo Syafru currently underestimate how many other people are in agreement that conservation is important.

Despite nearly everyone saying that conservation is important, some people did feel that it had negative effects on their lives. The reasons cited were higher populations of animals raiding crops and no means of controlling these animals, and restrictions and fees to harvest timber. Some people felt that it had little effect on their lives either way. The most common answer, however, was people identifying ways in which conservation was positive in their lives, including protecting the resources they depend upon and providing a rich, beautiful environment for them to live in and be a part of. Following this, many people felt that they participated in conservation, though for most of them this was in the context of encouraging their friends and neighbors to understand conservation and to treat the environment with care. It’s interesting that people did not more often cite direct, personal actions and ways they interacted with the environment. However, it is encouraging that many people not only felt that conservation was important, but that it was important enough that they wanted to spread the message and encourage change in others.

Overall, people had relatively positive views about conservation and valued it, with some complaints about side effects it had had on their lives. People thought that education mattered in regards to whether others viewed conservation was important, and while the data didn’t show this, people with more education did have a finer understanding of conservation and ecosystems. People reported participating mainly by spreading the word or, in turn, by listening to information given to them (attending programs by LNP and WWF). However, there was a difference in regards to gender –

only 50% of women surveyed felt that they participated in conservation, while 94% of men felt that they participated. This suggests that there may be more work needed to continue to engage women – either they are not actually engaging in conservation, or there is a difference in how women and men estimate their own involvement. Women may not think what they are doing is valuable or noteworthy, or men may overestimate what they are doing.

Questions 6 – 8: Tourism

There was strong agreement regarding tourism: people unanimously felt that an increase in tourism would be beneficial to their local economy and that conservation helped to attract tourists (85%). There was also mention of rare animals, including red pandas, specifically being a factor which attracts tourists. Building off of the concept of people valuing conservation, this highlights a specific reason for them to value it: they perceive conservation as a means to bettering their economic status. This is incredibly powerful. Because despite concerns cited in the interviews about restrictions placed on harvesting materials, people also seem to be understanding that conservation can have a holistic, healthy effect – it doesn't just benefit the forest and wildlife, it also can benefit them. This provides direct incentive to cooperate with or initiate conservation actions, and tangible reasons to protect rare species.

To further enforce this idea, when people were asked how to achieve desired increases in tourism, the most common response was to protect wildlife (62% of interviewees). Red pandas were brought up by 5 separate people as a specific animal that should be protected (and whose population should be increased) because advertising their presence will help to attract tourists. For the prospect of continued conservation efforts, this is greatly encouraging – people are seeing a direct line of effect, with greater preservation of rare species leading to their economic gain and the improvement of their lives.

There were other environmentally-focused answers for increasing tourism – keeping the area free of pollution and trash, and providing more education to tourists, including information about local nature and wildlife. There was specific mention of using the new information center. People also expressed that advertising and sharing their culture would be helpful, and the tourists who were spoken to expressed interest in local culture – some of them also expressing some regret that their interactions were mostly surface-level. Engaging tourists more with local culture may very well be quite effective and align with the aims and interests of those tourists.

Questions 9 – 13: Red pandas

Red pandas were viewed very favorably by interviewees, with a unanimous response that they were liked. People appreciated their beauty, and expressed pride at having such a rare animal around their home. Many also said that red pandas cause no harm to any property – they keep to themselves and are thus appreciated. It was reiterated, by a majority of people, that they attract tourists. A notable addition to this is a few people also adding that the presence of red pandas had attracted the aid of

NGOs such as WWF, as well as being part of the reason for LNP being founded. This again demonstrated an understanding of a direct line of effects – the presence of red pandas brought help from organizations who wanted to help preserve them, which led to many aid and development programs which improved the lives of people. Hence, this further encouraged them to value and preserve the red pandas. There were some people who were not observing this connection to tourists and NGOs – 23% of people felt red pandas had no effect on their lives, but they still felt positively towards them because there was also no harm. The single person in the study who did feel that red pandas had a negative effect on her still said that she liked them – it appeared she may have simply felt that regulation around them caused inconvenience, but she still liked the animals themselves. The frustration for her was that she could not graze her cattle in the areas where red pandas live, and had to graze them elsewhere. The overall sentiments towards red pandas were very positive among the group, and there were a couple of mentions of wishing for their population to increase.

Similar to conservation, the most popular response for people to say how they helped red pandas was to say that they raised awareness. There was also relatively large support for the CBAPU – even though it was not asked about and people were being asked how they personally helped red pandas, 9 people (35% of interviewees) who were not on the CBAPU still brought it up and voiced their praise of it. 65% of interviewees had seen a live, wild red panda – though for most people, it was just once or twice that they had ever seen one. Even people who had not seen one, though, still were saying that they liked red pandas and that they were beneficial.

