

## **Wildlife Ecology Workshop Held in India's Himalaya Region**

by Joseph L. Fox, Assoc. Prof. of Ecology, U. of Tromsø

The U.S. Fish and Wildlife Service (USFWS) and the Wildlife Institute of India (WII) are currently participating in an extensive five-year cooperative exchange program to promote the development of research and management expertise of the Wildlife Institute. During 1985-86 I worked through the ISLT on a snow leopard survey project in India's northwestern Himalaya. This project was organized through a cooperative ISLT-WII-USFWS research agreement and I was fortunate to be able to follow this up with participation in the current

exchange program's component dealing with "High Altitude Ecology."

As part of the cooperative exchange program, I worked with Dr. G.S. Rawat and others at the Wildlife Institute to organize a workshop of the Institute on the topic of High Altitude Ecology. This workshop was held July 3 - 5, 1990, at the Institute's location in Dehra Dun at the base of the Himalaya. Sixty-nine participants attended, 32 from the Wildlife Institute and 37 from outside the Institute.

Mr. Kishore Rao, Joint-Director of WII, welcomed the workshop participants and introduced Mr. H.S. Panwar, Director of WII, who discussed the major Indian Government management and research directions and priorities currently established for the Himalayan region, emphasizing the importance of the human-environmental interaction. Dr. W. Alan Rodgers, FAO representative at WII, then discussed recent assessments of biological diversity in the Indian Himalaya, knowledge gaps hindering such assessment, and the need for a coordinated approach to conservation planning.

The workshop sessions were separated primarily on the basis of regions of the Himalaya and Wildlife Institute research programs in each of these areas. The regions were: the Indian trans-Himalaya (Ladakh and Himachal Pradesh), the western Himalaya (Kashmir and Uttar Pradesh), and the eastern Himalaya (Arunachal Pradesh). The primary wildlife studies reviewed were projects on snow leopard in Ladakh, ungulate habitat ecology in Uttar Pradesh, and a survey of takin in Arunachal Pradesh.

Mr. R. S. Chundawat (WII) and I reviewed research progress from survey and ecological studies of snow leopard and their prey in northwest India, primarily in Ladakh. Mr. Don Hunter (USFWS) presented some products resulting from the use of remote sensing and Geographical Information System techniques (see previous article) for mapping snow leopard habitat in India, and Mr. Rodney Jackson (ISLT) discussed progress on an information data base for snow leopard which is being developed by the Snow Leopard Trust. Mr. S. Pandey (Wildlife Dept., Himachal Pradesh) reported on ibex abundance in Pin Valley National Park and Dr. Michael

Stuwe (Smithsonian Institution, USA) outlined his

research on alpine and Nubian ibex: and a proposal for ecological and genetic studies on ibex in India.

ing a review of such techniques by Dr. Rodgers (WII) and a critique of those currently used in the Kedarnath study area. Dr. N. P. Melkania (Indian Institute of Forest Management, M. P.) gave a brief presentation on grassland management at high elevations. The conservation value of reserve systems and the uneven quality of information on constituent protected areas was also discussed using a recent publication by the Indian Institute of Public Administration on the parks and reserves of Himachal Pradesh as background. Lastly, the group debated the pros and cons of captive breeding with regard to its value as a conservation alternative in Himalayan India.

### **Directions in Research and Management**

In general it is clear that the protected area network in the Himalaya is still in some flux regarding both size and location, as well as legal designation and management strategies for many of the reserves. The lack of definitive distribution and abundance data for many Himalayan wildlife species makes final decisions on a system of reserves difficult and points up dramatically the great need for reliable status information on wildlife throughout the Himalaya. The question of human habitation within and around most of the designated or proposed parks and sanctuaries, the economic development of these people, and the regulation of their demands on natural resources are primary issues to be addressed. In fact, whereas the workshop apparently adequately addressed the topics of wildlife biology and management-oriented wildlife survey techniques, it was noted in summation that presentations and overall consideration of the people/wildlife interface was under-represented.

Raghu Chundawat reports on snow leopard research in Ladakh. (*Photo by Joanma van Gruissen*)

During the discussion period Mr. Chundawat gave a brief outline of his research techniques on snow leopard and blue sheep ecology and Mr. C. Nurbu (Wildlife Dept., Ladakh, Jammu & Kashmir) presented a review of state government wildlife conservation activities in Ladakh. The discussion period centered primarily on research techniques and types of data gathered in the snow leopard study, the need for survey work throughout the transHimalaya, and the need to include the local villagers in the nature reserve management planning process.

