

Biodiversity of Changthang

The Changthang plateau is located in eastern part of Ladakh Union Territory and its altitude ranges from 4,000m to around 7,000m above mean sea level. It is one of the highest inhabited regions in the world. Changthang is located in the rain shadow of the main Himalayan ranges and is characterised by high altitude steppe and rolling mountains interspersed with lakes, wetlands and river basins. It experiences cold, long winters and plant production is relatively low and restricted to about four to five months each year. In an effort to conserve the unique cultural and biological diversity of the Changthang region, it has been declared a protected area called Changthang Wildlife Sanctuary.

Changthang is located at the intersection of the Palearctic and Oriental biogeographic zones and is home to a unique assemblage of biodiversity adapted to the harsh conditions of this region. In fact, the only known breeding site in India for black-necked crane (*Grus nigricollis*) and bar-headed goose (*Anser indicus*) is in Changthang.

Changthang is also home to large carnivores such as snow leopard (*Panthera uncia*), Himalayan grey wolf (*Canis lupus laniger*), lynx (*Lynx lynx isabellina*), and Wild dog (*Cuon alpinus laniger*). Changthang is home to six species of wild ungulates, namely blue sheep (*Pseudois nayaur*), Tibetan argali (*Ovis ammon hodgsoni*), Kiang (*Equus hemionus kiang*), Tibetan gazelle (*Procapra picticaudata*), Tibetan antelope (*Pantholops hodgsoni*) and wild yak (*Bos grunniens*). It is also home to Himalayan marmot (*Marmota himalayana*), woolly hare (*Lepus ostioleous*), Tibetan snowcock (*Tetraogallus tibetanus*) and chukar (*Alectoris chukar*).

Vegetation is predominantly mountain steppe consisting of wild grasses and include plants such as *Arnebia euchroma* (Rattan jot) *Rheum spiciforme* (Himalayan Rhubarb), and *Nepeta longibracteata*. The steppe includes sedges, *Carex* spp. and *Kobresia* spp.

Most of Changthang's biodiversity is recognised as being globally and nationally threatened or endangered. The region has faced the added stress of anthropogenic use primarily in the context of material poverty and lack of sustainable alternative livelihoods for local communities.

The unique biological assemblage of Changthang is influenced by ecological processes, climatic patterns and anthropogenic factors. Changthang has a long history of pastoral nomadism going back 3,000 years and more. Most of Changthang plateau is located above the altitudinal range for agriculture for this latitude. As a result, a vast majority of local communities are engaged in pastoralism, especially nomadic pastoralism, while some communities do practice limited agriculture in what is considered to be some of the highest agricultural fields in the world. These activities have played a crucial role in shaping the ecological history of the region.

Despite this long history of human use, Changthang has one of the lowest human population densities in the world with less than 2.5 persons per sq km according to the 2011 population census. Changthang shares linguistic and cultural links with neighbouring regions of Lahoul and Spiti (Himachal Pradesh), and Tibet. It is home to significant cultural, ethnic, and linguistic diversity especially dialects of Tibetan. The residents of Changthang are followers of Tibetan Buddhism.

In the context of the larger landscape, Changthang has historically occupied an important position in the trade routes that connected Ladakh

with Tibet, China, Central Asia and Himachal Pradesh. In fact, there are important rock inscriptions near Tangtse village in Changthang whose origins can be traced back to such traders. This trade that passed through Changthang served as a channel for exchange of technology and ideas. These influences are still evident in the dress, architecture, art, language, technology, culture, beliefs and lifestyle in Changthang.

Changthang represents a unique model where modern development coexists with traditional cultural practices in harsh ecological conditions owing to its geography and altitude. Moreover, awareness of biodiversity conservation is deeply embedded in the Ladakhi culture of which Changthang is an integral part. This awareness has been augmented by various interventions initiated by the Department of Wildlife Protection. Furthermore, given the complexity of the Changthang landscape and patterns of anthropogenic land use, it requires a landscape-level model that allows humans and biodiversity to coexist. This model is currently being practised in Ladakh as a whole and Changthang in particular.