

# The Lone Wolf Project

An expedition to the Simien Mountains, Ethiopia

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Preliminary Report for the University of Edinburgh

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## Abstract

The Lone Wolf Expedition to Ethiopia investigated the status of the Ethiopian wolf, *Canis simiensis*, and its rodent prey in the Simien Mountains. Rodent density has already been found to be a good indicator of Ethiopian wolf presence, and rodent density has also been found to correlate with habitat type. Through an 18 man, 7 week expedition covering 5 different areas of the Simien Mountains, the Lone Wolf Project collected data on the presence of wolves, other large mammal densities, the habitat types, the rodent diversity and density as well as conducting informal interviews with local people.

The multi-disciplinary investigation yielded some fascinating results: the level of agriculture was very high in all areas of the mountains that were surveyed. The density of domestic animals was high, which lead to large grazing pressure and possibly a reduction in the plant and fauna diversity. It is clear that wolves are easily distressed by human disturbance and try to shy away from it. It is also clear that the rodent density is very low meaning that few wolves can occupy a small area. Home ranges of wolves are likely to be large and thus the overall density, in an already fragmented landscape, is low. Indeed, in one area of grassland which was protected from grazing, not only was the rodent density greater but there was also a greater diversity in species of rodents.

The expedition also aimed to assess the needs and opinions of local people. Without the involvement of the people whose lives are intimately involved with that of the wildlife of the Simien, there can be little chance of constructively helping conservation in Ethiopia. This aim was achieved through interviews with the local Amharic people of the mountains. This third element to the expedition had the potential to give really useful answers to how wildlife and conservation scientists are perceived by locals.

Collaborations with the Ethiopian Wolf Conservation Programme and the University of Gondar greatly improved the impact of our expedition and the expedition gained hugely from exchanges in our experience, knowledge and cultures.

We found that in order to address the conservation needs of the wolf and other endemic Ethiopian wildlife it is unequivocally important to include the needs of the people local to the area and those whose lives are also deeply entwined with the mountains.

## Background

This project was mainly involved with compiling data on the Ethiopian wolf, *Canis simiensis*, in the Simien Mountains of Northern Ethiopia in order to better assess its conservation needs. There is little, detailed data on the Simien population and it is hoped that the results obtained by the Lone Wolf Project will contribute to a baseline dataset.

The Ethiopian Wolf, *Canis simiensis*, is a critically endangered carnivore with estimates of fewer than 550 animals left in the wild. Most of the present knowledge that we have on the wolves comes from the Bale Mountains in southern Ethiopia, where a long term research project has been monitoring the largest wolf population comprising more than half the total world population. The Simien (13° 15'N, 38° 00'E) was therefore an attractive area to study as there is very little prior knowledge in the area. The Simien is also an area of intense natural beauty, a UNESCO World Heritage site, and contains populations of two other endangered large mammals, the Walia Ibex and the Gelada baboon.

Appropriately, from an early stage our planning was directed towards a large, three-pronged, multi-disciplinary expedition in which information from different sources could be collected in order to make our conclusions more effective. The idea that people of different backgrounds could get involved with the expedition in order to add new dimensions to the results was certainly attractive, and in this respect the expedition succeeded in covering a broad range of the available sources of information. Ecological surveys of wolves and other large mammals as well as habitat assessment were conducted in order to understand the present densities and distribution of large mammals and different vegetation in the Mountains. Rodents have been found to constitute at least 90% of the wolf's diet (Sillero-Zubiri and Gotelli 1995), indeed this is only corroborated by the physical appearance of the wolf, where it has evolved an elongated snout to better access rodent holes (figure 3). Therefore the second major research theme of the expedition was an investigation of the rodent communities. We also conducted field interviews with local people. Two anthropologists were enrolled with a brief to investigate the human aspect of wildlife conservation in the Simien. How did people feel about the wolf? Did they understand that wildlife in the Simien is unique and in need of conservation? Was the wolf in fact a pest to the villagers' livestock? Did they care? Questions like these and others were used to try to raise awareness of wildlife conservation in this environment. Indeed the very fact that the expedition moved around the remote mountains, using local mules and visiting small villages raised awareness in itself. People were always very interested in what could possibly be so important as to attract all these people from so far away. One of the anthropological studies concentrated almost purely on the lifestyle of people in the Simien, and this proved very intriguing and insightful as to how best to address the conservation needs of the Simien.

