

A REPORT ON WILDLIFE ISSUES IN THE KANCHANJUNGA REGION

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Background

This report is based on studies carried out by WWF consultants, Lhakpa Norbu Sherpa and Dr Prahlad Yonjon, on wild mammals; Dr Chris Carpenter, on birds; and the author's observations in the Kanchanjunga area in Autumn 1994 and the summer of 1996 (Annex 1).

Wildlife Assessment

The methodology of wildlife assessment has been described in detail by Sherpa (1994) and Yonjon (1996). In general, both wildlife biologists based their studies on direct observation, interviews, habitat study, signs such as scats and droppings, and available literature. Sherpa (1994) prepared a list of mammals known or suspected to occur in the Kanchanjunga area.

However, Yonjon (1996) used land-use patterns to describe the key wildlife and their habitats in the Kanchanjunga region. Six land-use groups are recognised as wildlife habitats and used for analysis. These land-use groups are

agricultural area, barren land, shrubs, hardwood forests, conifer forests, and grazing areas.

Agricultural Area

Agricultural land constitutes 4.33sq. km. (0.27%) of the total area. About 94 per cent of this land is situated below 2,000m. Among the main wildlife found below this altitude are the rhesus macaque (*Macaca mulata*), gray langur (*Presbytis entellus*), and Himalayan black bear (*Selenarctos thibetanus*). Porcupines (*Hystrix indica*) have also been seen.

Hardwood

The total area of hardwood forest is 51.85sq.km. (3.2%). The *Schima* and *Castanopsis* forests below Amjilhasa were quite degraded. Excellent oak (*Quercus spp*) and *Rhododendron* forests interspersed with ringal bamboo occurred between Amjilhasa and Pholey. Fifteen large mammals use different habitats in the hardwood forests. These mammals included yellow-throated marten (*Martes*

flavigula), smooth otter (*Lutra perspicillata*), Himalayan black bear (*Selenorctos thibetanus*), fox (*Vulpes bengalensis*), jackal (*Canis aureus*), jungle cat (*Felis chaus*), leopard cat (*Felis bengalensis*), common leopard (*Panthera pardus*), serow (*Capricornis sumatraensis*), goral (*Nemorhaedus goral*), and barking deer (*Muntiacus muntjac*). The local people said many of these mammals were commonly sighted.

Conifers

The Conifer forests were comprised of *Abies spectabilis*, *Betula utilis*, *Tsuga dumosa*, *Juniperus wallichiana*, *Acer* spp, and *Larix griffithiana*. These forests may intermittently occur with deciduous mixed, broad-leaved species. The total area of conifer forests is 84.16sq.km. (5.3%). The majority (89.8%) of conifer forests occur between 3,000-4,000m; very few conifers exist above 4,000m (1.3%). Dense conifer forests occur between Gyapla and Ghunsa, from Ghunsa to Yamotari Glacier, and from Tseram - Toranden to Deorali Danda.

Almost all mammal species inhabiting hardwood forests occurred, with the exception of the *Rhesus macaque*, *Assamese macaque*, smooth otter (*Lutra perspicillata*), small Indian civet (*Viverricula indica*), and the porcupine (*Hystrix indica*). Additional large mammals include musk deer (*Moschus chrysogaster*) and red panda (*Ailurus*

fulgens), which are among the protected species of Nepal.

At Toranden (3,124m), leopard scat that contained the claws of a young jungle cat was collected. Along a two-km stretch between Toranden and Deorali Kharka (3,525m), 18 groups of goral pellets and four musk deer pellets were observed (Yonjon 1996). We also saw a few children at Yamphudin playing with a red panda pelt.

In the Simbuwa Khola Valley, some 200ha of pure stands of juniper (*Juniperus indica*) are found in Tseram where goral and monal pheasants were seen.

Shrubs

Shrubs totalling 141.73sq.km. (8.8%) were distributed below 5,000m. Shrubs were predominant between 2,000m- 4,000m (87%). LRMP (1986) describes shrubs as vegetation which may include hardwood regeneration. Above 3,000m, shrublands are dominated by *Rhododendron* and *Juniperus* spp. Alpine shrublands may harbour serow and musk deer in summer, as well as a host of small mammals such as beach marten (*Martes foina*) and pika (*Ochotona* spp). Such shrublands also provide excellent winter habitats for blue sheep (*Pseudois nauyaur*).

Grazing Area

Grazing land covers some 169sq.km. (10.5%) in the Kanchanjunga region below 5,000m. Grazing area expansion is the largest between 3,000 - 4,000m, covering some 118.87sq.km. with patches of pasture as large as 46sq.km.; in these areas, *clamastris* sp, *carex* sp, *festuca*, and *trisetum* sp are important.

