Black sheep and gray wolves

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THE Deccan plateau of South central India is home to the Indian gray wolf *Canis lupus pallipes*.[1] One of the world's oldest mountain formations, the plateau is characterized by molten volcanic basaltic rock formed thousands of years ago and consists of large scrub plains and grasslands. The Indian wolf occupies the southern most range of wolves worldwide, and is commonly found in semi-arid habitats consisting of agro-pastoral lands, scrub forests and grasslands[2] is the top carnivore species of the Indian open plains.[3] It shares this space with the great Indian bustard, blackbuck, chinkara, nilgai, jackal and wild cat.[4]

Where there are wolves there have to be sheep and indeed the Deccan plateau is home to traditional shepherding communities – the Dhangars, Kurumas, Gollas and Kurubas who have herded sheep for thousands of years,[5] contributing food, fibre, manure as well as food for wild predators. Shepherds believe that the gods created them with the explicit task of rearing sheep – specifically the black Deccani.

Shepherds continue to practice transhumant pastoralism despite the fact that their grazing lands are presently wedged between the three rapidly growing metropolises of Hyderabad, Pune and Bangalore. The forces of development have shrunk, bisected, fragmented and perforated this ecosystem and the now explosive growth of these cities is squeezing the sheep out of their land and with them the shepherds.[6] Needless to say this has also spelt the death knell of the wolf of which there are few left.[7]

Legends testify to deep ambivalences in the age old relations of sheep, their human owners and their canine predators. These shepherds are an ancient hunting-warrior tribe and their favourite god is Khandoba/Malanna. Legend has it that Khandoba's second wife was a shepherdess and while taking his marriage vows, he also committed to protecting her sheep and all the sheep of the Deccan. Biroba or Beerappa is the exclusive god of the pastoral communities of the Deccan, and is said to have created both sheep and the shepherding communities.[8]

In Maharashtra, the home villages of the Dhangars and other shepherding communities such as the Ramoshis and Matangs are mainly found in the districts which fall in the rain shadow region of the Western Ghats: Pune, Satara, Ahmednagar and Sangli.[9] Pastoralism rather than agriculture has been the preferred occupation in these districts of the Deccan plateau as the annual rainfall is low, often less than 600 mm and soils are shallow and poor. Large scrub fields known as *mal raan* provide ample grazing for sheep but are unsuitable for agriculture. Hero stones found in the region also indicate a livestock based economy in the past.[10]

Shepherds in this region spend the four monsoon months from June to September in their home villages practising some agriculture and as the rains recede begin their annual migration or *biraad* towards the Western Ghats and the Konkan coast in search of grazing land and fields. Farmers in the Konkan in turn welcome these shepherds as their lateritic soils leached by the heavy and intense rainfall need to be replenished with the dung and urine of these flocks. It is not unfamiliar even now to see shepherds with their huge colourful turbans negotiating their way through cities like Pune with their sheep, horses and dogs.

For eight months they graze their sheep by day in open forest lands, fields, by rivers and streams and camp in temporary shelters by night under the same open sky as the wolves. More recently, because of changes in agriculture cropping patterns and the preference of farmers for synthetic chemical fertilizers, shepherds have had to find alternate grazing grounds. Some even migrate East to the districts of Latur and Beed in Marathwada.

In neighbouring Telangana (Medak, Mahabubnagar, Nalgonda, Warangal) and Rayalseema (Ananthapur, Kurnool, Chittoor) regions of Andhra Pradesh, the Kuruma and Golla pastoralists continue to rear sheep and goat under sedentary, seasonally migratory or completely nomadic systems. The seasonally migratory shepherds and their flocks return to their villages with the onset of the rains in June and resume migration after Diwali.

Their geographic location determines traditional migratory routes, either westwards into Maharashtra and Karnataka, or eastwards into the lush forests of the Nallamalai and other parts of the Eastern Ghats. They share an ancient bond with peasants along the migratory tract, penning their animals on farmer's fields, who give them food grains in return for the manure. Factors such as expanding irrigation, reduced fallow periods, declining grazeable crop residue due to a change from food to cash crops, and increased dependency on chemical fertilizers, have strained these relationships between

peasants and pastoralists.