This report will highlight our findings from our preliminary analysis, but will be succeeded early in 2006 by the full expedition report. It is also hoped that several, peer-reviewed scientific papers will come out of the expedition which will help with the dissemination of our conclusions to a wider audience.

## Aims

There were two main aims to the expedition:

1. To investigate the ecology of the wolf in the Simien Mountains.
2. To gain a better understanding of the opinions, needs and lives of the people of the Simien.

These aims were achieved through two types of ecological field studies and informal interviews with local people.

## Study Area

Five campsites were chosen which would provide areas to investigate with different interests. We chose one campsite on the edge of the park, one near the park boundary, another was outside the park but very near a road and finally there were two far into the mountains, well outside the park.

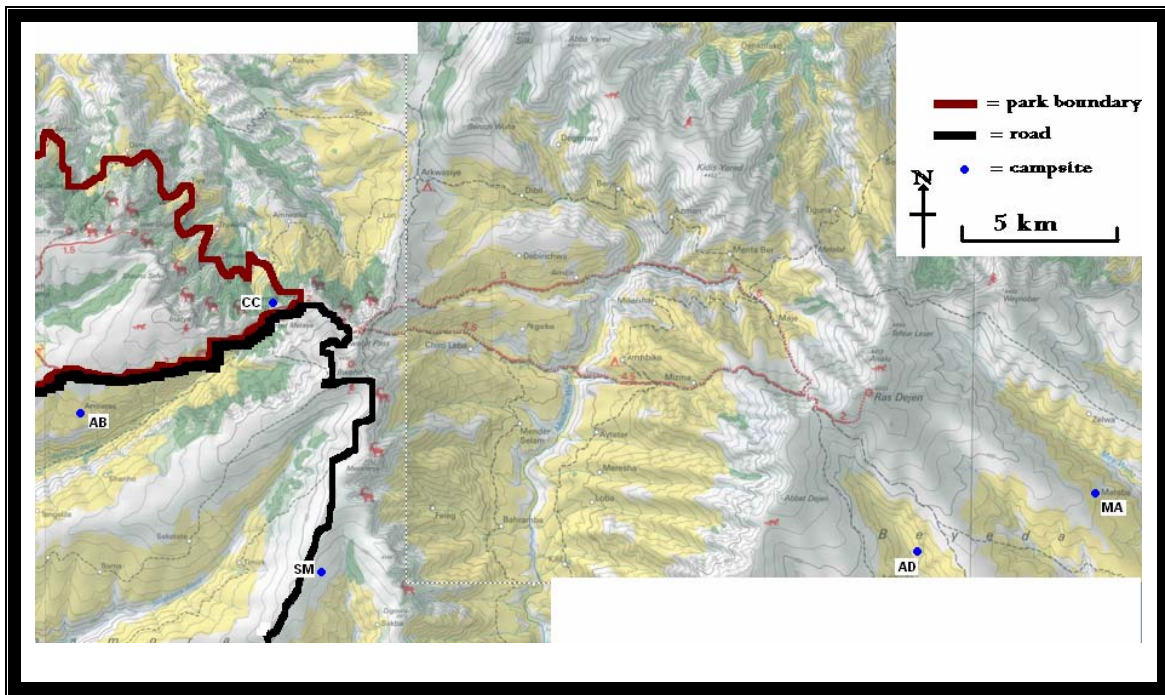


Figure 1. A map of the Simien Mountains showing campsites and Park Boundary

Figure 1 is a map of the Simien with campsites highlighted. Below is a table with short descriptions of each campsite.

