

Study on the Faunal Diversity of Protected Areas of Jammu and Kashmir: A Review

Ajaz Ahmed Wani

Associate Professor and Head Department of Zoology Govt.PG College Bhaderwah

Abstract

Protected areas are regions or zones of land or sea that are reserved for the purpose of conserving nature and biodiversity. Such areas are essential for biodiversity conservation, often providing habitat and protection from hunting for threatened and endangered species. The 5% of India's Protected Area have been an important reason why India has suffered no documented species extinction in the past 70 years. This is possible only by strong legislation favouring conservation and protection. UT of Jammu and Kashmir has notified more than 1700 sqkm area as protected Network comprising of 5 National parks, 15 wildlife sanctuaries, 33 Conservation Reserves and 14 Wetland reserves. The present article gives an overview of the protection areas of UT of Jammu and Kashmir.

Keywords: Protected Areas, Jammu and Kashmir, Biodiversity, Conservation, Fauna and endangered species.

Introduction

Jammu & Kashmir is a mystifying land. It is a picturesque collage of various elements of nature that makes it an ideal tourist destination. The northern frontier of the state is fortified with the majestic mountains of the Himalaya Range. These ranges and their snow capped peaks complete a picturesque landscape that includes crystal clear streams and lush green vegetation. Jammu and Kashmir is not a homogeneous land. It is marked by undulating topography and varied soil types that lead to the growth of diverse plants. These in turn, support numerous life forms to constitute an ecological pyramid.

In terms of climate, Jammu and Kashmir is unique. The vast distribution of topographical features is a cause of this fact. The controlling factor of the climate is the Himalayas. Except the dry plateaus of Ladakh, the state receives ample amounts of rainfall. The land is crisscrossed by perennial streams of fresh water. The streams water the land and sustain the lives of the people that inhabit the land. Winter season sees extensive precipitation in terms of snowfall. In the winter, the snow resembles a vast sheet of white blanket covering the valleys.

Culture and human settlements have also been altered by the pattern of the climatic variations of the region. Three socio-cultural regions have been established in the state. Each region has a set of distinct cultural patterns that coexist in harmony under the umbrella of Jammu and Kashmir. The Easternmost region of Ladakh is the stronghold of predominantly Tibetan culture. The southern state is the foothills of the Himalayas that are the home of tribes such as the Dogras that migrated centuries ago. The northernmost region outlines the beautiful valley of Kashmir and its majestic beauty. Each of these regions contributes heavily to make Jammu and Kashmir an epitome of cross-cultural harmony.

The scenic beauty of Jammu and Kashmir is enchanting, to say the least. The combination of nature, heritage and history make the state an enchanting land. Among many other traits that distinguish the land of Jammu & Kashmir, the flora and fauna of the state is one of prime importance. It is home to a bewildering variety of animals that inhabit the mountainous terrain. The flora that grow on the rich soil supports the variety of fauna found in the area. The flora has a defining impact on the lives of the people as well and is extremely beneficial for maintaining their cultural heritage.

The State Government has notified more than 17000 sq km as Protected Area Network comprising of 5 National Parks, 14 Wildlife Sanctuaries and 33 Conservation Reserves and 14 Wetland Reserves. These areas are being managed through habitat improvement and management, plantation, soil and water conservation, protection from fire, anti-poaching activities, development of infrastructure, providing supplemental feed to rescued captive wild animals etc. The rare and endangered species found in the state include Kashmir stag (hangul), Snow leopard, Tibetan antelope (chiru), Tibetan gazelle, Markhor, Musk deer, Brown bear, Black-necked crane and Western Tragopan etc. The wildlife Department is making all possible efforts for conservation and propagation of these species their habitat.

