

INSTITUTE OF CURRENT WORLD AFFAIRS

An introduction to Jigme Dorji National ParkMay 28, 1994
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Dear Peter,

"This is a trip of a lifetime," Tobgay Sonam, World Wildlife Fund Program Officer tells me as we rest our elbows on land use planning maps of northwestern Bhutan. "I wish I could come along. Right up here (he points to a stretch in the High Himalaya not too far from Tibet) you'll continue along the Snowman Trek, one of the most difficult and sought after treks in the world."

As I prepare for a trip to Jigme Dorji National Park, I become more impressed and intimidated by the natural wonders of Bhutan's environment. In a nation the size of Switzerland or the combined area of New Hampshire and Vermont are perennial snow peaks and humid sub-tropical forests. From north to south the country is approximately 150 km (94 miles) wide. Within this distance the elevation changes from less than 200 meters (656 feet) above sea level to 7554 meters (24,800 feet) at the top of Kula Kangri, Bhutan's highest peak.

The physical terrain is divided into three broad categories. In the south bordering the northeastern Indian states of Sikkim, West Bengal, Assam and Arunachal Pradesh are the sub-tropical Himalaya Foothills, or duars, home to approximately 55% of the country's population. The Inner Himalayas composed of high mountains, dense coniferous forests and deep river gorges stretch across central Bhutan. In the north bordering Tibet are the High Himalayas, a region of alpine meadow, glaciers and tundra. At 30-40 million years old, the Himalayas are the youngest mountain range in the world. The Indian subcontinent broke away from Madagascar. The land mass collided with Asia forming the mountain range.

The Eastern Himalayas have unique biological characteristics differentiating them from the Western Himalayas of Nepal. One example is the diversity of rhododendron species. As one moves west to east across the Himalayas, the number of rhododendron species increases from seven in western Nepal, to 29 in eastern Nepal to over 50 species in Bhutan. While ornithologists continue to survey avifauna in Central Bhutan over 800 species have been identified. Diverse habitats support populations of tropical animals such as the endangered one-horned rhinoceros and Asiatic water buffalo to temperate Euro-Asian fauna including the snow leopard (*Panthera uncia*)

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and grey wolf (*Canis lupus*). With a strong commitment to conserve their biological endowment, Bhutan's leaders have protected 22% of their land in a system of national parks, sanctuaries and strict nature reserves (See Figure I).

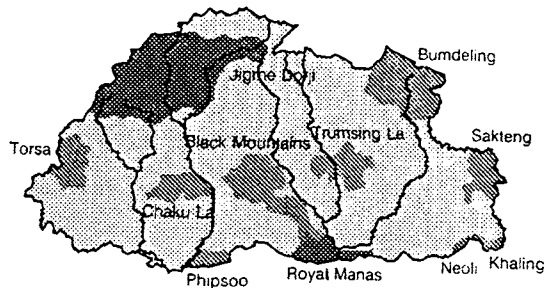


Figure I: Location map of Bhutan's protected areas.

Jigme Dorji National Park at 4,200 km² is the largest protected area in Bhutan (See Figure II). The park is home to over 2,000 people and numerous plant and animal species. Several of these are endangered or rare Himalayan fauna including snow leopard, musk deer and takin. The woolly takin (*Budorcas taxicolor*) with large hooves, a stub of a tail and squat legs is an awkward looking creature. This animal, with a mooselike face and a body looking like the result of a cross between a goat and ox, is the national animal of Bhutan. The only wild populations live in Jigme Dorji. Takin sightings on the eastern and western uppercatchment area of the Mo chhu and in the valleys northeast of Lingshi and in Lunana make me hopeful that I will spot the creature myself.