Campsite	Altitude	Benefits
Chennek Camp – CC	3621m	Scout camp on edge of park
Sebat Minch – SM	4010m	Near road
Adilemlem – AD	3818m	Area far out of park – little/no previous data
Matba – MA	3842m	Area far out of park – little/no previous data
Ambaras – AB	3703m	On edge of park allowing investigation inside park

Table 1. Campsites in the Simien

In each of the campsites both ecological and social analyses were conducted. The methods and results from each survey follow.

## **Wolf and other Large Mammal Investigations**

### **Introduction**

The Simien Mountains contains the one of the largest populations of Ethiopian wolves outside the Bale Mountains, estimated at between 40-54 wolves (Marino, 2003). Presently however their effective conservation is being hindered by a lack of baseline knowledge, most importantly concerning the distribution and abundance of these wolves.

Ethiopian wolves first suffered extensive declines through the loss and fragmentation of its habitat by agriculture and overgrazing (Sillero-Zubiri *et al.* 1994; Sillero-Zubiri and Macdonald 1997). More recently however hybridisation with domestic dogs, several rabies epidemics (see Gottelli *et al.* 1994) and persecution by local people has further threatened this species' future and genetic integrity. The wolf will be lost first from less populated areas such as the Simien. This study contributes data on the status of the wolf in the Simien.

### **Methods**

Initially we planned to obtain data on wolves by conducting transects and assessing the results with computer software. However, it soon became apparent that we would see few wolves this way. Therefore, on the transects we collected data on all large mammals seen, as well as crude habitat assessments in order to get an idea of the overall habitat of each study area.

The main data on wolf status is derived from two sources: early morning and late afternoon monitoring forays and opportunistic sightings of wolves observed over the seven weeks that we were in the field. Data from the Simien Mountains National Park (SMNP)'s 2005 third annual census will also be used to give a better picture of the status of the wolf in the Simien.

### **Large Mammal Surveys and Habitat Assessment Transects**

Transects of 3-8 km were walked in all study sites. Along the transects the observer would search for any large mammals and record the number of animals seen, the species of animal, their distance from the transect line, the angle from the transect where the animals were first seen and the GPS position of the observer. Concurrently habitat assessments were conducted and every 200 metres along the transect the observers made a circular quadrat and the major plant species and their proportions were noted. The presence of animal signs, typically droppings, was also recorded.

### **Wolf Status**

The time, GPS position, number, sex, possible pack ID and habitat type of all wolf sightings were recorded in order document their presence.

## Results

In all areas the presence of livestock and the amount of grazing was very high. On all transects outside of the park there were more than 50 heads of grazing livestock (cattle, sheep, goats, horses and donkeys) per square kilometre and was often over 100 heads per square kilometre. The only exceptions to this were two transects that traversed areas outside the park which were specifically protected from grazing in order to grow the *guassa* (grass) for thatch. The habitat surveys showed that where there was heavy grazing there was typically little plant diversity, only short grazed *guassa* being present. Furthermore, the diversity of flowering plants was very much greater in the protected *guassa* areas. The habitat assessment surveys also gave us indirect measures of livestock density in terms of number of droppings in the quadrat.



This photograph (figure 2) shows the transition between green fields of crops and the grazed mountain side. This was taken at approximately 3800 metres above sea level and shows that the amount of agriculture in the Simien is so high that even the most marginal land is used for crops and then above this land is then used for grazing leaving little for the wolf and other wild animals.

Figure 2. Shows the extent of agriculture in the Simien

Inside the park, less livestock was seen. However, there were still cattle, sheep and horses present, belonging to people from the few villages inside the park (eg Gich village) which still have small grazing concessions within the park.

Wolves were seen in all areas. The table below (table 2) shows minimum and maximum estimates for the numbers seen in each area as well as possible pack numbers. Most of the direct observational data on wolves was produced through opportune sightings while monitoring and during other expedition activities. Wolves were seldom seen during transects which took place during the main part of the day when wolves are solitarily foraging away from the disturbance caused by livestock. Figure 3 is an Ethiopian wolf seen near Adilemlem.

