

The Historical Development of Human
Impacts on Great Himalayan
National Park

Richard Tucker
Adjunct Professor
School of Natural Resources
University of Michigan
Ann Arbor, MI 48109 USA

October 1997

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SUMMARY

Villagers in the Ecodevelopment Zone are the key to preserving biodiversity in Great Himalayan National Park (GHNP), since their use of natural resources in GHNP and surrounding areas, and their responses to outside pressures largely determine the human impact on the Park.

Historically, governments from pre-colonial kingdoms onward, extracted taxes, labor and produce in return for defining and guaranteeing rights of access to resources. The modern administrative system, set in place by the British colonial rulers, carefully codified relations between the state and villagers, in terms of duties and rights. But this was a bureaucratic and hierarchical system, in which decisions were made from the top. Its legacy is a dilemma for today's era when cooperative management is the new approach.

The colonial system made the villagers' rights to land and other natural resources (grazing, forest products, etc.) more secure, but in recent years those rights have been slowly eroding, and in some ways are becoming more insecure. This is partly because of increasing penetration of the GHNP area by the market economy. The growing presence of outsiders has brought new opportunities and new pressures to both villagers and biodiversity. Regulating these outside pressures, as a vital dimension of Park management, is very difficult.

Protecting the natural heritage entails changing relations: from top-down authority towards cooperative planning. Finally, ecological change must be analyzed and monitored in terms of the historically evolving interactions between the natural and social systems of GHNP and the wider region which has influenced it.

INTRODUCTION

The Great Himalayan National Park is situated in a high mountain region, which is a periphery of India's national system, but one rich in natural resources. GHNP lies entirely in Kulu District, in a wide elevation range, between 2,000 and 5,500 metres, which represent at least five forest types. GHNP presently covers 765 sq km, lying in the basins of the Sainj (including its branch stream the Jiwa) and Tirthan rivers, tributaries of the Beas River. Adjacent to the Park is the Ecodevelopment Project Area: 255 sq km of land encompassing well over one hundred small villages with approximately 11,000 people living in some 1,600 households. [GHNP Report: 16-30] Also adjacent is the Tirthan Wild Life Sanctuary, 61 sq km., and the Sainj Sanctuary, in Rupi, comprising the Hurla and Parvati watersheds, as far southward as the right (north) bank of the Sainj river, including the Kanawar Wild Life Sanctuary on the left (south) bank of the Parvati. It reaches up to the divide with Spiti, now the Pin Valley National Park.

To the southeast, beyond the Jalori and Bashleo Passes, lies Outer Seraj, an area which drains into the Sutlej River; this includes the Rupi-Bhaba Wild Life Sanctuary, leading up the Sutlej to Kinnaur and Spiti.

In the Sainj and Tirthan valleys small farms cover most arable acreage in lower elevations. Forests are at all elevations, from 3,400' to 13,000'. Above tree line lie alpine pastures as high as 18,000', where shepherds have grazed their flocks for centuries; above the pastures tower snow peaks to well over 20,000'.

The human population of the region has always been largely settled in mountain villages in the tributaries of the Beas River. [Kayastha 1964] Agriculture in these mountains was largely for subsistence until the 1960s, when profit-making commercial agriculture and horticulture began to transform the economy and agroecology of the area. The farmers and shepherds of these villages, in their evolving knowledge and techniques, have always been the central link between human society and natural ecosystems in the Sainj-Tirthan region. Hence this report will focus on them, and their relations with outsiders (both political/administrative and commercial). The report will pay special attention to the patterns of competition and accommodation between villagers and the outside world, in the hope of shedding some light on present-day policy challenges. Specifically, we are in the midst of a shift away from centralized, hierarchical administration toward participatory management of natural resources; it is important to focus attention on the historical legacy of hierarchical systems.

TRADITIONAL PATTERNS OF VILLAGE LIFE AND RESOURCE USE

Human settlements in the Upper Beas Basin began well over 2,000 years ago, in a gradual drift northward from the lowlands up river valleys. [Ohri 1980] Archeological knowledge of the following centuries, especially regarding agriculture and land use, is scanty. So we must borrow from the first British compilations in putting together a broad picture of "traditional" land use and social structure, keeping in mind that traditional is not identical with unchanging. In the rural society of the area, caste structure and land tenure were intimately related. Unfortunately, no detailed sociological or ethnographic study of this area has yet been completed. But a general picture can be sketched from colonial documents. [See also Parry for Kangra, and work in progress for the GNHP/FREE project: Chaudhury, the Nangia group, and Chhatre]

The dominant caste of farmers and shepherds on the land were people called Kanets; by the 1800s they owned over 80% of the agricultural land in Kulu Subdivision, and referred to themselves simply as zamindars, the owners of the land. In the early 1900s they began to claim the caste name of Rajput, a status which was recognized officially in the 1930s. [Emerson 1920: 84-88; Diack 1897: 56-60] Since the the term Rajput has indicated a wide range of social status.

Perhaps as much as 1,000 years ago Rajputs of high status began penetrating the upper Beas region from the Punjab lowlands, during the early Muslim invasions. The most powerful Rajput families in modern centuries were descended from Kulu Rajas' retainers; they did not intermarry with Kanets in Rupi/Seraj.

Brahmins also gradually moved into the mountains from the north Indian lowlands. They brought orthodox Hinduism to the region, and looked down on local religious traditions. They built temples to the high gods of Hinduism, and served as hereditary temple priests (pujaris). But in spite of their high ritual status, many of these Brahmins also held land, and worked the plough, unlike most plains Brahmins.

Below all these in status were small numbers of Untouchables, today's Scheduled Castes. These jatis, the most numerous of them called Dajis in the Kulu valley and Kolis in Seraj, were not allowed to hold land, but were tenant farmers, laborers attached to Kanet families for their subsistence. They also included Chamars (leatherworkers who processed livestock products), Barehis (axemen or woodcutters in the forest), Thanis (masons and carpenters, using trees and stones from the forest), and Balras or Barras, who had the exclusive right to make baskets from ringal bamboo. As this list shows, the caste hierarchy is also a division of natural resource use. It implies the divisions of traditional environmental knowledge as well. [See the analysis of this link between social hierarchy and sustained management of natural resources in Gadgil and Guha 1992]



For their agriculture these rural people had very limited arable soils in the mountain valleys. Even in the nineteenth century there was a high ratio of rural population to arable land. On their small tilled terraces they grew hardy subsistence crops which were adapted to local conditions. [Harcourt 1870: 50-55; Diack 1897: 75-89] As an early British official wrote, "Throughout Kooloo, except in the higher vales, the soil yields two crops annually. ... Almost every description of grain grows to perfection, and is thickly cultivated." [Harcourt 1870: 50] In the area's varying elevations, from 2,500' to 9,000', traditional knowledge identified four crop zones and maintained varied rotation systems of crops. The Kulu Gazetteer records, "On the whole ... the harvests in Kulu are wonderfully secure, and it is proverbial that a famine has never been known." [Diack 1897: 79]

The farmers grew a variety of basic food grains. Rice, the main summer or *kharif* grain, was cultivated under irrigation in the valley bottoms. The irrigation canals (*kuls*) were cooperatively managed by the villagers under the direction of village officials chosen for that specific task. [Diack 1897: 81; for a similar system in the Kangra valley, see Baker 1994]

Winter or *rabi* grains included wheat, buckwheat and barley (the latter was cultivated in higher fields and was a favorite in Inner Saraj. In early modern times the *kharif* crop menu was enriched by several new cultigens from the Americas: maize, amaranth and potato.

Intercropped with the grains, or on smaller patches, the farmers grew pulses, sarsun for cooking oil, gourds, green beans, leafy green vegetables, and by the nineteenth century many European vegetables as well. On steeper hillsides they grew ruit and nut trees: apricot and peach for oil, walnut and other nuts.

In these thin mountain soils, severely deficient in humus and basic chemicals, crops do not grow without manure. The sources of manure were an important element of traditional agroecology, linking tilled fields with domestic livestock and the forest. Farmers used farmyard manure, including cattle and sheep manure and chaff, mixed with green loppings from small pine and fir trees. For fertilizing crops this was an effective combination, but it did damage the lopped trees, if not done with restraint. [Diack 1897: 80] Finally, there are indication that villagers practiced leaving their terraces fallow, at least every third year.

In addition to this system of permanent terrace farming, there are some indications that temporary or shifting agriculture was practiced in some locations until almost the onset of British rule (just as it was until recently throughout the hill belt eastward through the Himalayas and Southeast Asia). Hill farmers would cut a small patch of vegetation, burn any dry branches and grasses, and cultivate one or two seasons' crops, then leave the area in permanent fallow, for secondary scrub to recover. Early British observers argued that especially on relatively dry slopes, this practice had seriously damaged the vegetation. [Brandis, Baden-Powell and Stenhouse 1877: 1, 9]

Forest use was another dimension of the villagers' subsistence. They had open access to the forest for firewood and construction timber. They collected a wide variety of medicinal herbs, which anyone was allowed to harvest, and bamboos, which were reserved for Balras to gather and weave into baskets.

For occasional meat they hunted mammals and birds in the forest, especially in winter when the snows drove ungulates down the mountainsides toward the farm settlements. Villagers did not use guns, but laid snares for quail, pheasant, and even mammals such as ghoral, baral and musk deer. [V. Sharma 1998; for a Central Indian case see Rangarajan 1996]

The most important non-agricultural use of land in the Kulu and Seraj region was pastoralism. Village households had small numbers of cattle, sheep and goats for subsistence use. As a link with the commercial economy, both local villagers and outsiders also kept larger flocks of sheep and goats, which had to migrate in a transhumant system in search of food. [Mehra, in preparation; Chakravarty-Kaul 1996; Phillimore diss; Saberwal 1996] Each spring, when receding snows allowed, flocks moved upwards through the forest zone into alpine pastures (thach) for summer grazing of nutritious upland vegetation. It is a matter of dispute whether these high openings in the forest were partly or entirely created by shepherds using fire to eliminate trees. [Brandis, Baden-Powell and Stenhouse 1877: 7]

It is also debated whether the villagers' livestock caused severe denudation around settlements at lower elevations, especially on the warm, dry, south-facing slopes in the river valleys. Dietrich Brandis, the most knowledgeable early British observer, described a degree of degradation of the landscape of the lower Tirthan valley which was already as severe as today: "The lower part of the Tirth valley presents a lamentable scene of desolation, the slopes on either side ... being furrowed by torrents and scarred all over by landslips and incipient ravines, which indicate that grazing and burning are destroying rapidly the natural covering of the hill sides." [Brandis, Baden-Powell and Stenhouse 1877: 4; see also p. 33]

One other dimension of the traditional world of village life on the land is easy to dismiss in modern times, because modern knowledge gives it little credence. But it may yet hold one key to effective, sustainable management of rural and natural mountain ecosystems. The upper Beas region, perhaps as much as any cultural region in the Indian subcontinent, maintained a geography of sacred places. Most villages in Kulu and Seraj had temples to ancient local gods and goddesses (devtas and devis). Temple groves of the sacred deodar tree were under the care of the devtas, protected against cutting. Some temples were within the villages; others were sited on prominent or dramatic locations in the forest. These gods' homes were constructed of stone and deodar timber, most of them in similar style to human homes. They held rent-free land and granaries, and were supported by one or more pujaris (some Brahmin but mostly Kanet) a manager (kardar), an oracle or shaman, interpreters (chelas), and musicians



for festival times. All these positions in village society's management of sacred sites were hereditary. [Diack 1897: 48-53]

At melas pujaris dance, flay selves, go into trance, and speak for devta. Like most British, Harcourt dismissed these traditions as superstitious: "A religion which inculcates attendance at melas and such-like orgies is a creed that does not fail to recommend itself to the simple peasant; for it costs him nothing to keep up the worship in the temples, which all have their rent free grants; and where the tenets of Hinduism cross his fancy, he treats these as if they had no existence." [Harcourt 1870: 59-63]

Management was by the "body of hereditary votaries," the people of one phati or more; manager (kardar) apptd for life; rare appeal to Raja. The devtas linked village life with the outside world too. One way a raja could make his power legitimate was with gifts to the temples. Rajas often gave endowments in perpetuity to devtas; by the late 1800s 1/7 of cultivated land in Kulu was temple endowments. [Diack 1897: 70-73]

In summary, village life was a relatively self-sufficient local system of subsistence, and inter-relations with the natural world and the supernatural. As an agroecological system, it integrated croplands, forests and grazing lands. But throughout most of its history this system has also had important ties to two dimensions of the outside world: politically powerful overlords and urban markets linked by trade routes. Both were controlled by socially different groups, which impinged upon village life in ways sometimes disruptive or extractive, and also stabilizing. Historical documentation in recent years has not adequately traced the changing circumstances of villagers, in relation to both government agents and the market economy; but here too a general picture can be framed, highlighting aspects of pre-modern life which are important as a background for understanding the dynamics of recent times.