The popular coarse wool black Deccani sheep has been selected by the shepherds of the Deccan over years for its tolerance to drought, fodder scarcity, its capacity to migrate long distances and an ability to endure the large diurnal temperatures and seasonal variations of this region. The wool protects the breed from sun, wind, cold and rain. Unfortunately, policymakers have effectively discriminated against the breed. They believe its wool is not fine and the meat production is lower than 'mutton' breeds of India and the West. Early attempts at cross-breeding with exotics such as the Merino, Corriedale and Suffolk at the sheep breeding farm set up by the British in Pune, failed; the Deccani breed continued.

Deccani wool was once in great demand from a vibrant local market and the Indian Army, to whom coarse blankets were supplied. This market collapsed by the mid-nineties, due to international dumping of wool in the Indian market and the preference for synthetic substitutes. The sudden drop in demand for wool meant that it became unprofitable for shepherds to even pay the price for shearing sheep.[11]

The government and development agencies continued relentlessly with plans to replace the Deccani with hairy, 'fast growing' varieties and heavier mutton breeds such as the Nellore in Andhra Pradesh and the Madgyal in Maharashtra.[12] While shepherds prefer the black Deccani, market forces can distort choices in multiple ways. Today's shepherds are under tremendous pressure within the 'high growth economy' to switch to 'high growth breeds', which are rapidly diluting the Deccani, as also are a new source of stress in this fragile semi-arid grass ecosystem, with the introduced breeds greater fodder requirements.

Different communities perceive the wolf differently. Vilified by many European cultures, it assumes an extremely negative connotation in traditional fairy tales, be it Red Riding Hood, the Wolf and Seven Lambs or even the famed Russian Peter and the Wolf. Legislations enacted in Britain led to its systematic extermination over four centuries ago and today it is regionally extinct in Ireland and Britain,[13] and almost unseen in Western Europe and Scandinavia. Even modern fairy stories like the Harry Potter series portray the wolf negatively, be it as Fenrir Greyback, an ally of the dark Lord, or as the teacher Remus Lupin, who transforms periodically into a dangerous Werewolf. In contrast the pastoralists of Turkey and Mongolia[14] venerate and revere the wolf as do the Japanese.[15] The wolf though is extinct in Japan, having succumbed to the pressures of bounty hunting, disease and modern development.

In India, because the wolf is only one among many wild predators, it seems to pale in comparison to the regal tiger, the magnificent lion or the beautiful cheetah. It makes little appearance in the folk and fairy tales of the country with the wily jackal and cunning fox being more popular. Even the Seonee pack of *Jungle Book* fame (Kipling) are to be feared much less than the tiger Sher Khan. This secondary position it holds may paradoxically be a reason for its survival in India today. In fact, it does not even make it to the list of threatened species of the International Union for the Conservation of Nature and Natural Resources.[16] In India, wolves are an endangered species and listed under Schedule 1 of the Indian Wildlife (Protection) Act of 1972.[17]

Shepherds in the Deccan *do not* perceive the wolf as their biggest threat. Many shepherds we met in fact claim that the presence of the wolf is *beneficial* to sheep rearing. The lambs which are lifted by the wolves are considered an offering to the gods and many shepherds mention that the wolves ensure they keep constant vigil and take better care of their stock.

This can be illustrated by reference to a site well-known to us. About 70 kilometres due West from Hyderabad, the Kuruma pastoralists of Narsapur, Medak district have an ancient saying, '*Thodel-Manda Ki Lakshmi Untundi*' or 'a wolf is "Lakshmi" which brings wealth to the flock.' This stems from a strong belief that the wolf is a good luck omen and a sheep carried off by a wolf is an offering to Beerappa. It deters the 'evil eye' falling upon their flock, which will be free of disease and hence prosper. They attribute expanding agriculture and disappearing grasslands as a primary cause for the wolf disappearing; also a reason for a spurt in sheep diseases. They have not sighted a wolf in 10 years.

Further West in Narayankhed, which borders Karnataka and Maharashtra, migratory pastoralists share an identical belief: 'A wolf that enters the flock from one side and leaves the flock at the other, heralds good luck and health for the flock, in turn bringing wealth, especially if sighted on a Sunday.' Shepherds here frequently sight wolves, wolf dens, wolf pups, particularly during the monsoon months, and are emphatic that they never attack, kill or smoke out wolves, as they believe this spells bad luck and disease.[18]

Sheep mortality surveys in stationary and migratory sheep flocks of Medak reveal that diseases and not predators are the major cause of death.[19] A study in Ahmednagar district corroborated this finding. The annual loss of sheep to disease and accidents were significantly higher than those to wolf predation.[20] Losses were more severe amongst sedentary shepherds as compared to nomadic ones. A study from Karnataka, however, reported a considerable proportion of sheep loss due to wolves, which

again was significantly higher amongst flocks owned by sedentary shepherds as compared to nomadic ones.[21] Nomadic shepherds are reported to have a higher level of tolerance towards wolf predator loss as compared to settled shepherds, which is an important attitude to nurture for long-term wolf conservation strategies.

