MANAGEMENT PLAN

OF OVERA-ARU WILDLIFE SANCTUARY

2025-35



Compiled & Prepared by

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South Division

Jammu & Kashmir Wildlife Protection Department

FOREWORD



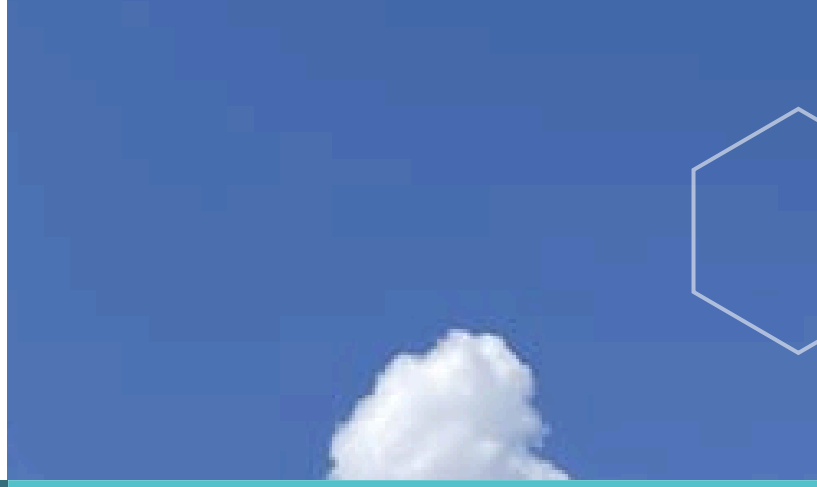
The Overa–Aru Wildlife Sanctuary is known for its spectacular alpine meadows, glacial lakes, verdant forests, and remarkable biodiversity. The sanctuary harbours rich wildlife, including the critically endangered Kashmir Hangul, Kashmir Musk Deer, Asiatic Black Bear, Himalayan Brown Bear and Asiatic Ibex. Equally significant is the avifaunal wealth including pheasants, vultures, raptors, finches, and several migratory species.

The present Management Plan (2025–2035) for Overa–Aru Wildlife Sanctuary is the first comprehensive scientific plan, moving beyond the earlier system of Annual Plan of Operations (APOs) under various schemes. This plan is prepared based on research, field-based insights, and lessons from past experiences and prescribes an action plan for habitat protection, species conservation, eco-tourism regulation, anti-poaching vigilance, and community-driven conservation.

A notable emphasis has been placed on participatory approaches, ensuring that the voices of local communities are incorporated into decision-making. By supporting sustainable livelihoods, promoting responsible eco-tourism, and building awareness, the plan seeks to transform local communities into guardians of their natural heritage.

I extend my sincere appreciation to Sh. Sohail Ahmad Wagay, Wildlife Warden, South Kashmir Division, whose efforts in field coordination, data compilation, and stakeholder engagement were pivotal to the timely completion of this Management Plan. I also acknowledge contribution of Sh. Tawheed Ahmad Deva, IFS, Regional Wildlife Warden, Kashmir and Sh. Rashid Yahya Naqash, Regional Wildlife Warden, Headquarter for their input in preparation of this plan.

Sarvesh Rai, IFS
Chief Wildlife Warden,
Jammu & Kashmir



Introduction

The Overa–Aru Wildlife Sanctuary, notified in 1987, is among the largest and most ecologically significant protected areas of Jammu & Kashmir. Situated in the upper Lidder Valley of Anantnag District, it covers an expansive area of 511 square kilometres, ranging from 2,000 to over 5,000 metres in elevation. Its landscapes include lush green coniferous forests of fir, pine, and spruce, interspersed with alpine meadows, glacial lakes, and snow-clad peaks.

The sanctuary's history is deeply rooted in Kashmir's conservation legacy. Initially, several compartments of the Lidder Forest Division and adjoining alpine pastures were recognized for their wildlife richness and declared as game reserves during the Dogra rule. Over time, their ecological importance led to their formal notification as a sanctuary, ensuring stronger legal protection for the flora and fauna.

Overa–Aru is globally significant for sustaining viable populations of flagship species, such as the Hangul (Cervus hanglu hanglu), Kashmir Musk Deer, Himalayan Brown Bear, Asiatic Black Bear, and Asiatic Ibex. It also provides habitat continuity to species moving across the Greater and Lesser Himalayas. Its alpine meadows and high-altitude pastures form a critical grazing ground for both wild ungulates and migratory pastoral communities, making it a unique socio-ecological system.

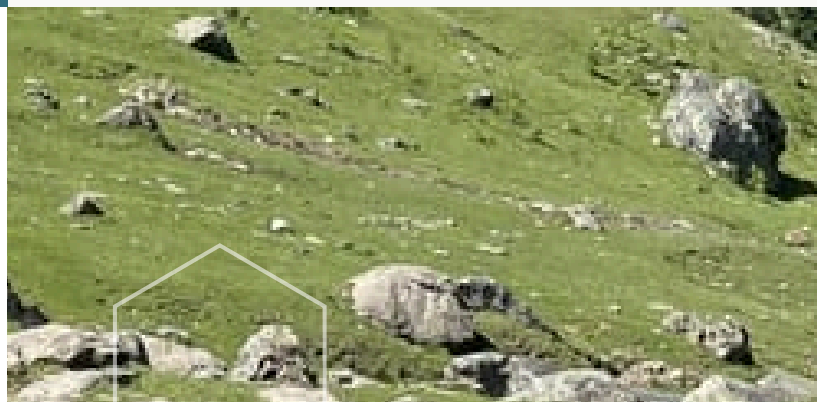
Despite its vastness and rich biodiversity, the sanctuary faces mounting pressures. Unregulated tourism, climate-induced habitat changes, increasing demand for grazing land, and developmental activities in adjoining areas threaten its ecological integrity. The present management plan seeks to address these challenges with a comprehensive framework for conservation, focusing on habitat restoration, wildlife protection, participatory management, and sustainable development practices.