LINKS TO THE OUTSIDE WORLD: POLITICAL SYSTEMS

The key to life beyond the local village was the tradition of Ranas and Thakurs. From as early as the first or second century A.D., these local overlords established their control over small areas of each river basin. Most were local Kanet lineage chiefs, with their retainers. The pattern was very unstable, for they competed with each other, levying taxes and tribute from farmers, shepherds and traders. [Hutchison and Vogel 1933: II, 417-31; Diack 1897: 16-27]

These local lords were gradually subdued by Rajputs from the lowlands after 1,000 A.D. The Rajputs were adventurers who established themselves as heads of aristocratic kinship networks, maintaining marriage relations with their counterparts as far south as Gujarat.

In the upper Beas basin the key power that ultimately emerged was the Pal dynasty of Kulu, whose origin was traditionally linked to the hero Bhima in the Mahabharata. They controlled the richest valley lands of the region. Their headquarters were first at Jagatsukh, then Naggar; then in about 1660 they moved to the modern location of Sultanpur (Kulu town).

Gradually the Ranas and Thakurs came under the limited overlordship of the Kulu Raja. Bahadur Singh (c. 1532-58) defeated the Thakurs of Seraj. But the situation was perennially unstable; the Kulu raja was able to exercise only limited control over the Ranas and in the villages. As Hutchinson writes, "For centuries the Rajas exercised little more than a nominal authority, and were constantly in danger of being overpowered by the local petty Chiefs. It was only after centuries of almost continuous warfare that they gained a real supremacy over the Ranas and Thakurs." [Hutchison and Vogel 1933: II, 425]

The Ranas and Thakurs became tributaries of the Kulu Raja, and were granted land, revenue and other rights in return for service to the raja. Ultimately in colonial times their former holdings became waziris in Kulu Division. Penetrating into the villages, the Raja's officials were a hierarchy of men who collected dues from holders of arable land. This hierarchy the British successors largely adopted in the late 1800s. Lower-level officials functioned primarily as collectors of taxes in kind from villages. Each subdivision was headed by a wazir, under whose authority a negi was appointed for each kothi or revenue village, which was a cluster of phatis or hamlets. Village landholders held collective responsibility for payment of goods and labor. Tax assessments included portions of many items, including cash, grain, oil, ghi, honey, and possibly even wild items like bird plumage and deer antlers. [Diack, 13]

The other general duty of villagers was begar or unpaid labor, a standard form of dues owed to the Raja, just as it was in many parts of India. For many purposes, including trail construction, service at the palace, and so forth. Brahmins and important courtiers were exempted. The most important form in the mountains was as portage, to carry the goods of important people



from one location to another. Men were required to report for begar duty when it was demanded, whatever other responsibilities they might have at home. Since the travelling seasons were before and after monsoon, begar demands for portorage fell most heavily in the kharif crop's planting and harvesting seasons. This form of begar was evidently an endemic source of friction between villagers and their overlords.

But this system of power was reciprocal, one of mutual dues and rights, providing stability to rural life, because the Raja and his agents were also the guarantors of villagers' rights with the local social hierarchy. Villagers were traditionally wary of outsiders, since they experienced outsiders mostly as people who had some advantage to gain by manipulating them.

Perhaps the villagers' most important right was nautor, the right to open forest land to the plough. Individual crop land was held under the Raja as the ultimate owner of all land, but he rarely confiscated (resumed) land.

Villagers were also guaranteed forest rights: the rights to gather wood products and building materials, grazing and fodder for their livestock, and non-timber forest products for their own use, including medicinal herbs and bamboos. The Rajas placed few restrictions on these rights, because the rural population was small in relation to the mountains' broad extent, and there was little monetization, little development of cash markets for forest produce.

One other element of the Rajas' power, the aristocratic hunt, was also very relevant to the fate of wildlife in modern times.

"The hill state rajas exercised control over the forest lands and regulated hunting. The common man was prohibited by ritual, religion and means from hunting. Rajas established game reserves, enforced close season and restricted hunting on the basis of social hierarchy, to his courtiers and the military elite. Rajas themselves arranged big hunting parties in the open season to involve the general public in these highly ritualised hunt activities." Presented musk, and monal and pheasant plumes to important visitors. [V. Sharma, 1]

As a final vital aspect of their powers, the Rajas as well as the Ranas and Thakurs were mediators with (or representatives of) the devtas, the ancient village gods and goddesses, such as Hidimba Devi, goddess of Manali village, whose ancient temple and sacred grove are still among the most prominent in the entire region. [Chetwode 1972]

Like the villagers and their traditional gentry, the devtas were also gradually brought under the sway of the higher powers of lowland Hindustan, the chief of whom in the Kulu region was the god Raghunathji, who was brought to Kulu by Raja Jagat Singh in the early 1600s. [Hutchison and Vogel 1933: II, 427]

The Rajas held the power to grant wealth, chiefly in the form of land, to the devtas and priestly families. Over the centuries Rajas (as well as others) presented ibex and bharal horns to temples, to honor the devtas and gain social respect.

In sum, the pre-modern system of political power was inseparable from the social structure, and through it the people's use of the land and its resources for their sustenance. Politics, society and human ecology were one fabric.

RURAL SUBSISTENCE AND THE MONEY ECONOMY

In addition, though considerably less important until the 1800s (there is only scanty information about the evolution of markets), natural goods came to have money value through trade. A regional network of markets, fairs and trade routes linked the upper Beas valley with far-flung locations, both in the north Indian lowlands and the northern reaches of the Himalayan mountains.

Some farm production was grown as cash crops. Any excess which they could spare was bought by Lahouli traders for their cold winter, and for their rice beer, lugri. Local people also bartered cooking oil to Lahouli traders for salt and wool. At higher elevations they grew opium poppy in a cycle from November to May, to produce milk and seeds for the opium extract. (By 1890 the poppy was the standard source of cash to pay revenue.) Buyers came to the area from Kulu, Mandi, and Hoshiarpur and Jullundur in lowland Punjab. Finally, tobacco (another New World cultigen) was grown on small plots, sown in Ap/May and harvested in Aug/Oct, for both their own use and sale to local buyers, who exported it via Mandi.

Traders were either Lahoulis, who bought rice and wheat for their grain-deficient home region to the north, or Punjabi Hindu trading castes (Khatris, Mahajans, Soods), who purchased valuable crops such as opium for markets far to the south. The local people of Kulu and Seraj, whether farmers, landless, landlords or Brahmins rarely were involved as traders in the accumulation of wealth. Their traditions of subsistence and local autonomy were too strong to allow crossing those functional and occupational boundaries. This left them open to exploitation by outsiders as the money economy grew stronger under British rule and modern capitalism. [Harcourt 1870: 74-76; Diack 1897: 97-100]

The rising power of empires in lowland Hindustan, which gradually reduced the mountain region to a status of dependency. [For background, see C. Singh 1991] Several of the pre-Mughal Muslim conquerors of the north Indian lowlands invaded the outer hills for plunder and tribute, but none stayed long. In the years around 1550, the young Mughal emperor Akbar attempted to conquer Kangra, and his successors continued to lay siege to that important fort. But none could maintain consistent control into the Siwalik hills and beyond. The best they



could do was to force the hill rajas into tributary relations which acknowledged Mughal overlordship. Farmans for levied for tribute, such as for hawks and other ritual items: rare natural items used to symbolize domination. This was the beginning of cultural processes leading to modern species depletion. [Ahluwalia, 73-116]

In the late 1700s Kulu paid tribute to Raja Sansar Chand of Kangra. Then in 1806 the Gurkha army of Nepal invaded Kangra in its westward sweep across the Himalayas. So Sansar Chand called in Ranjit Singh, the ruler of the Sikh Kingdom of the Punjab. Ranjit Singh defeated the Gurkhas, but the cure was almost worse than the disease; he extracted heavy tribute from Kulu in return. In response, the Kulu Raja allied with the rising British power after they defeated the Gurkha army in 1815.

The Sikh kingdom was by no means done with the upper Beas region. In 1839-40 the Sikh army conquered Kulu and then Seraj, plundering the region of its wealth. They cut Himalayan timbers and floated them down the Beas and Sutlej for use in Punjab. They gave Seraj to the Raja of Mandi for an annual fee of Rs. 32,000. But the Sikh power crumbled in the decade after Ranjit Singh's death. In 1846, at the end of the First Anglo-Sikh War, they ceded Kangra and Kulu to the British.



THE RISE OF MODERN ADMINISTRATION UNDER THE BRITISH RAJ

The mountain region above Punjab fell under British control as well. The new rulers moved quickly to establish the elaborate administrative structure which was already in place in other British regions of India. Very soon they demonstrated the many potential links between hills and lowlands, and integrated hill life with the broader north Indian region more fully than ever before. The broad belt around Kangra valley became Kangra District, with its new headquarters in Dharmsala. It included the upper Beas valley, organized as Kulu Subdivision, with its administrative offices in Kulu town, the former Sultanpur. Kulu Subdivision in turn was organized into six waziris: three together constituted the main Kulu valley; a fourth was Rupi (placed under the Kulu Raja); the final two were Inner Seraj (the left or south watershed of the Sainj and the entire Tirthan valley, with its administrative headquarters in the village of Plach on the steep hills above the Tirthan, and moved later to Banjar across the valley, where it still is located), and Outer Seraj (the region beyond the Bashleo and Jalori passes, draining into the Sutlej River, with its headquarters in the little town of Ani).

The Raja of Kulu was stripped of his political autonomy, as were all the small-scale rajas of the Simla hills nearby, and his title was downgraded to Rai of Rupi. But the British maintained him as the dominant figure of society in Kulu and Rupi, by confirming him in a variety of traditional rights, including the vital one of ownership of land in all undemarcated forests. This power was maintained until 1973. He was also allowed unlimited free timber, charcoal and grass, for his own use; and free permits for grazing buffaloes, and collect grazing fees from others.

LAND SETTLEMENTS AND THE EXPANSION OF AGRICULTURE

The British immediately set about constructing a systematic structure of tax collection, but they had to build on existing institutions, if for no other reason than that their manpower was limited. The Revenue Settlement was a system of taxation on the production of arable land. It had two broad aspects: defining the mutual rights and responsibilities of government and villagers, and managing the changing relations between subsistence and commercial economies. In the tradition of British common law, existing long-established practices were to be maintained in most instances. They also made the policy decision that villagers should not prosper beyond subsistence from market sales of timber or livestock products.

Collection of taxes (in kind or cash) and labor dues; and in return, rural people's rights to wood products, non-timber forest products, grazing and hunting. G. C. Barnes carried out the first survey of land use and rights was carried out from 1849 to 1852, interviewing villagers and surveying their crop lands. His Settlement was completed and officially adopted in 1855. Land rights defined the mix between individuals, villages and government.



Barnes concluded that previous hill rajas had been the ultimate owners of all land (forest and pasture as well as arable), but he placed tax only on arable land, not waste. He reported that villagers believed that “waste,” or non-agricultural land, belonged to the government, but the boundaries between villages were unclear in forest and pasture land. He did not survey higher elevations. Barnes gave rights to waste as well as arable to individuals, not to villages collectively, reversing an 1852 Punjab Government order to give all waste to the village community as a commons, not to individuals.

Within about twenty years of the conquest, after lengthy discussions about the principles of Land Settlements and their power to shape rural society and economy, the British were ready to claim governmental ownership of non-arable land, arguing that they were following the system which hill society and its rajas had always practiced. J. B. Lyall’s revised Settlement in 1874 achieved a more careful survey of waste lands, and drew boundaries along natural divides such as rivers and ridges.