Although wolf attacks on humans are well known and there is considerable danger of rabies as wolves are reservoirs of the virus, none reported any attack on humans by wolves in an informal survey conducted in three districts of Maharashtra with over a hundred shepherd families.[22] Sheep were the principal prey and wolf attacks and predation could occur at any time the day or night.

Southern tropical thorn scrub forests predominate in the Deccan, along with patches of tropical dry deciduous forests, which are believed to be the original vegetation. The former consists of open, low vegetation characterized by thorny trees with short trunks and low branching crowns that rarely meet to form a closed canopy. The second story is poorly developed and consists of spiny and xerophytic species, mostly shrubs. During the brief southwest monsoon season, an ill-defined lower story can be discerned. The dominant vegetation is *Acacia species*,[23] perennial grasses like *Dicanthium annulatum* have gradually been replaced by less nutritious annuals *Chrysopogon fulvus, Heteropogon contortus, Eremopogon foveolatus, Aristida setacea, and Dactyloctenium* spp.[24]

Studies on grass diversity and density in Medak district indicate that perennial grasses continue to be found on sandy loamy and black cotton soils, but annuals such as *Aeschynomene indica, Dactylactenium aegyptium* and *Corchorus olitorius* populate the red loamy and rocky soils.[25] Many ecologists believe that the thorn scrub vegetation represents a degraded stage of the tropical dry forests, modified by human and livestock use over hundreds of years.

Shrinking grasslands and grazing areas of the Deccan, and the reduction of wildlife and local breeds of livestock, a critical part of the diversity of the landscape, has not happened overnight. It can be traced back to the latter half of the 19th century beginning with colonial laws, rules and regulations which resulted in the enclosure of grazing pastures and forests, the policing of pastoralists and peasants, resulting in a reduction in fodder and firewood, a deterioration of the soil and health of cattle, destroyed livelihoods and increased pressure on the remaining land.[26] Post-independence these laws have continued virtually unchanged and continue to aim at sedentarizing itinerant and nomadic populations.

Although livestock grazing has been blamed for the destruction and deterioration of the forests and grasslands, it is in fact livestock rather than wild herbivores, which provide sustenance to the last surviving populations of the wolf. There is hardly any wild prey available for wolves in India besides a few in small and scattered nature reserves.[27] In Karnataka, the black-buck was found to be the only natural prey species in the distributional range of the wolf, and even here its density was low except in Rannebenur. In most of the wolf habitats the sheep density was higher than goat and blackbuck, and hence the researchers inferred that sheep and goat were the major prey species of the wolf.[28]

According to some estimates[29] individual packs of four wolves require approximately 75 sq kms. The few small and scattered reserves in the Deccan which include the sanctuaries of Rehakuri (2.17 sq kms), Nanaj (8496.44 sq kms), Mayurewshwar (5.14 sq kms), Rannebennur (119 sq kms), Rollapadu (6.14 sq kms) and Gundla Brahmeswara (1194 sq kms) scarcely offer support for more than a few packs of wolves. Most of these sanctuaries were designed for other species, mainly the blackbuck and Nanaj and Rollapadu for the great Indian bustard. Rannebennur sanctuary itself has been heavily planted with Eucalyptus which offers little or no sustenance for the blackbuck, a species it is supposed to protect.

The misguided afforestation drives of the 1970s and ’80s which sought to bring all barren land under tree cover has spelt more damage than good for those species of Indian wildlife and livestock that were dependant on grasslands. Interestingly, the reports of wolf sightings by shepherds in regions other than protected areas, points to possible inaccuracies in official census data of wolves, and the need to look beyond reserves.

If managed, does wildlife remain wild? While we may endlessly debate this issue, it is quite apparent that in the case of India, national parks and wildlife sanctuaries have only served a limited purpose. While on one hand the nation’s biodiversity rapidly continues to dwindle, on the other hand these new enclosures have discriminated largely against the most marginalized populations of the country, the adivasi, the nomadic pastoralists and former hunting gathering communities by denying them rights to traditional livelihood choices; collection of minor forest produce, livestock grazing, hunting-gathering and shifting cultivation.