In the upper reaches of the Ghunsa (Khambachen) and Simbuwa khola(s) (Yalung and Ramje), Yonjon (1996) observed a total of 78 blue sheep in eight different herds, averaging 9.75 ani-



Plate 11: Himalayan Blue Sheep

Photo: Ravi Sankaram

mals per herd (herd size 1 - 24). The male-female ratio was 96:100 and the yearling and lamb ratio were 56 and 60 per 100 females, respectively.

Snow leopard (*Panthera uncia*) scat was found at 4,376m towards Mirgin La and tracks on the snow were evident at 4,500m. Although there is no definitive information on the snow leopard population, at least four adults were evident in these three valleys as reported by Taylor (1995). In addition, a beech marten (*Martes foina*) was observed in Ramje at 4,290m.

Barren Land

Barren land occurs above 3,000m, covering an area of 1,151sq.km. (71.8%). Between 5,000 - 6,000m, land expands to a maximum area of 672sq.km., providing optimal escape cover for blue sheep above 4,000m, as well as providing snow leopard habitat.

Snow leopards are usually found only in subalpine and alpine regions, away from major human habitations. Their seasonal migration pattern often follows the migration patterns of prey species.

The Grey wolf (*Canis lupus*) is another predator of the alpine and subalpine regions whose range overlaps that of the snow leopard.

Assessment of Birds

The eastern Himalayas (Kanchanjunga area) support a wide diversity of bird species. This is due to the complex physiography and bioclimatic zonation (Ives and Messerli 1989) and their location at the convergence of the Palearctic and Oriental Zoogeographic Realms (Inskipp 1989). The eastern Himalayas are also identified by Birdlife International as a Priority I Endemic Bird Area since they support 25 restricted range bird species, of which 21 are confined to the region (Bibby 1992).

Photo: Devendra Amatya



Plate 12: Ghoral Habitat in Helok (2,500m)

Dr. Charles Chris Carpenter (Carpenter 1996) with his students from Wildland Studies, San Francisco State University, College of Extended Learning, visited the Kanchanjunga area four times for a six-week duration each between 1994 and 1996 and studied the altitudinal distribution of 251 bird species.

Out of 251 bird species, Carpenter (1996) found 123 species to be frequent species, 59 species to be long-distance migrating species, and 69 species to be common residence species.

He recorded the greatest number of birds during the autumn at 1,300masl, whereas during spring he found the greatest number at 2,700masl.

There are eight bird species which are considered to be at risk in Nepal and listed by IUCN as rare, vulnerable, or endangered. Five of them were recorded in the temperate forest above the elevation of agricultural activities. These include the Satyr Tragopan (*Tragopan satyra*), Fulvous Parrot Bill (*Para-doxornis fulvifrons*), Cutia (*Cutia nipalensis*), White-browed Shortwing (*Brachypteryx leucophrys*), and Little Pied Flycatcher (*Ficedula westermanni*). The other three species at risk were recorded at lower elevations where subsistence agriculture is widespread. These include the Forest Ea-

gle Owl (*Bubo nipalensis*), Short-billed Minivet (*Pericrocotus brevirostris*), and Grey-cheeked Warbler (*Seicercus poliogenys*).

Wildlife Conservation Issues

Crop Damage

The incidence of crop raiding by wildlife below 1,500m is extremely high; damage was done mainly by the rhesus macaque (*Macaca mulata*), grey langur (*Presbytis entellus*), and the Himalayan black bear (*selenarctos thibetanus*). Also, loss of cardamom bushes because of porcupines (*Hystrix indica*) was reported to be heavy.

Above 1,500m, crop-raiding species include the Assamese macaque (*Macaca assamensis*), grey langur, and the Himalayan black bear. In Amjilhasa (2,500m), barking deer (*Muntiacus muntjac*) and goral (*Nemorhaedus goral*) eat the crops. This is an exceptional case in the Kanchanjunga region because the local inhabitants, primarily the *Bhotia*(s) in this village, do not hunt and trap. Farmers posted scarecrows and made smoke in the evenings by burning farm residue to keep away the wild animals.

A woman informant at Hellok said that crop raiding above 2,000m by Assamese macaque was common, as opposed to rhesus macaques (*Macaca mulatta*) which were prevalent in agricultural areas below 1,300m.

Livestock Depredation

Livestock depredation is caused mainly by jackals (*Canis aureus*), foxes (*Vulpes bengalensis*), yellow-throated martens, (*Martes flavigula*), and jungle cats (*Felis chaus*).

Villagers said the common leopard was once numerous but has declined in recent years, probably because of hunting and trapping. Livestock depredation by leopards was not reported.

West of Sele La, two sub-adult yaks were mauled by a snow leopard at Kurlung Kharka (4,115m). Informants stated that domestic sheep become more vulnerable to snow leopards in the monsoon as the sheep move higher up.

