

Parks, people and the snow leopard: the Indian Endeavor

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As in any country with a burgeoning population living mainly at subsistence level or just above it, it has long been evident in India that species diversity and, indeed, much of wild nature had a long-term hope for survival only in protected areas. India has therefore in the past two decades established 73 national parks and more than 413 wildlife sanctuaries, covering almost 150,000 km² or about 4.2% of the total geographical area of the country. Attempts have been made to give adequate representation to all the biogeographic regions and ecotypes, to cover all the unique ecosystems and habitats of endangered species and their remaining populations, and to provide corridors and continuity with adjacent habitats and wilderness areas wherever possible. It cannot be said that all these protected areas have been unqualified successes or have fulfilled their expectations in full. Much better management and protection is needed in many cases. Nonetheless, the large majority of protected areas have seen improvements in habitats and an increase in biomass of critical species, both of fauna and flora. The enhanced numbers of predators and herbivores have caused damage to life and property of neighboring people, who at the same time have had to forego or curtail their previous exploitative practices and indeed their dependence upon the land and forests which have now become protected areas. At the other end of the spectrum, the wilderness or multiple use areas outside of the protected areas have deteriorated in quality and shrunk in size in many instances. Protected areas are becoming even more isolated as ecological entities, while such isolation acts to make their enhanced natural resources even more coveted by those living outside. Furthermore, policy decisions have been taken to deny permits for the location of any major or medium-sized industry within a radius of 25 km from the boundary of any park or sanctuary. Little wonder, therefore, that these protected areas are not popular with the people who live around them.

It is obvious that if these protected areas are to be viable entities in the next century, they will have to win the active support and cooperation, if not at least the acquiescence of the neighboring people. This can be achieved only if these people see them as non-hindrances if not indeed as assets, a situation only possible if the people have substitutes that would reduce or eliminate their dependence on the protected area. Better still would be the possibility for people to derive socio-economic benefits from the protected areas. In countries like India, the main challenges to protected areas will, therefore, come from outside the boundaries and the protected area managers will have to give up their insular approach to management and devote their attention mainly to their borders and to the areas and peoples outside them. Aldo Leopold had advocated this approach half a century ago. It is only now that the first serious efforts are being made to change to such a *modus vivendi* in India.

In India, the snow leopard has been reported from 11 wildlife sanctuaries and 7 national parks. Of all the protected areas on the Indian subcontinent, those in the higher montane uplands, the grasslands and the marine environments are the most difficult to protect and thus manage appropriately. In the case of high mountain areas, the reasons for difficulty in management are due to the remoteness, ruggedness and harsh climate as well as to the current lack of adequate management infrastructure. Resident pastoral and agricultural communities, albeit in relatively low density, are dependent on these lands for their survival with essentially no alternative arable land or sources for fuel and fodder in the region. With strong affinity to their native areas and a lack of suitable rehabilitation grounds in the vicinity, these mountain folks, of all the peoples in India, are the most reluctant to be relocated elsewhere. Thus, whereas some 43 villages have been shifted from protected areas in the past 25 years, not a single one is from a mountain region.

MANAGEMENT RECOMMENDATIONS

An appropriate protected area management approach and policy would be to address land and use and practices on the basis of certain zonation principles. Firstly, a core area should be set aside for nature conservation which is free from exploitation and disturbance. In the case of a national park the entire area would come within the purview of this core zone. In the case of a sanctuary, where human habitations may exist and human usage may continue, a core area would be carved out within it that would be disturbance-free and which would be as viable and appropriate for conservation needs as is possible. The rest of the area in the sanctuary, for want of a better term, may be designated as a non-core or a multiple use area. In a national park an attempt would be made to have such a non-core buffer around the periphery of the park, which in some cases is notified as a sanctuary to give a legal validity to the "buffer" zone. This zone would

provide for the needs of local people and also act as a protective belt around the core and as a habitat of the wildlife that may overflow from the core. There may be human habitation and usage in this zone, either within the protected area or outside it, but the usage would have to be limited and modified to an extent possible to harmonize with the conservation needs of the core zone. Efforts are then made to place both the non-core (buffer) and the core zones within the jurisdiction of the management authority of the park or sanctuary in question.