Traditional user rights included grazing, grass, dry wood for fuel, some lopping for fodder, timber for building (but only after official permission), state grazing tax on animals, and waste for all nearby residents (not just zamindars). The raja had the right to grant nautor. Lyall reported that under the first British, headmen were encouraged to give reclamation leases. Thus there had been much new cultivation since the British takeover, by both the men of each village and interlopers from the outside. Villagers have strong collective feelings against outsiders. [Barnes and Lyall 1889: 20-22]

As a result of these stages of Land Settlement, the collection of revenue (jama) was placed under the Deputy Commissioner (DC) and his subordinates. This hierarchy became the officials with whom villagers would have to work, more systematically than they had ever experienced before; that interaction would shape the future of agriculture and arable land throughout the region. Each cluster of villages (phatis) was defined as the local administrative unit (kothi), following the system of the Rajas; all landowners of each kothi were made jointly responsible to pay the jama each year. The DC appointed one headman (negi) for each kothi. Most negis were already influential local landholders; it seems probable that many were the same individuals who had functioned under the pre-colonial regimes. Their importance as the key link between government and village life was thus reinforced. The negis had assistants for each phati, called lambardars. In each phati watchmen (chaukidars or kraunks) and forest guards (rakhas) were appointed. In their modest authority they would also play an important role in the control and use of land.

The effect of the new taxation system was to begin the long process of monetizing the agricultural economy. The primary new cash crop which farmers grew to raise tax money was the opium poppy, which was legally grown until 1936, and sold mostly to Punjabi traders. Thus village

moneylenders evidently did not become a major burden on the farmer-shepherds of Kulu and Seraj as a usurious source of short-term cash, as they did under British rule in many parts of India.

Within this system a central point (one which has become very controversial in recent times) was *nautor*, the right to open new land to cultivation. This was a vital issue for the expanding village population, and for any joint family with several sons. It was also a key to the changing boundary between tilled land and “waste,” which is to say the central ecological change in a rural subsistence system. The Land Settlements placed the power to grant land from forest or pasture for new cultivation in the Revenue Department, in the Assistant Commissioner’s hands in Kulu, and his subordinate staff. Because this function did not fall under the Forest Department, it would inevitably conflict with the Forest Department’s highest priority, the preservation of forest reserves for production of marketable timber, and cause friction between the two departments.

Diack noted that “the great density of the population compared to the cultivation is very remarkable. It only shows on what small holdings it is possible for a peasantry to subsist whose habits are simple and wants few.” He reported that little grain was sold; villagers gained cash from selling wool. Regarding *nautor* rights, he continued, “Permission should be freely given to break up waste with due regard to the grazing rights of the people and the forest rights of the Government. And although the Government has a legal right to levy revenue at once on all such cultivation, it has waived its right to do so. The practice is to assess all newly broken land, after an exemption of three or more years, at the Circle rates, but the amount so assessed instead of being paid into the treasury is credited to the common fund of each *kothi*, to be expended on objects which are for the good of the estates.” [Diack 1898: 4. Also see p. 20]

The Revenue Settlement system concerned only arable land; it left “waste” or forest and grazing lands undetermined and unmeasured. These lands were vital to villagers’ subsistence as well as to the natural ecosystem of the region. Many *kothis* held waste in other *kothis*; they had always had vague boundaries. As Lyall concluded in 1871, attempting to balance the various claims on the waste, “The remaining area of the *kothis* consisting of unenclosed waste and forest, streams, roads, etc. is the property of the State, subject to certain rights of common or rights of use belonging by custom to communities or to individuals. The State has a right of approvement or reclamation of the waste, that is, waste land cannot be broken up for cultivation, or otherwise appropriated, except with its permission or by its order. ... Again, the State, for the purpose of forest conservancy, has a right to preserve or prohibit exercise of rights of common in a part of the forest; it has also a right to send in herds, droves or flocks to graze in the waste; but it is bound to exercise these rights and that of approvement, so as not to unduly stint or disturb the rights of use previously existing.” [Diack 1897: 64]



FOREST SETTLEMENTS AND VILLAGERS' RIGHTS

In the years immediately after the British conquest, many deodar trees were felled by private contractors, for big new commercial markets in lowland Punjab and beyond. The result was severe damage to forests in the middle elevation belt, where the higher villages were scattered across the mountainsides. [Cleghorn 1864; Stebbing 1921, vol. I]

In Kulu this haphazard approach was replaced by governmental timber operations from 1864 onward, under the 1855 Forestry Law, the first of its kind in British India. [Trevor 1920; Samler 1935: 36-39] The forest management system which had begun to evolve had to balance two factors which were inherently in tension with each other: villagers' rights in the forests, or the legal form of rural society's use of non-agricultural land and resources, versus commercial logging, which represented the wider society's claims to the timber wealth of the Himalayan region. The shifting balance between those two demands — and the resulting fate of forest ecosystems such as GHNP — has been a focus of controversy ever since. Under the modern bureaucratic system established by the British, that struggle was placed under the official hierarchy of the Forest Department, the hierarchy from Conservator of Forests (CF) downward to Divisional Forest Officer (DFO) to the Range Officer (RO), then the Forest Ranger and finally the local Forest Guard. Each level was more intimately involved with village life than the next higher; each higher level had more authority.

The 1878 Forest Law refined the more general law of 1855, just as Lyall's Revenue Settlement had refined the broad system which his predecessor had set in place. By the mid-1880s the result was that under the 1878 law, chapter 2, Reserved Forests must be largely free of local rights, and a complete list of records was a prerequisite. Since this wasn't possible, few forests were declared Reserved Forests; most areas were listed as Protected Forests.

Reserved Forests "are either situated in places remote from habitation where no body ever goes or consist of small areas of deodar forest in the vicinity of villages from which it has been possible to exclude rights. The former class of reserved forest is usually on steep ground, at fairly high elevations in remote and gloomy valleys, the reputed haunts of evil spirits; the latter, generally groves of ancient trees still considered in part as sacred to local deities." [Trevor 3]

Protected Forests included two classes of Demarcated Forests, in which rights were more extensive and a higher priority, and Undemarcated (Class 3) Forests, "all other forest and waste-land not recorded in the land revenue settlement as private property." They were placed under the DFO, and managed entirely for the needs of the local people. They were to be entirely open to grazing. [Trevor 1920: 4] Here lay an irony which would have major repercussions in the years which followed: for the most important and high priority rights, Working Plans don't deal with these forests.

The text of detailed Rules adopted under chapter 4 of the 1878 Forest Law included rights in 1 & 2 Class Protected Forests, which emphasized rights of local zamindars and their tenants. For example, "Deodar trees will be given only for irrigation channels, for the construction and repair of temple buildings, and for the doors and windows of dwelling houses." [Anderson 1894: 30-33]

The demarcation of reserves was a process of imposing the government's authority but also accomodating the villagers' needs and traditions. As C. G. Trevor, the most influential forester ever to preside over the Kulu Division, wrote, "The objects of management are

1. To attain the normal forest and to establish regeneration to the normal extent.
2. Without violating the sustained yield to provide for the requirements of rightholders.
3. To provide railway sleepers for the State railways.
4. In the interests of the general tax-payer to obtain the highest possible sustained yield from the forests both in timber and money.
5. To prevent denudation in the hills and to preserve an equable flow of water in the streams and rivers." [T 36]

In that formulation Trevor made no explicit reference to wildlife habitat, or the full range of flora and fauna. But forest botany, and silviculture or the modern science of forest management, was developing an awareness of the forest understorey. This subject deserves more careful study by historians of biodiversity. Trevor's silvicultural system's purpose was to encourage timber species, especially deodar, wherever each grows naturally, and in mixed forests; to attain "normal forest," which he defined as "an even-aged fully stocked wood, putting on the maximum annual increment and, when mature, yielding a revenue per acre far in excess of anything contemplated in the past." [Trevor 1920: 36]

The Forest Department's logging priority was deodar, then only slowly kail (blue pine). Chil pine grew in lower and drier locations, such as the lower Sainj and Tirthan valleys. In the higher forests, above about 2,300 metres, Himalayan fir and spruce are dominant. These species are not as strong for construction purposes, they are more remote from markets, and they will not tolerate long floating in Himalayan rivers. So fir and spruce had no commercial market before World War II. Instead, they were reserved for for right holders, as Class II Forests.

PRESSURE FROM THE TIMBER TRADE

Commercial timber trade placed increasing pressure on both forests and subsistence in the hills. It resulted in gradual encroachment on the Sainj-Tirthan basin, by three interlinked factors: timber extraction itself, the presence of Punjabi contractors and the arrival of outside laborers.



The first years of British control saw heavy deodar fellings in the main Kulu valley by private contractors, for the railways and the Public Works Department. The Northwestern Railway's demand for deodar sleepers exceeded the total supply of deodar. Also rapidly expanding commercial markets in lowland Punjab: building construction in the rapidly growing towns of Amritsar, Jullundur and Ferozepur Districts in Punjab and as far as Delhi.

The result was severe damage to forests in the middle elevation belt, where villages were scattered across the mountainsides. [Cleghorn 1864: 69-78; Stebbing, vol. I, 1921] This haphazard approach was replaced by governmental timber operations from 1864 onward. [Trevor 1920: 27; Samler 1935: 36-39]

At first deodar, and later also kail and chil, were floated down the Beas (it was too turbulent in the gorge below Larji for good floating of logs, so they had to be cut into scantlings or shorter sections first) to Dehra Gopipur. From there the wood was rafted to Dhilwan station on the Northwestern Railway, for shipment to markets throughout north India. En route the Forest Department paid the Raja of Mandi an annual rent of Rs. 500 for floating rights through his territory.

One important impact of these operations on riverine ecology, one which is often overlooked, was that the department's timber engineers "improved" rivers at turbulent, rock-filled locations such as the Beas gorge and the Parvati above Manikarn, by blasting obstacles to timber floating, thus making the water flow more smoothly, but disrupting riverine ecology and fish habitat.

The Forest Department preferred to do the timber felling itself when possible, since sales of standing timber to contractors lost much revenue. [Grover 1997: chap. 2] But often sold standing trees to private contractors through an auction system. Contractors felled too many trees, and destroyed young growth. The Forest Department gave advances to contractors, distrusting them all the while. "The Kulu contractor is in most cases a cheat, he takes large advances when he can get them, uses most of this money for his own purposes instead of advancing it to labour, produces a few men on the work and then absconds, to play the same game elsewhere. These men have no property which can be attached and civil suits against them are mostly waste of time and money. The only solution of the problem is dealing direct with the individual workman." [Trevor 1920: 34]

The contractors were mostly outsiders to local society in the upper Beas region, Punjabi commercial castes such as Soods, based in Lahore, Amritsar and Jullundur. [Grover 1997: chap. 3] When they hired local workers, they gave the workers cash advances; but the contractors found local labor very unreliable, and in return the local people distrusted them. For higher-paid skilled labor the contractors preferred to bring in outsiders, such as sawyers

from Mandi. Thus began the inward drift of contract labor, which expanded in later years with the commercial economy.

In sum, mutual suspicion and rivalry were developing among forest officers, Punjabi timber contractors, outside laborers and local villagers. The evolving social structure of forest products use was suffused with low-level conflict.

In Inner Seraj, the primary area of the present GHNP and its Ecodevelopment Zone, there were a few experimental commercial-scale deodar fellings in the first years of British occupation. [Brandis, Baden-Powell and Stenhouse 1877: 31-33] But little more was done thereafter until the Kulu valley and the Pulga area of the upper Parvati river, were heavily logged. In the 1920s kail pine was extensively felled in the upper Sainj valley. The fir and spruce belt was hardly touched even then, or in the Depression years of the 1930s. Then the heavy demand of World War II for wood forced intensive logging of all major timber species, far beyond what the Working Plans had anticipated. By 1945 fellings were in excess of their schedule by six years. And high prices on regional civilian markets for scarce timber during and after the war led to the first heavy logging on private lands as well. [Tucker 1982] By the late 1940s Tispur Block at the head of Sainj was one of only two blocks of fir still mostly untouched. [Aggarwal 1949: 72-83]

Juxtaposed with commercial timber operations was the necessity of guaranteeing that villagers' forest products needs would still be met sustainably from the same forests. Under the 1878 forest law and Anderson's 1886 application of it, villagers were guaranteed rights (bartan) in Classes I and II Demarcated Protected Forests, but the produce had to be used within the kothi of each landholder. Further, no land in these forests was to be turned to cultivation. Nautor was allowed only in Class III Forests.

Within Class I and II forests, the DFO could grant permits to landholders to cut trees for their own purposes, but not for sale. The fee schedule which Anderson set up was extremely modest: the highest was Rs. 7 for an entire mature deodar. This precedent, like Anderson's other regulations, became very weighty. As the commercial timber market accelerated in more recent years, and trees became worth thousands of rupees on the market, the fees remained miniscule, the Forest Department lost potential income, and villagers were increasingly tempted to sell their permitted trees clandestinely.

