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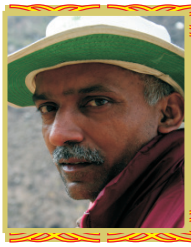

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Editor : Sanjeeva Pandey

Perspectives of Change in GHNP

Payson R. Stevens . . .

In May 1999, the Great Himalayan National Park (GHNP) opened as a gift to India and the people of the world. The Park, covering 754 sq km in the Kullu Valley region of Himachal Pradesh (HP), became the first region of the Western Himalayas to be protected as a unique, natural habitat. In March 2000, I had the good fortune to meet Sanjeeva Pandey, the first director of GHNP. A short trek near the boundary of the Park led to an invitation to visit the Park's interior. I returned in October 2000, with my close friend, Arny Lippin of New York City. With Sanjeeva as our guide, we did a month of trekking in the Sainj and Tirthan River Valleys deep within the Park. Sanjeeva accompanied us on some of the routes and later he and I trekked up the Jiwanal River Valley up through the high pass at Panchi Galu (4636 m).

GHNP is part of a boundary between four important ecological zones ranging from lowland Indian plains to the high Tibetan plateau. The complex Park geography has large variations in altitude that encompass an enormous range of species in a relatively small area. The Park is the home to rare and endangered bird (e.g., Western Tragopan, Chir

Khorli Poi-Tirith

Pheasant) and animals (e.g., Snow Leopard, Himalayan Musk Deer, Himalayan Black Bear, Himalayan Thar, Blue Sheep and Serow) species. GHNP also has over 250 ethnobotanically important plant species, of which 60 are of medicinal value and 25 are endangered IUCN Red data species. This remarkable biodiversity spans the subtropical, the south-east Asian forest, and the Siberian and Asian steppes. The wide variety of ecological habitats from lower valleys to high peaks, the transition zones, and the lack of developed visitor trekking routes, all presented a rich and complex environment to experience. As an avid trekker, I was immediately impressed by the opportunity to hike on rough paths through extensive areas never touched by developed tourism. I fell in love with the Park and offered my assistance and skills to GHNP. Sanjeeva and subsequent GHNP directors, Harsh Mitter and Ajay Srivastav accepted. Thus, creating my on-going and decade-long relationship with the Park and the surrounding Ecozone.

One outcome of the Park's creation was the conflict with some of the villagers in the Ecozone—an area of 265 sq km surrounding the Park with 14,000 inhabitants. Many villagers were unhappy at being forever excluded from the rich natural resources of the Park, which was necessary to begin the process of restoration and conservation. The loss of these resources for both daily living needs (firewood, wild animal meat, pasture for livestock, etc.) and income (medicinal herbs, wild gucchii/morel mushrooms, lichens, Monal feathers, etc.) all were keenly felt by villagers. The primary goal to protect the Park's unique biodiversity could not be accomplished without local support. The process of GHNP conservation and preservation had to address these issues. A newly created local NGO set up microcredit financing through Women's Saving and Credit Groups and Self Help Groups, as women were the poorest of the poor. The HP Forest Department (FD) began work trainings and job creation schemes such as forest plantation, herb cultivation, compost/vermicompost product development, etc. The NGO helped women develop local products for the market including apricot seed oil, fruit jams, and organic rajmas/red beans.

Over the last decade many of these efforts have shown a positive impact on the Park's environmental goals. Though accurate and on-going records are limited, the earlier levels of poaching and illegal resource exploitation appear to have diminished, though it persists. In 2008, US Fulbright Scholar Jennie Miller did a two month field survey on the Western Tragopan*, an extremely rare pheasant (listed as an IUCN Vulnerable species). Called *Jujurana* by locals, the *King of the Birds* numbers have doubled in the past decade. Other important GHNP endangered birds such as the Koklass and Himalayan Monal also showed significant population increases from earlier surveys.

Another important aspect of GHNP biodiversity is the geographical relationship between the Park and other protected areas. The Park boundaries are adjacent to the Pin Valley National Park (675 sq km) in the Trans-Himalaya, the Rupi-Bhawa Wildlife Sanctuary (503 sq km) in Sutlej watershed, and the Kanawar

Wildlife Sanctuary (61 sq km). The Tirthan Wildlife Sanctuary (61 sq km) and the Sainj Wildlife Sanctuary (90 sq km) are also contiguous with GHNP. The 2010 sanctioning of the Khirganga National Park (710 sq km) adds yet another neighboring geographic protected area, thus totaling more than 2900 sq km. These combined and different habitats support a full range of Western Himalayan biodiversity, from tropical to alpine to Tibetan. They connect islands of biodiversity and help ensure secure migration routes, essential for the survival of many animals.

The Park creation had closed off higher alpine meadows, or thatches, used by locals for livestock and this is also having positive results. During my early treks in GHNP (2000-05) these thatches showed severe soil erosion and displacement of alpine flora (especially annual and perennial wildflowers) resulting from goat, sheep, and cow grazing. The introduction of alien plant species through grazing animal droppings was another negative impact. Thatches, like Dhel, Khorli Poi, and Parkachi, are now in the slow process of natural restoration and recovery, yet another encouraging example ensuring GHNPs biodiversity.

Over the years Sanjeeva and I have trekked 1200 km to the different high altitude sources of the Park's four rivers: the Tirthan, Sainj, Parbarti, and Jiwanal. Informal wildlife observations have shown a steady increase of large mammals, such as Blue Sheep, Black and Brown Bear, Musk Deer and Ghoral. Indian and foreign research projects have been continuing over the years, though they have been limited. 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. There are dozens of Masters and PhD theses just waiting for enterprising students to write: identifying the numerous flora and fauna, studying the still unknown behavior 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. These are just a few of the opportunities for important research that GHNP offers.

