



SNOW LEOPARD CONSERVANCY

CONSERVATION PROGRAM



Walking on Ice – in the Footsteps of the Snow Leopard

by Rodney Jackson

In winter, India's Zaskar River becomes a pathway made of ice. This frozen gorge is, for the 10,000-odd people who make their homes in the region, the only winter lifeline to the outside world. And then it is only passable for some four to six weeks between mid-January and the end of February.

Zaskar, like its neighbor Ladakh, was once a land of independent kingdoms, but it lies even deeper in the folds of the Trans-Himalaya. Some of Zaskar's settlements are cut off from one another for months because of snow and avalanche danger. The motorable road out from the district headquarters of Padam is open only from late June through sometime in November. So hardy villagers make the 120-mile round trip trek on the river ice, as they have for centuries. They call the journey the Chaddar. They carry their highly prized yak butter to the market in Leh, Ladakh for much-needed cash or to exchange for essential goods. These they take home on their backs over treacherous ice and cliffs. That is, if the weather cooperates; if the temperature doesn't suddenly rise, melting the ice and stranding dozens of Zaskaris in Leh until April, when the three 18,000-foot passes clear of snow and the overland route opens up.

I experienced the Chaddar this past winter, along with SLC-India's director Rinchen Wangchuk and program officers Jigmet Dadul and Tashi Thundup. Except for Tashi, we all were novices to this unique form of trekking, one that requires sound balance, good hearing, the careful probing of ice, a willingness to fall up to one's chest in frigid water – and maybe a measure of lunacy.



Confluence of the Doda and the Tsarap Rivers

The expedition to Zanskar was funded by the National Geographic Society, and my original plan had been to go in via jeep last November. However, National Geographic had made me an offer I could not refuse – an invitation to a forum on Conservation in Tibet, with His Holiness the Dalai Lama, and an opportunity to address the burgeoning trade in furs and body parts of tigers and leopards in India and Tibet. Other commitments in 2006 left us facing the Chaddar or postponing the expedition for a whole year. None of us wanted to do that.



Rigzen Thundup using the CyberTracker

Our group included nine porters and the village-based nature guide Rigzen Thundup (no relation to Tashi), whom SLC-India was training to monitor wildlife using the CyberTracker, a PDA device we hoped could be used by local people to document wildlife sightings (including recording their location for use in computerized GIS mapping).

Our destination was the Lungnak Gorge, a remote corner of an already remote region, with 120 families in five settlements. We wanted to identify snow leopard population hotspots and determine if the gorge would be good for a long-term radio-tracking study. We would interview villagers to assess livestock depredation and map problem sites. We hoped to link

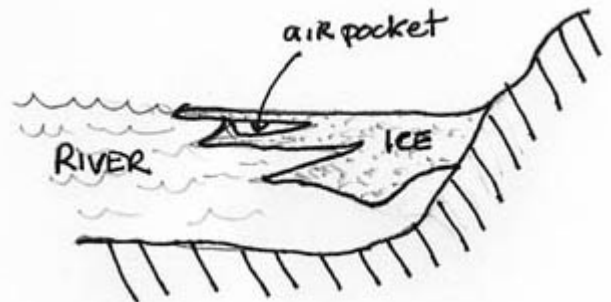
culture with conservation by documenting local attitudes, folklore and stories to illustrate Zanskari people's relationships with the local fauna and flora, including the analogy between culturally important species and ecologically important or charismatic species like ibex and snow leopard. Rinchen, Jigment and Tashi would hold a training workshop for Homestay providers with an eye toward expanding the program in Zanskar.



We set off in frigid weather on January 11. Even in winter the Zanskar River carries a sizeable volume of water to join the great "Lion River," the Indus, which rises on the Tibetan Plateau, traverses Ladakh, and meets the sea at the tip of Pakistan.

The river also bears small icebergs that act as battering rams, breaking up the frozen surface, keeping our "trail" in a state of constant tumble and change.

With temperatures well below zero, the water surface freezes, first along the river's edge and extending toward its center. The thickness of the ice may range from less than an inch to several feet; it may stretch from bank to bank, but usually forms only a narrow skirt along either bank. To complicate matters, several separate layers of varying thickness can develop one above the other with a pocket of air, or water flowing between them.