I take this opportunity to acknowledge the outstanding support and contributions of Sh. Sohail Ahmad Wagay, Wildlife Warden, South Kashmir Division, whose field-level expertise, coordination, and dedication greatly enhanced the preparation and scientific rigor of this plan.

Through its integrated approach, this plan aims to ensure that Overa–Aru Wildlife Sanctuary continues to serve as a cornerstone of biodiversity conservation in the Himalaya, while supporting the cultural and livelihood needs of the communities who have lived in harmony with this landscape for generations.

Tawheed Ahmad Deva, IFS

Regional Wildlife Warden, Kashmir Region
Srinagar



Acknowledgement

The preparation of this Management Plan for Overa–Aru Wildlife Sanctuary has been a journey of collective effort, dedicated guidance, and invaluable contributions from several individuals and institutions, without whose support this document would not have attained its present form.

I wish to record my profound and heartfelt gratitude to Sh. Sarvesh Rai, IFS, Chief Wildlife Warden, Jammu & Kashmir, whose unwavering support, vision, and steadfast commitment to strengthening the management of protected areas has been the beacon guiding this work. His consistent encouragement and far-sighted guidance provided both the inspiration and the clarity of direction necessary to bring this plan to fruition. His emphasis on scientific rigor, participatory approaches, and innovation in conservation governance has been a source of constant motivation throughout the process.

I am equally indebted to Sh. Tawheed Ahmad Deva, IFS, Regional Wildlife Warden, Kashmir, for his leadership, valuable inputs, and continued encouragement at every stage. His deep understanding of the conservation challenges of Kashmir and his timely advice ensured that this plan was both pragmatic and future-ready. The confidence he reposed in our team was a great source of strength, enabling us to move forward with determination and resolve.

I also extend my sincere gratitude to Sh. Rashid Yahya Naqash, Regional Wildlife Warden (Headquarter), J&K, whose thoughtful guidance and constructive feedback provided critical refinements to the structure and content of this document. His rich field experience and institutional memory added immense value to this planning exercise, ensuring that the document remains grounded in practical realities while being ambitious in vision.

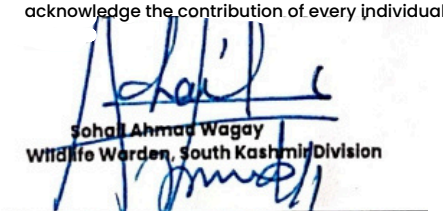
The preparation of this plan has been enriched by the contributions of several experts. I wish to gratefully acknowledge the scholarly insights and technical guidance of Sh. Vivaik Modi, Special Secretary (Technical), Department of Forest, Ecology & Environment, J&K; Prof. Anzar Ahmad Khuroo, University of Kashmir; Sh. Ifshan Dewan, Wildlife Warden (Headquarter); Sh. Amit Sharma, Wildlife Warden Poonch and Sh. Mohammad Rafiq Gojjar, Local Panchayat Representative. Their combined expertise brought together academic depth, administrative experience, scientific perspectives, and community wisdom, thereby strengthening the robustness and credibility of this plan. Each of them brought unique viewpoints — from policy-level frameworks to ground-level realities which together created a holistic blueprint for the future management of the sanctuary.

The success of this effort would not have been possible without the dedicated support of the staff of the Wildlife Division, South Kashmir. I wish to particularly acknowledge the tireless assistance of Sh. Niyaz Ahmad Wani, Head Assistant; Sh. Zahoor Ahmad; Sh. Rahil; and Sh. Zahoor Ahmad Mir. Their efforts in compilation, organization, data verification, and logistical coordination played an indispensable role in shaping this document. Their behind-the-scenes commitment ensured that the flow of information remained smooth and that this complex undertaking could be completed in a timely manner.

Special appreciation is also due to "Geo-Infinity India" and "51A Wildlife Conservation and Research Foundation" for their technical support in preparing high-quality, digitized maps. Their expertise has greatly enhanced the spatial clarity and scientific precision of this plan, allowing managers and decision-makers to better visualize and implement conservation strategies in the field.

Most importantly, I wish to place on record my deep admiration for the frontline staff of Overa-Aru Wildlife Sanctuary. The dedication of the Range Officer, Sh. Altaf Ahmad Koul, Block Officers, Shabir Ahmad, Mushtaq Ahmad Mir and Mushtaq Ahmad Bhat, and field personnel who work in some of the most challenging terrains and harsh climatic conditions — has been truly inspirational. Their intimate knowledge of the forests, wildlife, and communities, coupled with their perseverance in safeguarding biodiversity against threats such as poaching, habitat degradation, and human–wildlife interactions, has been invaluable in shaping the content and priorities of this plan. Their sacrifices and unwavering devotion to duty form the foundation upon which the sanctuary's conservation future rests.

This Management Plan is thus not merely a document, but a reflection of a collective vision, effort, and commitment. I take this opportunity to humbly acknowledge the contribution of every individual and institution mentioned above and dedicate this work to their spirit of conservation and service to nature.



Sohail Ahmad Wagay
Wildlife Warden, South Kashmir Division

Special Acknowledgement

It gives me immense satisfaction and a deep sense of gratitude to record the outstanding contributions of Sh. Kaiser Iqbal Malik, Sh. Gulzar Ahmad Khan, and Sh. Zahoor Ahmad Mir, whose tireless dedication, expertise, and unwavering commitment formed one of the strongest foundations of this Management Plan.

