

Feral dogs of Spiti Valley, Himachal Pradesh: an emerging threat for wildlife and human life

It is believed that dogs were domesticated by man about 15,000 years ago to facilitate hunting, guarding and protection¹. During recent years, their services have extended to search operations, anti-terror tasks, detection of explosives and drugs, in forensics and to help in rescue operations. Today, according to an estimate, more than 700 million dogs inhabit sympatrically with human beings, worldwide². According to organizations working on the management and welfare of dogs, about 25% of the dog population is owned/semi-owned, and the remaining 75% is free-roaming, stray and feral. The frequent reproduction of dogs led to overabundant population that resulted into dog-human conflicts, such as dog bites, road traffic accidents, inconvenience due to their escalated fights, blind chasing of one another on roads, barking and soiling^{3,4}. Overpopulation of dogs and its impact on wildlife (and humans too) have raised serious conservation concerns in many parts of the world^{5,6}. Their basic instinct to hunt, takes a toll on many endangered and/or endemic wildlife species. Often, they hybridize with wild canids and contaminate the gene pool. They also transmit a number of diseases, both in human beings and wildlife⁷. For example, rabies, one of the world's widespread and deadliest diseases kills several thousands of people every year, and adversely affects the life of over five billion people globally. In terms of economics, canine rabies costs the world about US\$ 124 billion every year⁸. Under control with due care, dogs are useful and harmless loving pets. But, mishandling, lack of care, refusal and free release convert them into stray or feral (Figure 1), which may be a nuisance. Scarcity of food (provided by human beings) and their inherited instinct for hunting force them to form 'packs' and hunt for survival. In India, feral dogs are quite common throughout the country and are usually treated as harmless living beings.

In a recent study, time activity budget of free ranging dogs was documented⁹. It was concluded that free ranging dogs are generally lazy, submissive (with humans) and friendly animals, and do not usually pose threats to human well-being. How-

ever, there have been debates regarding these facts^{10,11}. In the present study, we report our findings on the feral dogs of Spiti Valley, Himachal Pradesh (HP), and the threats caused by them to the sustainability of wildlife.

Spiti Valley is located in the trans-Himalayan area of HP. It is a mountainous, rugged, remote and thinly populated cold desert area. The valley begins with the origin of Spiti River from Kunzum range, and traverses about 150 km through huge, barren and fragile mountains located on either side. The valley is characterized by different types of habitats such as alpine pastures, dry alpine scrub and interspersed small agricultural patches in the vicinity and surroundings of small primitive villages, associated with seabuck thorn *Hippophae rhamnoides*, willow *Salix* sp. and poplar *Populus balsamifera* patches. The main occupation and source of income of the villagers is short-term agriculture (only for 4–6 months, as the area remains mostly covered with snow, displaying sub-zero climatic conditions in winter) and livestock such as cow, yak, donkey, sheep and goat. In the lower valley (mainly in Poh, Tabo and downward) for the last 7–8 years, residents have started apple cultivation. The population of most villages ranges between 100 and 200 people (except Rangrik, which has about 800 people). The area is endowed with a wide variety of endangered/rare wildlife (Figure 2) like snow leopard *Panthera uncia*, Siberian ibex *Capra sibirica*, Tibetan wolf *Canis lupus chanco*, Himalayan fox *Vulpes vulpes montana*, Woolly hare *Lepus oiostolus* and Blue sheep *Pseudois nayaur*, etc.

During the last three years (2012–14), for documentation of avifauna and mammals of Spiti Valley, we undertook three extensive field surveys. After perusal of the data/information collected in first two surveys, we found that feral dogs are causing a serious threat to wildlife in Spiti Valley. To evaluate the level of threat/loss to wildlife, during the third survey in August–September 2014, we interviewed 76 people throughout the valley using a questionnaire designed to collect information on wildlife, conservation issues and some socio-economic

aspects. The entire valley from Lossar village (32°28'28.52"N; 77°41'07.99"E; 4138 m) to Lari village (32°04'52.7"N; 78°25'11.2"E; 3284 m) was divided into eight sections/circles. In each circle, 9–10 people were interviewed.