The third zone, usually outside the buffer zone, is the area of human settlements and agriculture peripheral to the buffer zone or protected area. Here the prime objective would be eco-development of the people to improve their living standard and quality of life and to reduce and if possible even to overcome their dependence on the core and buffer zones for their basic needs and livelihood. In this endeavour, projects have been initiated both by the government as well as by some energetic non-governmental organizations (NGOs), the emphasis being on the people themselves undertaking various tasks with financial aid, guidance and full support from the assisting agencies. Certain eco-development efforts have also commenced in the buffer zones, mainly to generate biomass and to assist natural regeneration of the vegetation. The implementing agency here, however, would be primarily the government, since the land is owned by the government, although there are some notable exceptions where the village communities have taken on the task. Where the buffer zone is communally owned, it is the community which is the most appropriate organization for implementation.

There are many examples of conservation efforts made by state and central government, local communities and NGOs, a few of which are mentioned here. For the past two decades the various parks and sanctuaries, including Tiger Project reserves and the Biosphere Reserves, have been receiving financial assistance from the Central Government. Since the inception of the Snow Leopard Conservation Scheme shortly after the Fifth International Snow Leopard Congress at Srinagar, India in 1986 a little over 30 million Rupees have been given by the Central Government to the various national parks and sanctuaries that hold snow leopard populations. All assistance mentioned above for the protected areas is for the better protection and management of the protected areas and their buffer zones, though some amounts were extended towards eco-development of local people and for lessening their dependence upon the protected areas for various usufructory needs.

Last year, in non-snow leopard areas, a specific scheme was launched for eco-development around national parks and sanctuaries throughout India, including Biosphere and Tiger Reserves, and so far 18 protected areas have received 11 million Rupees for this purpose. The main emphasis has been around those protected areas where actual human-animal conflict and that between the protected area management and the local people has manifested itself most prominently. Predictably, the conflict is usually the sharpest where there is none or a very small buffer zone around the core zone of the protected area or national park.

The basic eco-development programs in Phase-1 focus on the following:

1. Silvi-pastoral development.
2. Raising of fuelwood and fodder plantations of fast-growing indigenous species.
3. Creation of veterinary centres for better care and qualitative improvement of the livestock breeds, and action to reduce the dependence on forest goods and on free grazing of livestock.
4. Creation of permanent and mobile dispensaries including vaccination and family planning clinics.
5. Provision of safe drinking water.
6. Provision of alternate energy, particularly solar energy sources, methane gas cookers and more efficient stoves.
7. Erection of physical barriers, including electric fencing, to protect crops and livestock from depredation by wildlife.
8. Soil conservation measures to enhance moisture retention and prevent soil run-off. Terracing of cultivated fields would be included in this activity.
9. Creation of small anicuts and dams for irrigation. Encouragement of special varieties of crop seed suited for irrigation farming and of crops which would decrease animal depredation incidence.
10. Training of staff, volunteers and village level workers in eco-development and related activities.
11. Preparation of management plans that would incorporate eco-development schemes for protected areas.

Phase-II activities of the scheme envisage:

1. Insurance of life, crops and property against animal depredations outside of protected areas.
2. Improved dryland farming techniques.
3. Improvement of soil productivity through manuring, crop rotation, etc.
4. Development of horticulture suited to local conditions, including cultivation of medicinal plants.
5. Development of apiculture, sericulture and pisciculture.
6. Setting up of cottage industries most suited to the local people and conditions.
7. Providing marketing facilities for the local produce, including milk products.
8. Education and recreational facilities aimed at explaining the role of protected areas and wildlife management in improving land productivity and quality of life.
9. Study of culture and tradition of local people and communities to establish links between their lifestyle and maintenance of ecological equilibrium.

A district-level coordinating and overseeing committee is envisaged for the purpose of these eco-development projects, with the Collector, the administrative head of the district as its chairman, the director of the park or sanctuary as the member-secretary and having representatives of the local people and NGOs. The Wildlife Institute of India at Dehra Dun is to launch a special training programme in various avenues of eco-development.

The National Wastelands Development Board (NWDB) of the Ministry of Environment and Forests, set up by the Government of India to ecologically reclaim and make productive the wastelands of the country, is also taking up an integrated programme of wasteland rejuvenation around selected parks and sanctuaries and involving a number of concerned governmental and non-governmental agencies. Creation of public awareness in these regions is also a part of the programme. The major thrust would be to improve protection to permit adequate natural regeneration, and enhance natural regeneration by planting and reforestation with suitable fuel and fodder species.