Figure 3. The Ethiopian Wolf. Note the elongated snout, adapted to burrowing for rodents. The Ethiopian Wolf is Critically Endangered on the IUCN red list, thus it is essential that all is done to prevent its extinction.



Camp Site	Wolf Pack ID	Min	Max	TOTAL
Chennek	Bwahit	3	6	3-6
Sebat Minch	Kechamo Bwahit	1	3	
	Sebat Minch	3	4	
	Zana	1	2	5-9
Adilemlem	Arbaruugrug	5	8	
	Atterie	3	4	
	Tefahulzer	2	2	10-14
Matba	Gaganbahar	1	3	
	Gaudymada	1	1	2-4
Ambaras	Geech-Aynamada	2	4	2-4
<b>TOTAL</b>		22	37	22-37

Table 2. This table shows minimum and maximum estimates for all areas where research was conducted. Numbers are only estimates as it was often difficult to rule out double counting.

## Discussion

The numbers of wolves observed was encouraging. We surveyed less than a third of the available wolf habitat in the Simien and saw approximately 30 wolves. Throughout the mountains the amount of grazing and other agriculture in all areas was more worrying however. The level of grazing and associated lack of biodiversity, disruption and human presence is possibly inhibiting the numbers of wolves that can inhabit the area, this will continue to increase without effective management. The most wolves were seen in Adilemlem, one of the campsites in which we only stayed for a week. This was also the campsite where there was an area near by that is protected from grazing. The largest group of wolves seen at one time (5) was in this protected area.

Disruption from man is certainly having an effect on the Ethiopian wolf in the Simien. However, this is not the only problem. The following two sections investigate other possible reasons behind the observed low density of wolves in the mountains: a study of their rodent prey and the brief results of our interviews with local people.



Figure 4. On route between campsites in the Simien. Here our Ethiopian wildlife expert, Derebei, points out the direction of the trip ahead.

## Rodent Investigations by Clare Marsden

### Introduction

Diurnal rodent species constitute the major part of the Ethiopian wolf's diet and therefore have a large influence on the distribution and abundance of wolves (Sillero-Zubiri & Gottelli 1995). Sillero-Zubiri *et al.*, (1995) found that rodent density was a good indicator of Ethiopian wolf presence. Consequently researchers have highlighted the importance of a complete understanding of rodent distribution, abundance and biomass within Ethiopian wolf populations for the planning of their future conservation (Sillero-Zubiri & Macdonald 1997).

The vast majority of studies of afroalpine rodent populations in Ethiopia have been conducted in the Bale Mountains where strong correlations between habitat type, rodent biomass and wolf abundance were found. These findings have subsequently been extrapolated for other Ethiopian wolf populations. It is not known, however, if these findings are similar for the rest of Ethiopia.

The aim of this study was to investigate the species composition and abundance of rodents in unique endemic afroalpine habitats of the Simien Mountains of Northern Ethiopia.

### Methods

Research was conducted in the Simien Mountains during the wet season. Four study sites were selected Chennek, Sebat Minch, Adilemlem and Matba. All study sites were classified as afroalpine habitat and were found above 3500 m.

### Live trapping

Rodent species composition and abundance were investigated using live trapping as previous research has shown that this method gives the best estimates of rodent abundance when the trapping period is short (Sillero-Zubiri *et al* 1995; Lucy Tallents *pers comm*).

Rodent surveys were conducted using aluminium Sherman traps. A 0.16ha grid of 50 pairs of traps, laid out at 10m intervals, was made. These were pre-baited for two days with a peanut butter and flour bait. The traps were then set at dawn and cleared at noon and dusk for three consecutive days. All caught animals were identified to species level and then weighed, sexed and individually marked by fur clipping to enable mark capture release data could be collected.

Since a common habitat was not found for all sites, trapping took place in the dominant habitat of the area. In each site three grids of traps were randomly placed and simultaneously set (two grids at Chennek). In Sebat Minch, time enabled two trapping periods so two habitats were sampled.



Figure 5. Two of our Ethiopian students, Abraham and Chalachew, help with the trapping effort. Every time a rodent was caught its sex, weight and species type was recorded. It would then be marked in order to assess the density of the rodent population.