The invaluable role of Sh. Kaiser Iqbal Malik deserves special mention. His financial acumen and administrative expertise were instrumental in designing a sound and sustainable budgetary framework for the plan. With exceptional clarity, he succeeded in harmonizing the diverse requirements of conservation management with fiscal prudence and long-term viability. By aligning ecological priorities with financial realities, he ensured that the plan is not only ambitious in vision but also practical in its implementation, thus safeguarding its continuity and resilience for years to come.

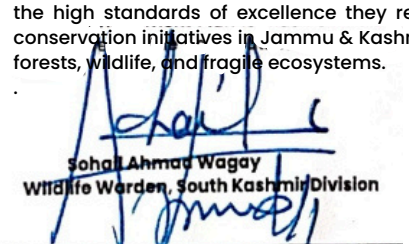
Equally commendable are the contributions of Sh. Gulzar Ahmad Khan, whose perseverance, diligence, and methodical approach played a pivotal role in shaping the knowledge base of this plan. His painstaking efforts in collating, verifying, and synthesizing critical archival records, field data, and historical references have given the document a depth of accuracy and reliability. His eye for detail and unwavering commitment to authenticity have ensured that this plan rests on a foundation of precision and comprehensiveness.

Special acknowledgement is also due to Sh. Zahoor Ahmad Mir, whose vision, commitment, and deep-seated sense of responsibility towards conservation added exceptional strength to this endeavour. His ability to blend foresight with practical action has enriched the plan with clarity, direction, and purpose. His guidance and constructive inputs have been invaluable in reinforcing the ecological priorities of this document, ensuring that its conservation objectives remain both visionary and achievable.

Together, Sh. Kaiser Iqbal Malik, Sh. Gulzar Ahmad Khan, and Sh. Zahoor Ahmad Mir exemplify an extraordinary blend of professional competence, analytical rigour, and an abiding devotion to the cause of conservation. Their contributions go far beyond routine administrative duty; they reflect a spirit of service, integrity, and dedication that sets a benchmark for others within the department

In recording this Special Acknowledgement, I do not merely express gratitude for their efforts, but also seek to highlight and celebrate the high standards of excellence they represent. Their work serves as both a guiding light and an enduring inspiration for future conservation initiatives in Jammu & Kashmir. It is my earnest hope that their example continues to motivate others in the service of our forests, wildlife, and fragile ecosystems.

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Sohail Ahmad Wagay
Wildlife Warden, South Kashmir Division

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01

Chapter 1
Introduction to the Area



1.1 NAME, LOCATION, CONSTITUTION, AND EXTENT

Name & Historical Context

The Overa-Aru Wildlife Sanctuary derives its name from the Overa and Aru regions, which are characterized by the presence of two hutment Nallahs, the Overa and Aru. Historically, the area was noted for its rich biodiversity, which led the Maharaja of Jammu and Kashmir to designate it as a "rakh" (hunting reserve) for his personal use and that of his guests.

Prior to 1945 – Royal Hunting Reserve ("Rakh")

Before formal conservation efforts began, the forested tracts of Overa and Aru were traditionally managed as royal hunting grounds, locally referred to as "Rakh", under the patronage of the Maharaja of Jammu & Kashmir. These areas were preserved primarily for game hunting, and their ecological richness was acknowledged even during this period through selective protection of key habitats and species.

1945 – Initial Declaration as Game Reserve

On July 17, 1945, through Cabinet Order No. 710-C, the Overa (165.39 sq. km) and Aru (292.00 sq. km) areas were officially designated as "Reserves" during the Dogra regime. This decision was based on the recognition of the region's outstanding biodiversity and its importance as a natural habitat for species such as the Kashmir stag (Hangul), Himalayan black bear, musk deer, and a variety of high-altitude avifauna. The declaration aimed to curb unregulated hunting and exploitation of forest resources, laying the early groundwork for scientific wildlife management in Kashmir.

1981 – Designation as Man and Biosphere Reserve

On February 4, 1981, the area received further recognition through its designation as a "Man and the Biosphere Reserve" under Government Order No. FST-20 of 1981. This status, part of the UNESCO-led international program, underscored the ecological significance of the Overa-Aru landscape and promoted the need for a balanced approach to biodiversity conservation, scientific research, and local community involvement. The emphasis was on protecting the area's fragile alpine and sub-alpine ecosystems while allowing for sustainable use of natural resources.

1987 – Notification as Wildlife Sanctuary

Following continued conservation efforts and the establishment of a dedicated Wildlife Wing within the Forest Department, the Overa-Aru area was formally notified as a Wildlife Sanctuary. This was executed under SRO No. 154 dated 19.03.1987, endorsed via Forest Department Order No. FST/WL/SAN/Overa/97 dated 18.03.1987. This notification provided the area with a legal framework for stricter wildlife protection, habitat preservation, and regulation of human activities. It marked the transformation of Overa-Aru into one of the most vital protected areas in Jammu & Kashmir for the conservation of rare and threatened Himalayan species.

Location

Geographic Coordinates

The Overa-Aru Wildlife Sanctuary is strategically located between 33° 46′ 0″ N to 34° 16′ 0″ N latitude and 75° 7′ 30″ E to 75° 33′ 30″ E longitude, encompassing a diverse altitudinal range that supports a variety of ecological zones. Its positioning within the western Himalayas makes it an important component of the Himalayan conservation landscape.

Bio-geographical Classification

The sanctuary falls under the 2A Biogeographic Zone and is a part of the 2.38.12 Himalayan Highlands Province, as per the classification of the Wildlife Institute of India. This zone represents the temperate and alpine biomes characterized by rugged terrain, snow-fed streams, coniferous and broadleaf forests, and alpine meadows. These features are critical for supporting endemic and endangered fauna such as the Hangul (Cervus hanglu hanglu), Himalayan brown bear, snow leopard, and various high-altitude bird species.

