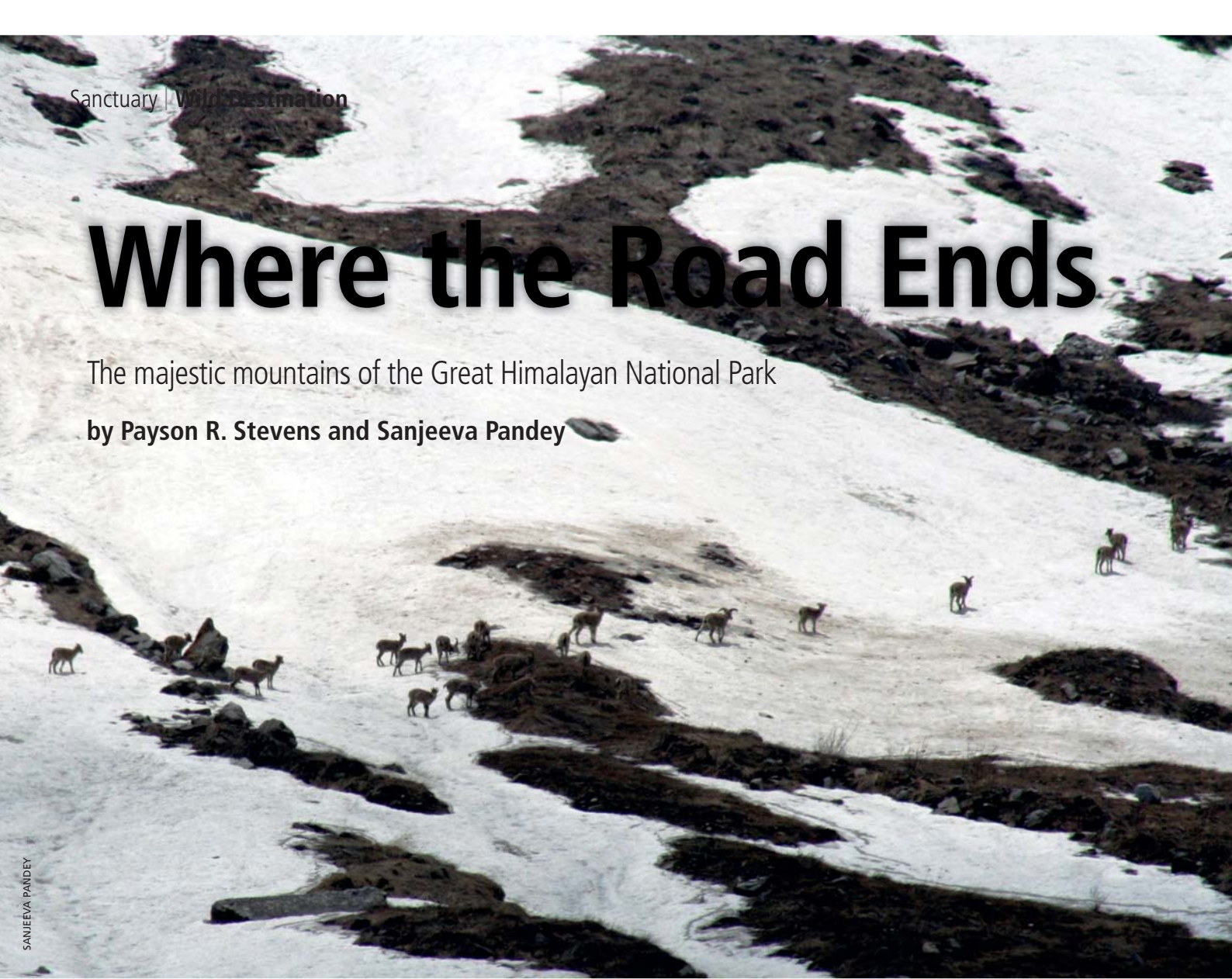


Where the Road Ends

The majestic mountains of the Great Himalayan National Park

by Payson R. Stevens and Sanjeeva Pandey



SANJEEVA PANDEY

It is late May and there is still plenty of snow on the mid-range and high peaks in the Great Himalayan National Park (GHNP). The Tirthan river is rumbling right below us, cascading over large boulders in streams of silvery water. The oak and coniferous forest is lush and moist. We're sitting at the Rolla camping site, a 10 km. trek (from 1,500 m. to 2,100 m.) into the park from the trail head at the village of Gushaini. Though our trek was only planned as far as Nada Thatch, another 12 km. up from Rolla, we all impetuously agree that we should head to Tirath, the source of the Tirthan river.

It's an ambitious plan as it's still another 30 km. of trekking to Tirath up to an elevation of 4,100 m., and we only have four days to do the whole round trip. Though I've just turned 60, Sanjeeva laughs that an 80 km. round-trip sounds like a good birthday test.

It's also a recce trek to assess the region for trekking and mountain climbing. This is part of the Friends of GHNP plan to develop eco-tourism in the park and train local village youth in the skills, logistics, and business of trekking to help create alternative livelihoods. Bringing in Indian and foreign trekkers, and working with the local community can only help to improve the lives of local people and protect the park's environment.

Northern India is blessed with a boundary that includes some of the highest and most majestic mountain ranges on our planet: the mighty Himalaya. Within this great spine of Asia, extending some 2,500 km., the GHNP is the only protected conservation area in the western Himalaya that is mostly devoid of biotic pressures, encompassing a multifaceted ecosystem of outstanding universal natural value.

Since its opening in 1999, the park has attracted a new breed of Indian and international 'wilderness eco-tourists' drawn by its rugged and pristine beauty. Located in the Kullu district of Himachal Pradesh, the GHNP is one of India's few national parks with no internal roads, making it remote and inaccessible for the casual visitor. From the Gushani trail head, it takes four to six hours of trekking, along the powerful Tirthan