## Results and Discussion

Seven different rodent species were caught during trapping periods (Table 3). *Arvicantis abyssinicus*, *Otomys typus* and *Lophuromys flavopunctatus* were all positively identified, and a further four species await clarification. *Arvicantis abyssinicus* was the most commonly found species and was recorded in all study sites. No study site recorded all seven species of rodent.

Preliminary analysis of the data in Table 1 suggest that both habitat type and grazing influence rodent species abundance and composition.

Study sites with Guassa, Lobelia, Carex habitat recorded a substantially higher abundance of rodents than study sites in Guassa, Lobelia mixed habitat. When rodent abundance is compared between study sites of the same habitat, the data suggest that rodent abundance was notably lower where grazing intensity was medium - high. The lowest abundance of rodents was found in Sebat Minch 1, the most overgrazed of all the sites surveyed for rodents.

The data in Table 1 indicates that grazing intensity is a more important factor affecting the rodent species composition and diversity recorded at study sites. Both Adilemlem and Matba (absent – low grazing) recorded six species, whereas Sebat Minch 1 and Sebat Minch 2 (medium – high grazing) recorded a maximum of 2 species. However, Chennek, has low grazing intensity, but recorded only two species. It is possible that that this discrepancy is related to the significantly wetter conditions in that area, or that this site was the first surveyed area and therefore methodology was being tested and only two grids were used. Further rodent trapping would be needed to clarify this.

Overall these data suggest that grazing has a negative influence on rodent diversity and abundance. These findings probably relate to the negative influences of grazing on rodents. This includes trampling of holes, reduced within habitat heterogeneity, competition for food and increased predation risk because of a reduction in vegetation height.

	<b>Chennek</b>	<b>Matba</b>	<b>Sebat Minch 1</b>	<b>Sebat Minch 2</b>	<b>Adilemlem</b>
<b>Habitat</b>	Guassa, Lobelia	Guassa Lobelia	Guassa, Lobelia	Guassa, Lobelia, Carex	Guassa, Lobelia, Carex
<b>Grazing intensity</b>	Absent – Low	Absent - Low	Medium - High	Medium – High	Absent – Low
<b>Total number of rodents caught in 3 grids</b>	12*	15	2	49	90
<b>No. &amp; Percentage of the Unstriped grass rat <i>Arvicantis abyssinicus</i></b>	11 92%	2 13%	2 100%	46 94%	24 27%
<b>No. &amp; Percentage of the Swamp rat <i>Otomys typus</i></b>		6 40%		3 6%	36 40%
<b>No. &amp; Percentage of the Harsh furred rat <i>Lophuromys flavopunctatus</i></b>	1 8%	2 13%			5 6%
<b>No. &amp; Percentage of rodent species 1</b>		1 7%			9 10%
<b>No. &amp; Percentage rodent species 2</b>		2 13%			8 9%
<b>No. &amp; Percentage of rodent species 3</b>		2 13%			
<b>No. &amp; Percentage of rodent species 4</b>					2 2%

Only 2 grids used

Table 1: Rodent species composition and abundance in study sites.

### Future analysis

Species identification for the four unknown species is currently being clarified via photographic correspondence with Ethiopian rodent experts at both Oxford and Manchester University.

Once a suitable transformation for the data has been determined, it will be possible to estimate population sizes for trap grids using Bailey's Triple Catch equation. This involves the use of the mark recapture data recorded during live trapping (Begon *et al*, 1996).

Line transect data of rodent hole abundance in the study sites (not included in methods) will be used to extrapolate rodent population estimates calculated with Bailey's Triple Catch.

## **The Effects of the Simien Mountains National Parks wildlife conservation policies on Local Communities by Julie Grant**

One aim of the Lone Wolf Project (LWP) was to document the lives of the people of the Simien Mountains. We wanted to determine if the SMNP's policies are beneficial or detrimental to the livelihoods of local communities. Furthermore, we aimed to establish if local communities perceive the policies as detrimental to their livelihoods and if so do the policies lead to an increase in wildlife persecution by the locals. If the policies are detrimental to the local people and result in wildlife persecution, the park may need to consider re-thinking its policies as their conservation policies may not be conserving the wildlife after all.