LIST OF PROTECTED AREA NETWORK IN JAMMU AND KASHMIR

S. No	NAME OF THE PROTECTED AREAS	AREA IN SQ. KM
WILDLIFE DIVISION CENTRAL - SRINAGAR		
1	Dachigam National Park	141
2	Thajwas Wildlife Sanctuary	210.5
3	Salim Ali (City Forest National Park)	9.07
4	Wangath Conservation Reserve	12
5	Dara / Sharsbal Conservation Reserve	34
6	Brain / Nishat Conservation Reserve	15.75
7	Khrew Conservation Reserve	50.25
8	Khonmoh Conservation Reserve	67
WILDLIFE DIVISION - WETLANDS		
1	Hokersar Wetland Conservation Reserve	13.75
2	Shallabugh Wetland Conservation Reserve	16.91
3	Hvgam Wetland Conservation Reserve	7.19
4	Mirgund Wetland Conservation Reserve	4.06
5	Kranchoo Wetland Conservation Reserve	0.064
6	Chatalurn Wetland Conservation Reserve	0.426
7	Manibugh Wetland Conservation Reserve	0.053
8	Freshkhori Wetland Conservation Reserve	0.1525
9	Malgoam Wetland Conservation Reserve	2.665
WILDLIFE DIVISION – SHOPIAN		
1	Hirpora Wildlife Sanctuary	341.25
2	Panyer Conservation Reserve	10
3	Skikargah Conservation Reserve	15
4	Khangund/Hajin Conservation Reserve	15.5

WILDLIFE DIVISION – SOUTH		
1	Overa Aru Wildlife Sanctuary	511
2	Achbal Conservation Reserve	20
3	Rajparian Wildlife Sanctuary	20
4	Khiram CR	15.75
WILDLIFE DIVISION -NORTH		
1	Kazinag National Park	90.88
2	Limber Wildlife Sanctuary	21.76
3	Lachipora Wildlife Sanctuary	37.65
4	Gulmarg Wildlife Sanctuary	180
5	Naganari Conservation Reserve	9.54
6	Ajas Conservation Reserve	48
WILDLIFE DIVISION CHENAB - KISHTWAR		
1	Kishtwar High Altitude National Park	2191.50
2	Jawahar Tunnel Chakore Reserve	19.572
WILDLIFE DIVISION - JAMMU		
1	Ramnagar Wildlife Sanctuary	31.50
2	Nandani Wildlife Sanctuary	33.34
3	Sudhmahadev Wildlife Conservation Reserve	142.25
4	Gharana Wetland Reserve	0.75
5	Pargwal Wetland Reserve	49.25
6	Kukrian Wetland Reserve	24.25
7	Nanga Wetland Reserve	15.25
8	Asa Chak Sangral Wetland Reserve	7.00
9	Bahu Conservation Reserve	19.75
WILDLIFE DIVISION - KATHUA		
1	Jasrota Wildlife Sanctuary	10.04
2	Surinsar-Mansar Wildlife Sanctuary	97.82
3	Thein Wildlife Conservation Reserve	18.90
WILDLIFE DIVISION – RAJOURI-POONCH		
1	Tatta Kuti Wildlife Sanctuary	66.27
2	Sheshara Forest	1.43
3	Khherri Conservation Reserve	18.45
4	Kulian Conservation Reserve	10.29
WILDLIFE DIVISION - LADAKH		
1	Hemis High Altitude National Park	3350
2	Karakuram (Nubra –Shayok) Wildlife Sanctuary	5000
3	Changthang Cold Desert Wildlife Sanctuary With following parts: Tsomoiri (Ramsar Site) WR (Leh) Norrichain (Tsokar) WR (Leh) Hanley / Chusul Marshes WR (Leh)	4000

WILDLIFE DIVISION – KARGIL		
1	Kanji Wildlife Conservation Reserve	100
2	Bodkharbu Wildlife Conservation Reserve	100
Source : Department of wildlife protection ,J&K		

BRIEF DESCRIPTION OF THE PROTECTED AREAS OF JAMMU AND KASHMIR NATIONAL PARKS DACHIGAM NATIONAL PARK

Location: 34°05' N and 75° 10'E

District: Srinagar, Year of Establishment: 1981

Area: 141 km² Altitudinal Range: 1676 to 4267 m asl.

Major Fauna: Critically endangered Hangul, Brown bear, Black bear, long tailed Marmot, Himalayan Weasel, Yellow throated Marten, Serow, Leopard Cat, Common leopard, Grey Langur, Monal Pheasant, Koklas Pheasant, besides a variety of avian fauna is also present.

Major Flora: Fir, spruce, Blue pine, *Parrotiopsis jacquemontiana*, *Indigofera*, *Rhus succedanea*, *Quercus robur*, *Prunus tomentosa*, *Rosa webbiana*, *Arneibia benthamii*, *Rheum emodi*, *Dipsacus innermis*, *Jasminum humile*, *Aesculus indica*, *Dioscorea deltoidea*, *Rhododendron campanulatum*, *Ulmus wallichiana*, *Berberis lycium*, *Picrorhiza kurrooa*, *Artemisia absinthium*, *Aconitum heterophyllum*, *Podophyllum hexandrum* etc.