river, just to reach the park boundary. The difficult terrain has limited visitors to less than 1,000 trekkers a year, drawn to the high adventure that serious trekking in the GNHP affords. The wide variety of ecological habitats from lower valleys to high peaks, the transition zones, and the limited trekking routes, all present a rich and complex environment for the nature lover.

Trekking in the Himalaya

Here, one can find communion in an environment that is fast disappearing from our planet: nature in its wildest, most ancient form. Trekkers have to negotiate slippery paths, slick with mud and leaves, where bridges and trails are often washed out, forge rivers and scale muddy cliffs. The park management is very conscious of the poor quality of its trails, but the conservation goal is to protect the fragile ecosystems here, allowing them to evolve with limited human intervention. The visitor carrying capacity is limited (like the fragile Grand Canyon/U.S.A), and the park brochure describes the no-road connectivity as one of its assets. The GHNP is a natural world domain where only serious trekkers experience glimpses of beauty, danger, and magnificent vistas reached through arduous effort.

A trekker coming around the turn on the trail would gain incredible views of flowers blooming in emerald thatches (meadows), clouds bubbling up on thermals above the mountains, and distant peaks, like Phanchi Galu (4,600 m.) or Dhel (3,737 m.), rising proudly then disappearing into monsoon mists. All the while, the four rivers of the park offer their musical backdrop: bubbling, drumming, roaring, and carving their way down to *sangam* (confluence) with the Beas and Sutlej rivers, flowing further onto the plains of India with their fertile sediments.

The importance of this Himalayan landscape

After an exhausting, steep 12 km. hike, we arrive at Nada (up from 2,100 m. to 3,300 m.), where a small forest hut serves as a camping site. A beautiful, verdant alpine meadow is before us, filled with wildflowers splashing yellow, blue, and red in all directions. But there's no time to rest, if we're going to make it to Tirath in a day. Abruptly, we move from the meadow onto a very narrow and difficult path. Below us and always present, the roaring Tirthan river continues its journey in the opposite direction.