An interesting note was brought up by a few people that prior to conservation efforts starting for red pandas, many people did not know much about red pandas or even recognize what they were when they saw them. However, everyone asked during this study knew what they were and were relatively decisive about liking them. This suggests a shift in people's knowledge and understanding of red pandas – and the fact that they also were saying that they were helpful animals for attracting tourists and NGOs suggests that conservation education in the area has been successful, and people have been aware of red pandas, thinking about them, and seeing or conceiving of positive impacts that red pandas have on them.

In asking people about their knowledge of red pandas, a variety of information was offered. Most people had something to say, except for 2 women – and while this is only two people, it is again interesting that both of them were women and not men, and may further suggest that women could be more involved. The most common thing people knew about red pandas was that they eat bamboo, which is important as that means people understand some of the needs and ecology of red pandas – they must have bamboo available. Many people also compared them to a dog or a cat, which is not surprising – as a carnivore in a monospecific family, it has no close relatives and thus it is reasonable for people to see the closest similarity with other carnivores. Another aspect of behavior that a few people mentioned is that red pandas will often migrate altitudinally. In general, people's knowledge of red pandas was simple but included the most essential parts of their ecology, which is helpful for involving people in red panda conservation.

Questions 14 – 19: Effects of Langtang National Park

People had mixed thoughts about LNP. In general, there was widespread appreciation that the environment was protected (which resonates back to people feeling that conservation is important) but also a good deal of resentment about the fact that permits must be obtained to harvest wood and that the permits cost money. The cost seemed to be the biggest aggravating factor for many people, and some even said that the permit system was fine (some even saying it was good, so that people did not harvest wood carelessly) but they felt it was an unfair burden to have to pay a fee. Nearly everyone brought up a negative point about how LNP affected their life, and it was nearly always the permits for wood and/or the fact that they feel there is no way to control animals raiding their crops. Despite this, the majority of people (88%) still said that there were at least some things about LNP that made them enjoy living there – mainly regarding the protection of the environment and resulting natural beauty, and the tourists that are attracted by the status of “national park”. This elaborates the situation – while people have their frustrations, there is not an all-out rejection or hatred of the national park. This was echoed by the project manager from WWF in LNP, who said that when the park was initially formed, people felt that it was only bringing them restrictions and this felt threatening and frightening—people were largely against the park at that time.^F Now, however, conservation efforts have been slowly paying off and people are understanding more, and now the majority are in favor of the park.^F This was generally reflected in the interviews – while it was not a strong majority, 57% of people said that LNP was overall a good thing, and a further 26% said that it was a mix of good and bad things.

People also generally felt that conservation had come only in the time after LNP had been established. There was some mention of informal community agreements to not overharvest the forest or to mostly take dead trees, but many others also said that people took as much as they wanted and needed. Many people said that since the time LNP had been created, there were more trees and a thicker forest in general, and as a result, fewer landslides and floods – which is very beneficial to the community, as these natural effects can cause serious damage to property, human life, and roads. The general community census seems to be that LNP has improved the quality of the environment, likely in large part to the restrictions that it has created. People still chafe at these restrictions, though, which is natural as it affects their lives in the immediate present. While I do not have data from before the Gorkha earthquake to compare to, I suspect frustrations with this have risen since and are especially high now. Many people in Thulo Syafru are still living in temporary houses of old boards and sheet metal, and expressed a feeling of being stuck – they cannot get or afford a permit from the national park, and they cannot afford to buy materials from outside sources.

Questions 20 – 27: Interactions and perceptions of Langtang National Park and World Wildlife Fund Nepal

Overall, more people said that they interacted with LNP than with WWF, but a number of people said that their interaction with LNP was only to get permits. Beyond that, a greater divide developed – which is to be expected, as LNP and WWF serve very different roles and thus interact with

people in different ways. More people felt that WWF listened and responded to the community than LNP. There was more split with LNP, with a number of people saying that they did listen while a few said that they did not. With WWF, no one said that they felt like WWF ignored them.

The overwhelming thing that people listed as a positive for LNP was that it protected the environment, with some people adding that they felt more secure for having the national park's presence. However, some people also said that there was nothing they liked about LNP. And while there were also a few that had nothing negative to say about LNP, there was a majority complaint again about the permits for wood. This continually seemed to be the biggest divide between local people and LNP, and both of them expressed valid concerns. In the wake of the earthquake, nearly everyone has been in need of building materials, for which they want wood. However, there was also massive damage to the forest – landslides completely wiped away large sections of forests, and many trees in other places were knocked over.^F At the same time that people needed timber the most, less was available and there was increased need to protect the forests, so LNP increased restrictions on harvesting in some areas.^F However, they are again issuing permits^F and also working on other solutions; encouraging the use of alternative building materials and are going to start bringing in timber from the Terai where it is more plentiful.^E Many forest products are allowed to be harvested by local people with no fee; timber is one of the few that is charged for, partially as a control mechanism and partially as a way to fund LNP.^E Up to 50% of park revenue, including these permit fees, goes back to BZUCs to use for development and conservation projects, so some of people's money is reinvested in improving their community.^B Additionally, LNP is working to prioritize people. BZUCs have been asked to recommend to the park which people need permits for wood the most – as nearly everyone would like a permit but the forest cannot sustain every household harvesting simultaneously, they are being allowed in batches.^{B, C} With those who are in the greatest need for building materials and who have the fewest means to buy alternative choices being prioritized and given permits first, the chairperson of Suryakunda BZUC estimated that within 5 years, everyone will have been able to obtain the resources they need.^C Right now, it will be difficult to soothe people who need these resources but are being told they must wait, and difficult to prevent them from feeling ignored even as LNP is working to find solutions.