KISHTWAR NATIONAL PARK

Location: 32°25'N and 76° 17' 20.036"E

District: Kishtwar, Year of Establishment: 1981

Area: 2191.50 km². Altitudinal Range: 2269 to 6373 m asl.

Major Fauna: Brown Bear, Himalayan Black bear, Musk Deer, Ibex, Markhor, Snow Leopard, Wild boar, Bharal, Indian Muntjac, Serow, and Hangul. Bird species like Himalayan monal, Koklass, Himalayan snowcock, western Tragopan Himalayan Jungle crow, Bearded vulture, Griffon vulture, Paradise flycatcher, Golden oriole, White cheeked bulbul and Black bulbul are seen.

Major Flora: *Pinus gerardiana*, *Cedrus deodara*, *Pinus wallichiana*, *Quercus baloot*, *Daphne paniculata*, *Juglans regia*, *Parrotiopsis Jacquemontiana*, *Desmodium elegans*, *Dipsacus innermis* etc.

KAZINAG NATIONAL PARK

Location: 34°10'0"N and 74°2'0"E

District: Baramulla, Year of Establishment: 2000

Area: 90.88 km² Altitudinal Range: 1800 to 4300 m asl

Major Fauna: Western Tragopan (*Tragopan melanocephalus*) one of critically endangered pheasant thrives in Kazinag, it also supports existence of Goral, Musk deer, Black bear, Leopard, Yellow throated Pine Martin, Royle's Pika in addition to Markhor and Ibex.

Major Flora: Plant diversity is dominated by *Inula*, *Podophyllum*, *Rhodiola*, *Aconitum*, *Angelica*, *Lavatera*, *Sedum*, *Indigofera*, *Eremurus*, *Arneibia*, *Rubus*, *Heracleum*, *Acer caesium*, *Dictamnus albus*, *Artemisia amygdalina*, *Selinum vaginatum*, *Senecio chrysanthemoides*, *Parthenocissus himalyana*, *Aesculus indica*, *Euonymus hamiltonianus*, *Pinus wallichiana*, *Eremurus himailicus*, *Craetegus*

songarica etc.

HEMIS NATIONAL PARK

Location: 33° 59' 00" N and 77° 26' 00"E

District: Leh, Year of Establishment: 1981

Area: 3350 km² Altitudinal Range: 3000 to 6000 m asl

Major Fauna: The park is home to a viable breeding population of about 200 snow leopards, especially in the Rumbak catchment area. Other species are Argali (Great Tibetan Sheep), Bharal (Blue Sheep), Shapu (Ladakhi Urial), Asiatic Ibex, etc.

Major Flora: Dry forests of *juniper*, *Populus - Salix* forests are present at lower altitudes. The upper mountain slopes are moist, this area is characterized by alpine vegetation including *Anemone*, *Gentiana*, *Thallctwrn*, *Lloydia*, *Veronica*, *Delphinum*, *Carex* and *Kobresia*. The other parts of the park support steppe vegetation which is dominated by *Caragana*, *Artemisia*, *Stachys*, and *Ephedra*, present along the lower river courses. 15 rare and endangered medicinal plants which include *Acantholimon lycopodiodes*, *Arnebia euchroma*, *Artimisia maritima*, *Bergenia stracheyi*, *Ephedra gerardiana*, *Ferula jaeschkeana* etc.

SALIM ALI NATIONAL PARK

Location: 34° 04' 31.20" N and 74° 48' 8.39" E

District: Srinagar, Year of Establishment: 1986

Area: 9.07 km².Altitudinal Range: 1585 to 2800 m asl

Major Fauna: Hangul, musk deer, Himalayan black bear, leopard, Himalayan serow and 70 species of birds, including the paradise flycatcher, Himalayan monal, and Himalayan snowcock.

Major Flora: Blue pine, *Indigofera*, *Rhus succedanea*, *Hackberry*, *Prunus tomentosa*, *Prunus prostrata*, *Rosa webbiana*, *Clematis montana*, *Arneibia benthamii*, etc.

Fauna of J&K

The fauna of Jammu and Kashmir is diverse due to its unique location and climatic condition. About 16% of the Indian mammals, birds, reptiles, amphibians and butterflies are found in J&K. Birds top the number in chordate diversity following by mammals, reptiles, fishes and amphibians. There are about 112 species of mammals. Carnivores represent 32% of the total mammalian fauna in J&K. A total of 19 species of the ungulates reported from the UT, 13 have been listed as globally threatened.

