

## UPDATE ON THE HIMALAYAN SNOW LEOPARD PROJECT

DarIa Hillard

Following is a special report to SNOW LINE on the final field season of the Himalayan Snow Leopard Project in the Langu region of Nepal (team members: Rodney Jackson, Gary Ahlborn, DarIa Hillard):

In February 1984, not long after Gary's extraordinary experience in the Tillisha grasslands, when he witnessed an unsuccessful charge on a herd of blue sheep by a full grown male snow leopard, the project team began hearing intermittent mating calls. These drawn-out "yeowls" were made at all hours of the day and night, though we heard them seldom and never knew which snow leopards were making them.

It became clear that our collared female #965 had mated during this time, for the following spring her activity pattern changed so abruptly that we knew for sure she had given birth.

From telemetry, we knew where her den was situated, and the temptation to have a look was almost overwhelming. The uncertainty of what #965 might do if her neighborhood were invaded by humans ruled out any possibility of exploring the area; what if she abandoned her babies, or tried to move them away and one or all of them died?

We had no choice but to leave for our summer break without knowing how many cubs had been born to #965, missing the good chance of seeing the offspring of the world's first radiocollared snow leopard. We could only hope to recontact her when we returned in the fall, and that we'd get a glimpse of the cubs.

We returned to the Langu in November, 1984 to begin the final eight month field season. It was two months before

we were even able to confirm that #965 still had any babies. In early January, tracks in the snow revealed that she, with two young ones tagging behind, was engaged in a hunting expedition deep in Tillisha Canyon. Her radio collar sent a steady signal that the cats were making their way up the canyon, often criss-crossing the icy stream, in search of any warm-blooded creature to provide a meal for her growing cubs.

Tracks in snow, the only evidence we had for over six months that #965 was a successful mother. We had opportunities to see her, and them, but luck was never on our side. The receivers might indicate that #965 and company were virtually in front of our noses, certainly the signal was a line-of-sight, but search as we might with spotting scope or binoculars, a rock or a bush or who-knows-what would conceal the entire group and we would retire in frustration that they'd eluded us again.

In the final week of our final field season in the Langu, Rod and Gary made an expedition into Tillisha Basin, the alpine meadow which forms the headwaters of Tillisha Stream Canyon. They fastened ropes where necessary and let themselves down into a place so far removed from human experience that they must have paused in the passing to acknowledge the magnitude of their deed. Very likely no one else had ever gone before, for no Dolphu Villager would accompany them.

#965 was transmitting from a broad sweep of grassland about 500 yards away as the crow would fly. Just for the hell of it, Rod took a look along the bearing through his binoculars, not much expecting to see her against that grass. But his heart nearly burst, for there was our leopard, our #965, whom we had tried so hard on so many occasions to glimpse, sauntering along, with two big cubs doing anything but sauntering beside her. They romped. They chased one another, rolling and tumbling down the steep hillside. They

leapt and charged, playing like kittens rather than the year-old cats they were!! Rod and Gary watched for 20 minutes, until it got too dark to see. "Poor 65" they thought, how on earth does she ever feed these two rambunctious cubs? They must bungle at least half her attempts at hunting, if they behave like that all the time. But she was obviously managing it somehow, for they all looked healthy and strong. In fact, such play is probably very important in the cubs' development, honing their skills for the serious work of learning to hunt for themselves.

September 10, Mill Valley, California

The radio-tracking study is finished, having grown from a one-year "trial" to a highly successful four year effort. Five leopards were radio-collared, and many others were monitored through tracks and other signs. We have the first quantitative information on snow leopards in the wild, their movements, home-range, habitat use, social relations, marking behavior, and the first long-term experience with a mother and her litter. The information is in field note-books and data forms. The next stage is to analyze it. Our goal is to report our findings at the International Snow Leopard Symposium in India next October. The first popular article will appear in National Geographic Magazine after April, 1986. It will be six months before the scientific articles are ready for publication.

We will never forget our stay in Nepal, the insights into Nepalese culture and values, the interest and support expressed by so many people in our work and personal welfare in such a remote study area. Our profound thanks to all of you in the U.S. and Nepal for making our study possible!

But the work of preserving snow leopards and their high mountain habitat is far from finished. The Langu

--- leopards are surely a unique

population, living as they do in an area virtually untouched by people. Most of their vast historic range is under heavy stress from human activities, villages, cropland and pastures for livestock grazing, and in many areas their native prey is being rapidly depleted. Before we can say that snow leopards are not imminently threatened with extinction, we have to look at other areas. Nepal's establishment of another national park, which encompasses the Langu as well as a large part of the Dolpo Plateau, is a very encouraging sign for the future.

How many snow leopards are left? No one knows. Answering that question is not easy, but our work with the collared cats of the Langu has provided a technique well suited to the rugged and remote terrain that is snow leopard habitat. Using sign indices developed from carefully placed transects, we should be able to reliably estimate snow leopard populations and to identify critical habitat. Part II of the Snow Leopard Project will consist of a series of comparative surveys, beginning with the Shey-Phoksundo National Park (the area described in *The Snow Leopard*, by Peter Matthiessen) late next year. Here we will test and refine our "habitat model" for its sensitivity to cat-man interactions and develop a management plan for snow leopard and bharal for His Majesty's Government. Later, we plan to survey other parts of Nepal, and hopefully Pakistan. Unless the pressing and legitimate needs of the mountain peoples are met, we cannot hope to preserve the snow leopard for future generations. The product of Part II will be threefold: A definitive document on snow leopard ecology in the wild, a management plan for preserving habitat for man and cat, and a "standardized" survey handbook that third world biologists can put to use, generating comparable information in diverse geographical areas.