As WWF does not impose any regulations or governance on people, due to its position as an INGO, but rather only acts cooperatively with them and provides assistance and funding for projects, it was natural that people viewed WWF very favorably. Very few negative points were raised against WWF. Those that were raised were minor and by just a few people – wishing for WWF to be even more involved and wishing for more help handling large grants that WWF gives to the community. People had an overwhelmingly positive reaction to WWF, citing the many programs that WWF has provided as well as their protection of the environment and their transparency and honesty.

Questions 28 – 30: World Wildlife Fund Nepal programming

The programming and assistance WWF has provided have been well-received by people and they spoke highly of it. No one disliked any programs; only a few requests for minor modifications of current programs (e.g. flagpole height and the reach of drinking water pipes) were suggested. 100% of

people said that the programs in general had been helpful to them. WWF held a very good reputation throughout these interviews, and many people said they felt like WWF listens well to them. People were also often equally familiar or even more familiar with the project manager for WWF than with the organization itself; this highlighted how essential personal, trusted relationships are with local people. Direct and repeated contact with communities, building a rapport and a good personal reputation, are crucial to the success of conservation efforts.

People also had a variety of thoughts about how to continue programming, which is encouraging to see that people are actively thinking about how to further develop their community. The most pressing concern, naturally, was repairing houses which have been damaged by the earthquake. WWF is not a humanitarian organization and thus this is not their jurisdiction; however, they have already employed several cash-for-work programs which have hired local people to work on short-term development projects (such as repairs of trails) which has served the dual purpose of furthering work to benefit both conservation and community development goals, as well as providing much-needed money to people.^F

Extensions to other programs were requested, including building stairs in the village, increasing the reach of drinking water, and additional support with monasteries and stupas. These may be possible and could be useful points of discussion between WWF and Thulo Syafru.



Iron flagpoles provided by WWF Nepal alongside traditional wood flagpoles. People have been very appreciative of the iron flagpoles as they last for many years (the wooden ones must be replaced each year), so less work is needed to repeatedly harvest new poles, and the fee for harvesting the wood is avoided with just a one-time fee for the iron flagpole. This is beneficial to conservation efforts as well, as it reduces timber demand on the forest.



Left: typical stairs found in the village. Right: cement stairs built by WWF. The cement stairs are easier to navigate and are preferred by the villagers.

Questions 31 – 35: Perceptions of wildlife

In general, people liked animals that were aesthetically pleasing and which don't cause any damage to their crops or livestock, as well as thinking that these animals are important. People dislike animals which cause damage to their crops and livestock and think these animals are less important. Red pandas were the most mentioned animal for both animals that are liked and animals that are important, further suggesting that people have become very aware and supportive of them through conservation programming.

There was a less positive reaction regarding predators, which is not surprising as they are a threat to people's livelihoods. 50% of people did not view predators as important, though those who had received higher levels of education were more likely to view them as important. Thus, this may be a concept to consider in future education programming; to keep educating people about ecosystem concepts, and that healthy populations of all animals will contribute to the healthiest environment, which will further benefit them in terms of available resources and continued attraction of tourists. People are already highly valuing some species, particularly red pandas. I believe it is possible to continue cultivating this view for other species, even if some will be more difficult than others to create positive attitudes towards.

Questions 36 – 37: Compensation

Besides permit fees for harvesting wood, animals raiding crops was the other most discussed grievance. No one reported receiving any compensation but some people said they had heard it supposedly existed. This was clarified by speaking with staff of LNP – compensation is in the works and at the time of writing, was nearing functionality. An endowment, created by funds contributed by LNP, WWF, and other agencies, has been established and the interest from it will be able to fund at least some compensation for damage caused by wildlife.^E Many cases have already been filed with the national park and are pending.^E This system of compensation will be handled by the BZMC,^E and villages are requesting at least 10% of livestock value be compensated.^C



People worry about their livestock being killed by wild predators and about their crops being raided, as these are the primary sources of subsistence and income for many people.

A previous study in LNP (including the Syafru area) investigated crop-raiding specifically by Assamese macaques, which were one of the most commonly-mentioned problem animals in this study as well. It found that the most targeted crops by macaques were potatoes and maize (both of which are currently grown in Thulo Syafru) (CITE). The most common responses by farmers for how to deal with crop-raiding was to grow less palatable crops (which is encouraged by LNP,^E and programs from WWF have also assisted with this, including medicinal herbs and tea^F) as well as to express their wish for compensation from LNP (CITE). Now, both of these are viable options, so progress continues to be made. This study also warned that even though Buddhist cultures tend to be relatively tolerant to primates, it is risky to rely on this as a conservation strategy as these values can be overcome by frustration from farmers, and cultural shifts can occur, especially as economic status changes (CITE). Furthermore, to truly deter crop raiding by wildlife, it is essential that the community work together in a unified fashion, to protect all the fields together (CITE).