Post-independence, expanding agriculture of the green revolution model, expanding human habitation and excessive afforestation of the grasslands with unsuitable species rapidly fragmented and depleted grasslands much faster than ‘over-grazing’. Poorly designed and implemented land reforms further exacerbated the decline of grazing pastures, where instead of confronting the landlords and distributing their lands to the landless, the state distributed village commons and grazing lands to Dalits and other

landless communities, which was a complete travesty of justice: the most uncultivable marginal lands were given to communities on the margins while the entire village and visiting pastoralists were simultaneously dispossessed from their rights to customary grazing lands. Wild herbivores, birds and other wildlife which were dependent on these grassland ecosystems also lost out.

The Report of the Task Force on Grasslands and Deserts of the Government of India (2006) reiterates that grasslands and deserts are the most neglected ecosystems by the Ministry of Environment and Forests. It goes on to add that protection, development and sustainable use of grasslands are very important for the rural economy and livestock and some of the protected areas of arid and semi-arid grasslands have important grass and shrub genetic resources, which are important for ecological and food security of the country. Therefore, these areas should not be considered as important only for wildlife conservation but as multi-varied gene banks for the future.

Pastoralism and wolves, although struggling to survive, have adapted to changing agrarian conditions. Pastoralists, in the face of adversity, change migratory routes, expand or shrink their flocks, change the species or breed composition of their flocks and even graze on new crop residue. The conflicts the shepherds face with the forces of modern development are in fact far larger than the canine predators of their sheep.

It would appear that the change in landscape and cropping patterns and growing human domination would have driven the wolf away, but studies by wildlife scientists have shown that wolves have in fact adapted to the new situation.[30]

Extensive sugarcane plantations in western Maharashtra have proven to be a refuges for female wolves for whelping. The 18 month 'grass' crop which has otherwise been heavily criticized for ruining the environment by lowering the water table has sheltered both leopard cubs and wolf pups. They naturally face persecution by sugarcane farmers who smoke their fields prior to cutting the cane, but that happens only occasionally. In the absence of wild herbivores they have therefore almost entirely shifted to domestic herbivores, as a source of sustenance.

Both historically and in the present context, the survival of wolves appears to be closely linked to sheep, building a strong case for sheep rearing provided there are mechanisms in place to compensate the shepherds for their loss to both disease and wolf predation. Projects such as the conservation programme for snow leopards[31] and Tibetan wolves, in parts of Himachal Pradesh, have an inbuilt

programme for livestock insurance.[32] However, in the Deccan, most of the wolf attacks and predation happen in areas outside of PAs and there is no mechanism in place for compensation by the forest department. Such initiatives are an urgent necessity.

Second, the situation demands a radical shift in approach to the conservation of threatened species away from a mere focus on parks and sanctuaries to a new approach which encompasses management of an entire landscape, that places local communities at the forefront, affirming their traditional livelihoods, knowledge systems and attitudes which actually play a vital role in conserving the entire ecology of an area, including its wildlife.

Livestock have been at the receiving end of all environmental debates, from overgrazing to being singled out as the largest contributor of methane emissions adding to global warming. In semi-arid and arid areas, transhumant grazing in fact prevents overgrazing, keeps alien species in check and contributes to enhancing biodiversity.

Grass has for years been a commodity for sale and the forest department has earned considerable revenue in the past by selling it as fodder. In the name of 'development and progress', large chunks of common lands have been gifted to industry, SEZs, mines, or dams or rendered unusable for pastoralists through social forestry and watershed schemes. Fresh threats to these last remaining grazing spaces for wild and domestic animals appear in the *avatar* of biofuel plantations promoted by the renewable energy sector.

A significant increase in the livestock population in the early years of independence, thanks largely to the increase in crop residue, has already been reversed and given way to a massive reduction.[33] The country's agriculture policies that increasingly favour horticulture and cash crops like cotton, coupled with new emergent demands on crop residues from biomass based energy industries, translate to dwindling fodder resources to feed chronically undernourished stock.

The task force on grasslands has advocated a national grazing policy, for livestock owners to decrease their number of animals and shift to so-called superior breeds – a recommendation which continues unchanged since colonial India. While the reduction in numbers is already underway, shepherds cannot shift to superior breeds as the fodder required to raise them is just not there.