Another serious and looming issue for the Park (and for the planet) is the onset of global warming with all the concomitant impacts on biodiversity. As temperatures rise, shifts will occur in habitat ranges for many organisms. Large and small animals from lower elevations will be able to move to higher ones that were once colder but whose temperatures can now be tolerated. 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 have the ability to disrupt existing ecological balances with potentially dire results for flora, fauna, and humans. Sessile/immobile plants do not have the ability to migrate into tolerant zones (as animals do) so their adaptation (or lack of) to warming temperatures can result in unprecedented shifts in ecological communities, especially if climax species die out or diminish in their dominance. Critical ecological trigger points can occur shifting the balance of existing relationships with rapid, unknown, and reverberating consequences.

Impacts on weather and climate, along with changing seasonal monsoon regularity, are another large environmental unknown for GHNP and the Himalayas. The increased intensity and variability of storms expected by global warming (already starting) may

not be easily predictable but could seriously disturb existing GHNP ecologies. The disruptive effects on the lives and livelihoods of villagers in the Ecozone with more floods, storms, hail, etc. will create other problems. As human-induced global warming is underway, with little will by political world leadership to stopping it, only by developing mitigating responses can we prepare for the future. The impacts of global warming on villagers will also exacerbate their effects on GHNP. The pressures of uncertainty over water, firewood, and food could force locals into the Park reigniting old resource issues. The resultant social, political and economic fallout could create new problems and conflicts threatening conservation efforts in the Park.

Global warming is already having an impact on Himalayan glaciers as satellite observations (and historical photographs) are showing the recession/melting of many Himalayan glaciers (and others worldwide). A July 16, 2010 article in the *New York Times* discusses some of these impacts:

> An Indian glaciologist, Syed Iqbal Hasnain, now at the Stimson Center in Washington, told me that most Himalayan glaciers are in retreat for three reasons. First is the overall warming tied to carbon emissions. Second, rain and snow patterns are changing, so that less new snow is added to replace what melts. Third, pollution from trucks and smoke covers glaciers with carbon soot so that their surfaces become darker and less reflective — causing them to melt more quickly.
>
> The retreat of the glaciers threatens agriculture downstream. A study published last month in Science magazine indicated that glacier melt is essential for the Indus and Brahmaputra rivers, while less important a component of the Ganges, Yellow and Yangtze rivers. The potential disappearance of the glaciers, the report said, is "threatening the food security of an estimated 60 million people" in the Indus and Brahmaputra basins.

Out of the work with GHNP, I helped found a US NGO, My Himachal (MH) in 2006 to work on rural HP

concerns. For the last five years MH has focused on child health care, education, and job creation projects. Each year issues related to global warming have become increasingly apparent during our health surveys in the higher Upper Seraj/Kullu Valley. In May 2010, My Himachal initiated a water pilot to study how traditional and modern techniques might help recharge small catchments in those villages suffering from chronic water shortages. Techniques like water conservation of existing pipes, check dams and tanks for holding water during monsoon rains, and reforestation of forest land could all offer potential help. If successful over the next few years, the MH Water Recharge Pilot may offer solutions for some of the water issues related to changing climate and global warming.

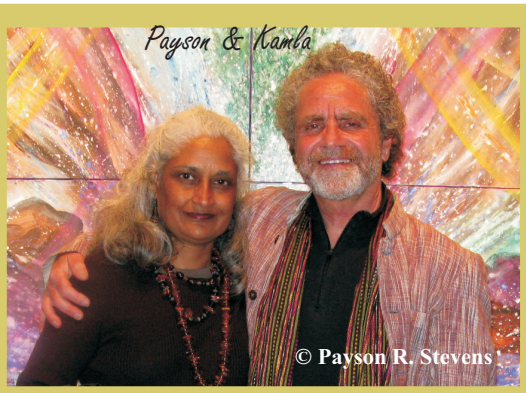
GHNP is currently in the final stages of the UNESCO World Heritage Site nomination process—a recognition of its unique natural value. Many individuals have worked diligently over the past decades to help create and sustain the Park. The role of local villagers helping to conserve and protect GHNP, even with issues over resource exploitation, has been an integral and essential part of the Park's viability. It must not be forgotten that the environmental protection of GHNP comes with a cost for local villagers. They have given up necessary survival resources for the continued existence of the Park. The dilemma of the poor being excluded from a region created for nature conservation requires on-going sensitivity for all the stakeholders. As my 88 year old mother-in-law, Laj Bedi Kapur, has said: *We humans must speak for the tongueless animals and plants.*

The Great Himalayan National Park is a testament to the collective efforts and vision of a broad spectrum of Indian society to conserve a wondrous environmental region for generations to come. This dedication is reflected by the slogans of the Park:

- Protect Nature
- Conserve Nature
- Preserve Nature
- Celebrate Nature

Jai Ho Biodiversity!
Jai Ho GHNP!

* Miller, J. R. B. 2010. Survey of Western Tragopan, Koklass Pheasant, and Himalayan Monal populations in the Great Himalayan National Park, Himachal Pradesh, India. Indian Birds 6 (3): 60–65.



About the Author

Payson R. Stevens *is an American trained in the earth sciences and art. For over 25 years he worked with NASA, NOAA, and the USGS on global change issues. He lives half the year with his wife, the writer Kamla K. Kapur (www.kamlakkapur.com), in a remote area of the Kullu Valley where he paints, writes, and does seva. He is a founding and advisory board member of My Himachal (www.myhimachal.com), a US and Indian NGO working on rural poverty issues and nature conservation. His artwork can be seen at www.energylandscapes.com*