Many people expressed desire for a fence, and often mentioned that an electric fence had been provided by WWF for the neighboring village of Brabal. At the time of writing a proposal was being put together by Thulo Syafru to also receive an electric fence, though it will be more costly as Thulo Syafru is

larger and has a larger agricultural area.^C However, I believe this would be a good option as it would likely provide significant help with wildlife raiding crops as well as preying upon livestock, and would thus reduce the demand on the new system of compensation. It would also be a unified approach, as suggested by the previously-discussed study. And it would be a significant step to address one of the largest complaints of the village – that the national park has resulted in higher animal populations but also a ban on killing them, and sometimes the villagers have felt that LNP has not done anything significant to help them with the resulting damage to their agriculture. Thus, the provision of a fence (even if it is by WWF) could help to improve perceptions of LNP as it could ease one of the largest grievances against them, as well as potentially making it easier to develop positive opinions about more species of wildlife if conflict with those species is reduced.

Recommendations for Areas of Focus

People are interested in red pandas and their conservation; I believe the community would be open to further conservation actions for them. Continued education regarding ecological concepts and conservation would also be beneficial. People are assimilating this information and many are interested in it. Further increasing their knowledge should continue to pave the way for more sustainable living and conservation action.

Continuing to work with people on programming also will be essential. People have many ideas and are eager and thinking about this. The more participation they have, and the more input they can have in implementing new programming and making it so that it is self-sustained by the community, likely the more care and ownership they will have of the area.³ While not all ideas suggested by people are feasible, many are. Some fall within the jurisdiction of what WWF can provide. Others do not and may be better undertaken by the community themselves. The list of ideas that people had for new programming might make a useful discussion point among the community, as they decide how to allocate funds provided by LNP and WWF. One that I think may be particularly worth pursuing is creating more tailored trekking packages for tourists. This could help to highlight Thulo Syafru and its surrounding trekking routes, and draw more tourists in to LNP – which all interviewees thought would be beneficial, and on the condition that tourists are properly managed, WWF Nepal and LNP also both agreed that increases in tourism would be beneficial.^{E, F} A trekking package which provided more time spent in villages and engaging directly with culture (workshops/lessons/demonstrations in traditional crafts, experiencing cultural performances or ceremonies, getting to interact with local persons of interest such as shamans, lamas, teachers, etc) have the potential for success. Trekking packages to see red pandas would have to be considered under discussion with LNP and WWF Nepal to evaluate if this is feasible or if it would cause too much disturbance or create new threats to wildlife; however, it may be reasonable to create a multi-day package that aimed at wildlife viewing (I believe it would be very difficult to guarantee red pandas, though they could be advertised as a potential sighting) and was led by guides who had been given training to provide nature education. The idea may need discussion, but warrants consideration as a potential way to increase tourism and local economy, as well as awareness about conservation and rare wildlife in LNP.

Finally, I believe it is crucial to address people's two largest points of contention with LNP – permits for harvesting wood and damage caused by wildlife. It is not reasonable to expect these to be magically fixed; LNP has good reasoning to place restrictions to preserve the forest. A former study through SIT wrote a harsh critique of the Department of National Parks and Wildlife Conservation in Sagarmatha National Park, saying that the restrictions and fees on harvesting wood were unreasonable and violating the rights of local people.⁷ However, the current study showed that the situation is much more nuanced than that. Many community members expressed appreciation that the forest had been protected by LNP and that there was not careless harvesting of wood. While they are not entirely happy and many did feel intense frustration with the restrictions on harvesting wood, especially in the wake of the earthquake, they still valued conservation and many recognized other aspects of LNP which they were grateful for. To suggest simply eliminating the permit system⁷ ignores the value of conservation (as seen by both conservationists and indigenous people) and its impact on the long-term sustainability and welfare of local villages.