One other aspect of forest administration which was initiated by Anderson's system, which ultimately became very important for village life and forest ecology, was that he put no restriction on the collection of medicinal herbs, fruits, nuts, or bamboo, for villagers' own use or sale, or collection by outsiders. Many years later, in the 1960s, it became evident that the government's choice not to regulate this segment of forest resource use was a major limitation on its capacity to protect forest flora from the unforeseen consequences of an expanding commercial economy.



CONFLICT OVER GRAZING RIGHTS

The most challenging and complex issue in the forests was grazing rights, since the shepherds of the region had grazed their flocks of sheep and goats throughout the various vegetation zones since long before the beginning of written records. The Forest Department conducted a long process of codifying grazing rights, which showed disagreements among officials over the proper degree of strictness which should be exercised for the sake of the forests. (Anderson worked on its details for five years, 1881-86)

In 1876 Dietrich Brandis, the Inspector General of Forests, with Baden Powell and Stenhouse, toured the Kulu forests. In Brandis' report afterwards, he insisted that Reserves should only be fixed where few rights (uses) existed; "and where rights were admitted he insisted, as have all Forest Officers, that the number of cattle and the quantity of timber must be fixed. This policy was accepted by the Government of India." [Anderson 1894: 24]

In 1882 Wilhelm Schlich, who had succeeded Brandis as Inspector General of Forests, toured the Kulu region. He wanted to restrict rights severely in deodar groves near villages; Lyall called this confiscation. [Schlich 1882] Regarding local flocks, there was a debate over whether to set a maximum number of sheep and goats, not to be increased even if family increased in future. (The maximum could be 5% or 50% more than existing numbers.)

There was vertical mobility among Kulu shepherds (puhals), who were often hired by flocks' owners; puhals were considered to be not as skillful as professional Gaddi shepherds farther west. Individuals and village-collectives claimed rights in summer thaches. Efforts were made after 1910 to reduce the increase in numbers, by raising taxes. [C. Singh 1997: 163-74] Outsiders' rights included Gaddis' rights in passage from the Kangra-Palampur region through Kulu valley to Lahaul and northern Spiti, northward in spring and returning in October. Rights were limited to migratory routes, and did not extend into Seraj at all.

Regarding summer thaches in Sainj and Tirthan: flocks entered in late spring from beyond the mountain passes, especially from Outer Seraj, much of which was so much drier than Inner Seraj during the monsoon months that flocks had to practice transhumance, spending the monsoon in high pastures in Inner Seraj and Rupī. They represented different social networks from local people. The extent of their rights in relation to local people's rights was to become one of the perennial controversies of the human ecology system of the Sainj-Tirthan region.

The highest ecological zone under human use is the alpine meadows above tree line. As Trevor reported, "Extensive tracts of alpine pasture stretch above the forest limits to the line of perpetual snow. ... It is impossible in the space available to describe in an adequate manner the vast flora which is here found. ... These grazing grounds are resorted to by the local sheep

during the summer months, and large herds of ponies are turned out to graze where the hills are not too steep. Nomads dig for medicinal roots and the poacher snares the musk deer secure from the attentions of the forest guard. During the winter these uplands are a wilderness of snow, a cold wind blows off the mountains, work ceases in the forest and till the return of spring all is dead." Second Class Protected Forests were mostly this high country; this class was primarily the best fir forests in the Fir Working Circle. Concentrated management would not be attempted above 10,000'. [Trevor 1920: 19] Anderson's 1886 principles included the norm that rights should be only for the life of the holder.

Anderson saw great difficulties in completing the record of rights, and saw that the process must be ongoing, rather than finalized permanently and neatly. "The finality of the record of reserved forests, which has so many charms for the Forest Officer, is to me an objection. If the claims were few, mistakes would also be rare, but here the forests are close to the homesteads and are the resort of the people for the supply of all their wants. Under these circumstances a record, however carefully prepared, must be incomplete, and to make it final would be dangerous." [Anderson 1894: 26]

Anderson's system was not adopted until 1896, after a protracted intra-government controversy over the appropriate degree of strictness of regulating subsistence under the new system (before any consensus evolved among British officers or between them and local people). The debate gave insights into tensions both within the government and between administrators and local villagers, and it revealed officials' attitudes toward governmental intervention, and about the dangers of petty authority and bribery among lower level officers. The shadow of twentieth-century problems could begin to be seen.

In 1892 E. O'Brien, the Divisional Magistrate, toured Kulu and Seraj, to assess prosecutions under Anderson's draft Rules for trivial offences (such as using house-permitted tree for cow shed), which had angered many local people. O'Brien received many petitions from local people. He reported far too many court cases, clogging the agenda of the Tahsildar of Kulu, Naib Tahsildar of Plach, and the Assistant Commissioner's court. And he perceived that most cases were examples of petty bureaucratic authority. "Prosecutions for those trivial forest offences were invariably instituted on the unchecked and unattested report of a Forest Guard whose pay is Rs. 5 or Rs. 6 a month." I told the Conservator of Forests and his officers that these cases "should not form the subject of prosecutions because they only set the people against the Forest Department, and for that reason were bad policy, and caused constant annoyance to the people. I am still of opinion that the rules of Anderson have not the force of law." The Conservator of Forests and the Deputy Conservator have protested, but they exaggerate. [Anderson 1894]

Details of how the system actually operated can be seen in the petition of Het Ram, Rasu or manager of grazing runs, Gopalpur kothi in Plach, who was a member of the family of the



head forest official of Plach. He asked the Forest Department to give far more discretionary powers to local officers. Anderson commented that he just wants to exclude anybody he dislikes. In another case in Manglaur kothi of Plach, villagers wanted to choose their own trees for construction, not the Ranger or rakha; but Anderson had checked and decided that there was no shortage; many fine trees were available. He concluded that though local forest officers often harassed villagers, they mustn't lose all their powers. [Anderson 1894, 28-29]

It was unclear whether revenue officials must enforce prohibitions on non-rightholders grazing in Class 2 Forests, if rightholders protested to them, but in Undemarc Forests those officials should not intervene. Negis and others told Anderson they did not want promiscuous grazing in Class 2 Forests, but they wanted rules enforced to keep outsiders out, especially where the grazing resource was not more than they needed for themselves. [Anderson 1894, 5-6] Anderson summarized the 1891 fees on sheep and goats, noting that fees for foreign shepherds were determined annually by the Assistant Commissioner and his staff and negis. [Diack 1898: 37-38]

Anderson's system, including its detailed list of individual rights in each village and hamlet, was finally adopted as Punjab law in 1896. Thus, by 1900 the regulation of the village system depended on local Revenue and Forest officers, working either together or at cross purposes. The system which they administered enshrined a putatively complete list of individual rights to the natural resources of Kulu Subdivision, though Anderson himself knew that the list could never be entirely complete, accurate or up to date. The system's details defined the game of accommodation and rivalry among villagers, outsiders and officials which would be followed throughout the twentieth century.

The official position was spelled out in detail again by C. G. Trevor, the most influential forester ever to be in charge of the Kulu Forest Division, when he revised the Working Plan in 1920. He knew those forests and their people intimately, since he was DFO in Kulu from 1910 onward, and worked on the revisions from 1915 to 1919. Regarding the alpine pastures (thaches), he explained the principles for closures:

"As a rule none of these areas should actually be closed until taken in hand for regeneration. It is quite useless to close a canopied fir forest and to expect any result; such action only annoys the people unnecessarily and gives scope to the officious forest guard. The opening and closing of these notified areas will be entirely at the discretion of the Divisional Officer acting under the control of the Conservator. As soon as it is intended to take up any compartment for regeneration the people will be notified accordingly, such fencing as may be necessary will be done, and work will commence. Similarly an area partly or completely regenerated may with the approval of the Conservator be opened to cattle grazing for certain months of the year or the whole year, or all restrictions as regards grazing may be removed. The Forest Department has no wish to restrict rights except to the extent necessary to carry out successful regeneration;

but to obtain this it is absolutely necessary that the forest officer should have full power to control the grazing in areas under regeneration." [Trevor 1920: 77. See also p. 19]

"It is only possible to close areas in protected forests by the laborious process of obtaining Government sanction to each closure and by notifying the same in the Gazette. This necessitates an enquiry by various authorities in each and every case; every closure proposed is generally objected to on principle by the people and a long period may elapse before the matter is finally settled. The result was that only a few areas were closed and that the grazing destroyed most of the reproduction which might have been expected from the fellings." [Trevor 1920: 28]

From Trevor's 1920 system until after Independence there were no further major revisions of forest regulations in Kulu and Seraj. It is worth attempting to assess how severe the conflicts between villagers and the Forest Department were under this system, and what patterns of conflict, if any, can be seen in the printed record. Probably the most vivid expression of protest, and the most damaging to natural systems, was protest fires. In 1921, at the height of the first national Non-Cooperation campaign led by Mahatma Gandhi, the most destructive fires in the colonial era ravaged the chil pine belt of Kumaon, east of Himachal. [Guha 1989; S. Pathak; Tucker 1984] In the Punjab hill districts the fires were far less severe and there was no voiced protest movement of the Kumaon sort, for there was no Congress organization there. In the Beas basin the fires have been generally overlooked, but they were serious enough. One British observer calculated that 26,000 hectares were damaged in Kulu. [Glover 1927, reported in Samler 1935: 41; see also Tireman (1927): 2, 4]

The fires in Kulu occurred immediately after the adoption of Trevor's Forest Working Plan. Whether this was purely coincidental or not, no historian has yet clarified, for there has still been no detailed study of those events. In 1935, for example, fire damaged 14,800 ha in Mandi, 26,000 ha in Kulu and 1,268 ha in Kotkhal and Kotgarh. [Gorrie 1936; Samler 1935] A decade later another series of protest forest fires broke out in many districts of British India, sparked once again by Congress resistance to British rules in 1930-31. But this time there seems to have been no repercussion in the Punjab hill zone.

In the British districts of Kangra and Kulu, the most serious controversy between villagers and officials was perennially over grazing rights. In 1939 the Garbett Commission was established, to placate shepherds; it evidently served its purpose for the time being. [Chakravarty-Kaul 1996; Saberwal 1997; Tucker 1986]

The All-India politics of the freedom struggle cast their repercussions into the Punjab hills again from the late 1930s onward, when Congress organized the Praja Mandal movement against taxes in both British and Princely hill districts, and against the remnant of begar labor



in the States. [Ahluwalia 1988: 181-98; Handa 1968] But this movement did not center on land rights as such. In 1944 the freedom was organized in Kulu under Congress. Once again in 1945 and 1947, years of intense stress for Indian society at the end of World War II and then Independence and Partition, there were unusually severe forest fires in the dry season before the onset of monsoon. Once again it was very unclear whether there was any social conflict between villagers and officials behind these fires.

When K. L. Aggarwal revised the Working Plan in 1949, he suggested a senior Indian forester's view of the fires: "The writer's study of the causes shows that occasionally when the fires start in a couple of places a sort of mad fit takes hold of the country-side resulting in a series of fires near to each other, but disconnected in origin, which are clearly traceable to criminal intent. Evidence is generally not available of the actual perpetrators of these offences who are often sheltered by the villagers. All right-holders in the forest concerned are liable to assist in quenching the flames, but sometimes the opportunity is taken of spreading the fire instead of putting it out, not merely with a view to obtain good growth of grass for acttle, but also to drive away wild animals such as leopards and bears as well as out of sheer mischief most probably to escape the long days and nights of vigil by burning out the whole area in one attempt." Aggarwal concluded by stressing the need in independent India for the Forest Department and villagers to cooperate more closely than they had in colonial days. [Aggarwal 1949: 35]

Aggarwal was working under extremely difficult conditions, so the scope of what he could review was limited. Indeed, there has been no thorough revision of rights in arable or waste since Trevor's work, although the actualities of rural life have evolved slowly and steadily. A fourth revision of the revenue settlement, parallel to Aggarwal's forest settlement, was done by Bachitar Singh in the 1940s. He made fresh measurements of arable land only, and made no attempt to bring records of timber and grazing rights up to date. [Pathak 1996: 14]

HUNTING AND FISHING

Finally, one more closely related aspect of human pressure on forest species composition was hunting and fishing, by both local people for subsistence and British officials for sport. British military hunters entered the western Himalayas from 1815 onward, and especially from the 1860s onward, when a new generation of guns, much more accurate than their predecessors, gave sport hunters greater firepower. Most British military officers who settled in the Kulu valley after 1870 were avid shikaris (hunters). [Chetwode 1972: 140] Sport hunters' trophies included ibex, musk deer, serow, tahr, goral, bharal, leopard and bear, as well as pheasants and other game birds. [Tyacke 1893] Several of them wrote accounts of their adventures and exploits. Their trophies probably constituted only a small number in the vast reaches of the western Himalayas, unlike the large numbers of trophy kills in some of the Princely States in Gangetic and peninsular India.