The GHNP lies between four important ecological zones ranging from lowland Indian plains to the high Tibetan plateau. The park's

complex geography comprises many distinct altitude-sensitive ecosystems that encompass an enormous range of species in a relatively small area. All the headwaters of four valleys make the GHNP one of the most sacred places in Himachal Pradesh, with each source dedicated to the *devtas* or *devas*. The park's four main valleys, the Tirthan, Sainj, Jiwa Nal and Parvati, each have an eponymous river, which enrich Himachal Pradesh (agriculture, irrigation, timber, hydropower, etc.) and help protect critical downstream hydrologic resources.

The park is home to rare and endangered birds including the Western Tragopan and Chir Pheasant and mammals such as the snow leopard, Himalayan musk deer, Himalayan black bear, Himalayan tahr, blue sheep and serow. The GHNP also has over 250 ethno-botanically important plant species, of which 60 are of medicinal value and 25 are endangered IUCN Red-listed data species. The region, spanning the subtropical, the south-east Asian forest, and the Siberian and Asian steppes, is recognised as a Conservation International Biodiversity Hotspot. The symbol of the park is the Western Tragopan, a medium-sized, brightly plumaged pheasant that is highly endangered. A Kullu legend describes how God created the Tragopan, locally known as *Juju Rana*, out of feathers shed by every bird in the universe. This "undisputed King of Birds", though globally threatened, has good populations in the park. It inhabits upper temperate forests between 2,400 m. and 3,600 m. in the summer, and in the winter, dense coniferous and broad-leaved forests between elevations of 2,000 m. and 2,800 m. An honored, small group of GHNP trekkers have seen the elusive bird, while many others have heard its distinctive "mwa, mwa" cry at dawn.

Four other pheasant species, Koklass, Chir, Kalij and Himalayan Monal (this is most likely to be seen as it is abundant in the higher forests) occur in or adjacent to the park, along with raptors such as Lammergeiers, Himalayan Griffon Vultures and Golden Eagles. A great variety of other birds occurs, some of which reach their western limit in the park.

We continue moving up and finally at dusk reach our campsite at Majhoni (3800 m.). The local eco-tourism team quickly sets up our camp in the small green meadow, beating down the tall grasses and shrubs for a level site. We have been trekking for 11 hours and are all exhausted from the steep climb along the difficult trail. Everyone is too tired for dinner.

The forest area of the GHNP consists of extensive stands of oak, coniferous forests of blue pine, West Himalayan silver fir and West Himalayan spruce as well as Himalayan cedar. The broad-leaf forests contain horse chestnut, *Rhododendron arboreum*, the Himalayan oak *Quercus leucotrichophora* and *Q. floribunda* at the lower altitude, and pure patches of birch *Betula utilis* at higher altitudes. Yew is an important medicinal tree of the understorey, which also holds a rich variety of shrubs along with patches of ringal bamboo. Bell rhododendron *Rhododendron campanulatum* is seen in the sub-alpine zone while *Juniperus communis*, *J. pseudosabina*, *Lonicera*, *Berberis*, *Cotoneaster*, *Viburnum* and *Rosa* are found at about 3,700 m. The alpine flora occurring above 4,000 m. is characterised by species rich meadows with medicinal and economical values, including *Aconitum violaceum*, *Salvia moorcroftiana*, *Viola serpens*, *Jurinea macrocephala*, *Rheum emodi*, *Bergenia ciliata*, *Picrorhiza kurroa* and *Saussurea graminifolia*.