So while these systems of restrictions do have value, I believe more work can also be done to continue to ease lingering tensions, which have been improving since the initial anger surrounding the inception of the park.^{C, E, F} Work is already underway to reduce conflict with wildlife and crops/livestock, such as planting unpalatable crops. I would strongly urge that the proposal for a fence around Thulo Syafru's fields is approved if it is at all possible. I believe this act would be received very well by the community, and they would feel appreciative for it. Timber is a more difficult issue. There was an interesting point of disparity, with the national park staff saying the fee was "nominal"^E whereas in interviews, community members repeatedly bemoaned how expensive it was. I was told wood was 100 Nepalese rupees per cubic foot^C and that there is a maximum allotment of 100 cubic feet for one household in one year.^E This would mean a family may be paying up to 10,000 rupees for wood in a year. The differing perceptions of expense should be recognized, regardless of who is "right" or not. Staff from the national park specifically stated that when people are frustrated with LNP, it is important not to blame them for that but rather to try to communicate further with them.^E This is an encouraging statement to hear and an important attitude to maintain. I believe this is exactly such a case that requires more communication, to help reduce bitterness that some people feel regarding their perception that the national park is ignoring their needs. Any relief efforts possible to help people rebuild their houses should be of utmost importance, and anything possible to ease the cost of alternative materials or to reduce the price of the permit fee temporarily as people recover from the earthquake would be appreciated by the local communities. It may not be possible ever eliminate the fee as it serves as a source of revenue for LNP, which has limited funding to begin with,^E but a temporary solution in this outstanding case of damage to people's homes should be further considered. It has been said many times that when people's basic needs are not met, they will not act for conservation,^{3, E, F} so easing this tension is not only a matter of human welfare but also of the success of conservation efforts in the area. And of course, any way to continue to and further involve the BZUCs and other constituting committees in decision-making and authority over their own land would be beneficial.

Conclusion

Overall, an encouraging example of conservation is present in LNP. People expressed a general understanding and support of conservation, a concern for red pandas as a rare and important species in the area, and a direct understanding of how conservation and wildlife can boost tourism and their economy as well as fostering relationships with NGOs which can help provide new ideas and methods for sustainable development. The chairperson of Suryakunda BZUC expressed positive sentiments regarding the way things are going; that relationships between local communities and LNP continue to improve and mature, that development is progressing, and that the community is headed in a positive direction.^C There are systems in place via the BZMC, BZUCs, and other committees to give local communities at least some input and say, which is essential. Community members are being directly involved in the work of conservation through programs like the CBAPU, which exposes them to the core of what conservation is about and what it is trying to protect; this is the best type of education, and also gives people more ownership of the natural resources they are relying upon. While there is more work to be done – conservation will always be posing new challenges^F – the current trajectory of conservation efforts in Thulo Syafru appears to be mutualistic regarding improvements in welfare and living for both humans and nature.

Appendices

Interview questionnaires

Interview Questionnaire – Community Member

What is conservation?

Do you think it is important? Why?

Do most people think conservation is important?

Does conservation affect you?

Do you participate in conservation?

Does conservation affect tourism?

Do you want more tourism here?

What do you think are the best ways to increase tourism?

Do you like red pandas? Why?

What do you know about red pandas?

Do red pandas benefit you? How?

Do you do anything to help red pandas?

Have you ever seen a red panda?

Does being in LNP affect your life or livelihood? How?

Do you like living in LNP? Why?

Overall, is LNP a good thing or a bad thing?
 Before LNP was created, did Thulo Syafru practice conservation?
 Did the creation of LNP change this?
 Have you noticed changes in the environment after conservation programs started?
 How much do you interact with the park service? WWF?
 If you or the village talks with them, do they listen?
 What do you like the most about the park service? WWF?
 What do you like the least about the park service? WWF?
 Are the WWF programs helpful to you? Which have been the best?
 Are there new programs you want?
 Are there existing programs you don't want?
 Which wild animals do you think are the most important?
 Which wild animals do you think are least important?
 Which wild animals do you like the most?
 Which wild animals do you like the least?
 Do you think predators (carnivores) are important?
 Do you get compensation for damage from animals?
 Do you want compensation/a different solution?
 Do you have anything else you want to say?

While results from this questionnaire were not used due to only having a sample size of 5, this was the questionnaire which was constructed for tourists:

Interview Questionnaire—Tourist

Why are you visiting LNP?
 How did you find out about LNP?
 What do you know about LNP?
 Where have you travelled before/what type of travel do you usually do?
 Was it easy to get the permit/was the price fair?
 Do you know of any NGOs doing work in LNP?
 Do you know of any conservation efforts in LNP?
 What do you know about red pandas?
 Do you like them?
 Did they influence your decision to come to LNP?
 Are you interested in learning more about them?
 What have your interactions with local people been like?
 Do you think local people are conservation-minded?
 Do you think local people are treated fairly by the government?
 Do the ecosystems in LNP seem healthy or degraded?
 What do you like the most about LNP?

What would make you like it more or encourage you to come back?

What do you not like about LNP?

Would you recommend other people come here?

What type of people would you recommend LNP to?

Recommendations for the Red Panda Information Center

WWF Nepal provided funding to construct a community building and red panda information center in Thulo Syafru – the building is recently completed but not yet furnished. This represents a remarkable asset for the community and for WWF, as it can provide neutral and functional space for community meetings; trainings and programming by WWF, the national park, or other organizations; and a way to reach, educate, and inform tourists. Per the request of WWF Nepal, several suggestions on how best to utilize the full potential of this building follow.



The community building and red panda information center

Outdoor space:

The outer courtyard must provide a clean and welcoming impression if tourists are to be drawn in. The WWF Langtang project manager, the chairperson, and one of the interviewees all mentioned a statue of a red panda would be a nice addition in the community. Such a statue, located centrally in the courtyard, would provide aesthetic value and also help to capture the interest of tourists. It would help to establish the community building as a place associated with red pandas and conservation, both for community people and for tourists.