Ants	198 Taxa belonging to 54 genera in 7 subfamilies
Butterflies	408 species, (27% of Indian Butterflies)
Moths	461 species, Jammu having more species than Kashmir
Fishes	120 species, 105 in Jammu and 23 in Kashmir
Amphibians	7 species
Reptiles	63 species
Aves	555 species of birds including resident, passage visitors, summer and winter migrants
Mammals	112 species

Source: Dar &Khuroo (Eds.) 2020. Biodiversity of the Himalayas: Jammu and Kashmir State, Springer Nature

Jammu and Kashmir is home to 7 species of amphibians belonging to 6 genera, 5 families and 1 order. 63 species of reptiles belonging to 43 genera, 12 families and 2 orders have also been reported. The available data suggest that there are 120 species of fishes belonging to 14 genera under 5 families in J&K. The available data also reveals that as many as 198 species of ants, 408 species of Butterflies and 461 species of Moths occur in the J&K.

Avian Diversity

The avian diversity is changing and varies seasonally. As per the available data a total of 555 species of birds belonging to 20 orders occur in the Jammu and Kashmir State. This constitutes 40.36% of the total bird species count (1375) for the Indian subcontinent. Out of 105 families occurring in the subcontinent, 76 (72.38%) are represented in this State. Jammu and Kashmir State has a rich diversity of birds, comprising 555 species belonging to 76 families in 20 orders. Among these, 32 (5.76 %) species are globally threatened and 9 (1.62%) species are endemic to the Western Himalaya. Jammu region, being the most diverse in terms of habitat types and vegetation, supports the largest number (381, 68.64%) of bird species found in the State, followed by the Kashmir region with 299 (53.87%), and closely by the Ladakh region with 291 (52.43%) species.

Mammalian Diversity

Owing to the enormous diversity of habitat types, great altitudinal span and climatic variations, J&K possesses a rich faunal diversity. Many of these mammal species are endemic and relatively confined to various areas of this Himalayan range. The diverse assemblage of wild sheep and goats represented by Blue sheep, Urial, Argali, Ibex, Markhor, Himalayan Tahr, Serow, and Goral, is an indicator of the diversity. Though these species have their distribution range spread to far-off Central Asia and Middle East, yet they display greater adaptive variations in this region than in any other part of the world. Furthermore, the Kashmir Red Deer (*Cervushangluhanglu*) and Kashmir Musk Deer (*Moschuscupreus*) and LadakhUrial (*Ovisorientalis*) are extremely threatened species endemic to this region and require immediate management and conservation attention.

Some of the notable mammalian wildlife species of J&K are:

Hangul(*Cervus elaphus hanglu*)

Family: Cervidae

J&K Wildlife (Protection) Act: Schedule - I IUCN

Status: Critically Endangered

A sub-species of European Red Deer Inhabit temperate- forests (broad-leaved - coniferous forests intercepted with meadows) between 1500 – 3600 m Commonly sighted (Oct - Feb) in Dachigam National Park, Srinagar.



Fig: Hangul (*Cervus elaphus hanglu*).

Musk Deer (*Moschus chrysogaster*)

Family: Moschidae J&K Wildlife (Protection) Act: Schedule - I IUCN

Status: Endangered

A small mountain ruminant with a musk gland under the abdominal skin. Found in sub-alpine oak, rhododendron forests, alpine scrubs & meadows.

Commonly seen in Overa – Aru, Limber Wildlife Sanctuaries, Kashmir & Kishtwar National Park, Jammu.



Musk Deer (*Moschus chrysogaster*)

Chiru or Tibetan Antelope (*Pantholops hodgsonii*)

Family: Bovidae J&K Wildlife (Protection) Act: Schedule - I

IUCN Status: Critically Endangered

Pantholopshodgsonii) Distributed along the Tibetan plateau.



Chiru or Tibetan Antelope (*Pantholops hodgsonii*)

Himalayan tahr (*Hemitragus jemlahicus*)

A migratory population visit Ladakh during summer season. Trans Himalayan deserts between 3250 – 5500 m. Sighted in DBO area and Chang Chen Mo Valley, Ladakh.

Family: Bovidae J&K Wildlife (Protection) Act: Schedule – I

IUCN Status: Endangered.

A copper – brown mountain goat that lives in extremely inaccessible terrain. Inhabit precipitous slopes – prefers oak forests.