People and biodiversity protection

The GHNP's western side is inhabited by a human population of 16,000 to 17,000 individuals, living in 130 villages in a 265 sq. km. buffer or eco-zone. Most of them live in poverty and depend on the natural resources for their traditional livelihoods as agriculturists and pastoralists, and for extraction of medicinal plants and animal husbandry. In such remote and inaccessible rural areas, where biodiversity is concentrated,

FACING PAGE A flock of *bharal* or Himalayan blue sheep traverse the snow-clad mountains in the western Himalaya. They feed mainly on grass but during times of scarcity, resort to shrubs and herbs. They, along with goral and tahr, comprise the prey for leopards (in the forest zone) and snow leopards (above the tree-line).



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Consolidating protection in the GHNP

A number of Protected Areas (PAs), including the wildlife sanctuaries of Sainj (90 sq. km.) and Tirthan (65 sq. km.) were added to the Great Himalayan National Park in 2010. The total area under Park administration (national park, wildlife sanctuaries and eco-zone) is 1,171 sq. km., and referred to as the Great Himalayan National Park Conservation Area (GHNPCA). In 2010, an area of 710 sq. km. of the Parvati river catchment, contiguous to the northern boundary of the GHNP was initially notified as the Khirganga National Park, adding biological diversity, conservation value and physical protection to the GHNP. Under the *Indian Wildlife Protection Act*, the final notification will take place when all the rights and privileges have been settled or purchased by the government. The boundaries of GHNP are also contiguous with the Pin Valley National Park (675 sq. km.) in Trans-Himalaya, the Rupi Bhabha Wildlife Sanctuary (503 sq. km.) in Sutlej watershed and the Kanawar Wildlife Sanctuary (61 sq. km.). All these contiguous areas add up to 2,850 sq. km., which preserves a continuous landscape in the Western Himalaya and offers wildlife corridors to further ensure conservation goals.

the reach of government development programmes is often limited, and poverty is pervasive.

The creation of the park closed off higher alpine meadows, or thatches, with positive, restorative results in sites that were once known for severe soil erosion and displacement of alpine flowers (especially annual and perennial wild flowers) caused by the overgrazing of village livestock (cattle, sheep and goats). The introduction of alien plant species through grazing animal droppings added another negative impact. Thatches like *Dhel*, *Khorli Poi* and *Parkachi*, are now in the slow process of natural recovery, an encouraging sign for the GHNP's biodiversity.

Formal and informal wildlife observations have shown a steady increase in the populations of the large mammals. The characteristic megafauna here includes several species of herbivores such as the goral, the Himalayan tahr and the *bharal* or blue sheep. These comprise the prey for leopards (in the forest zone) and snow leopards

(above the tree-line). Himalayan black bears inhabit the forests, while brown bears occur in the alpine meadows.

The need for more systematic and on-going scientific animal surveys is essential for an accurate assessment of their population numbers and to compare to earlier research. Identifying the numerous flora and fauna, studying the still unknown behaviour and natural history of the endangered animals and birds in the park, monitoring long-term ecological changes (such as glacial recession), or developing base line studies to understand the coming impacts of global warming are just a few of the opportunities for important research that the GHNP offers.

Managing the GHNP, or for that matter any other PA in India, is a juggling act. One outcome of the park's creation has been conflict with the villagers in the eco-zone. Many villagers were unhappy at being forever excluded from the rich natural resources of the park, necessary to their livelihoods. The primary goal to restore,

conserve and preserve the GNHP's unique biodiversity could not be accomplished without local support. Towards this end, a local NGO, Biodiversity Tourism and Community Association (BTCA), set up microcredit financing through women's saving and credit groups and self help groups, as women were the poorest of the poor, alienated from the process of development and nature conservation. At the same time, many local men have become used to the subsidy culture, an offshoot of the government's development policies. So, the park management initiated work in the eco-zone by organising and training the women of poor households towards job creation schemes such as forest plantation, herb cultivation, compost/vermicompost product development, etc. The NGO has helped women develop local products for the market including apricot seed oil, fruit jams and organic *rajmas*/red beans.