In Kulu the effort to manage hunting was enshrined in the Forest Department's authority to issue sport hunting permits. Anderson's rules established three categories of permits: big

game for Rs. 100; small game for Rs. 10; and special permits for Rs. 100. The permits cost ten times as much for foreign hunters, and were issued by the DFO.. All large mammals were permitted except snow leopard, leopard and musk deer. The system also gave royalties for animals actually shot.

As for local hunters, after the great Rebellion of 1857, when British power was nearly swept away from the subcontinent, the British disarmed most local people's guns, ensuring that local hunters would not have access to modern technology. But paradoxically, in many parts of India the British blamed local hunters for most depletion of game species, though they admired the skills of "native trackers." [Rangarajan 1996; Tucker 1991]

The British themselves undoubtedly played greater roles in the ultimate depletion of game species of mammals and birds. One aspect was the rise of market hunting, especially for the Simla market, where vacationing British society demanded wild game for its lavish parties where the imperial elite maneuvered for status. [Kanwar 1990; Pubby 1988] The markets were ultimately international as well, centering on bird skins and plumes to satisfy the late Victorian rage in wealthy women's clothes. Enormous amounts of bird plumage moved through international commercial channels, to Calcutta and from there to the milliners of London, Paris and New York. Among the most popular were the elegant plumes of the Himalayan pheasants. This, in addition to the local tradition of decorating "Kulu hats" with pheasant feathers, initiated the modern decline of those species.

The passion for bird plumage was the ladies' expression of the Victorian British passion for natural history. Every official worth his status collected one family of wild species or another, in a feverish taxonomic effort. Serious natural historians vied with each other to provide specimens for European museums. This contributed to the origin of severe depletion of some rare species, especially birds. How much this pattern affected the upper Beas region is not yet determined.

By the 1870s some British officials, especially foresters, began to realize that game species were beginning to be rare, under the combined pressures of sport hunting and market demands. It became increasingly clear that hunting had to be regulated. Regulated hunting began with 1878 Forest Law, which established shooting blocks in the Reserved and Demarcated Forests, established a system of permits for sport hunting, gave forest officials the authority to issue the permits, and thereby began to define all other hunting as poaching.

The process of creating the modern system of controls on hunting was a long one; it was carried out primarily at the central government level, but with significant contributions at the provincial level. The 1887 Wild Birds and Game Protection Act established close seasons for specific species; placed controls on the sale of plumage and skins, and gave an official definition of poaching. In 1912 revisions of that act, which applied to British India, though not the Princely States, established the first schedule of protected animals and the legal basis of a system of



wildlife sanctuaries. In 1924 similar Shikar Rules were written for princely hill states, though it proved very difficult to enforce those rules. The problem of effective enforcement of shooting rules was beginning to be visible.

From the 1880s onward, natural history associations began to play important roles in wildlife conservation as well. The premier organization was the Bombay Natural History Society, which carried out increasingly systematic field surveys in many parts of India, gradually including the Himalayas. Its members identified many new species, and began to substantiate which species were rare and threatened. Hugh Whistler's surveys of Himalayan bird life in the 1920s were an outstanding contribution to this work. [Whistler 1924] This helped make it possible for the Punjab Government to adopt its own Wild Birds and Wild Animals Protection Act in 1933, which established official schedules of restricted fauna in the hill states. That law protected musk deer and ibex. Confronting local hunters, it established a limited ban on snaring and netting, but allowed single barrel guns for crop protection. This in turn was an important contribution to the 1935 national Conference on Wildlife in New Delhi, which led directly to the formal establishment of India's system of National Parks and sanctuaries.

Sport fishing in several Himalayan rivers, including the Sainj and Tirthan, was an additional dimension of wildlife depletion and subsequent management. Indigenous fish species, especially mahseer, originally attracted Victorian anglers to the rushing snowmelt streams. [Tyson 1941] But ready to improve on Nature, colonial officials introduced brown trout from Kashmir beginning in 1909, the forerunner of today's trout fishing competitions downstream from GHNP. [Chetwode 1972: 144; Jaiswal 1987: 88]

In sum, the natural communities of flora and fauna in the Sainj and Tirthan watersheds had been slowly shaped by local people and their livestock for many centuries. But now the process was beginning to accelerate under the introduction of Western systems of resource management. However, the social and ecological changes which were emerging from the interaction between local communities and a new administration also included the expansion of population and the market economy in the upper Beas region. The full process can not be understood without reference to those factors as well.



TOWNS AND TRADE: THE REGIONAL ECONOMY

We can trace the rise of population with some accuracy beginning with the first reliable decennial national census in 1881. Figures indicate that the overall population of the region rose gradually before World War I, though not as dramatically as the steady, rapid rise throughout India from the 1920s onward.

Demographic changes, 1881-1911

	1881	1891	[1901]	1911
Kulu	38,064	40,419	x	46,199
Rupi	14,041	14,635	x	16,449
Inner Seraj	17,531	18,152	x	18,840
Outer Seraj	30,623	32,399	x	31,926

[Source: Trevor 1920: 11]

As for the spread of cultivation, figures for arable are instructive:

Inner Seraj Acreage

1851	9,872
1871	10,361
1891	11,212

[Diack 1897: 89]

In themselves these figures are too general to indicate much about changing pressures on the land. A more detailed study would be necessary in order to calculate the specific change in rural and urban population in the Sainj-Tirthan area, but an understanding can be easily approximated. The only large town in the upper Beas region was Kulu. Mandi town, down the Beas below, was the only other nearby potential important market for the region's goods. Beyond that, a few locations emerged as small bazaars during colonial times, including Larji at the confluence of the Sainj and Tirthan rivers, and Banjar up the Tirthan on the route to the Jalori Pass.

Very old trade routes linked the area to markets much farther away, but none was more than a bridle path. Northward, the ancient route led past the headwaters of the Beas over the Rohtang



Pass into Lahaul and Ladakh, and from there into western China and central Asia. To the southeast the Jalori and Bashleo passes above the Tirthan were the mule routes to the major market in Simla, a new creation of the colonial period, and to Rampur, the little capital of Bashahr State in the upper Sutlej valley. A third flow of trade connected the southern Kulu valley via two low passes to Mandi State, and thence to the lowland markets of Punjab and as far as Delhi. There were no motorable roads in the region until the first automobile clung to the precipitous walls of the gorge between Mandi and Kulu in 1928. That car expressed the determination of British engineering, and foreshadowed the major road-building efforts of the Public Works Department throughout the region after 1950. William H. Donald, the chief Public Works Department engineer, improved the Aut-Sutlej road for apple shipments, not long before 1914. [Chetwode 1972: 136]

New crops, especially fruits for commercial cultivation, which the British had introduced into the Kulu valley. Most of the British settlers were retired military officers from Scotland, England and Ireland; they were also avid hunters and fishermen. From at least 1870 these men produced British and then American varieties of apples. First was Capt. R. C. Lee; then Col. Rennick and Mr. Minniken, managers of Kulu tea estate, first put 38 acres into tea, but ultimately found that they could not compete with tea produced in Kangra and northeastern India, so they switched to apple and pear trees. They were followed by William H. Donald, Capt. A. T. Banon, and others. The new crop began to spread beyond the Kulu valley in the 1870s, to the tehsildar's garden in Banjar, and Rev. Marcus Carleton, an American Presbyterian missionary, in Outer Seraj. They were produced for markets in Simla and the plains. They were shipped by coolie or mule over the Bhubu Pass to Palampur, then by military pony cart to Pathankot, and rail to Simla. [Diack 1897: 87; Chetwode 1972: 127-49; Shabab 1996: 47-49]

In the bazaars of the upper Beas region, trade continued to be handled almost entirely by commercial groups who were not local. Lahouli Buddhists bought grain and other goods for transport northward, while Punjabi Hindus controlled the steadily growing trade with towns in the plains. Kulu and Seraj were being steadily more strongly linked to the market economy of wider north India. The British saw this as a major form of progress, and encouraged local landowners to become more involved. Harcourt was frustrated that they resisted, leaving all the new profits from commerce to outsiders. But the era of rapid commercialization of agriculture was not to emerge until after India became independent in 1947 and began to set its own priorities.



SUMMARY: ENVIRONMENTAL TRENDS UNDER BRITISH ADMINISTRATION

In sum, the colonial era's major changes were commercial logging and fruit, plus slow expansion of subsistence cropping (without major changes in that crop complex). Any serious reduction of biodiversity, however defined, had in all likelihood occurred mostly in the main Kulu valley and perhaps the middle Parvati, the only areas which had been changed by commercial logging and horticulture.

The years saw steadily shifting boundaries between forest cover and arable. The patchwork subsistence landscape of agriculture and grazing was a complex fabric of natural and anthropomorphic species mixes, in which probably few species were seriously reduced overall, though grazing routes and thaches were undoubtedly reduced to a few unpalatable weedy species. Recent research suggests that important wild mammals such as the ungulates actually thrive on forest edges and varied grazing.

There was undoubtedly no serious reduction of flora in the colonial century. Medicinal herbs, the most seriously reduced in recent years, had little market before the 1960s. Ringal bamboo was plenty adequate for local farmstead uses. No indication of depletion of other species.

The work of the Forest Department was the most commercialized aspect of natural resource use, and it penetrated deeply into natural ecosystems and wildlife habitat. Logging was usually selective, less devastating to local habitat than the clearcutting of the early post-Independence years, but still a sudden change in species composition and microclimate. Silvicultural science worked toward "normal forests," defined as even-aged stands of commercial timber species, with old trees culled and non-commercial species reduced or eliminated. This was undoubtedly a threat to the habitats of various species of flora and fauna, though field knowledge of most species did not exist. Indeed, the modern science of ecology was only beginning to emerge by the 1930s. Until it became more highly developed in more recent years, the ideology of proper resource use was left by default to commercial priorities, defined as development or meeting the broader society's needs. But it must be noted that within the forestry profession the emerging science of forest biology was to be an important contributor to the more mature studies of natural and human ecology of recent years.



ACCELERATING PRESSURES AFTER INDEPENDENCE

India ruled its own destiny from 1947 onward. By early the next year Himachal Pradesh was born, first in the form of an amalgamation of the former Princely States of the Simla region, under the administration of the central government. In 1951 it was given a degree of autonomy under a Lieutenant Governor, and it became a Union Territory in 1956. The movement toward greater autonomy continued in 1963 when the Legislative Assembly was initiated in Simla.

Meanwhile, Kangra District, including Kulu, Rupi and Seraj, remained part of Punjab. In 1963 Kulu became a separate district, including Rupi and Seraj. Then in 1966, as part of the reorganization of Punjab, Kangra and Kulu were transferred to Himachal. Five years later, in 1971, Himachal gained full statehood, under the dynamic leadership of Chief Minister Y. B. Parmar. The administrative units in the area which would later become GHNP were Kulu and Banjar tehsils, within Kulu District.

CENTRAL AND STATE GOVERNMENTS' DEVELOPMENT STRATEGY

The independent government made a commitment to rapid economic and social development, to generate wealth and meet the needs of a rapidly expanding and largely poor population. In a series of Five Year Plans from 1951 onward, public funds were invested heavily in economic growth. The environmental costs of development were considered only marginally for the first three decades. [Bhati 1990]

In Himachal the first priority was transport infrastructure, to overcome the severe inaccessibility of the mountain region. [Verma and Partap 1992: 620-22] By 1950 the Mandi-Kulu road was jeepable through the gorge below Aut, but it was not metalled through the gorge until the 1970s. "Beyond Mandi, the road is very narrow and at places is blasted from solid rock and supported by wooden eaves partly hanging over the turbulent Beas." [Kayastha 1964: 180; Chetwode 1972: 43-45] This heavy emphasis channelled major resources through the Public Works Department. A 1954 Punjab government plan was slowly implemented. The 1962 border war with China accelerated mountain road building, for strategic defense, including gradual improvement of the national highways up the Beas and Sutlej rivers. [Tucker 1982]

In the late 1960s, under the efforts of Chief Minister Parmar and the first Member of the Legislative Assembly (MLA) for the Sainj-Tirthan area, Dilaram Shabab, local roads were steadily improved to make automotive traffic possible. The foot bridge across the Beas at Aut was replaced by a suspension bridge suitable for trucks and busses, and another was built across the Tirthan at Larji. The road from Aut via Banjar and the Jalori Pass to Ani, the Sutlej basin and Simla was gradually improved, as was the side road 14 km up from Larji to Sainj village. These enabled regular bus service to begin, allowing villagers from remote areas to reach major towns for markets and labor easily for the first time.