Analysis of the data revealed that 68% of the people considered feral dogs as the most prominent threat to their livestock. In most villages, minimum 7–8 (in some areas up to 35) dogs inhabit, and often target goats/sheep for hunting, usually attacking at night. Until a decade ago, sheep/goats were the most dominant component of livestock of the people in the valley. About 10–30 animals were owned by each family and it was a significant source of income/livelihood, as the cost of an individual animal generally ranged between Rs 6000 and 8000. Moreover, enough grasslands were available for grazing, free of cost. But due to dog depredation, for the last 5–6 years they have shifted to cow-keeping (limiting to 1 to 6 or 7 animals as per financial condition and personal need of the family). It is alarming that now these feral dogs have started victimizing the young calves of cows, often, even in captivity, and usually chase women and children also, if found alone. The villagers never retaliate, most probably owing to their Buddhist culture and peaceful nature. We envisage that the days are not very far, when these dogs will target villagers also. The dogs not only directly affect human life in terms of loss of livestock, but also indirectly spoil the crops like barley and peas. Often, their big packs play in the crop fields and damage the crops.

Among wildlife, they ferociously chase the Himalayan fox (Figure 2a), a



Figure 1. A pack of feral dogs in Spiti Valley, Himachal Pradesh.



Figure 2. *a*, Himalayan fox *Vulpes vulpes montana*, mostly chased and harassed by feral dogs. *b*, Woolly hare *Lepus oiostolus*, an endangered and rare species often victimized by dogs, once spotted. *c*, Blue sheep *Pseudois nayaur* is also terrified by feral dogs in Spiti Valley. *d*, Blue sheep (single individual) in a typical posture.

common inhabitant of the valley. There are incidents when they have attacked blue sheep, woolly hare and fawns of ibex. Indeed, the foxes are not that harmful in Spiti, except chewing pea pods as reported by most villagers. Foxes usually forage upon rodents and some birds (such as chukar, choughs and pigeons), and thus control their population. We were also informed that rodents cause serious harm to apple trees, and avian species such as pigeons, chukar and choughs pluck and uproot the tender saplings of crops of pea and barley. During winter, when availability of food is scarce, the rodents peel off the bark of apple trees (mostly in whole circumference of trunk) resulting into slow death of the tree within few months. Thus, foxes indirectly act as biological controlling agents for harmful rodents and some birds. Woolly hare is endangered and rare in India. During the last three years, we could observe it only once. It seems that the population of this species is low in the valley. Although it can camouflage itself easily owing to its colouration similar to the background and its boulder-like shape (Figure 2*b*), in rocky habitat, they find it difficult to escape due to limited running capacity. Young ones of donkeys and yaks are other victims of dogs in the valley.

Studies have shown that free ranging dogs have imposed a sizable handicap on the efficacy of conservation initiatives in many parts of the world^{12,13}. For example, Ethiopian wolves *Canis simensis* get seriously affected by dogs through

transmission of disease and hybridization¹⁴. In some cases, mere presence of dogs in an area is enough to deter other species from habitat. This has been reported in the case of Mountain gazelle *Gazella gazelle*. In some areas of central Asia, such as Mongolia, feral dogs have been reported to depredate on three (i.e. Mongolian gazelles *Procapra gutturosa*, Mongolian saiga *Saiga tatarica mongolica* and Argali *Ovis ammon*) out of nine endangered and threatened species of ungulates¹³. Incidents of predation on blackbucks (*Antelope cervicapra*), Nilgai (*Boselaphus tragocamelus*) and Indian wild ass (*Equus hemionus khur*) have been reported from India^{15,16}. Feral dogs have been reported as a major threat to the breeding population of a rare avian species, Black-necked crane *Grus nigricollis* in Ladakh¹⁷.

A number of measures have been suggested/adopted worldwide to control the population of such dogs⁴. Surgical sterilization, capturing and occasional culling are among them. In recent years, contraceptives and sterilants are also used owing to cost-effectiveness, convenience and social acceptability over surgical sterilization⁴.

Unfortunately, in Spiti Valley such facilities are almost negligible. There is lack of logistic/administrative support/facilities in the valley. Moreover, there are more important issues like electricity, road, transport and public health-related problems. In our opinion, the government should pay adequate attention on the dog menaces. Appropriate measures

should be adopted in the valley for the revival of eco-friendly natural lifestyle of the people and sustainability of wildlife.

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ANIL KUMAR*
RAHUL PALIWAL

*High Altitude Regional Centre,
Zoological Survey of India,
Solan 173 211, India
*For correspondence.
e-mail: anilsonta@gmail.com*