The endangered musk deer (*Moschus chrysogaster*) lives in birch-rhododendron and birch-conifer forests ranging between 2,900 - 4,200 meters. The deer is highly valued for the medicinal properties of the oil contained in its musk pod. The oil is used as a cardiac stimulant, aphrodisiac, anti-spasmodic, anti-pyretic and anti-inflammatory, and in urinogenital disorders (Yonzon, 1992). The number of snow leopard (*Panthera uncia*) living in the higher altitudes of the park is unknown. Preying on blue sheep and the livestock of park residents, villagers who have lost stock, particularly yaks, to snow leopards are among the best informants on where populations of this animal exist.

As a major watershed, the region includes the catchment areas for river systems vital to communities in Bhutan, India and Bangladesh. All rivers flow from north to south eventually merging with the Brahmaputra River. Mount Rinchen Dzyo near Lunana is the headwaters of the Pho chhu. The Mo chhu begins in Gasa. The two systems mix in Punakha and continue their journey to the Indian plains as a single entity. In the western region, the Tsang chhu and the Do chhu start from Mount Jumolhari. Jumolhari (the "J" is pronounced "Ch") at 7314 meters is one of the most sacred mountains in Bhutan. There is a sanctified image of Buddha on the peak left there in 1970 by the first expedition to climb the mountain.

Vegetation types and floristic associations change with increases in elevation and are classified into three distinct ecological zones: 1) montane zone, 2) high montane - subalpine zone, and 3) alpine zone. The lower elevations are montane regions with predominantly blue pine (*Pinus wallichiana*) forest and spruce (*Picea spp.*) forest. Blue pine forest occupy the dry lower valley slopes. Moving to higher slopes there is a gradual transition from blue pine to spruce and fir (*Abies densa*) forest.