The country through multiple policies is unwilling to grant shepherding communities access to lands

on which they have traditionally grazed and where no other form of primary food production through agriculture or forestry is possible. Lands, conveniently termed wastelands, are rapidly diverted to other uses before these marginal communities can confirm their customary usages. While the Forest Right Act 2006[34] recognizes grazing as a traditional right in forest areas for Adivasi and traditional nomadic pastoral communities, utilizing the legislation to actually confirm these rights has been an uphill task.

Both shepherds and wildlife require large tracts of land which are not fragmented. Shepherds and wildlife have coexisted in the past and can continue into the future, provided human predation in the guise of development, euphemistically 'the wolf in sheep clothing', does not lay waste their land forever.

Footnotes:

1. According to physiographic zones the Deccan has been further categorized as North, South and East Deccan and includes large parts of Maharashtra, Andhra Pradesh and Karnataka.

2. Y.V. Jhala, 'Status, Ecology and Conservation of the Indian Wolf *Canis lupus pallipes',* Sykes', *Journal of Bombay Natural History Society* 100(2-3), 2003, pp. 293-307.

3. M. Singh and H.N. Kumara, 'Distribution, Status and Conservation of India Grey Wolf (Canis lupus pallipes) in Karnataka, India', *Journal of Zoology* 270, 164-169, 2006.

4. Asad Rahmani, Conservation Outside Protected Areas: Case Study of Bustard Protection, in V. Saberwal and M. Rangarajan (eds.), *Battles Over Nature*: *Science and the Politics of Conservation*. Permanent Black, Delhi, 2003, pp. 117-135.

5. Studies drawing upon archaeological evidence combined with oral traditions and cults of the Kurumas point to the antiquity of the sheep pastoral system in the semi-arid regions of the southern Deccan which plausibly goes back to the Neolithic-Chalcolithic period *c.* 3000 BC. Sontheimer and M.L. Murty, Pre-historic Background to Pastoralism in the Southern Deccan in the Light of Oral Traditions and Cults of Some Pastoral Communities, in Gunther-Dietz Sontheimer, et al. (eds), *Essays on Religion, Literature and Law*. IGNCA and Manohar, Delhi, 2004, pp. 157-182.

6. Renee Borges, The Anatomy of Ignorance or Ecology in a Fragmented Landscape: Do We Know What Really Counts?, in V. Saberwal and M. Rangarajan (eds), *Battles Over Nature,* op cit., pp. 56-85.

7. Asad Rahmani, 2003, op cit., fn. 4.

8. Gunther-Dietz Sontheimer, A. Feldhaus, A. Malik, H. Bruckner, *King of Hunters Warriors and Shepherds: Essays on Khandoba*. Manohar, Delhi, 1997.

9. Ramoshis are a tribe who were formerly notified as criminal by the British and today are classified as denotified; the

Matang are a backward community whose primary occupation was related to making ropes and brooms.

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12. Rosalie Aebi, Sheep Husbandry on the Deccan Plateau in India: Recent Developments and New Challenges From Keeping the Native *Deccani* Breed and the Introduced *Nellore* Breed. BSc thesis, Swiss College of Agriculture, 2009.

13. M. Rangarajan, *India's Wildlife History: An Introduction*. Permanent Black, Delhi and Ranikhet, 2001.

14. Jiang Rong, *Wolf Totem*. Penguin, London, 2008.

15. www.wolfsongalaska.org 2010.

16. www.worldwildlife.org 2010.

17. Y.V. Jhala, 2003, op cit., fn. 2.

18. Anthra, Supporting Pastoral Livelihoods. Mid-Term Report. Anthra, Pune, 2008.

19. S. Ramesh, Control and Prevention of Epidemics and Exotic Diseases. Anthra, 2007.

20. R. Krithivasan, V.R. Athreya and M. Odden, Human-Wolf Conflict in Human Dominated Landscapes of Ahmednagar District, Maharashtra, India and Possible Mitigation Measures. Submitted to the Rufford Small Grants Foundation, 2009.

21. M. Singh and H.N. Kumara, 2006, op cit., fn. 3.

22. Anthra, unpublished, 2009.

23. www.worldwildlife.org 2010.

24. www.eoearth.org/article/Deccan_thorn_ scrub_forests 2010.

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27. Y.V. Jhala, op cit., fn. 2.

28. M. Singh and H.N. Kumara, 2006, op cit., fn. 3.

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30. Ibid.

31. www.snowleopard.org July 2010.

32. www.ncf-india.org July 2010.

33. GOI, NSSO Reports 215, 338, 408,493.

34. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. GOI.