IUCN Management Category

Overa-Aru Wildlife Sanctuary has been designated as a Category IV Protected Area under the International Union for Conservation of Nature (IUCN) classification system. Category IV – Habitat/Species Management Area signifies that the sanctuary is managed mainly for the conservation of specific species and habitats through active interventions.

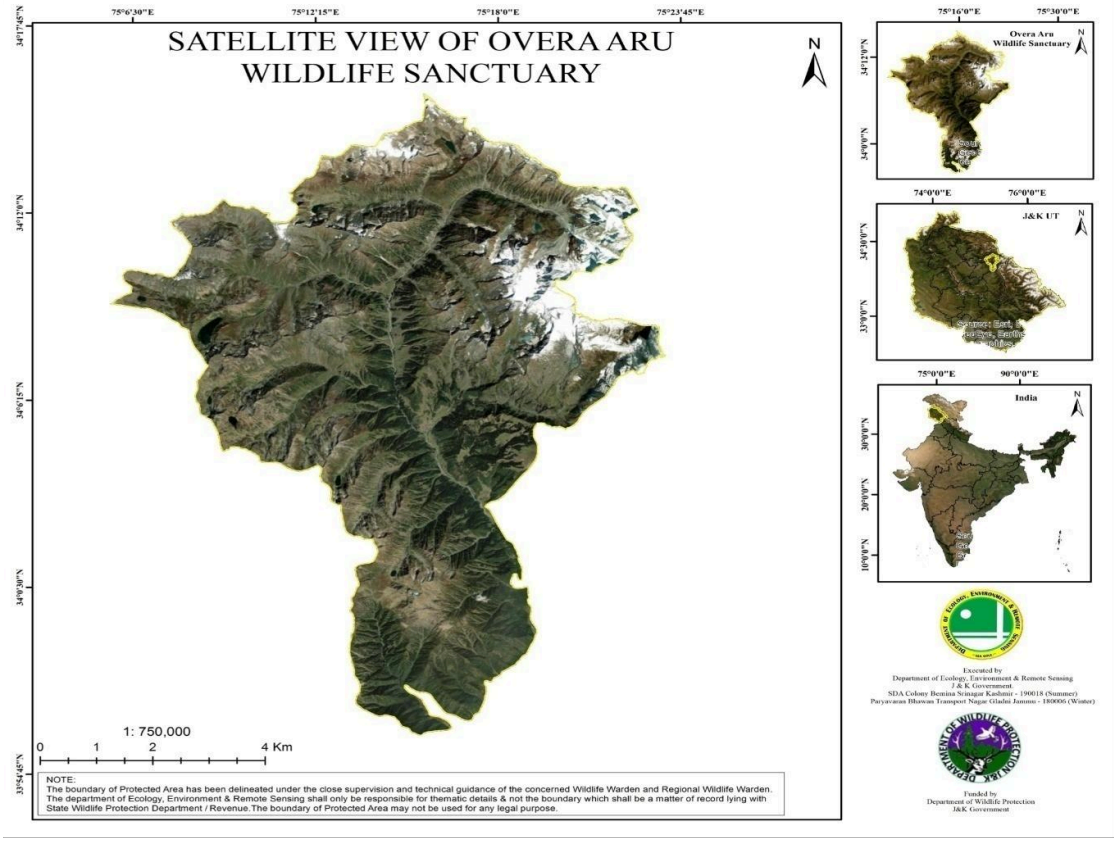


Plate 1: Map showing Satellite View of Overa-Aru Wildlife Sanctuary

1.2 APPROACH & ACCESS

The administrative Head Office and the Range office of Overa-Aru WLS are located at Bijbehara, Overa, and Pahalgam of District Anantnag respectively. Pahalgam and Overa are 100 km and 90 km from (Srinagar) summer capital of Jammu & Kashmir UT. The nearest Airport is Srinagar International Airport which is 100km from Overa.

Name of the Protected area	Category of Protected Area	Whether Initial or Final	Year of Notification	Stage of Settlement of Rights from Section-19-25 of WL (protection)	Periods of previous approved Management Plan
Overa-Aru Wildlife Sanctuary	Wildlife Sanctuary	Final	SRO No. 154 Dated 19.03. 1987 (425.00 sq kms)	Not required	Ist Management Plan