Furthermore, aesthetics and education can be combined. Gardens along the edges of the courtyard would help to create a welcoming feel to encourage people in. There are many plant species of cultural and scientific significance in the area, and specimens should be selected for these purposes, allowing the courtyard to serve as both a garden and a small botanical museum. Flowers used in tihar would be an excellent choice, as well as a variety of medicinal herbs. I believe it would be ideal if small stands of bamboo could be planted each front corner of the courtyard to provide attractive greenery, but also to directly exhibit the red panda's primary food source. They would likely have to be trimmed to prevent overgrowth, but as long as they were maintained, could be attractive and educational statement additions. As possible, it would also be good to include crops which have been used in sustainable livelihood initiatives and/or to reduce human/wildlife conflict. Cardamom and tea plants are potential choices. The chairperson suggested, as well, that the small hillside which rises above one side of the courtyard could be a good place for plants of interest. It could be an excellent location for larger plants which may not fit as comfortably within the bounds of the courtyard. Each type of plant can be easily marked with a small sign, identifying it and describing its use and significance. This would provide interesting information to tourists about the ecology of the region as well as local livelihoods.

To increase the welcoming feel of the courtyard, benches should be present – one on each side (left and right) could provide symmetry and reasonable space for seating. Having seating available will encourage people to spend time, as well as making an indirect statement that the area is intended for the enjoyment of people. Additionally, the fence surrounded the courtyard should be painted, probably matching in color to the building. It would also be very easy and useful to place a sign on the outside of the fence (or directly paint a message), next to the gate, welcoming people and identifying the building – e.g., “Welcome to the Thulo Syafru Red Panda Information Center and Community Building.”

Technology:

Many organizations which provide environmental education in the US (zoos, museums, nature centers, etc) have been incorporating increasing amounts of technology and screens into their displays, as visitors have been found to spend more time engaging with and looking at screens than they do with static signage. This information center faces difficulties in this regard due to budget limitations, remoteness (at the time of writing the road to Thulo Syafru was unpassable due to landslides – it was about to be repaired, but may face this issue again in the future), and electricity which is usually present but not always. However, I believe whatever technology can be incorporated should be.

First and foremost, a television screen could be easily located at the front of the main room. Even one screen allows for great variability and options in displaying information. It could be used to show short documentaries and videos (WWF has already published at least one documentary about red pandas in Nepal) to either tourists or community members. One of the suggestions from a community member was for information to be presented in new and interesting formats – a television could be an avenue through which to achieve that. An easy and useful educational display would be to display a rotating set of pictures or video clips on it demonstrating conservation work in the area. An obvious choice would be photos taken of and by the CBAPU, showing images of red pandas they had found in their monitoring work as well showing them engaged in work. Images and videos could easily be interspersed with short textual messages given basic facts about the CBAPU – how long it has been operating, how many members comprise it and which parties are represented (the national park, the army, and the community), how often they go out, what information they provide, what their tasks are, etc. Any conservation program could easily be presented in this manner, as well as information about culture, livelihoods, the national park in general, etc. Screens allow information such as this to be presented in an engaging format, as well as allowing information to be easily highlighted, and more information presented in less physical space since it is in a rotational format. One large screen at the front of the room would be a significant asset. If more, smaller screens could be located elsewhere in the room I believe they would be a bonus as several topics could be presented simultaneously, allowing visiting tourists to move about the room and peruse them.

A permanently-mounted projector would be an easy and useful addition. It was requested by some community members, and would increase the functionality of the room. Community members, then, could have it available for their personal use for their own meetings and events, and the national park, WWF, or other NGOs could come and use it for their programming as well without having to carry in and set up a projector. Movies could also be shown over the projector if they wanted to be shown to a full room/audience, as a projector will be able to display a larger image than any television could plausibly be placed in the room. This increases the capacity of the building for showing short documentaries or other educational films which may be of use or interest to people. If people desired, it could also be used for showing movies recreationally. A ceiling-mounted, pull-down projector screen could be installed along the front wall. If a television was also placed here, as suggested, the screen could simply pull down over it – if a projector screen is in use that will likely be the sole focus of the room and other media will not be being used simultaneously.

Following that, a computer dedicated to the community building would be ideal. That way, again, people would have access to using the projector at all times, even if they do not have a personal computer. A simple laptop would be perfectly acceptable. One woman requested this and also said she wanted training courses for how to use computers, especially for women. I am personally not sure which NGO's jurisdiction something such as this might fall under, and it's likely that the school (before or after hours) would be a better location for this as they already have a computer room. I believe this would be a good point of discussion for the community to have themselves, as they could likely arrange such a program internally – and if it could be arranged, it could be very beneficial to increase the technical skills of community members and further empower them, their ability to interface with modern systems, and

ability to access information. But a computer available for community use outside of the school could be advantageous, and also helpful for making presentations or displays for use on both a projector and a television. By having these three pieces of technology present in and dedicated to the community building, its functionality would become much more versatile and flexible.