TOP During severe winters, waterfalls freeze instantly on the ice blocks and transform into magnificent ice falls.



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LEFT The Himalayan or Asian black bear inhabits the forests of the Great Himalayan National Park. The GHNP is currently in the final stage of the UNESCO World Heritage Site nomination process – in recognition of its unique natural value.

winter snow and ice... waiting to defrost and for us to return, on another trek, to this holy place, high in the majestic mountains.

Impacts of changing seasonal monsoon regularity and intensity are another large environmental unknown for the GHNP and the Himalaya. We can only prepare for the disruptive natural and socio-economic effects of more floods, storms, hail, etc. by bolstering the scarce will of political world leadership and developing mitigating responses.

The GHNP is currently in the final stage of the UNESCO World Heritage Site nomination process – a recognition of its unique natural value, sustained by many over the decades. The role of local villagers helping to conserve and protect the GHNP has been integral and it must not be forgotten that the environmental protection of the park comes at a cost to these villagers. The dilemma of the poor being excluded from a region created for nature conservation requires on-going sensitivity for all the stakeholders.

Payson R. Stevens is an American trained in the earth sciences and art. For over 25 years he consulted with NASA, NOAA, and the USGS on global climate change issues. Since 2000, he has trekked over 1,500 km. with Sanjeeva in the park, and advised on conservation and rural community issues. Together they founded Friends of GHNP, an association of individuals who value the GHNP as a place of great natural beauty and significant ecological importance. His artwork can be seen at www.energylandscapes.com

Sanjeeva Pandey is an officer of the Indian Forest Service, working as the Chief Conservator of Forest in the Himachal Pradesh Forest Department at Shimla. He was Director of the GHNP from 1998 to 2006, where he engaged himself in biodiversity conservation through livelihood-based natural resource management. More park information: www.greathimalayannationalpark.com

The next morning, we all stagger out of our tents, have our chai and biscuits, fill our daypacks with lunch and start our ascent, having to cross a huge bowl of white snow and ice with mountain ridges on each side of us. One slip could be very dangerous as the Tirthan river continues rolling below us, at times vanishing beneath the snow and ice. Numerous hidden crevasses could easily swallow one of our group. Our team is delicately spread out along the white snowfield like dark beads in a strand.

In the developing world, the impetus for the creation of Protected Areas (such as the GHNP) is very strong, but past experiences have led to increasing resistance from both local communities and governments to expand the existing PA network. The American model, replicated in many countries, isolates PAs from human habitation and exploitation and has resulted in inevitable conflict with local communities. People living in and around PAs have been regarded as a management problem, and historically, little effort has been made to involve them in the design and management of the PAs.

A warmer Himalaya

Another serious and looming issue, not just for the GHNP, is the onset of global warming with all the concomitant impacts on biodiversity. As temperatures rise, shifts are occurring in habitat ranges for

many organisms. Issues between new species migrating into the park and long established ones will create competition with potentially far-ranging consequences for the interconnected food webs. Low lying insects, pests, and disease vectors will gain the ability to disrupt existing ecological balances, while sessile/immobile plants, lacking the ability to migrate into tolerant zones, can result in unprecedented shifts in ecological communities, especially if climax species die out or diminish in their dominance. Such critical ecological trigger points shift the balance of existing relationships with rapid, unknown, and reverberating consequences.

In the distance, small dark forms move up the mountain slopes. Taking out my binoculars, I count 70 blue sheep... the largest group of mammals I have seen in my years of trekking in the park. I call out to Sanjeeva, and his team quickly arrives and sets up, videotaping this herd. We are all quite happy to see this abundance of wildlife. It is a good sign that the park is providing a safe habitat for a species that once was hunted for its meat and fur coat.

Then, suddenly, dark, grey stratocumulus clouds start gathering overhead and we realise that we must return to Majhoni before the next snow falls. Tirthan, the Tirthan river source, is bubbling under the blanket of