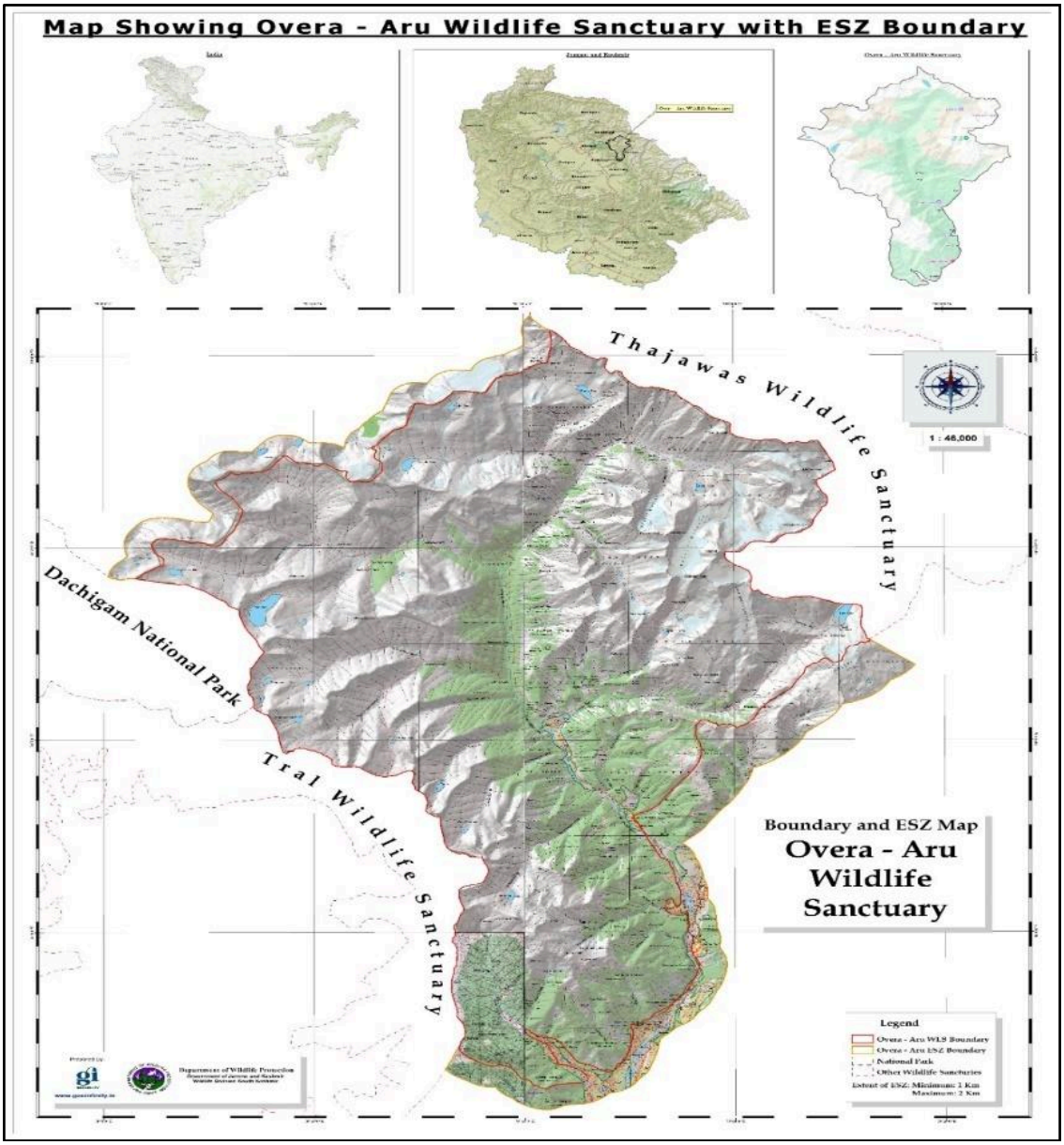


Plate 2: Map showing Overa-Aru Wildlife Sanctuary along with ESZ

Extent

The total area of Overa-Aru Wildlife Sanctuary is 425.00 sq km.



Plate 3: Map showing accessibility in Overa-Aru Wildlife Sanctuary

1.3 STATEMENT OF SIGNIFICANCE

The Overa-Aru Wildlife Sanctuary is of significant ecological, biological, and conservation importance, primarily due to its strategic location next to Dachigam National Park, which hosts the last viable population of the critically endangered Kashmir stag (Cervus hanglu hanglu). This proximity makes Overa-Aru an essential wildlife corridor for Hangul and other key species such as the Kashmir Musk deer, the Asiatic black bear, Himalayan brown bear, and common leopard. The sanctuary also provides critical habitats for several threatened and endangered species, Siberian Ibex underscoring its role in biodiversity conservation.

Overa-Aru is renowned for its rich and diverse ecosystems that support a wide range of species, including rare and endangered flora and fauna. Its ecological significance is enhanced by its geomorphological features and proximity to the popular tourist destination of Pahalgam. Notably, the sanctuary serves as an ideal environment for the in-situ conservation of the Hangul, a species of global conservation concern, and other important species such as the Kashmir Musk Deer, Himalayan brown bear, Himalayan yellow-throated pine marten, common leopard, and the Kashmir flying squirrel.

Additionally, the sanctuary plays a crucial role in the water systems of the region. It is one of the primary catchment areas for the Jhelum River, with the Lidder Nallah serving as a major tributary, providing vital water resources for both wildlife and local communities. The alpine pastures within Overa-Aru indicate the sanctuary's rich ecological diversity, contributing to a balanced and sustainable ecosystem.

Overa-Aru also supports a substantial avian population, further increasing its importance for bird conservation. Furthermore, the sanctuary offers excellent opportunities for scientific research, education, and eco-tourism, making it an ideal location for studies on biodiversity, conservation, and sustainable tourism practices.

Biodiversity Significance

The Overa-Aru Wildlife Sanctuary is known for its exceptional biodiversity, featuring unique and highly diverse flora and fauna. It acts as a sanctuary for rare, threatened, and endangered species, contributing significantly to global and regional conservation efforts. Among the notable species residing in the sanctuary are the Kashmir musk deer *(Moschus cupreus),* Siberian Ibex, Brown bear, Himalayan yellow-throated pine marten (*Martes flavigula)*, and Kashmir flying squirrel (*Priapomys Leonardi, Petaurista magnificus*). These species, many of which are globally threatened, highlight the sanctuary's critical role in preserving Himalayan biodiversity. The area also inhibits a rich repository of Medicinal and aromatic plants.

The sanctuary's alpine pastures are indicative of its highly diversified ecosystems, supporting a range of ecological niches and hosting a wide array of plant and animal species. Additionally, the sanctuary is a haven for avian diversity, with numerous bird species, some of which are rare and endemic to the region.

Hydrological Importance

The sanctuary's role as a major hydrological resource is another critical aspect of its significance. It is one of the primary catchment areas for the Jhelum River, a lifeline for the Kashmir Valley. The Lidder Nallah, flowing through the sanctuary, serves as an essential tributary to the Jhelum River. This stream provides vital ecosystem services, including drinking water and irrigation for communities residing in its vicinity. The perennial snow-fed streams and rich forest cover also play a key role in maintaining the region's hydrological cycle, preventing soil erosion, and ensuring the availability of fresh water.