Toward evening each day, the water level rises with the melt from snowfields and glaciers on the main Himalayan range far to the south. The increased flow overtops and melts the surface ice, while underneath the growing pressure and battering causes bridges and trails to break up and float downstream. A seemingly good trail can disappear within a matter of hours, even minutes, requiring skilled pathfinding and a good dose of that centuries-old Zanskari "Chaddar knowledge." I should add that Zanskar and especially Ladakh, fall within the rain shadow of the world's highest mountain range. Until recently they received little snowfall of their own, but we were to learn that shrinking glaciers and global warming are having their effect on the Chaddar.

We had hardly gone three hours when we encountered our first serious obstacle, and my first serious thought that I was in above my head, as it were. The gorge had narrowed to a mere 30 feet, the walkway was less than a foot wide and clearly unstable. Our guide tested the ice. Maybe we'll have to turn back, I thought, trying to smother my sudden feeling of delight when he pronounced it "no good." But a second later my heart plummeted to my feet when he started up the cliff face. It was so icy that he slipped back down several times before his boot got a grip on what seemed an infinitesimally small crystal and he yelled "Okay!"

I suggested that Rinchen bring the rope out. As they pulled me up the rock face to a pencil-thin "trail" above the defile, Tashi saw the look on my face and said (not for the last time) "Don't worry Rodney, it will get easier. The Chaddar is no problem, really." I kept thinking, I have it easy, what about the porters carrying 50-80 pounds on their backs, not to mention a home-made wooden sled?



The first night we camped at the confluence of the Kanak River, an unbelievably cold and windy place. While we huddled in our tents, the porters were warmed in their cave by a roaring campfire fueled with the abundant driftwood carried down the side canyon. What I did not know then was that at every other campsite, all nine men would have to search for two or three hours to find enough wood to last them until morning for cooking and drying wet boots and clothing.



Obviously, wet boots and frozen feet are not a good combination in winter, and we all knew that frostbite presented a constant danger. So we carried a spare set of clothing in our daypacks in case we fell through the ice. Even the air was so cold that I hoped I would not have to change my clothes until I reached Padam; to fall through the ice sent slivers of dread up my spine.

How could anyone not be stunned by the beauty?
(photos by Jonathan Renouf)

The next day we met two Englishmen, Peter Burgess and Jonathan Renouf, who hoped to snow-shoe back from Zanskar over the high passes. As a group we climbed again above the river, across a slope of loose scree, and steeply down to the river. Picking our way, Rinchen and I looked back in time to see, to our horror, one of our porters fall and slide head-first toward the cliff edge, catching himself miraculously before plunging into the Zanskar. Around the fire that evening, Rinchen, Jigmet and I let Tashi know that the next time he gave a pre-trip briefing he should tell the truth! He laughed and said it would get better.



A cautious Peter Burgess

Setting out the next morning, I offered quiet prayers and asked myself, How could anyone not be stunned by the beauty of this place? Cliffs soaring thousand of feet straight up into blue skies, rock colored all shades of brown, red and purple. Streaked with dark intrusions and serpentine fissures, this intricately layered strata was deposited in the Tethys Sea 100 million years ago, but is now incredibly twisted and folded back on itself. Color photographs barely convey the subtle coloration or stark ruggedness of such terrain. I was reminded again of the Sanscrit proverb, “A hundred divine epochs would not suffice to describe all the marvels of the Himalaya.”

Every day we found fresh snow leopard tracks near camp. We passed a meditation cave and shrine made even more sacred by one of Ladakh’s Rinpoche priests who apparently found solitude here one winter. Once the ice has melted, no people are able to reach most sections of this gorge; the only trails are narrow precarious “slivers” made by wild ungulates – ibex and blue sheep – traversed too by snow leopards, fox and the occasional wolf. One morning we were able to approach within 100 yards of a large male ibex, evidence that we are among the first groups this season to penetrate the gorge. Later the wildlife would become more wary, as groups of Chaddar adventure trekkers (mostly from France and Germany) actually pay good money to make this trip– for fun!