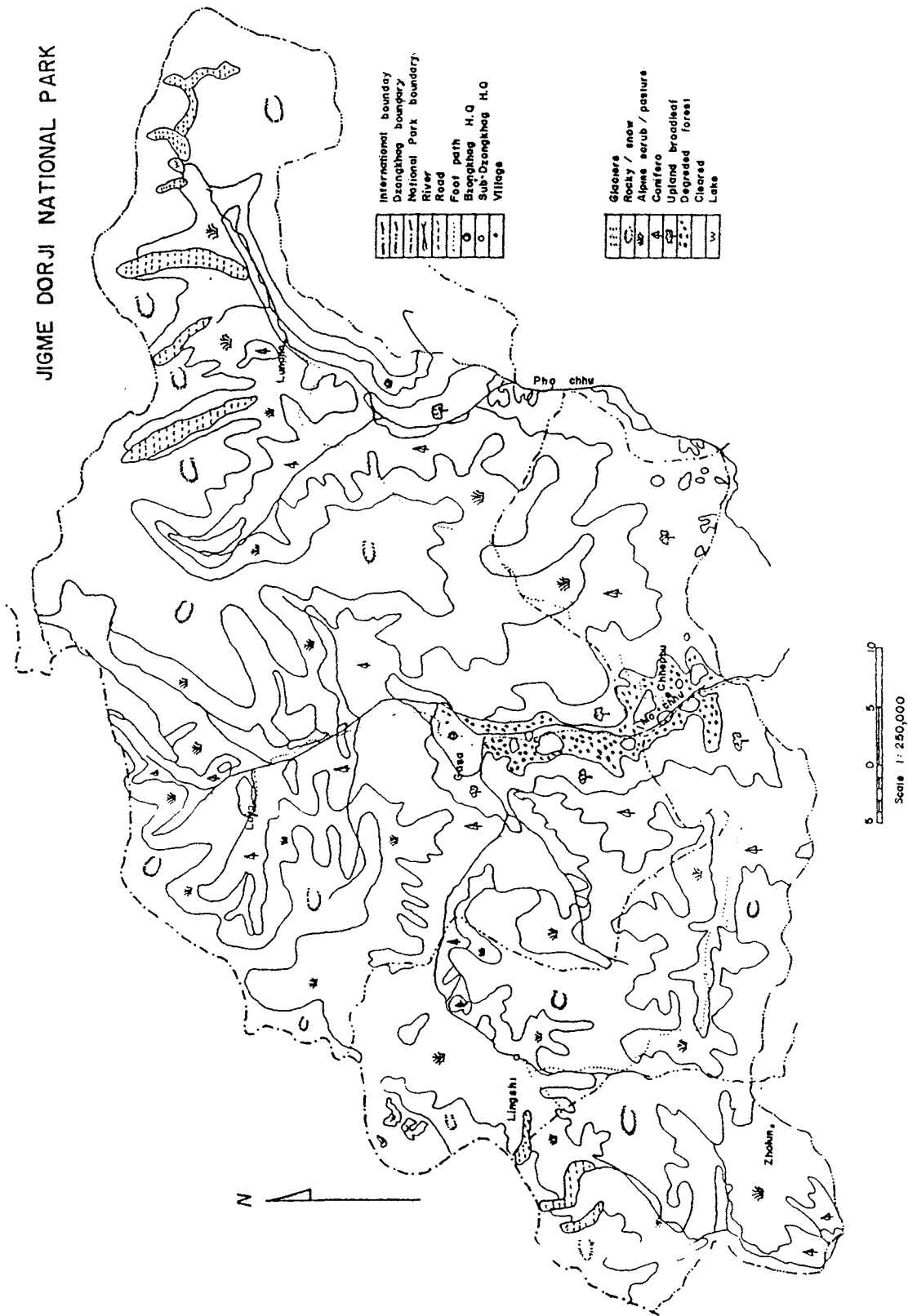


Figure II: Map of Jigme Dorji National Park indicating boundaries, major human settlements, habitat types and the two major river systems; the Mo chhu and the Pho chhu.

Spruce forests are interspersed with maple (*Acer pectinatum*). In the high montane-subalpine zone, hemlock (*Tsuga spp.*) forests are commonly found with birch (*Betula utilis*), *Rhododendron spp.* and thickets of *Arundinaria griffithiana*. Both hemlock and fir forests are densely mixed with rhododendrons. Juniper - rhododendron forests above 3,700 m have dwarf rhododendron species like *R. lepidotum* and *R. anthopogan* in the understory. Alpine communities have low growing perennial herbaceous plants suitable for grazing. Typical species include sedges (Family, Cyperaceae), mustard (Brassicaceae), buckwheat (Polygonaceae) and willow (Salicaceae).

Land uses practices in the park include dryland agriculture for maize, potato and barley crops. Rice grows in low elevation wet lands. Women cultivate turnips, chilis and radishes in small kitchen gardens. Pasture land for grazing cattle, yaks and small ruminants is shared with takin, blue sheep and other wild ungulates inhabiting the region. Leaves and needles used for green manure and bedding for livestock are collected from areas known as sokshing. Sokshing areas are predominantly single species stands of blue pine or oak.

The park has short-term inhabitants - trekkers and researchers like myself. There are three major passes in Jigme Dorji that all converge in Laya. The Jumolhari trek in the west runs through Lingshi. The Snowman Trek passes through Lingshi, Laya and Lunana and the Gasa Hot Springs Trek passes near the park's center. In 1992, 8.7% of the tourists to Bhutan visited Jigme Dorji, the largest proportion of them venturing out on the seven day Jumolhari trek.

Currently no plan exists to manage this landscape. The ultimate goal is to manage park resources in a sustainable manner so that all living and nonliving organisms coexist. Successful management needs information regarding what and who inhabit the lands within and immediate to the park boundaries and their specific resource requirements, for the park's people, understanding their cultural and historical relationships to these surroundings and seeking their ideas for ways to protect this biological diversity while promoting their livelihoods. For the next seven weeks I will be in Jigme Dorji visiting and talking with the residents who live in and depend upon the park for their daily subsistence.

Best regards,



Cynthia

Sources

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