Conservation & Management

The Overa-Aru Wildlife Sanctuary has long been recognized for its conservation value. It offers a suitable habitat for in-situ conservation of several globally important species, including the critically endangered Hangul. The sanctuary is part of a larger ecological landscape, forming a contiguous habitat with adjacent protected areas such as Dachigam National Park and Tral Wildlife Sanctuary. This connectivity is crucial for species requiring large territories, such as leopards and bears, and for migratory and seasonal movements.

However, the proximity of several villages to the sanctuary's boundaries presents challenges in managing human-wildlife interactions. Encroachments, resource dependency, and human-induced disturbances threaten the sanctuary's ecological balance. Strategic management interventions, including habitat restoration, community involvement, and enhanced protection measures, are essential to address these challenges.

Research, Education & Recreational Potential

The sanctuary's rich biodiversity and unique ecological characteristics make it a valuable site for scientific research and ecological studies. It offers opportunities to study Himalayan ecosystems, wildlife behavior, and conservation strategies. The sanctuary also holds potential for environmental education, allowing students and researchers to gain hands-on experience in conservation practices. High-altitude alpine lakes are a stunning attraction for travelers, offering breathtaking beauty.

Additionally, the Overa-Aru Wildlife Sanctuary has recreational value due to its picturesque landscapes and proximity to the renowned tourist destination of Pahalgam. Eco-tourism initiatives can be developed to promote sustainable tourism, creating awareness about conservation while generating economic benefits for local communities.

The Overa-Aru Wildlife Sanctuary is a cornerstone of biodiversity conservation in the Kashmir Valley. Comprehensive management strategies and community participation are vital to preserving this sanctuary's ecological and socio-economic value.

The Overa-Aru Wildlife Sanctuary is a vital ecological region, not only for the conservation of endangered species but also for its role in maintaining ecological balance, supporting water resources, and offering opportunities for sustainable human engagement. Its biodiversity, research potential, and eco-tourism opportunities make it an invaluable asset for both conservation and the local community.

Strategic Significance in relation to Dachigam NP, Thajawas WLS and Tral WLS

Ecological Connectivity and Wildlife Corridors

This exchange is vital for maintaining healthy gene pools and enhancing species resilience against diseases and environmental changes. It constitutes a part of the Dachigam–Overa-Aru–Tral ecological continuum, which is essential for seasonal and altitudinal migrations of wildlife. One of the most significant beneficiaries of this corridor is the Kashmir stag (Hangul), whose seasonal migration patterns rely on undisturbed movement through this corridor for foraging and breeding. Maintaining the integrity of this corridor is essential for conserving the region's wide-ranging and endangered fauna, mitigating human-wildlife conflict, and preserving ecological functions.

The Overa-Aru Wildlife Sanctuary, situated to the southeast of Dachigam Wildlife Sanctuary and adjoining Tral Wildlife Sanctuary, plays a pivotal role in maintaining ecological connectivity across the landscape. This interconnectedness forms a crucial wildlife corridor, facilitating the movement of species between protected areas. The sanctuary acts as a biological bridge, enabling genetic exchange among fragmented populations of key species such as the Himalayan black bear, musk deer,
and various leopard subspecies.

Biodiversity Hotspot and Habitat Diversity

Overa-Aru WLS spans a remarkable altitudinal range of 2,100 to 5,400 meters, encompassing a diverse array of ecological niches and habitats. This vertical stratification fosters rich biodiversity and habitat heterogeneity. The sanctuary contains coniferous forests, alpine meadows, sub-alpine scrublands, and glacial landscapes, each supporting specialized flora and fauna. These habitats serve as critical breeding, feeding, and sheltering grounds for numerous species. In conjunction with Dachigam National Park and Tral Wildlife Sanctuary, the Overa-Aru region hosts over 500 plant species and more than 100 avian species. It is an important habitat for globally significant and endemic birds such as the Western tragopan *(Tragopan melanocephalus*) and the Koklass pheasant (*Pucrasia macrolopha*). The sanctuary is also renowned as a repository of aromatic and medicinal plants, many of which have high ethnobotanical value and are used in traditional medicine systems. Notable species include: *Taraxacum complylodes* (medicinal dandelion), *Aconitum chasmanthum* (Himalayan aconite, highly endangered), *Atropa acuminata* (Himalayan belladonna), *Dapsacus inermis* (used in traditional healing practices), and *Trillium gayanwa* (an endemic medicinal herb).