COMMERCIAL CROPS

As the transport infrastructure improved, this enabled the government to pursue its second major priority, the expansion of market agriculture. This work centered in the main Kulu valley at first, then spread into the Sainj-Tirthan area in the late 1960s. By the standards of modern development, most villagers' lives in the 1950s were backward and poverty-stricken. Their literacy rates were extremely low: in most villages under 10%. Health services were almost nonexistent, and birth and mortality rates were high. Well over 90% of the area's population were small farmers and shepherds. The beckoning, growing markets for cash crops, especially fruit, presented a major opportunity to "modernize" the agricultural economy as the foundation for prosperity and social development.

Statewide the acreage under market crops rose 10% between 1974-75 and 1979-80 alone. As for fruit, Himachal had 1,000 ha in fruit trees in 1948; by 1988 the acreage rose to 150,000 ha; over 80% of that was in apples. [Verma and Partap 1992: 627; Swarup and Sikka 1983: chap. 6] In Kulu District there was a 14% area increase from the mid-1960s to the end of the 1970s alone. This trend meant major shifts into fruit trees from both waste lands and field crops. [See table in Verma and Partap 1992: 626]

A more recent additional trend has been vegetables such as cabbage, cauliflower and peas, for urban markets in Kulu and Mandi, and farther away in the cities of Punjab, Haryana and Delhi, especially off-season vegetables. The new tourism in Kulu and Manali, which boomed in the 1970s, also provided markets for fruit and vegetables.

The Himachal Government established important support programs to encourage these developments. Starting with the Third Five-Year Plan (1961-66) a major emphasis was placed on horticulture, especially fruit production. [Bhati 1990: 45] The Fifth Plan (1966-71) introduced High Yielding Varieties of several cash crops, with associated package of inputs, including chemical fertilizers. Statewide, consumption of inorganic fertilizers rose from 2,200 tons in 1966-67 to 14,000 tons in 1979-80. [Swarup and Sikka 1983: chap. 6]

The state government also established price subsidies, a marketing cooperative, the Himachal Pradesh Horticultural Produce Marketing and Processing Corporation, and by the 1960s Primary Agricultural Credit Societies. Related research agencies included the 1976 Agricultural University at Palampur, and by the end of the 1980s the Horticultural University at Solan. All these state government programs must be taken into account in a full understanding of the transformation of the farm economy which has affected the Sainj-Tirthan region, and which holds the promise of further rural development strategies but also the danger of adverse environmental impacts.



For the village economy the new market cropping achieved a breakthrough in incomes, toward a prosperity never seen before in the region. But it was not all rosy or equitable. Urban traders were major beneficiaries of the new income, and the larger landowners were able to profit from planting orchards, but the landless Scheduled Castes at the bottom of the economy could benefit only in the form of some wage labor. [Ashwini Chhatre?, pers. com.] And land which was changed from annual crops into orchards was somewhat less available for winter grazing for migratory flocks of sheep and goats.

The environmental impacts of the new horticulture were also complex. Tree crops were a better use of steeply sloping arable land than annual crops, since they stabilized soils and inhibited erosion. But the new trees were susceptible to new diseases; by the early 1990s their yields were beginning to decline, and the money costs of inputs were steadily rising. [Sanjay Singh, pers. com.] And they required large amounts of wood for packing crates, which was largely provided from the high spruce and fir forests. Heavy logging of the high forests became a major extension of the ecological impact of the market economy, throughout the upper Beas region.

Finally, from the 1960s onward a major cropping change evolved, from the variety of traditional grains to mostly rice, wheat and maize — from a traditional hills diet to a Punjabi diet. This was a shift from kodra and sadiara grains, which were more climate-resistant. And possibly crop diversity was declining. [P. Choudhury, Vinod T. R., and S. Singh, pers. com.]

VILLAGE LEVEL INSTITUTIONS

These deep-seated shifts in the region's rural life were initiated by government programs, new technologies and the market — all outside forces. They posed a challenge to local institutions, and raise the question of whether local communities could play any major role in planning and shaping their own future. The early 1950s brought Panchayati Raj to India, both nationally and in Himachal, as the village-level introduction of formal democratic procedures with elected officials. In the 1960s the village Negis of Kulu and Seraj were displaced by the new panchayats and their chairmen (pradhans). At first they were elected by concensus of village landholders. But the official panchayats became polarized by party rivalries and factionalism; many of them became little more than patronage channels for whichever party was in office. [Shabab 1996: 113-16] They held little promise for the broader task of allocating and managing natural resources, which faced them in the 1990s.

A second alternative was the far older devta committees, which formally managed only the temples, their sacred groves and their endowed lands. But the devta managers were under a traditional ethical mandate, which the new political panchayats did not share: members were expected to maintain the specific ethical and ritual standards which the devtas instructed.

Field studies of these traditional institutions are seriously inadequate, but one village-level study of a fairly isolated mountain valley between Kulu and Manali reports that the devta committees are still functioning. In several villages the committees have five members, headed by gaur. The average area of the temple lands is only about 1 ha. There is heavy grazing on those lands, but no tree felling except for repairing the temple. Each committee “acts as rendezvous, resolves villagers’ social conflicts, problems and regulates the role of religious faith in human welfare. [The chairman] is believed to have overriding knowledge of forecasting climate and agriculture production activity and performs devta’s activities.” [Singh and Rao 1995: 7]

A field report from one village in the Sainj valley describes the continuation of complex restrictions on use of the temple lands and vegetation, including tight restrictions on women and Scheduled Castes; traditional taboos on ritual impurity are still in force there. A devta committee comprised of all men of the village decides fines or punishments for breaking temple lands rules. [I. Singh 1997: 17-19] However, other field researchers report that for the most part the committees are in decline now, as civil officers’ influence rises. [P. Choudhury and Vinod T. R., pers. com.]

In sum, the long history of village life in the region has evidently left its local institutions far too weak and fragmented to carry out new tasks of ecodevelopment or maintenance of biodiversity, without a major new effort to create local institutions. The century and more since centralized colonial administration began to penetrate to the village level has prepared the region badly for a new era of shared planning and management.

CHANGING DEMOGRAPHY

Under the chaotic social conditions of Partition in 1947, nearly all Muslims of Kulu and Mandi areas were forced to flee to Pakistan. In return, Punjabi Sikhs and Hindus who had fled the Pakistani segment of Punjab arrived in the market towns, including tiny markets such as Aut and Banjar. The increasing power of urban commercial castes and the market economy dates from that time. But Himachal’s population, including the population of the upper Beas basin, has remained largely rural until today.

LAND REFORM

A high priority for the state government from the 1960s onward was a new definition of social justice: the ancient disabilities of the landless and Untouchables must be overcome, in part by granting them ownership of agricultural land, just as their Rajput covillagers had always had. The 1968 Nautor Land Rules made grants possible to them from Class III forest land. “The nautor could be given for agriculture, horticulture, thrashing floor, construction of a building for residence and public purposes. The priority was given to landless, marginal holders, schedule castes and tribes, family of people who had died in military service, ex-servicemen and others.



The Nautor Rules provided detailed procedures for receiving application, field visit by revenue officials, receiving objections, and clearance from the Gram Panchayat to proposed allotment. It also had a provision for an assessment from the Forest Department of the tree resources on the plot." [Pathak and Pandey 1996: 16-18; Verma and Partap 1992: 619-20]

Six years later the 1974 Himachal Pradesh Village Commons Vesting and Utilization Act strengthened the position. In Punjab the village commons (*shamilat*) were under the panchayat, but the Himachal Vesting Act transferred commons to the State, to allot partly to the landless and poor. This was also Class III forests, under the jurisdiction of the Revenue Department. The 1970s saw many nautor grants by the Revenue Department, under persuasion from local political representatives.

The early 1980s brought new complications to the picture. The Central Government's 1980 Forest Law forbade any breaking up of forest land, including Class III forests, without prior approval from the Centre. This was a hopelessly complex process, even for making roads, panchayat house, school, irrigation, etc. Nautor grants were effectively ended.

But since the 1960s there had been many encroachments on forest land, especially for the expanding industry of fruit trees. "The invisibility of the terrain to the gaze of the government officials, whether Forest Department or the Revenue Department, and powerful encroachers — powerful enough to deal with lower officials, have prevented any cognisance of the encroachment. The absence of demarcation has made the task even easier. Moreover, in the encroachment cases, the courts were helpless in establishing the question of rights since the lands were not surveyed and demarcated. In addition, if a person enjoyed quiet possession for a certain number of years, within the land laws, the courts could only concede the right of the person on the land." [Pathak and Pandey 1996: 18]

Encroachments on forest land continued to increase over the years. The law stated that villagers could till new soil only in their home kothi. But many local people were beginning to encroach on forest/grazing land of adjacent villages. These cases were rarely recorded or adjudicated by the Revenue Department, and the Forest Department avoided intervention, not wanting to act as a buffer between villages. The boundary of responsibility between the two departments remained confused. "Generally the cultivated lands are extended without proper sanction. The correct procedure is not followed and as soon as an application is filed, the applicant thinks that the land is his. Immediately he breaks it up and keeps it in his illegal occupation. As is usually the case, the influential and clever persons indulge in such activities and the poor and needy law abiding inhabitants suffer." [Kapoor 1972: 23-24] One knowledgeable forest officer claimed that encroachments were increasing because III Class Forests were not measured, and the Revenue Department had been giving nautors in them without notifying the Forest Department. [Jaiswal 1987: 47]

The state government made some effort to cut through this administrative tangle. Its 1987 encroachment policy was to guarantee all encroachments which had happened prior to 1982, but only if they were contiguous to the claimant's previous land, or for landless villagers. But enforcement was difficult: illegal encroachments must be ejected by revenue courts, which were cumbersome and rarely led to evictions. The boundary between settled and forest land was becoming more unclear than ever, and the Forest Department had other priorities for its work: priorities in which it had hope of measurable success and satisfaction.

FOREST MANAGEMENT UNDER THE 1952 POLICY

The Forest Department's policies after Independence were consistent with the overall priorities of the Five Year Plans. Their priorities were accelerated timber cutting and contribution to rapid economic growth (rising market production and cash incomes). As J. C. Sharma, who revised the Kulu forests' Working Plan in 1980, put it in retrospect, "The value of the forest was recognised not only in the physical field such as conservation of soil and moisture, prevention of erosion and increase in rain fall etc. but also in the economic field such as development of agriculture, industry and communication. Forestry was no longer a mere handmade [sic] but in indispensable and foster mother [sic] of Agriculture and Industry. All the post-independence reconstruction schemes involve industrial expansion, river valley projects, electricity schemes and development of communication all of which lean heavily on forest produce." [J.C. Sharma 1980: 36]

A new plan appeared, for a newsprint factory using spruce and fir; maple and bird cherry for textile industry. Sports needed willows, while matches and plywood required chil and fir. Development schemes of Central and State governments included fruit orchards in Kulu valley, with many small sawmills. [J. C. Sharma 1980: 37-40]

The Forest Department initiated a new revision of the Kulu Forests Working Plan to meet these major changes in land use priorities. But the department's resources were seriously inadequate to the task: the process of revision took eleven years, from 1961 to 1972, and then Kapoor's 1972 Plan was never officially adopted, but was only used de facto. The department was proving increasingly inadequate for meeting the expanding administrative detail of its responsibilities.

Aggarwal's Selection Working Circle was abolished, and working moved to Regular, Fir or Protection Working Circles. The new plan created a Broad Leaved Working Circle, to meet demand for walnut, maple, bird cherry, birch and Kharsu, with blocks of over 1 ha and up to 3,000 m from Demarcated and III Class forests.

Mechanical logging required clear felling, which would have more severe ecological impacts than any previously used selective logging. But "the system of clear felling was abandoned



sometime in 1974-75 as the regeneration did not keep pace with fellings. Clear fellings also invited criticism from people of all walks of life, villagers, Forest Officers, Tourists and Politicians." [J. C. Sharma 1980: 41]

In those years the Sainj and Tirthan watersheds underwent accelerated fir harvests in the high forests, in response to the fruit growers' demands for crates. As the fruit growers' political influence grew, they could impress their needs on the Forest Department effectively, whatever the ecological costs.