As regards the role of the local communities themselves, apart from active cooperation with government and non-governmental agencies in their programmes, they have to assume leadership in activities related to communal lands as well as address themselves to overall public awareness and participation. It is evident that forests and grasslands cannot always be protected from local communities. They have to be protected with the help of the local people, who should in return derive an economic return from these lands in the form of usufructs. Uncontrolled grazing and exploitation of forest produce would have to be curbed and one way to achieve this would be to earmark state lands outside of protected areas, and indeed even in the buffer zones of the protected areas, which would be used for specific villages or communities to carry out controlled grazing. Encouragement would be given to harvest grass rather than graze livestock in the area to reduce the livestock population by having fewer numbers giving better yield and to discourage the usage by goats and sheep. Once the villages know that the usufructs of a particular buffer or other area are earmarked for them, they would protect them from the exploitation of others and thus develop a vested interest in the safeguarding of these resources from both overexploitation and potential fire damage. The communities would also ensure an equitable distribution of the usufructuary resources among their members and would have rights to impound cattle and levy fines, as with the local elected Van Panchayats (Forest Local Authorities) of the State of Uttar Pradesh (UP) in north India. Nearly 31% of all the hill forest of UP, some 10,500 km², are under such community management. The state of West Bengal in eastern India has had a very notable success in community forest management and a number of other states have also initiated such efforts with varied success. Three such states, Himachal Pradesh, UP and Jammu & Kashmir hold snow leopard populations. In the northeastern Himalayan states of Sikkim and Arunachal Pradesh the forests and pasture lands have traditionally been under community management.

Considering the number of NGOs having concern for the environment in India, there is not a proportionate percentage of them interested in eco-development. This is understandable, given the nature of the task and the fact that this concern is a rather recent development. The NGOs, however, do have a vital role in this field, considering the sensitive nature of the work involved and the rapport that they have and can develop with the people. Some NGOs have already initiated their programmes and a number of them have achieved commendable success. The Ranthambhor Foundation was initiated in 1989 with the objective of maintaining ecological balance between man and nature and to conserve the bio-resources of

the Ranthambhor National Park and Tiger Reserve through the support of the local people. It has started a mobile primary health care service that has catered to 15,000 people and a stationary clinic is now planned. Family planning is a primary objective of this medical programme, together with immunization, health education and the employment of traditional medicine. A dairy development cooperative has been started with the object of encouraging stall-feeding of livestock to develop alternatives from the practice of free-grazing. Specimens of locally adapted improved breeds of cattle have been brought and local people sent to the National Dairy Development Board for training. Surveys of livestock populations and of milk production has been started, and over 600 kg of milk are being daily collected by the cooperatives for marketing purposes. Artificial insemination and veterinary care services are being planned. The Foundation has started a nursery to grow 50,000 saplings of indigenous fruit, fuel and fodder species. More than 30,000 saplings have already been planted and a seed bank is underway. It is proposed to encourage the use of bio-gas and solar energy as alternatives to fuelwood. Some 20 to 25 local painters have been encouraged to develop a local school of art to depict natural motifs and scenes of the local area, currently generating about 0.2 million rupees a year. An eco-education programme affecting about 750 local children has been initiated and an information and interpretation centre is also being established. A few fellowships are to be given to undertake research on topics that may help harmonize the interest of nature conservation with those of the local communities.

The World Wide Fund for Nature - India (WWF-India) has also commenced a complementary eco-development project around Ranthambhor to generate an attitude of self-help among the people. One of the villages has elected its own development committee and has started a village fund for use in different village activities. It has built its own school where 36 children are studying. A cooperative milk society has been started and an animal health camp has been organized. An animal husbandry consultant has been employed to visit the project site for 2 days a month and a small nursery for growing saplings has been set up. Attempts to collectively manage about 200 acres of the community grazing land have, however, not met with success so far.

It must be reiterated that while development of fuel and fodder biomass and other human welfare and animal husbandry activities have long been underway as part of the work of a welfare state, an integrated eco-development programme around protected areas to provide alternatives to the affected people and to thereby better conserve the protected areas has had very recent beginnings. In order to overcome the apathy that the local people sometimes have towards the protected areas, it is essential that eco-development efforts and funds must flow from the protected areas themselves, not from another agency, so the people realize that the benefits are by way of recompense. It is increasingly evident that upon this intricate, time-consuming and difficult task of gaining public support by providing acceptable and tangible lifestyle alternatives and techniques, rests the long-term future survival of the bio-diversity and natural genetic resources of South Asia. Whether we like it or not wildlife management is primarily going to be the management of people.

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