As I mentioned, the ice changed constantly. Jigmet and I crossed over a bridge just before water started seeping onto the surface. By the time Tashi and Dawa the cook arrived at the spot fifteen minutes later the bridge was gone, so they had to backtrack to find another crossing which meant walking along a narrow ledge at the base



of a cliff. Ice shelves beside dark rock are the most unreliable and dangerous, since the rocks absorb the heat of the sun.

By the third day, I was beginning to learn how to assess ice conditions by watching Tashi. Like all Zanskaris he carried a walking stick which he constantly used to prod the ice surface ahead of him. I copied him using my ski pole.

Smooth ice is naturally very slick and I was thankful for the metallic ice-stabilizers that slipped over my boots and enabled me to walk more like the local Chaddar travelers who rarely fell despite their typically treadless rubber boots. Rinchen, Jigmet and I learned to walk along the ice-ridges, which were stronger, and to avoid places looking like fractured glass panes! But it is really hard to “read” ice conditions when the surface is obscured by a layer of snow. Here we would rely more upon sound: was the resonance from tapping the walking stick on the ice solid-sounding or hollow and weak or brittle? In fact, ice produces a remarkably wide range of reverberating sounds and tones that reflect not only its thickness, texture and strength, but also whether it is underlain by standing or flowing water or a empty cavity of air. Solid ice gives that reassuring “thunky” sound you know might hold a car, but if the stick pokes through and you hear a cracking sound you’d better leap back immediately! Even so, probing with my walking stick, I always hoped for the best, especially in places where ice chaffed up against rock or on those dreaded ice-bridges.

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We would stop for lunch around noon, cooking our meal (usually instant noodles but occasionally rice and dhal) on a kerosene stove. Water had to be collected from the briskly flowing current (5-10 miles an hour) at the edge of the ice, and all the Zanskaris seemed to know what sections to avoid and when to spread their weight by laying on their bellies and dipping the jerry can into the current. Still we lost our jug the third day out when the ice started to break up under Dawa. Again I insisted on the rope – a concession that lasted one whole day.



Remarkably (or perhaps because I followed behind others!), I fell through the ice only a half dozen times, and then the freezing water reached no higher than my knees or thighs. Rinchen was not so lucky. He crossed a thin section with a rock in the middle which served as a bridge to get onto what looked like a solid ice sheet that would have enabled us to bypass a section of open water. The ice was solid, but it was actually



an island that began separating from the rock and stranding Rinchen. The weather had changed and it was snowing heavily. Of course when it snows it gets notably warmer, and the ice begins to melt. The gap was now too wide for Rinchen to jump, and the only alternative was to throw him a rope so we could haul him out quickly when he went in up to his waist. Fortunately we all carried a set of spare clothes in our day packs. We all ragged him about not carrying a stick. If he'd had one he'd never have ventured onto the ice island. He cut a sturdy branch from the very next bush he came to – which happened to be a rose bush with many thorns to strip before he could make

use of it!

Photo: Rescuing Rinchen

Despite the efforts of our guides, we were unable to continue further upriver that day. To sleep, we split up into three small groups and spread our sleeping bags in grottoes formed beneath boulders piled up along the narrow stretch of solid ground. We tend to forget that even sleeping bags and warm parkas are a recent introduction to Ladakh. The first European ventured up the Chaddar in 1977 and remarked how the Zanskaris slept on the Chaddar: On their knees, like babies. Their traditional robes reach only to their knee, so that to lie flat would have exposed too much of the body. Draping the heavy woolen robe over themselves while kneeling also helped hold in their body heat.



Whenever they encountered smooth ice, the cook, Dawa, and the porters would place their loads on their wooden sleighs

Our porters said this place was among the worst in the gorge. It had an especially bad reputation among the people of nearby Lingshed village who were very reliant on the Chaddar for their winter supplies. It seems no group gets past without someone getting wet up to their waist or chest. Not surprising then that local people consult the spirits and astrologers before making this journey. Everyone carries a charm for protection, for a river like this is full of the dangerous kLu, or water spirits. I had two protectors, a small Ganesh, the elephant-god, suspended on a thread around my neck along with a crystal blessed by the Dalai Lama.