In order to address these issues 29 interviews were conducted with local people from the villages of Argin, Timirk, Adilemlem, Matba and Ambaras. The village chairmen for Argin/Ambaras, Timirk and Adilemlem were also interviewed along with four SMNP scouts from Chennek and Sebat Minch. Additionally, participant observation was used to gather information while living in and around villages. Local villagers and members of the team, many of which regularly work in and for the SMNP, contributed to this information.

### **Beneficial effects of the SMNP's conservation policies on local communities**

As the SMNP's wildlife conservation policies protect many rare and often-endemic species, tourists are attracted to the area not only to view the scenery but also to see the wildlife. As a result there is an opportunity for local communities to generate income from tourists. This is usually done by hiring out mules or donkeys to carry tourists' luggage while the tourists trek. Some money can also be made from the sale of souvenirs to tourists. However these are not reliable sources of income as they are unpredictable. In addition although some local communities benefit from the tourism which the SMNP attracts, this is not widespread. Which villages benefit most is determined by how close to tourist centres or routes they are.

In addition to the tourist trade, communities benefit from the park in other ways. Within the Simien Mountains there is a shortage of firewood. To combat this, eucalyptus nurseries have been established to grow and supply local communities with eucalyptus trees, which can be used as firewood. As these nurseries only exist in or near to the SMNP, not all communities within the mountains have access to them. Therefore although people benefit from the park through the nurseries, the nurseries are only beneficial to the few local communities which exist in or near to the park. Overall, the SMNP conservation policies do seem to offer benefits to people living within the Simien Mountains but these benefits are unequally distributed.

### **Detrimental effects of the SMNP conservation policies on local communities**

In contrast to the above, local people in the Simien Mountains believe that wildlife often benefits from the existence of the park at their expense. This is probably because people have witnessed the reduction of their grazing and *guassa* (roof thatch) land, both during the Park's establishment and its recent expansion. This is to allow wildlife more land which is free of people and livestock, including domestic dogs, all of which can compromise wildlife habitat.

People also believe that wildlife are treated better than humans because if wild animals attack or kill livestock villagers are prohibited from killing the culprit, or allowing their dogs to chase or kill the culprit, even if the livestock taking happens continually. The local community can report livestock killing by wild animals to Park authorities however the authorities do not take any action in regard to such complaints nor do they offer compensation to replace the loss. The loss of even just a few livestock can be detrimental to villagers livelihoods, as they often own little livestock to begin with. From this it can be seen that the SMNP's conservation policies can be detrimental to the livelihoods of local communities and that local villages also perceive them as such.

### **Do the SMNP's conservation policies lead to increased wildlife persecution?**

Overall everyone interviewed was aware that it is illegal to kill wildlife both in and outside the park. Even so there were still some reports of wildlife persecution. A common jackal has been killed this year in response to livestock taking; this was reported in Matba but happened in Weno. In Adilemlem it was reported that twice in the last 5 years people have tried to poison the Ethiopian wolf by leaving poison laced-meat for them. Both times the meat was found before any harm came to the wolves. As it was difficult to determine who was responsible for the attempted poisoning no prosecutions were ever brought. While the LWP was working in Sebat Minch, scouts had to shoot two dogs for chasing Ethiopian wolves which had been seen stalking livestock. It is difficult to know if the dogs carried out this activity on their own initiative or if they had been sent by a local farmer!

In general it would seem that wildlife persecution does not seem to be widespread even when people lose livestock. It has been suggested that the common jackal and the spotted hyena are the biggest problem in this respect. However while the LWP was working in the Simien Mountains we did hear reports of Ethiopian wolves attacking sheep in both Matba and Adilemlem. A horse was killed in Argin by either a leopard or Hyena. As already stated, the loss of livestock can be significant to villagers' livelihoods and as a result many people feel that some form of compensation from the national park or the government would be appropriate.