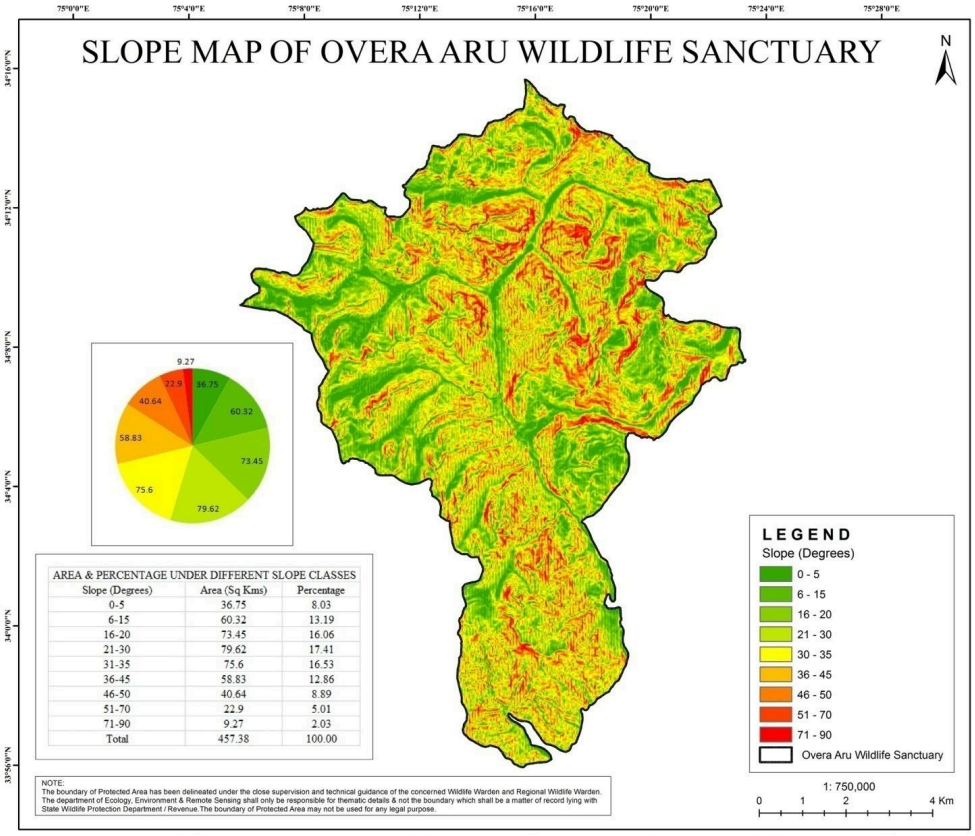


Plate 4: Map showing slopes in Overa-Aru Wildlife Sanctuary



Plate 5: Natural Landscape of Overa-Aru Wildlife Sanctuary

Chapter 2
Background Information & Attributes



2.1 BOUNDARIES

The Overa-Aru Wildlife Sanctuary was officially established through SRO No. 154 dated 19th March 1987, issued under Endorsement No. FST/WL/SAN/Overa/97 dated 18th March 1987. This notification legally defines the sanctuary's boundaries and marks its formal recognition as a protected area dedicated to biodiversity conservation. The creation of the sanctuary reflects the Government's commitment to preserving the unique and fragile ecosystems of Jammu and Kashmir. Geographically, Overa-Aru Wildlife Sanctuary is situated in a highly ecologically significant zone and is surrounded by several key natural and protected areas. The Overa-Aru Wildlife Sanctuary, is defined not just by administrative lines but by vital ecological boundaries that enhance its biodiversity and connectivity. To the northeast, it adjoins Thajwas Wildlife Sanctuary, forming a continuum of alpine habitats. On the west, it merges with Dachigam National Park, bolstering conservation efforts for species like the endangered Hangul. The northwest boundary meets Basmai Forest, rich in temperate vegetation and fauna. Southwest lies Tral Wildlife Sanctuary, extending crucial forest ecosystems. The southeastern edge is buffered by Nunwan Forest, while the southern limit touches Kular Forest, hosting broadleaf and coniferous species. To the east, the Lidder Forest and Shishnag region offer vital riverine and glacial landscapes. These ecological linkages make Overa-Aru a key node in Jammu and Kashmir's protected area network, essential for habitat connectivity, climate resilience, and species migration.

The demarcation of the sanctuary's perimeter is a critical element in its effective management. As part of this ongoing effort, 311 boundary pillars have already been installed across the sanctuary's terrain. Additionally, the installation of 64 more boundary pillars is planned for the current fiscal year to further strengthen the clarity and enforcement of the sanctuary's perimeter. In areas vulnerable to human encroachment and unauthorized activities, the Forest Department is actively undertaking boundary consolidation through the construction of chain-link fencing. These physical barriers serve the dual purpose of marking the boundary and preventing illegal access or land-use change, thereby safeguarding the sanctuary's integrity.

Natural features such as high rock cliffs, turbulent mountain streams (nallahs), glaciated summits, and high-altitude lakes provide additional physical definition to the sanctuary's borders. In tandem with these, certain man-made structures, including all-weather metallic roads, offer logistical access while also contributing to the delineation of the sanctuary limits. These features not only mark the spatial extent of the sanctuary but also play a vital role in monitoring, enforcement, and facilitating scientific research and patrolling.

These updated maps will enhance the understanding of ecological patterns, identify vulnerable habitats, and guide appropriate conservation interventions. Furthermore, a set of high-resolution 3D topographic maps has already been developed, offering an in-depth representation of the sanctuary's physical geography. These will aid in terrain-sensitive planning, restoration initiatives, and disaster risk mitigation.

In summary, the legal establishment, clear boundary demarcation, and integration of modern mapping and geospatial technologies are collectively enabling more informed, efficient, and resilient management of the Overa-Aru Wildlife Sanctuary. This comprehensive approach ensures the long-term preservation of one of Kashmir's most important biodiversity hotspots while facilitating adaptive management strategies in the face of ecological and anthropogenic pressures.

2.2 GEOLOGY, ROCK & SOIL

The Overa-Aru Wildlife Sanctuary is characterized by a predominantly mountainous terrain with underlying crystalline rock formations. These formations include granite, phyllites, and schists, which are interspersed with deposits of limestone in certain regions. The geological framework reflects the ancient crystalline axis of the Himalayan Mountain system, which is recognized as containing some of the oldest rock formations in the region. Along the northern flank of this crystalline axis, fossiliferous sediments of marine origin are found, providing evidence of the area's geological history and its association with prehistoric marine environments.

Pioneering studies on the geology of the region have been conducted by researchers such as Godwin-Austen (1896), Lydekker (1876), and Middlemiss (1911). These studies have documented the stratigraphy and structural complexity of the Himalayan system, shedding light on the region's geological evolution. The embedded limestone formations in the sanctuary are indicative of sedimentary processes that occurred during the uplift of the Himalayas, where marine sedimentary layers were subjected to intense tectonic activity, metamorphosing into their current form.