Arrangement:

If the information center is to be made friendly to tourists and used as an educational space for visitors, it will be best to keep it as neat, orderly, and spacious as possible. Having the room remain largely open will also be important to continue facilitating community meetings, where there may be two or three dozen people present. However, if at all possible, the chairs should have a way of being neatly put away to give the space an official, welcoming, and tidy presence at other times. The chairs could simply be kept stacked to the side at times when they are not in use. Alternatively, basic closets could be installed so that they could be stacked out of sight but still easily accessible.

The front of the room is largely unused space during meetings and programming – place for a speaker to stand and address people seated on the other half of the room. Thus, the two corners in the front of the room will likely see the least traffic and physical use and are the most “dead” space in the room, and so the room would likely not lose much functional space if closets were built here. If a 3 foot by 3 foot closet were built in each corner, 6 total feet would be taken away from the length of the front wall, leaving it 14 feet long – still plenty of space for a projector screen, for a speaker to stand, etc. In addition, closets could have an upper shelf for any spare materials (especially any hardware or cables related to technology in the room, flash drives, etc). They could also provide sectioned spaces for statement visual displays – each closet could easily be painted attractively, with a mural or other informative visual. One easy option would be to paint a red panda on one and a snow leopard on the other, to highlight two of the species of greatest concern in the park. The options for how to decorate such furnishing are endless, though, and it would be easy to use them in a variety of ways to make attractive, eye-catching, and educational pieces of artwork in the room.

I believe it would be worthwhile to sacrifice a little more floor space in the room to make tabletop displays. Wall displays are informative, but can quickly become repetitive and less interesting and engaging for visitors. It will be best if there is a variety of ways in which information is displayed to engage people more and encourage them to stay longer and take in more information. I do not believe it would be overly costly to put counter space along the back wall – 2-3 feet subtracted from the length of the room, either along the whole back wall or part of it, would likely be an acceptable sacrifice in exchange for the educational value it could add. However, it would obviously be best for the community to consider first how they are using the space already – if they feel like they can spare a little, or if they feel like they already are often reaching maximum capacity with no space to spare when they have meetings.

Tabletop displays:

People will tire of reading text – to maximize people’s engagement with information presented in the center, it will be ideal if as many non-text mediums can be provided as possible. The more tactile and visual displays can be, the more interest people are likely to have.

A common strategy in centers educating visitors about wildlife (e.g. zoos, museums, and nature centers) is to provide visitors the chance to closely examine parts of the animals in question. Bones and skulls are regular choices, as they are interesting and often surprising to visitors (it is not how they normally visualize or think about the animal, and it encourages them to think more deeply about how the animal works) and provides an opening in which to discuss the animal’s biology, ecology, and behavior. Naturally, there are many issues with displaying actual parts of an endangered and CITES-listed species, but replica skulls have become readily available. Both Skulls Unlimited (www.skullsunlimited.com) and Bone Clones, Inc. (www.boneclones.com) currently sell a replica red panda skull (both priced at the time of writing at \$145 USD). This could create an avenue in which to provide biological information about red pandas, especially if the teeth of the replica are displayed (indeed, two replicas could be displayed side by side – one with the jaws together and one with cranium and mandible separated, so that both upper and lower teeth can be seen). Easy points of discussion regarding teeth can be to show that red pandas are in order Carnivora (canines) and yet have adapted to an herbivorous lifestyle, almost solely of bamboo (molars).

Any other biological artifacts/replicas that are available or relevant would be fantastic additions, including of other species of interest in the area. Cultural artifacts could also be displayed – indeed, I believe it would be of use to display some information about culture, as many people mentioned wanting to engage tourists more in their culture, and tourists that were spoken with expressed interest in local culture. Ritual objects, traditional instruments, and other cultural artifacts such as khukuri knives could all be displayed, and put in a simple Plexiglas case to prevent damage or theft. This would be especially educational if it were objects which tourists wouldn’t often come across – e.g., they will likely have encountered plenty of cultural dress, but may not encounter religious rituals or cultural ceremonies.

One significant piece, which would be eye-catching as well as informative, would be a solid terrain model. This is a three-dimensional, spatially accurate map – a scale replica of the landscape. They can be made as long as elevation data is provided, and painted to show any information desired. This could make a fantastic centerpiece along the back wall, allowing visitors (and community members) to see a model of the landscape they are in, getting a precise and aerial view of the terrain. Trails could easily be added on to the map, so people can see exactly where the routes they are on go. Solid terrain models are more intuitively understandable and relatable than flat maps, as they are an actual and accurate replica of the landscape, not a representation or photograph of it.