In 1961 an Extraction Division was added for modern machinery methods: logs were to be transported to roads by skylines and cranes. A large sawmill was set up at Shamshi, including a capacity to mill hardwoods, which were then floated to Nangal, since the Bhakra Dam was by then complete. Markets shifted from Doraha to Nangal, and from Dhilwan to Pathankot, when dams were completed. Depots were maintained at Kulu, Manali, Bhuntar, and Banjar. Waste wood at sawmills was sold for firewood.

For forest labor, local men were available except during the sowing and harvesting seasons and melas. For infrastructure development the Forest Department and its contractors imported labor, including increasing numbers of Nepali migrant laborers for sawing etc. Carriage labor mostly from Garhwal; skilled workers mostly from Mandi. In Kulu-Manali shortage because of border roads labor at high rates. Also comptn at higher rates from orchards, trekkers. [Kapoor 1973: 61-62, 212]

A new law in 1974 established the Himachal Pradesh Forest Corporation, to oversee the production of packing cases, relations with hydropower projects (relations with the State Electricity Board) and the Public Works Department. The Corporation also supervised salvage fellings for sale to private buyers in Pathankot, Sundernagar and Mantarwala. [Jaiswal 1987: 90-91] It was also in charge of the resin factories at Nahan and Bilaspur, and of course general timber extraction. [Gupta 1998: 16]

In response to environmental criticisms, commercial timber fellings were banned statewide in 1978. Thereafter the Forest Corporation was expected to do only salvage logging, and establish more depots for local people and fruit packers. The trend of changing priorities was embodied in a new 1980 Himachal Pradesh Forest Policy, which instructed the Forest Department and Corporation to reorient their work toward reforestation and conservation. In line with the changed priorities, the department's name was changed to the Department of Forest Farming and Conservation. [Gupta 1998: 39-40] Then in 1982 private timber contracting was entirely ended, at least in principle. Official figures indicate a rapid decrease in timber operations: the total for 1979-86 was only 7,600 cubic metres of deodar, kail, chil and fir. What the actual figure was is open to debate.

The Forest Department's work of reforestation was also a potentially important element of the picture. Reforestation had begun almost at the beginning of the Forest Department's existence, over a century before, but its priorities were very different from villagers' interests. From very early on, the Forest Department had planted commercial species in Reserved and Protected Forests, at the expense of fodder trees. Since the 1960s it added fast-growing exotic species, especially eucalyptus in lower elevations.

What were this policy's benefits to villagers? One vitally important feature for villagers' lives was the system of Timber Distribution (TD) rights: granting timber trees from government forests to villagers for construction, for very low fees. By the 1970s the question of TDs was becoming an increasingly contentious between forest officials and villagers. In an accelerating trend, many village families were splitting from joint households into nuclear units, so there was a steady increase in demand for housing construction. Deputy Rangers were responsible to mark the designated trees, and they were responsible to see that trees cut for villagers' personal use were not sold on the market. But many villagers were able to get large trees (seed bearers) from the Rangers and sell them to illicit buyers for huge profits on the bloated commercial timber market. At least some villagers were gaining more from Forest Department procedures than they were legally allowed.

A second benefit was the century-old system in Kulu of the Kothi Fund, which designated the fees from TD to be used for village paths, bridges, water lines and other local improvements. [Anderson 1886: ..] These funds were to be administered by local panchayats. But the fee schedules remained virtually frozen at 1890s levels, so the funds provided only trivial amounts of money for the cost levels of recent years. [Kapoor 1973: 18] And as panchayats became factionalized, the funds they administered seem to have become primarily a source of personal gain and quarrels. Collective funds continued to be far less important to the household and village economy than the century-old system of rights to forest products.

GRAZING PRESSURES ON BOTH SHEPHERDS AND FORESTS

Under the democratic regime enshrined in the Legislative Assembly and the state Ministries, local people gained new channels for registering their priorities with the government. The controversy between the Forest Department and the grazing interests continued: the graziers gained new leverage through their representatives in the new Legislative Assembly. [Saberwal 1995a]

The debate centered primarily on the needs and impacts of the large migratory flocks of sheep and goats. The first issue was whether their numbers were rising. There were sharply conflicting views on this contentious issue. The Forest Department had argued for over a century that numbers of sheep and goats were steadily increasing, in parallel with the increase of the



state's rural population. [Tucker 1986] In the late 1970s Phillimore studied the question independently, and concluded that there was a steady, gradual decline in overall numbers around Himachal. [Phillimore 1981: 104-9]

But what was the trend in the Sainj-Tirthan area? No reliable estimates of numbers or trend were available. This made it very difficult to substantiate policy recommendations. The first Himachal Wildlife Project report noted how difficult livestock census were, then recommended that all flocks be removed from any future GHNP. [Gaston, Hunter and Garson 1981: ..] The research team's resurvey in 1992 gave an estimate of 25,000 local sheep and goats in GHNP, plus 10,000 outsiders' sheep and goats each summer. [Gaston and Garson 1992] This set the stage for more systematic surveys.

The most recent and painstaking counts indicate lower numbers, and a slow, steady decline in the flocks. The Indian Institute of Public Administration's 1996 report listed 19,000 total in summer pastures. [GHNP 1996] Also in 1996 Iqbal Singh's field work also challenged the earlier, higher figure; his field work corroborated the IIPA estimate. [I. Singh 1996] It is also controversial whether the summer thaches have seen reduced grazing in the 1990s; if so, whether that reflects reduced numbers of local or outsiders; and what the resulting ecological transition may be.

Singh also challenged the assumption that grazing must be excluded from the park for the sake of maintaining biodiversity and the health of endangered mammals. There is still some uncertainty whether domestic livestock diseases spread to wild ungulates, and whether the flocks' upward migration through the forests in the spring disrupts the nesting of pheasants and other birds, or mammals' habitats. These both need more systematic, longer-term monitoring.

An unresolved question is whether there is any recent historical trend which can shed light on the social costs of restricting locals' or outsiders' grazing rights in GHNP. Local shepherds' difficulties increasingly focussed on the shrinking of winter pasture in the lower elevations. Winter pasture was steadily shrinking, as it was being changed into fruit orchards, new cultivation and new houses. In addition, the hard life of the migratory shepherd stood in sharp contrast to the new alternative sources of work and income in the villages and towns. As local people began to gain more cash income from other sources, they could begin to cut back on the demanding life of migratory grazing.

But there is also evidence of a trend toward fewer flocks but with relatively constant total numbers, herded in more multi-household groups. One great virtue of Singh's field work is that he collected verbal evidence from the shepherds themselves, which has been almost entirely lacking before, about the long trend. He reported that they all agreed that the total

numbers of sheep and goats had been declining steadily in recent years. [I. Singh 1997: 10] (This verbal history is probably neither more nor less reliable than the written record, but it exemplifies the importance of researchers' gathering and reporting whatever verbal testimony they can gain from the older villagers.)

In addition to the local flocks, there were still summer flocks, largely from Outer Seraj, but also from Mandi and Suket, where summer heat and drought mean inadequate pasturage. Iqbal Singh found two large herds from Mandi in 1996 in the Sainj watershed; both may have had unclear rights to graze in the thaches. Profitability for them comes from pastoral products, including weaving, via markets for wool and shawls. Northward trade was disrupted when China closed the Tibetan border with Ladakh after 1959.

Some Gujjar herders began to appear as well. After their nineteenth century presence in Rupi [Anderson 1886: 36], they began to appear in Kulu in 1940, when the Forest Department permitted 80 of their buffaloes into the Beas valley. Most of them gained land in the southern Kulu valley, with grazing rights attached. [Kapoor 1973: 20] The valley's people need an adequate supply of milk during the tourist season; so in 1971 the department decided to issue regular forest grazing permits to Rahdari Gujjars, those who owned land locally. In 1971 250 buffaloes were counted; in 1972 there were 1,314; and in 1978 there were 2,020. [J. C. Sharma 1980: 10] In a separate and more recent drift, additional Gujjars have begun to migrate in summer from the Ani area of Outer Seraj to high pastures in the Tirthan watershed.

Ultimately the core issue concerns the environmental impacts of large-scale grazing in the region. Early research for GHNP saw large flocks as largely destructive for wildlife and habitats. The first international team of wildlife biologists concluded in 1983, "Grazing has ... modified the understorey vegetation considerably, reducing the amount and diversity of shrubs and ground vegetation. Along grazing routes in particular, large areas of meadow consist almost entirely of dock ... and other nitrophilous herbs. The understorey is best developed in areas subject to little or no grazing, such as the upper Sainj and Tirthan valleys. ... Comparisons of heavily and lightly grazed areas lead us to the conclusion that grazing by domestic animals is causing severe alteration of the natural forest flora. In most areas this reduces the suitability of the habitat for wildlife." [Gaston, Garson and Hunter 1983: 311] Garson expanded the analysis that year, concluding that the upward spring migration of flocks to high thaches probably disrupts nesting habitats of pheasants and other species. [Garson 1983]

But systematic field research on the impact of large-scale grazing had not been carried out yet, so this critically important issue remained obscure. Recent research challenges this view, arguing that in alpine areas a mixed vegetation pattern of open pastures (thaches) and forest is probably the most advantageous and varied for wild species diversity. On the basis of intensive local research in similar alpine areas of the Dhauladhar, west of the upper Beas,



Saberwal concludes, "Intense grazing pressure may be responsible for the observed low species diversity adjacent to the campsite, but the effect is insignificant at the level of the overall landscape." [Saberwal 1995b: 1]

"If maximizing biodiversity is the main objective, one could argue that by having areas subject to different grazing intensities, one can create a patchwork of forest types and thereby increase regional biodiversity over the landscape as a whole," as an alternative to eliminating all grazing and allowing the vegetation to revert to a uniform secondary forest. [Saberwal 1995b: 17-18]

"If nothing else we need to discard the idea that humans and biological diversity are incompatible. Doing so could considerably reduce the social and economic costs associated with displacement programs: costs inevitably borne by marginal communities." [Saberwal 1995b: 20]

New research results from Wildlife Institute of Institute scientists and SAVE, the local NGO, refine the discussion further, by tentatively proposing that a landscape which represents both wide natural variation plus additional human-induced variation is probably a more advantageous habitat for many birds and smaller species. For example, WII biologists report that "Thaches seem to be ideal habitat for insect fauna, particularly butterflies." Different species prefer short or tall grass, but excessive grazing reduces number and variety of flowering plants on which butterflies depend. [Uniyal and Mehra, 7] And Iqbal Singh's field survey for SAVE indicates that weed species dominate the perennial nighttime resting spots for the flocks, but "weed infestation was negligible on the level of overall landscape." [I. Singh 1977: 11]

Additional monitoring of varied habitats within and near GHNP, both natural and human-impacted, will be necessary in order to assess more precisely how much the different arguments are colored by differing assumptions about social justice. [For additional refinement of the management issues at stake, see Mehra and Mathur.]

NON-TIMBER FOREST PRODUCTS

Most observers agree that the second major pressure on GHNP's diversity of species is the collection of medicinal herbs, as well as other Minor Forest Products, especially morel mushrooms. This is a different issue from grazing rights, for administrators as well as local people, since the Forest Settlements from Anderson onward placed no restrictions on anyone's collecting the herbs. Until the 1960s there was no significant commercial market for the major herbs, and no one anticipated that this would become a critical issue for the park.

But beginning in the 1960s the commercial market expanded enormously, giving local people a major new source of income. Tandon's field survey of villages in the Ecodevelopment Zone indicates that 70-85% of households are now gaining cash income from collecting and selling

herbs. [Tandon 1997: 3] The original system of rights established in Anderson's Settlement were restricted to a collecting season of only two months, 15 August to 15 October. But under the irresistible pull of the booming market, collectors expanded their work to the entire season, from April to November.