Wegge (1991) reported 5-10 yak losses to snow leopards each year. However, all these kills may not be by snow leopards. The grey wolf preys on some of the same species preyed upon by snow leopards, resulting in competition.

Wolves prey on livestock and are thus persecuted by people. Poison, traps, and guns are used to eliminate the wolf. Wolf dens are tracked down using dogs and cubs are killed. In Amjilhasa, one herder reported that two sheep were killed by a Tibetan mastiff. One suspects that it must have been a grey wolf.

Overgrazing

The people of Olangchung Gola, Ghunsa, Gyapla, Pholey, and Amjilhasa of the Kanchanjunga area — all of them of Tibetan origin — use alpine pastures to graze their yak herds in the summer. Amjilhasa and Gyapla herders used the pastures between Olangchung Gola and Pholey, Pholey herders use areas up above Khambachen, and Olangchung Gola and Ghunsa herders use Tseram, Yalung, and Ramje — the upper reaches of the Simbuwa Valley — as their pasture land. In addition, people from adjoining regions bring thousands of sheep into the Kanchanjunga area for summer grazing for up to eight months.

All pasture land between Khambachen and Pangpema, Yamotari Glacier and Mirgin La, and Yalung and Oktang are intensely grazed by yaks and sheep. Yak population figures are not available; conflicts emerging while practising traditional grazing rights under the

Kipat system are not fully understood. However, it appears that the Kanchanjunga region supports a large population of high-altitude cattle and sheep. This is evident from the recent levels of snowstorm mortalities. For example, Dawa Chind, a cattle owner from Ghunsa, lost 60 yaks in the November 1995 snowstorm. He suspected that at least 160 yaks had died in Ghunsa and places above (Yonzon 1996).

The impacts of grazing in these areas are not well understood and the available reports appear to be contradictory. Carpenter et al. (1994) stated that the alpine meadows were under tremendous grazing pressure. Contrarily, Wegge (1991) suggested that cattle numbers were not in excess and vegetation did not show grazing pressure. However, Nyima Sherpa of Ghunsa recalled large numbers of yaks and sheep in the Sele La Pokhari — he stated that he had not seen any blue sheep herds with more than 10 animals for several years. Although yak herds were to arrive in late May - early June, the distance between stray yaks and all blue sheep herds observed during the survey in April averaged 330m, suggesting diet overlap and perhaps a possibility for competition in summer (Yonzon 1996).

Hunting

Hunting is common among the local *Rai*, *Limbu*, and *Gurung* ethnic communities. In some cases it is integrated into their cultural traditions. More recently, economic incentives have led to increased hunting in the area. It was learned that a large section of the community hunt to earn supplementary income. *Rai*(s) and *Limbu*(s) are avid hunters and hunting is integrated into their cultural traditions and subsistence economy. A key informant at Helok recalled that primarily goral, serow, barking deer, and black-backed

kalij (*Lophura leucomelana*) were hunted.

The *Walungpa*(s), *Bhote*(s), and *Sherpa*(s) of the Kanchanjunga region may trap and hunt, but they are so discreet that their activities are hardly noticed. On the contrary, the *Limbu*(s) and *Rai*(s), as avid hunters by tradition, are strongly associated with gun-bearing. For example, all 250 *Limbu* and eight *Rai* households in Hellock village hunt regularly (key informant). A small hunting party may consist of four persons and two dogs. We also observed a small party of three boys, all less than 15 years of age, with shotguns. Nearby areas like Sekathum (1,500m) were no different; we heard several gunshots resound throughout the village (although the fact that villagers were also firing shots to celebrate the Nepalese New Year that day must be considered). On the other side of the valley, a similar situation prevailed between Dhupi *Danda* and Yamphudin at 1,700m.

Hunting appears to be rampant. Yonzon (1996) noted that there is a need to address this issue. While curbing such activities, alternatives must be sought in terms of nutrition, as wildlife may constitute one of the major sources of protein. There are quite a few professional hunters who will be affected if hunting restrictions are implemented and enforced. These hunters' expertise can be tapped by the proposed Kanchanjunga Conservation Area (KCA) management team by employing them as field staff.

Before resuming blue sheep harvesting on a sustained-yield basis, their status in the entire Kanchanjunga region must be determined. Once such a baseline is established, a viable scheme of sustainable harvesting can be implemented with intermittent monitoring. Revenue from such an activity may contribute to community



Photo: Ajay Rastogi

Plate 13: Himalayan Blue Sheep Trophy

programmes aimed at poverty alleviation.

A total ban on the hunting of blue sheep should remain in effect in those areas frequented by trekkers, because non-consumptive wildlife values are long-term and can reach a wider mass in such areas.

Harvesting blue sheep on a sustained-yield basis is needed to benefit the local communities. However, hunting should be totally prohibited in all trekking-related areas.