People were also asked about the use of wildlife parts in traditional medicine or magic. Although most people are aware of what the various animal parts

were used for, people believe this to be an activity of the past and today people feel that it is better to preserve the wildlife for tourists, as tourists will bring work and money to the area in the form of mule hire. Therefore it would seem that people are not supplementing or replacing lost income through selling wildlife parts for medicine or magic.

### **Does the SMNP need to re-think its conservation policies?**

From the above it can be seen that the wildlife conservation policies of the SMNP do have both beneficial and detrimental effects on local communities. However the policies do not seem to lead to an increase in wildlife persecution. People in the area do seem to respect and obey the law. Perhaps the SMNP should consider revising its policies to allow for some form of compensation to be awarded to people who lose livestock. Additionally, the park should make provisions to deal with wild animals which repeatedly cause problems for local people.



Figure 6. Julie, James and Friew conduct an interview with a farmer and friends on the edge of his barley field



Figure 7. Some local villagers in Timirk, near Sebat Minch

### **A brief ethnography of the people of the Simien Mountains by James Busby**

As I walked into the smoke filled house, the owner took my bag and put it out of sight behind the *majet*, a screen at the rear of his hut. I sat down on a goat skin mat around the hearth. Then he, the owner, offered me a cup of coffee or '*buna*' which I gladly took and sipped quickly whilst it was still piping hot, as is the custom. We sat and talked about marriage, the local farmers union that

deals with legal matters, the buna ceremony itself, and many other things. During the interview I was offered traditional *injera* made from barley or *gibs* (the only grass crop grown in the Simien) and either *tela* (local beer) or yoghurt to wash it down with. This injera was laden with either *gommen* (a type of cabbage), *dinitch* (potatoes) or a spicy *berbere* (chilli powder) sauce always lovingly cooked by his wife in a wrought iron pot over the hearth. When the talking and eating was finished, I left the house and my bag was carried for me till I reached the outermost perimeter of the man's house. Here he gave me the bag shook my hand and bade me farewell, praying that God kept me safe.

This is a romantic view of my work in the Simien but it covers many important areas of the life of people in the Simien; their economic, belief, kinship and legal system. The People of the Simien are Amhara and speak the Amharic language along with the majority of Ethiopia. They are a patrilineal society which at this point in my analysis bears closest resemblance to the Hawaiian kinship system model. There has been no recent in-depth study of the people and my aim of this project is to promote to fellow anthropologists the importance and interest that the people of the Simien give in order to encourage more detailed study.

The period of study was seven weeks and in this I visited seven villages and even lived in one, Timirk, for a period of five days. At Timirk we rented a mud-hut for my interpreter Friew, my fellow anthropologist Julie Grant, her interpreter Eskedar Kelele, a wildlife expert, Derebei Deksios and myself. The five of us cooked over an open fire, slept on the mud floor and tried to live as close as possible, a similar life to the local people in order to gain a greater insight into the culture.

The interview structure was to start by talking about the idea of marriage in terms of the ceremony itself, how the marriages are arranged, whether there is any bride wealth or bride-price involved, whether there is a system of wife exchange between villages and the idea of divorce. We then talked about the *buna* ceremony, the availability of coffee and the purpose it serves to bind the community together. I moved next to discuss superstition, the *bala coli* and *bala sarr*, and the evil eye (this progressed throughout the interviews into discussions about the role a *deftera* plays in the community as well). I concluded the interview by discussing what the people thought about my coming and asking them these questions in order to gain an idea of how genuine their answers were. I theorised that if they gave a hostile answer to this question, some of the more personal questions may have been dishonestly dealt with.

One of the greatest findings of the study was the conflict between the government's ideas for economic reform in the area and the immense obstacle that religion puts in the way of this reform. The difficulty will be explained in depth in the main report, but it highlights that in order for economic reform to occur there has to be a great deal of cultural reform first.