Other nights we camped in caves. The narrow gorge had surprisingly few places to accommodate even a small tent; by comparison the caves provided protection from falling rocks or the threat of avalanches, which presented a special danger with fresh snow falling on older snow, now very slick from repeated



thawing and re-freezing. One cave, Kilima Bao, was large enough to accommodate us all – very comforting as still more as snow fell throughout the night and heightened our concerns over avalanching. “See,” one porter told me, “my prediction came true.” Several nights earlier he had told me of a Zankari saying, “If tea overflows the pot while heating, it will surely snow the next day.”

Thanks to Marmot Mountain for donating tents for our expedition

The porters are especially adept at retrieving driftwood from beneath boulders where it has been trapped during summer floods. But wood is becoming increasingly scarce as the number of winter tourists escalates. The few junipers and other bushes are disappearing rapidly, and regulations requiring kerosene stoves for porters and visitors are urgently needed.

Other changes are in the air: the Indian Army is forcing a road through this gorge hoping to connect Ladakh with the Indian “mainland” and enabling all-year access to its most remote region. There are of course pros and cons to such a road. While it will eliminate the need to gather fuelwood—a good thing for wildlife habitat, cars will make poaching easier—a threat that the ibex and snow leopards of the Zaskar River gorge have never really faced.

Bulldozer on the new road

The people naturally welcome the road, but it will take many years for this massive project to be completed, and even the five year projection for the Padam-Leh segment is overly optimistic given the forbidding terrain and amount of rock-blasting required.





Some of Zanskar's settlements are cut off from one another for months because of severe weather.

I shall never forget the 6th day that we were on the Chaddar. Snow had been falling all day, as we cast nervous glances upwards. It was especially hard going, breaking trail through up to two feet of snow. Shortly after passing the side trail to Lingshed we entered a particularly narrow part of the gorge. Rinchen and I were about 100 yards behind the group; I was having trouble keeping up with my 20-30 year-old companions (who grew up in these mountains and have the lungs to prove it).

Suddenly I heard two ominous sounds at once: a powerful WOOSH, and Rinchen shouting "Rod!" A rush of adrenaline got me to the side of a large rock as a huge cloud of snow exploded from several hundred feet above, enclosing me in a white-out and peppering my face with sharp, swirling ice crystals. Then, almost as quickly it cleared and I could see Rinchen climbing out of crotch-deep snow and urging me to get the hell out of there. As an experienced mountaineer, he was especially propelled by the fear that this small avalanche could be a precursor to something big, and his fear fueled mine until five minutes later a tremendous, thundering avalanche swept over the buttress, dumping thirty feet of snow where we had just been standing. My fingers found my Dalai Lama crystal and Ganesh.



Almost daily we had passed small groups of Zankaris heading to Leh for supplies or jobs as porters for Chaddar groups. I saw boys as young as seven years with their fathers, on their way to school in Leh. There were three teenage girls in tennis shoes, as if on a Sunday outing, and several men in their seventies, one leading a reluctant Tibetan mastiff dog to sell in Leh. With everyone we encountered we exchanged questions and information about the ice conditions ahead. But, as I quickly found out, conditions had usually changed by the time we got to the place in question – sometimes happily, as on the

morning we met the trekkers who told me to be prepared to walk several hours through 12-15” deep water. Not us! Our waders stayed in our packs.

We were nearing the end of the ice walk, day seven, still breaking trail through two-feet of snow, while more snow fell all around. We were tired and progress was slow. At around 4pm the snowfall turned into a blizzard. There was no place to shelter and we knew there was no alternative but to continue on towards the road camp where we’d intended to spend the night. While Tashi and Jigmet forged ahead, Rinchen and I waited for the porters, spread out behind. Darkness descended and we knew we must bivouac for the night, or all freeze to death. With the driving snow and wind howling at least 30 miles per hour, we would all have to work together to pitch our large kitchen tent and sleep as best we could, with or without food or a hot drink.



Then, a strange and miraculous thing happened: The wind momentarily died and the swirling snow cleared briefly. Ahead we could see lights. They were coming from the road crew’s Quonset hut! We were less than 100 yards from safety! With long icicles hanging from my beard and eyebrows, shivering uncontrollably and way too close to hypothermia for comfort, I collapsed into the warmth and safety of the hut. With warm cups of tea in our frozen hands, and the heavenly jet-roar of a kerosene heater we all soon recovered enough to speak, and to eat a welcome warm meal.