The absence of a balanced male-female ratio is indicative of a disturbed population. This corroborates the fact that blue sheep hunting was licensed by the government between 1979-1994. It is understood that about two to three hunting license have been issued each year since that time; however, the number of animals slaughtered is not reflected by this minimal number of permits. Guli Sherpa, a member of Gyapla Village, Ward No. 8, and one of the *shikari(s)* (game scouts) hired by the two Kathmandu-based outfitters, stated that one government permit led to the shooting of at least four blue sheep. As hunting clients arrive by helicopter, there was very little the District Forest Office (DFO) at

Taplejung Bazar could do to monitor these groups' activities. Most of the *shikari(s)* were Tibetan refugees from Lelep, adjoining Hellock.

Illegal hunting of blue sheep by locals exists (Carpenter et al., 1994; Sherpa 1994; Wegge 1991). The Tibetan communities in Pholey and Gypla possess guns, and herders from Pholey use traps and snares to kill blue sheep. Government staff at Ghunsa also hunt blue sheep, but their activities are not reported for fear of persecution. Yamphudin herders had trapped a few blue sheep with salt and nooses. During the survey, herders sold a blue sheep skull with its horn for NRs 500.

Snow leopards are killed by farmers because they predate on livestock. The animal is also sought for its beautiful pelt which is used to make fur coats.

Tourism

Tourism is slowly growing, but only through organised trekking. This is because of the poor tourism infrastructure in the area. However, the potential for organising and expanding community tourism is enormous. While developing tourism, threats to both natural and cultural resources must be monitored by local communities. Such

participatory management programmes do not weaken land ownership and management, but rather promote rights to use the productivity of such resources in exchange for protection (Yonzon 1993).

A well-developed tourism infrastructure will improve the strength of the community and may address long-term employment needs through guiding and portering opportunities that would arise for marginalised people.

Inventory and Baseline Data

Some inventory and baseline data have been collected. However, there is a need for more information to monitor environmental quality and economic improvements. The importance of integrating biological conservation with economics cannot be overemphasised. Therefore, ways to diminish threats to biodiversity, subsistence agriculture, and livestock are vital for maintaining the Kanchanjunga region's resources. Only with such information can probable steps towards managing wildlife and sustainable development be implemented successfully.

Knowledge of the traditional grazing patterns of yak and sheep herds will be essential for preparing a management plan for the Kanchanjunga region.

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Attachment to Paper

Field Visit in September 1994

The study was limited to the Ghunsa *Khola*, Simbuwa *Khola*, and Tamur River valleys. The first study route followed Gopetar (1,300m), Sinam (1,100m), Yamphudin (1,700m), Gairibas (2,700m), Deurali Pass (3,345m), Hellok (1,600m), Sekathum (1,500m), Amjilhasa (2,500m), Pholey (3,000m), Ghunsa (3,340m), Gypla (2,720m), Hanspokhari (4,150m), Jongim (2,600m), Olangchung Gola (3,150m), Lungthung (1,800m), Chiruwa (1,300m), Mitlung (960m), and Taplejung Bazar (1,800m).

Field Visit in April 1994

The second study route followed Chiruwa-Hellock (1,570m), Sekathum (1,500m), Amjilhasa (2,500m), Gyphla-Pholey (3,000m), Ghunsa (3,340m), Khambachen (4,050m), Mirgin La (4,540m), Sele La-Yalung (4,050m), Ramje (4,376m), Tseram-Toranden (3,124m), Yamphudin (1,700m), and Fungfung-Mamankhe (1,823m). This report does not include the upper reaches of the Yangma *Khola* where wildlife abundance has been indicated but not studied.

Discussion

A question was raised by Mr. Devendra Rana, WWF-International, Switzerland, concerning whether any studies had been carried out on the medicinal plant trade as part of the medicinal

study, or if there was anyone else who had done it.

Mr. Devendra Amatya, WWF Nepal Programme, mentioned that a baseline survey of medicinal plants had been conducted, and it was found that the medicinal species were the most exploited species. The frequency, density, biomass, and the regrowth status of medicinal plants were also studied in that area.

The Chief Ecologist, Mr. Narayan Poudel, inquired if any intervention was needed from their side and if there were any recommendations.

Mr. Devendra Amatya, WWF Nepal Programme, pointed out that the area was very poorly managed since the local people themselves managed the area in their own style. Most of the diversity of the area would soon deteriorate if the area was not managed properly. Although the area was not densely populated, deforestation and mismanagement of the area were very serious. The area should be managed through community-based enterprise, local NGOs, or by the local people instead of by direct intervention of the government. The government should have a positive role and not discourage the local people to harvest resources. The people already knew that the resources were deteriorating and that they had to conserve resources through their own efforts. But, the efforts of the local people were not sufficient, therefore, INGOs, NGOs, and government offices must cooperate with them.