Occasionally seen in Kishtwar National Park, Jammu.

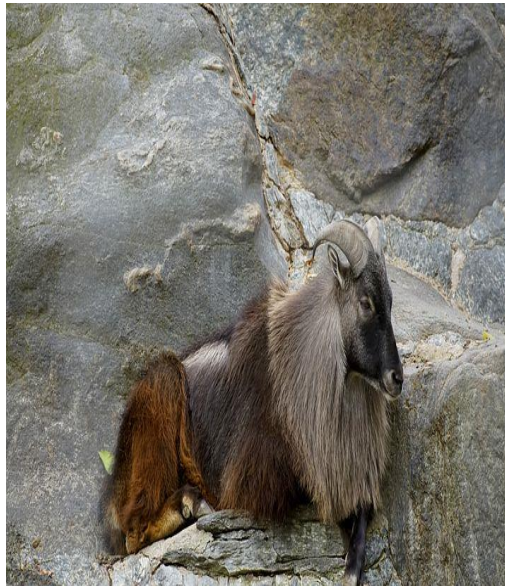


Fig: Himalayan tahr (*Hemitragus jemlahicus*)

Markhor (*Capra falconeri*) Family: Bovidae

J&K Wildlife (Protection) Act: Schedule - I IUCN Status: Critically Endangered

The largest mountain goat in the world. Found in dense pine and birch forest or open barren slopes.

Commonly sighted in Limber, Lachipora&Hirpora Wildlife Sanctuaries, Kashmir



Fig: Markhor(*Capra falconeri*)

Ibex (*Capra ibex*)

Family: Bovidae J&K Wildlife (Protection) Act: Schedule - I IUCN Status: Endangered
A dark brown goat with dull white saddle patch. Distributed along steep crags above the tree line.
Frequently sighted at Kanji Wildlife Sanctuary and Hemis & Kishtwar National Parks.



Fig: Ibex (*Capra ibex*)

Bharal or Blue Sheep (*Pseudois nayaur*)

Family: Bovidae J&K Wildlife (Protection) Act: Schedule - I
IUCN Status: Lower Risk

Lives in slate- blue shale country and has a coat to match. Mountainous regions above the tree line of open grassy ground intercepted with high cliffs. Large herds frequented in Hemis National Park, Ladakh.



Fig: Bharal or Blue Sheep (*Pseudois nayaur*)

Himalayan Brown Bear (*Ursus arctos*)

Family: Ursidae J&K Wildlife (Protection) Act: Schedule - I
IUCN Status: Endangered

World's largest terrestrial omnivore Found above tree line in alpine scrub and meadows, occasionally moves to sub-alpine forests. Often seen in Limber and Hirpora Wildlife Sanctuaries, Kmr. and Kishtwar National Park, Jammu.



Fig: Himalayan Brown Bear (*Ursus arctos*)

Asiatic Black Bear (*Ursus thibetanus*) Family: Ursidae J&K Wildlife (Protection) Act: Schedule - I
IUCN Status: Vulnerable

A large forest – dwelling bear also called the Moon Bear due to the crescent shaped white mark on its chest.

Heavily forested broad-leaved and coniferous forests. Generally seen in all valley's Protected Areas particularly Dachigam National Park.



Fig: Asiatic Black Bear (*Ursus thibetanus*)

Common leopard (*Panthera pardus*)

Family: Felidae

IUCN Status: Engendered

The most adaptable big cat of the Indian sub-continent with versatile distribution range – found in plains, deciduous and evergreen forests, scrub jungle and fringes of human habitation. Commonly seen in all Protected Areas of J&K.



Fig: Common leopard (*Panthera pardus*)

Black necked crane (*Grus nigricolis*) IUCN Status: Critically Endangered

The only high altitude crane, a few pairs found within the limits of Trans-Himalayan marsh. Frequently seen in Tso-moririlake, Ladakh.



Fig: Black necked crane (*Grus nigricolis*)

Snow Leopard (*Uncia uncia*)

Family: Felidae

J&K Wildlife (Protection) Act: Schedule-I

IUCN Status: Endangered

Adapted completely to live in Snow – covered areas at temperatures up to -40°C. Inhabits alpine steppes, grassland and scrub above the tree line.

Generally seen in Hemis National Park, Ladakh.



Fig: Snow Leopard (*Uncia uncia*)

References:

1. [www.protected area network India](http://www.protectedarea.network.in).