In consequence several species of herbs have become rapidly depleted, and three in particular are officially Endangered now:

Picrorhiza kurroa (kaur, karu) and *Valeriana jatamansi* (muskabala) are Critically Endangered;

Dioscoria deltridea (shingli mingli)

Taxus baccata (brahmi)

Jurinea macrocephala (dhoop)

Saussurea lappa (kuth)

Morchella esculenta (guchhi)

[Tandon 1997: 12-13]

Cash cropping, especially apples, brought in outside workers some of whom gradually became de facto rightholders. Wyeth began research on Dioscorea in 1960. [Tandon, Annexures VIII-IX] Guchhi, the morel mushroom, attracts many people in May and June, to mid-elevation forests. They probably disturb pheasant nesting sites, and have cooking and warmth fires, which may go wild. [Gaston and Garson 1992: 53-54] Morels now bring in Rs. 11,200,000 per year in the Ecodevelopment Zone. "The village communities, especially the collectors, are unorganised, without any stable village level organisation or groups." [Tandon 1997: 10]

Who collects these products? Entire families from areas near villages; only men and boys from high and difficult locations. These include fuwals (summer graziers), who are gradually declining in numbers. The major work is done by an increasing number of local men who go up specifically for other herb species in the thaches and crags. [I. Singh 1997, 7-9] They have a system of rotational harvesting, including fallow years, since it wouldn't pay to go up for small amounts. They report that quantity of herbs hasn't decreased, but less per collector; they say that there have been no collectors. Increasing education for local boys leads them to take easier jobs; but market demand brings in more outsiders, especially Nepali collectors. [I. Singh 1997: 14-16]

Right-holders complain about others impinging on collection of marketable herbs and mushrooms, both those with rights in other areas of the park, and those with no rights in the park. They complain that Forest Department staff should enforce the Record of Rights and prevent these irregularities. [Choudhury 1997: 65; I. Singh 1997: 16]

The system of trade begins with many local shopkeepers, who buy from the gatherers. By the mid-1990s there were eight traders in the Parbati valley and thirty-eight in Seraj Division.



Many specialize in one or two items. Larger traders work from market towns; the largest group was eighteen in Kullu, all of them relatively small-scale Indian firms except the multinational Wyeth Laboratories with its headquarters in Bombay. The herbs are shipped from these towns to Amritsar, Delhi, Bombay and beyond. [I. Singh 1997: 11-13; Tandon 1997: Annexure VII]

Major traders in Amritsar and other distant cities place orders with key traders in towns like Kullu, who give advances to local traders at trailheads in Gushaini, Manikaran, Sainj, etc., to buy specified quantity at specified prices; a collection time, generally of 2-3 weeks is given. Markets and prices are very unstable and risky; large dealers must have big capital.

The local agent earns a small commission, or withholds some of price to collector. Many herb collectors "are very poor and in debt to the local agent in his role as shopkeeper." Local traders have close links with the Forest Department for collection and export permits. Herbs usually shipped by truck, sometimes by bus, usually to Majeetha Mandi in Amritsar. From there to Delhi, Saharanpur, and Calcutta for export. [Bajaj 1997: 29-41, 62-65]

Nearly 60 species are collected. Collectors and Park officials are aware of restrictions only on *Dioscorea*, which seriously depleted, and *Taxus baccata*, which is recently being overharvested. Records indicate about 1,200 collectors; but there are probably many more. Herb collectors report overexploitation of some species, especially dhoop, and a decline in quality of some others. [IIPA, 56-65; Choudhury 1997: 15-18]

The trade has been controlled to some degree by a series of regulations, but they have been localized or of uncertain application or else rapidly outstripped by the market. The first were two districts' laws: the Chamba Minor Forest Products Act of 1947 and the Mandi Minor Forest Products Rules 1956. For lack of statewide legislation, these regulations were informally adopted by the entire state. In 1964 the Punjab government fixed royalty rates for 14 species, but these were haphazardly collected or recorded. The 1972 Central Wild Life Act includes a list of species whose extraction and trade is prohibited or restricted.

In 1978 a Himachal Pradesh law set up a list of permit fees; in 1993 the Himachal government raised royalty rates so as to reflect market prices more reasonably. But this was not accompanied by stricter regulation or collection of dues. Several Himachal government agencies are involved in the trade, in particular the Forest Department, the Ayurveda Department and the State Council for Science, Technology and Environment. [Bajaj 1997: 49] On the scene, DFOs have the authority to issue transit and export permits. Local panchayats are authorized to collect fees. But one observer concludes that they have been ineffectual. Panchayats merely grant permission to local contractors. [Bajaj 1997: 43]

Regarding bamboos, landless, Scheduled Castes continue to harvest ringals. As other forms of cash, such as for unskilled labor, become more available, slow decline in this work. As the market for bamboo items increases, there is an incentive to continue this work, but this also attracts marginal outsiders, such as migrants from Bihar and Andhra. In sum, pressure on bamboos does not seem to have changed much in recent years, and is not a serious ecological problem in and around GHNP. [Choudhury 1997: 21-22]

HUNTING AND FISHING

Hunting, the other local system of harvesting the natural wealth of the region, underwent basic restrictions in the same years. The number of gun licenses for crop protection increased considerably in the first years after Independence, when the colonial fear of political strife was removed. They were issued by the District Magistrate. India-wide, commercial hunting accelerated in the 1940s-60s, but it is unclear whether the Sainj-Tirthan region was affected. [Tucker 1991] "Inadequate wildlife staff, a strictly commercial approach to forestry, the expanding road network and access to crop protection guns led to another phase of indiscriminate hunting in the 1960-1980 period." [V. Sharma 1998: 3]

The system of licences was not fully effective, because far more hunters were at work than the number of licenses reflected. In the years immediately after Independence many local shikaris obtained licenses for snaring musk deer and hawks. But Gaston, Hunter and Garson reported that in 1979-80 in Kulu District only 7 large game licenses and 7 small game licenses were granted, including 1 to a foreign party hunting for ibex. That winter two illegal outsiders poached two male musk deer in Rolla area, plus other ungulates for food. [Gaston, Hunter and Garson 1981: 111-14]

Skyrocketing prices on international markets, parallel to the explosion of some medicinal herb prices, rapidly outstripped the capacity of any officials to control or even monitor the harvest. The most dangerous case was the market for the musk pod of male musk deer, which were hunted close to extinction in the area in the 1970s. Most pods were sent to Japan to use as a base for cosmetics. [Green 1986; and check Shaller 1980 in that bib]] The first GHNP wildlife survey reported that the price for musk pods had spiralled upward to Rs. 8,000 in the 1970s. [Gaston, Hunter and Garson 1981: 112] And Choudhury calculates that the price of musk has risen at least 800% since Independence. [Choudhury 1997]

Brown and black bear skins were sold at Rs. 2-3, and the bile of black bear was Rs. 10. By the early 1970s the skin was earning Rs. 500 and bile earned Rs. 1,000-1,500. The actual hunters continued to be mostly local men, but there were some outsiders too. [Choudhury 1997: 39-40] The poachers included military men and government officials. Meat from wild game was readily available in local markets in winter. Forest guards knew local poachers and shikaris, but rarely reported them. [Kapoor 1973: 213-22]



In 1982 most hunting was banned in Himachal; the ban was specifically imposed in GHNP when it was notified in 1984. But there too enforcement was lax: only one poaching case was filed in court through 1989. [IIPA 1996: 98] Though all hunting was now illegal in Himachal, most local hunters never bothered to get Forest Department licences, so shikar probably continues unabated. Of the five species of pheasant, shooting or drop-traps especially in winter takes crest feathers of monal, western tragopan and koklas for hats. Finally, Jura falcons were sold to Pathan Muslim traders.



THE EVOLUTION OF GREAT HIMALAYAN NATIONAL PARK

There was a national trend toward degradation of natural systems and then awareness of the environmental costs of rapid development. The 1972 Wildlife Law gave legal force to India's portion of the international list of endangered species of flora and fauna, and banned hunting in India. [See Wildlife (Protection) Act 1972: 55-58] An immediate result of the new law was a major acceleration of the system of National Parks and Protected Areas.

The Government of Himachal, fully autonomous since just one year before the new law, was already actively interested in establishing one or more national parks. Chief Minister Parmar understood the state's great wealth of natural species. Dilaram Shabab, the legislator from the Tirthan valley, had already been discussing possibilities with the Chief Forester of the state. Shabab wrote to Parmar in 1971, proposing the Sainj-Tirthan region as far as the Spiti boundary as a new national park, both to preserve its natural wealth and as a development strategy for nearby villages. [Shabab 1997] In its turn the Himachal Forest Department, working through its new Wildlife Wing, made fresh proposals for establishing game sanctuaries. [Kapoor 1973: 219-20] Momentum was rising for establishment of the Great Himalayan National Park.

In 1976 8,396 hectares were declared the Tirthan Wild Life Sanctuary. In 1978-80 a team of Indian and international wildlife biologists conducted the first systematic survey of three areas in the upper Beas region as possible sites for a national park. In 1981 their report recommended the Sainj-Tirthan as having less human and livestock impact than either the Solang valley at the upper end of the Beas basin or the upper Parbati valley. [Gaston, Hunter and Garson 1981] In 1983 Garson continued working with the Wildlife Wing in the Sainj-Tirthan area. He concluded that "we are now completely confident that the upper Sainj and Tirthan Valleys contain both exceptional forests and a remarkable and complete array of the larger, more ecologically sensitive wildlife species typical of the Western Himalayas." In particular the area supported critically important populations of Western Tragopan, Cheer pheasant, other pheasants and musk deer. [Garson 1983: 3]

In March 1984 the Himachal Government declared its intention to create GHNP in that area, and also defined a 111,000 hectare buffer zone. Three years later in 1987 the Park's first Working Plan was completed, as a revision of the former Forest Working Plan for the area. But the presence of many villages in the buffer zone was a major legal problem. In 1990 the state legislature cancelled the buffer zone by removing the lower Sainj valley, with its many villages, from the National Park.

In order to establish park boundaries which both protected critical wildlife habitat and managed the human presence effectively, more wildlife surveys of the region and social surveys were urgently needed. Garson and Gaston resurveyed their original study area in 1991. They



found increases among pheasants and ungulates below 3,100 metres, and found no significant change in subalpine and alpine habitats. They recommended restrictions on grazing and medicinal collection in order to maintain the park's viability.

In March 1994 the state government adjusted the boundaries again, adding 14,500 hectares to the Park, but removing 9,000 hectares to create the Sainj Sanctuary. In 1994-95 it established the Ecodevelopment Zone on the western side of GHNP, encompassing well over 100 villages. This new status required the participation of local villagers and NGOs in planning and managing the area. But it proved difficult to bring officials into direct sustained work with villagers to expedite programs. [Pabla 1996] The long tradition of suspicion and avoidance between officials and villagers was difficult to overcome.



CONCLUSIONS AND PERSPECTIVES

Village life and its setting: until 1960s human pressure on S-T grew very slowly. Largely subsistence, with very limited export of natural resources beyond the area. Sharpest increase was colonial timber extraction. Between villagers and the state, there was increasing intervention in British times, in a more centralized and bureaucratic system. The extent of actual government regulation was less than official documents proposed in principle. Villagers sometimes accommodated officials, sometimes evaded or even resisted them. This long tradition made it very difficult to shift to today's principle of participatory management in the area around GHNP.

There was growing impact of the commercial economy, with an increasing flow of cash into villages, and slowly rising material expectations among the villagers. These links have been important links to the changing agroecosystem, as cash crops with chemical inputs have partially displaced traditional subsistence crops. Moreover, traders and contractors were often responsible for environmental stress, evading regulations and limits for extraction of timber, non-timber forest products and wildlife products.

In sum, ecological change in the area around GHNP has centered on the gradual expansion of patchwork arable and grazing. There is little evidence of severe depletion of wild species before 1960s, even under specific hunting pressures of colonial era.



ACKNOWLEDGEMENTS

I am grateful to Winrock International, especially K. C. Govil, for the financial and logistical support which made this project possible. My hearty thanks goes also to the GHNP research team from the Wildlife Institute of India: B. M. S. Rathor, in charge of the project; V. P. Uniyal, field supervisor, and research staffers Pradeep Choudhury, Badrish Mehra, Suneet Naithani, Ramesh K., Milind Saxena, Sanjay K. Singh, and Vinod T. R., for their indefatigable energy in the field, working under often extreme climate conditions, and enthusiasm and generosity in our conversations. I also received indispensable help in and around Simla, especially from Sanjeeva Pandey, Virinder Sharma and Chetan Singh. Finally, dedicated environmental researchers in New Delhi also gave me vital support and encouragement, including Amita Baviskar, Ashwini Chhatre, and Mahesh Rangarajan, and the research team at the Indian Institute of Public Administration and World Wide Fund for Nature - India: Shekhar Singh, Raman Mehta, Pratibha Pande, Vasumathi Shankaran and Ashish Kothari. My grateful thanks to all of them for their detailed understanding of both GHNP and its place in the national system of parks and protected areas. All of these friends, and more whom I may have neglected to mention, have deepened this historian's understanding of how human needs may be made compatible with natural ecosystems. Any confusions or weaknesses in the text are purely my own.

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