The main problem of this study was the lack of time spent in the field. I was not able to build up trusting relations with the people which in my view, led to the need to ask the question mentioned above. Coupled with this there simply was not enough time to find out complete answers to the questions, and gain a full understanding of the culture. As well as these problems was the inevitable hindrance of having to use an interpreter. Some of the data will have been lost in translation. However I believe that the data collected is valid and 95% of it honest. Although the study can not be called complete I believe that it is a good start into the anthropological study of the people.

## **Personnel**

There were four University of Edinburgh students on the Lone Wolf Project: George Busby, Clare Marsden, Julie Grant and Richard Hoolahan. James Busby, a recent anthropology graduate from the University of Durham also came along adding his own expertise. Through collaboration with the University of Gondar in Northern Ethiopia, we were able to bring along four Ethiopian applied biology students. Abraham Sileshi, Abraham Birara, Chalachew Godebo and Eskedar Kelele joined us for the last four and a half weeks of the project. Another student, Friew Kidane, who helped us a lot in the acquisition of provisions in Gondar before the trip was also invited to come on the expedition as our interpreter. As well as the ten of us, it was also necessary for us to employ two Simien Mountain guides, Abera Getachew and, Getachew Assefa, who also works part time for the Ethiopian Wolf Conservation Programme. We were also obliged by law to employ a Park Wildlife Expert, Derebei Deksios. With such a large team, it was decided that we should hire a cook and an assistant, Mengistu and Beri. We were also required to have three scouts with the group at all times. Therefore the overall team consisted of 18 people.

## **The Lone Wolf Project – a brief consensus**

The Lone Wolf Project set out to investigate the factors affecting the density and distribution of Ethiopian wolves in the Highlands of Ethiopia. Through an integrated, multi-disciplinary approach we now have several lines of data to explore. This is the preliminary report, some analysis is still to be completed. However, even at this early stage it is possible to make some general comments about the wolf and the Simien.

The ecological surveys on large mammals and habitat have shown that the level of agriculture is great and intense. Only areas of the mountains that are actively protected are not disturbed by man. Therefore there will always be conflict between the two. This will continue to get worse as the population grows. However, more wolves were seen than expected, so it could be that the community education programmes, the proposed extension of the Park and greater public understanding of wildlife conservation are helping the wolf.

The rodent surveys have shown that the rodent densities are very much lower than those of the Bale Mountains in Southern Ethiopia. This also clearly affects the number of wolves that can live in an area. Wolves depend on rodents to survive and so the lack of rodents is also a big factor controlling the wolf density.

The results of our interviews, while qualitative, have greatly helped our understanding of the lives and needs of people of the Simien. Both the specific questions about peoples' relationships with wildlife and more general questions about the way Simien Mountain villagers live have shown us that while the Park and government have begun to take the opinions of villagers into account, there are still some problems. How can you tell a villager who has recently lost a sheep to a wolf that it is necessary to conserve the wolf and to protect it? It is the resolution of issues like this that is central to future conservation efforts in the Simien.

Our work in the Simien has also shown the need for greater education *outside* Ethiopia on the wealth of natural resources contained within the country. Ethiopia's wildlife and landscape can rightfully be called its natural heritage and it is also a duty of the Lone Wolf Project to promote the unique wonders of this heritage to people outside of the country. Through the publication of our final report to both our funding bodies and academic institutions as well as the wider dissemination of our results through presentations to Edinburgh University, the Royal Geographical Society and other professional bodies, and our website on the World-Wide-Web, all members of the Lone Wolf Project hope to help Ethiopia, and the Simien in particular, remain culturally and ecologically diverse while promoting and conserving its wildlife and heritage.

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<http://www.exodus.co.uk/mappages/tye.html> - for map of Ethiopia.

[www.gondarlink.org.uk](http://www.gondarlink.org.uk) – for information and links to people and services in the Gondar region of Northern Ethiopia.

[www.kilimanjaro.cc](http://www.kilimanjaro.cc) – map of Simien Mountains.

[www.redlist.org](http://www.redlist.org) – for the endangered status of the Ethiopian Wolf.

[www.worldwildlife.org](http://www.worldwildlife.org) – for information on species endemic to the Simien.