The discussion period centered on survey techniques for alpine and subalpine mammals, includ

There was general agreement that substantial wildlife survey work is still required in the Himalayan region. A high priority for current wildlife research activities in the Himalaya should be in designing, conducting, and evaluating basic surveys of wildlife presence and abundance. The Wildlife Institute can accommodate some such surveys in its research schedule (e.g., the takin survey); but the vast majority of this work is, most practically, the responsibility of the state wildlife management departments. In this regard, a workshop on survey techniques for high mountain mammals and birds is needed to provide personnel with the back

ground to carry out the necessary surveys. It was suggested that the Wildlife Institute consider holding the workshop, instead of leaving the task up to state Wildlife Department staff in view of the latter's low attendance at the present meeting as well as their earlier attempt at a similar workshop. The new workshop would need detailed planning to ensure adequate participation by state Wildlife Department staff.

The Wildlife Institute plans to continue and expand its current Himalayan wildlife studies in Uttar Pradesh, primarily because the research sites are nearby and accessible for both long-term studies and provide excellent opportunities for short-term teaching excursions. The establishment of a Wildlife Institute .. Himalayan research station in one of these sites seems a logical and desirable development in this connection. As there is apparently no current research on Himalayan wildlife in Sikkim and Arunachal Pradesh, and because basic status information is still of crucial importance there. Institute personnel have proposed a follow-up to the takin survey of this year that will be better prepared to assess wildlife presence, distribution, and abundance in the region. With the completion of the WII snow leopard project in Ladakh and the current political situation in Jammu and Kashmir, WII research in the high trans-Himalayan region will probably be "on hold" for the near future.

Ladakh (e.g. Hemis National Park) presents an ideal situation for research on trans-Himalayan wildlife and human land use, and the region certainly represents India's best hope in terms of snow leopard conservation. A field research station should eventually be established in Ladakh for research on

the several endangered species in the region. Plans are also underway at WII in Ladakh to begin a project on ibex ecology and genetics in a trans-Himalayan region of Himachal Pradesh in cooperation with Dr. M. Stuwe of the Smithsonian Institution's Conservation and Research Center, and this should contribute greatly to the current limited information on wildlife status and ecology in this particular region.

The expected central government funding and implementation of project Snow Leopard (modelled after Project Tiger) by early 1991 should also provide the means for greatly increased management-oriented activities associated with parks and sanctuaries selected as project sites. In an extra-work

shop discussion session requested by the WII Director to formulate recommendations for conservation priorities in snow leopard habitat (members: G. S. Rawat, J. L. Fox, R. Jackson, S. Pandey, G. P. Sharma, S. Sathyakumar) it was suggested that: 1) the best areas for snow leopard conservation appear to be in the trans Himalaya (especially Ladakh) and Project Snow Leopard areas there should concentrate on those best for snow leopard. 2) reserves in the main Himalaya contain relatively less prime snow leopard habitat and selection criteria should also concentrate on other wildlife values. 3) surveys are needed in the main Himalayan reserves so that Project Snow Leopard reserve selections can be finalized and management plans prepared. 4) consideration should be given to the juxtaposition of the various Himalayan reserves with regard to their forming a network of habitat to support the viable snow leopard population no single reserve can accommodate. 5) full use should be made of the store of local knowledge on wildlife distribution, abundance, and habitats, and 6) a review of the resolutions/recommendations for conservation made at the 1986 snow leopard symposium in Kashmir can be used

as a basis to assess recent progress.

Without question, studies also need to be initiated and expanded on the relationship of people's activities to the landscape and wildlife, dealing with traditional land use practices and the effects of recent changes in both those practices and the introduction of new practices by outsiders. An intimate knowledge of the interaction between people and wildlife will be essential to the creation of sustainable development alternatives associated with protected sites, as well as in the large areas between reserves. Whereas the Wildlife Institute plans to address this question through its own programs, its interdisciplinary nature will require substantial interaction with workers from outside the Institute.

The High Altitude Ecology Workshop, then, served to point up: 1) deficiencies in our knowledge of wildlife distribution and abundance in the Himalaya, 2) an appreciation of the information required to develop a system of protected reserves in the region, 3) the value of direct interaction and critical project assessment among Himalayan wildlife researchers, 4) the necessity of communication among the various wildlife researchers and managers in Himalayan India, 5) the need for consistent survey and research techniques throughout the region, 6) the need for increased awareness and investigation of the human factor in wildlife conservation in the Himalaya. The workshop itself, however, serves to correct some of the noted communication deficiencies, as it is the first meeting on Himalayan ecology to be held at the Wildlife Institute. Furthermore, the return of former WII students as wildlife managers providing well-structured reports on their work was one of the high points of the meeting and indicates that we can look forward to increased state-WII cooperation in Himalayan wildlife research and conservation.

The Wildlife Institute, under the guidance of Dr. G.S. Rawat, plans to publish a collection of the abstracts from the workshop, with a brief review of the discussion session results and conclusions.

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Artist Robert Bateman (L) with Joann and David Wilson, successful bidders for the Bateman snow leopard lithograph at the Mill Pond Press and Howard/Mandville Gallery ISLT benefit auction.  
*(Photo by James Photography)*