The next morning we were greeted with blue skies and a vast white landscape stretching to the horizon and blue clouds: the three days of snow were finally over. We raced down the slope, crossed the river and walked to Hanumu, the nearest village, where we met Peter and Jon. They’d been able to travel more quickly in a small group and had exited the gorge before conditions worsened. But now they regretted having stashed their snowshoes near Lingshed for the journey out.

From Hanumu we had a relatively easy two-day trip to Tashi’s home in Karsha, a village of 70+ households and a former mini-kingdom with a gompa perched high above. We also visited a recently established Homestay in Pidmu, one of the sixteen host families in several Zanskari villages. While I ate my supper, the owner told me how happy he was that the Snow Leopard Conservancy is supporting this new initiative in Zanskar. Until recently he earned his income from guiding tourists across Zanskar. But wolves and snow leopards presented a constant threat to the pack animals, especially in winter when they had to be pastured away from the village and could not be easily guarded. Over the course of several winters he lost all of his donkeys.

Although the Pidmo villagers are not aware of India's wildlife regulations, their Buddhist religion prevents them from hunting. But this could quickly change if more livelihoods are placed at risk by snow leopards and wolves, and herders resort to retribution. I feel that taking preventive action now is the best strategy, including expanding the Homestay program into other communities, even in areas like this where Buddhist values are strong.

We solicited traditional stories about wildlife. My favorite came from one of our porters, who explained a trick used by snow leopards in hunting ibex. The cat gets above the herd and hides behind a large boulder. It then rolls an artemesia bush, a shrubby aromatic plant, down the slope toward the ibex, which scatter and run away. When they realize it was just a bush, they come back to the grazing area. After a while, the snow leopard repeats the process. The ibex flee, but not as far. Next, the cat makes itself into a ball and rolls down into the herd and makes its kill. The technique works just as well on blue sheep!



Our plan to hold the workshop in Lungnak had to be abandoned because of the blizzard and the acute avalanche danger in the gorge. Locals told us it would be 5-10 days before anyone could get in or out, and allowing time for the work, we could not make it back along the Chaddar before the ice melted. If we got stranded it would be early April at best before the passes back to Leh were opened for foot traffic. Or we could pay about \$5,000 for the hour-long ride back via helicopter. We could phone for it, or email from the new internet café in Padum! A century ago we might not have minded a forced opportunity to really get to know the communities of Zaskar, but times have changed. While I visit China this summer for our new program there, Tashi and Jigmet will have to go back to Zaskar and conduct the village interviews.



Padum, district headquarters

After the hard time we had getting into Zanskar, I have to admit that I did briefly consider the idea of chartering a helicopter back to Leh. I remembered that some one hundred trekkers had been helicopter-lifted the previous winter after being stranded in Padum by a warm spell. But we can save more than a dozen cats for the price! So I lay awake at night thinking about how easy researchers have it in Africa, jeeping right up to their animals. I kept worrying about the condition of the ice, climbing over cliffs, falling into the river – until my mind filled with images of what Zanskaris have to go through every year of their lives until these remote settlements are linked by an all season road. Heck, what was my problem? I think that once again, my protectors were in action; our journey back to Leh was beautiful and far easier. No snowfall, solid firm ice all the way except for one spot, which seemed such a small thing after all.

We saw few ibex or other wildlife on the way out, and only two snow leopard tracks, though we met about five groups of trekkers coming in. I suspect that the wildlife had retreated to higher ground to elude those two-legged creatures with their eye-straining, electric-colored clothing!



Looking back, it was the hardest trip I have ever undertaken, and I doubt I will do it again, but I took away from it the valuable and unexpected lesson that expert judgment and clear thinking are at times far more important than physical strength. And yet the Zanskaris must also be among the strongest people on earth. It's a good combination of attributes for those who hold the future of the snow leopard in their hands.

Abstracted from field notes of Rodney

For information on the Snow Leopard Conservancy's programs, visit:

A handwritten signature in black ink that reads "Rodney Jaw". The signature is written in a cursive, flowing style.

<http://www.snowleopardconservancy.org>