

SUMMARY OF FINDINGS

National Parks, wildlife sanctuaries and other types of PAs are at the forefront of efforts to conserve biological diversity. But many PAs are in crisis. Already underfunded, they have come under increasing pressure from the expanded scale of human activities outside and sometimes inside their boundaries. Conflicts of interest have thus arisen in many areas of the world between PAs and local people. Traditional approaches to Park management and enforcement activities have been unable to balance these competing objectives (Wells *et al.*, 1993).

Reflecting these concerns, the 1980 World Conservation Strategy, a major document reflecting the views of numerous groups, emphasized the importance of linking PA management with the economic activities of local communities (IUCN, 1980). The need to include local people in PA planning and management also was adopted enthusiastically by conservationists and PA managers at the 1982 World Congress on National Parks at Bali.

Understanding the complex and variable relationships between the PAs and their local communities - particularly any threats to the PA posed by local people's activities - requires site-specific analysis. The nature, extent and distribution of local human activity, as well as local people-park relations, are as important for project design and implementation as the absolute size of the PA.

A good environmental sense has been one of the fundamental features of India's ancient philosophy, culture and tradition, which has taught us to respect nature and to take cognizance of the fact that all forms of life - humans, plants and animals are closely interlinked and future of these life forms depend upon the health of the land, water and air on which they live. Protected areas offer all such opportunities and possibilities. So our earnest attempt should be to maintain the protected areas in the manner they should be, so that we can ensure the ecological and social security to humanity (Dey, 1994).

Modern concepts on conservation are based on World Conservation Strategy (1980), Caring for the Earth (1991), the Biodiversity Convention (1992) and the Global Biodiversity Strategy (1992). The basic principles emerging from these conservation strategies are accepted and put into practice universally. We have been able to co-relate these latest learnings with "**Bioregion Common Property Resource Management Studies**".

'Jambughoda Wildlife Sanctuary' - JWLS is such a **bioregion** which maintains the integrity of biological communities, habitat and ecosystems along with the regions local human communities. The forests of the bioregion are the **common property resource**, of which, the rights to use and manage are with the Forest Department and local communities.

JWLS was notified as a protected area in 1990 and finds a place in 1993 *United Nations List of National Parks and Protected Areas* (IUCN, 1994 b.) in Category IV - Habitat/Species Management Area, a PA managed mainly for conservation through management intervention (IUCN, 1994 a.).

JWLS comprises of forests of the Jambughoda and Halol talukas of Panchmahal district and those of Sankheda taluka of Vadodara district, having a total area of 130.38 sq kms. The sanctuary lies at a distance of 72 kms from Baroda University. The deciduous forests are home to a rich diversity of plants, animals and tribal people. The forests reflect distinct biodiversity-rich regions - remnants of its glorious past. The objectives of the study were -

1. to ascertain the biodiversity of the forests - mainly the forest tree species, avifauna and mammal species,
2. to understand the people-forest relationship - tribal life styles and their culture, and
3. to assess the impact of local communities on the forests.

With the aim to provide a resource base of information on JWLS, so as to facilitate framing an appropriate site-specific management plan, findings are presented below:

1. To ascertain the biodiversity potential of the bioregion for the sustenance of the local communities -

- * A total of 105 forest tree species have been identified in JWLS. The species come under 42 flowering plant families, belonging to 88 genera. The nomenclature of the species have been brought up-to-date as far as possible, to conform with the Articles of the *International Code of Botanical Nomenclature*, 1988.
- * 19 forest tree species are of significant interest, as their presence reflects the richness of the forests in the glorious past. These are considered as rare by us, as they are not commonly met with in the sanctuary, being restricted to certain localities.
- * Certain genera were found only in JWLS and have not been recorded earlier in two other deciduous habitats of the Panchmahal district, Gujarat State, namely, the Pavagadh Hill (Chavan & Oza, 1966) and Ratanmahal Sloth Bear Sanctuary (Bedi, 1968).
- * A parallel has been drawn of the floristic elements of JWLS with those of Western India, ascertaining the geographic climate range of the generic species based on Willis, 1983.
- * We can, therefore, conclude that the floristic elements of JWLS have a parallel with those of the 3 distinct elements of the Bombay flora - one from the Malayan region, another from north-eastern and C. India and one more from N. Africa through Asia Minor.
- * A flowering calender is presented for nearly 70 genera, providing specific flowering months.
- * To our knowledge, literature on identification of Indian deciduous forest tree species based on bark characteristics is next to nil. There is a need for such a key to facilitate identification of trees in the field, for botanists and foresters. Keeping this in view, an attempt was made to design an artificial key for identification of 24 forest tree species of JWLS, based on bark characteristics - colour, texture and form, substantiated with photographs.
- * JWLS provides a home to 14 mammal species and about 90 bird species. The

mammals and avifauna have been enumerated, with a mention of their status, local name and distribution, food and habitat preferences.

2. To understand the People-Forest relationship -

The cultural life styles of the local communities depends upon the biodiversity of the forests. The people living in and around forests are inextricably linked with the land and biological resources. The study findings shall help to convince decision-makers not to uproot the tribal communities from their traditional forest homes; in fact, they shall serve as the custodians of their heritage, if provided the opportunity.

The thesis presents a typical tribal way of life, their habitat, agriculture practices, dwelling, cultural and social beliefs.

3. To assess impact of local communities on the forests -

The need and aspirations of the local people are influenced by massive spread of urbanization and industrialization. Economic development of communities within PAs only leads to over-exploitation and depletion of forest resources. The major issues which lead to degradation of the JWLS forests are - energy needs, increased populations of man and livestock, variations in climate due to loss of forest cover, illegal encroachments for agriculture, backward nature of the community, high rate of alcoholism, low literacy%.

The findings shall convince the masses and decision-makers that sustenance of mankind originates from biodiversity of PAs. Hence, we need to halt the loss of biodiversity by promoting prudent use of the forest resources, thus, supporting the economic stability of the local tribal communities.

The management recommendations proposed shall serve the cause of wildlife conservation, and help to establish harmonious relationship between the forests and people in JWLS.

Our endeavours in the field have given us training for botanical explorations,

working in the laboratory and the Herbarium, enabling us to continue researches on biodiversity and on protected areas-people relationships, along modern trends for bioregions of other parts of the country.

In the end, it is our humble claim that the data contained in this work are of value as being first-hand and reliable; we claim that this thesis is a distinct contribution to our knowledge of "**Bioregion Common Property Resource Management**".