Furthermore, a solid terrain model could provide more than just an intriguing and informative map – it could provide educational data on any variety of environmental factors that are wished for. For example, red panda and snow leopard habitat could be marked on it. Watersheds could be illustrated. Ecosystem type could be differentiated. Many options are possible, though it should be considered carefully which would be most helpful, as the paint job should be easily readable and not cluttered. A

display such as this would provide people with a very tactile and understandable medium of information, and would likely be a focal point of the information center as it would be novel and stand out from more traditional, text-based displays. Tourists often visit LNP for the mountains and dramatic landscapes – they would probably appreciate getting a chance to examine this landscape in a different way. Solid terrain models are available from a few different vendors, but Solid Terrain Modeling, Inc. (www.solidterrainmodeling.com) seems to be the most prominent and has worked for museums and organizations like National Geographic.

Any ways in which displays can be interactive would be ideal. Many such education centers create small games, or displays with movable parts so people can enact cause and effect regarding environmental or biological concepts. These are often targeted at children but can also be of interest to adults. A very basic concept would be a small balance, with one end having small model pest animals (e.g. muntjacs) attached so that this end naturally is down, with the other end empty and up. The base it rests on could be illustrated as agricultural fields. Small model predators (e.g. leopards) could be available to be placed on the other end – as more are added, the balance starts to lift and the muntjacs are quite literally taken out of the field as a proper balance between predator and prey populations is achieved. Interactive displays such as this can allow ecological concepts to be physically demonstrated and acted out by people, and can help create intuitive understandings where they may not naturally exist (e.g., many people in the interviews stated that they did not think predators were important). This is just one idea – there are endless possibilities.

Wall displays:

There are many posters currently in the information center, and currently they are the sole source of information. These are very useful to have, as they provide specific facts and can contain a large amount of information. The ones currently present are useful and cover a variety of topics already – red pandas, the Gosaikunda area, species of birds and butterflies, etc. I believe the species identification posters are particularly nice, as they may be of interest to people for discovering the identity of animals which they have seen, as well as advertising the rich biodiversity of the area.

Other wall displays can be added or enhanced. While it will be useful to have some displays which offer a larger amount of text as some people will be interested and be happy to spend the time reading, again, care should be taken to not overwhelm people with text. Additionally, language should be considered – English seems to be the language that tourists and locals most consistently have in common, so it is a good choice. However, there are people who will be in the information center (both local and foreign tourists) who do not speak English. Ideally, even people who do not speak English should be able to learn something from the information center, so I again urge an emphasis on visual displays. Posters can be made artistic and more freeform as opposed to research-style. Themes can be created to connect concepts in an organic way, as well as directly illustrating the benefits of conservation. e.g., a display themed as healthy forests = healthy pandas = healthy communities. Using artwork and photographs to help illustrate concepts will be appealing and beneficial.

Glossary

Biogeographical region – the highest level of describing general groupings of flora and fauna, describing vast areas of the globe which are characterized by species assemblages with shared evolutionary history owing to continental movement and resulting isolation and deviation of these species assemblages from each other.

BZMC – Buffer Zone Management Committee

BZUC – Buffer Zone User Committee

BZUG – Buffer Zone User Group

CBAPU – Community-based anti-poaching unit

CFUG – Community Forest User Group

IUCN – International Union for the Conservation of Nature

LNP – Langtang National Park

WWF – World Wide Fund for Nature

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- G. Finance and Administrative Officer for WWF Nepal in Langtang National Park, interview by Jennifer S. Brady, December 1, 2016.

Suggestions for future research

Conservation is a rich subject and many aspects of community participation could be looked at in more detail. A closer look at how women are (or are not) involved in conservation would be an interesting and important subject. Methods (and success or failure) of conservation education in rural communities would also be worth studying. One aspect that was hoped for in this ISP but which was not achieved was to investigate tourist perceptions of LNP and compare them with what local people thought tourists thought – essentially, how accurately are local people perceiving tourists, and vice versa. What attracts tourists? What do they want to see? What would be the most effective ways of increasing the volume and quality of tourism in Nepal? Especially in the wake of the earthquake, with all of Nepal seeing reduced tourism, this would be a fruitful subject to pursue.

While it is not explicitly conservation-related, charting people's recovery after the earthquake could also be a subject of study. People were eager to talk about the earthquake and tell their stories, which were eye-opening, awe-inspiring, and in many cases deeply saddening. There is much material here, ranging from possibilities for ethnographies to data-based research on how repairs are progressing.

Nepal is an incredibly biodiverse country, and I would encourage any further research on endangered species conservation here. Illegal trade is becoming an increasing issue as more roads are being built and access to rural areas improve. But there is strong conservation work here, and Nepal is regarded as having some of the best forest management practices of the developing world. Any further investigation into this would be of interest. Indeed, the CBAPU alone is an intriguing concept which could be the subject of an entire ISP. As many people told me throughout my ISP, Nepal is rich both in people and nature. There is so much diversity here, and the interface between culture and wildlife is of great interest. WWF Nepal was also an incredibly helpful organization full of generous and kind people; additionally, their networking connections were invaluable for completing this ISP. Reaching out to them or other such organizations in Nepal is highly suggested.

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