The sanctuary's diverse geology contributes significantly to its ecological diversity by influencing soil composition and hydrology. The soils derived from these crystalline rocks are generally shallow, well-drained, and vary in texture, supporting a wide range of vegetation types adapted to the nutrient and moisture conditions of the region.

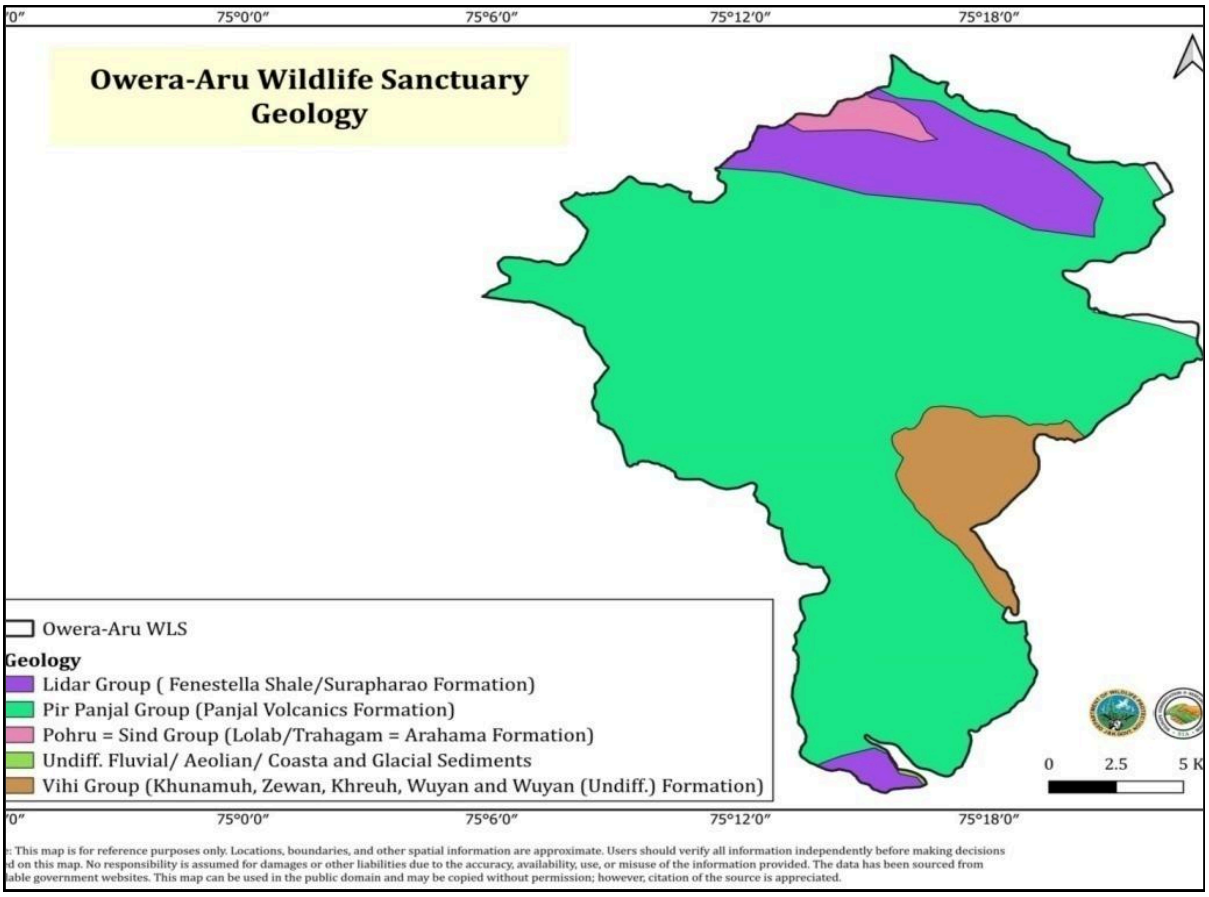


Plate 6: Map showing Geology of Overa-Aru Wildlife Sanctuary

2.3 TERRAIN

Overa-Aru Wildlife Sanctuary features the rugged terrain typical of the Great Himalayan and Zanskar mountain ranges. The sanctuary is characterized by steep, jagged mountains separated by deep ravines and valleys. This topography creates a series of undulating slopes that support a wide range of vegetation types, contributing to the region's rich biodiversity. The terrain is generally steep, with varied elevation gradients, which create diverse microhabitats throughout the sanctuary.

The undulating terrain includes a series of ridges, steep cliffs, and rolling alpine meadows. These features are a result of the sanctuary's complex geological and geomorphological history, shaped by tectonic uplift, glaciation, and erosion. The steep slopes and deep valleys act as natural conduits for water flow, feeding into the Lidder Nallah and other tributaries that sustain the region's hydrological network.

The varied slope aspects and altitudinal gradients foster a diverse range of ecological conditions, supporting species that are uniquely adapted to specific microclimates. For instance, south-facing slopes, which receive more sunlight,support xerophytic vegetation, while the cooler, moisture-retentive north-facing slopes harbourmesophytic and hydrophytic plant species.

The steep and rugged terrain of Overa-Aru Wildlife Sanctuary not only shapes its biodiversity and habitat complexity but also presents challenges for wildlife conservation and management. It creates natural barriers and corridors, influencing the movement patterns of species such as the Hangul deer, Asiatic black bear, and common leopard. This interplay of geology and terrain underscores the sanctuary's ecological and geological significance in the Himalayan region. Since its connectivity withThajwas Wildlife Sanctuary the probability of snow leopard in the alpine region of the Sanctuary cannot be ruled out.

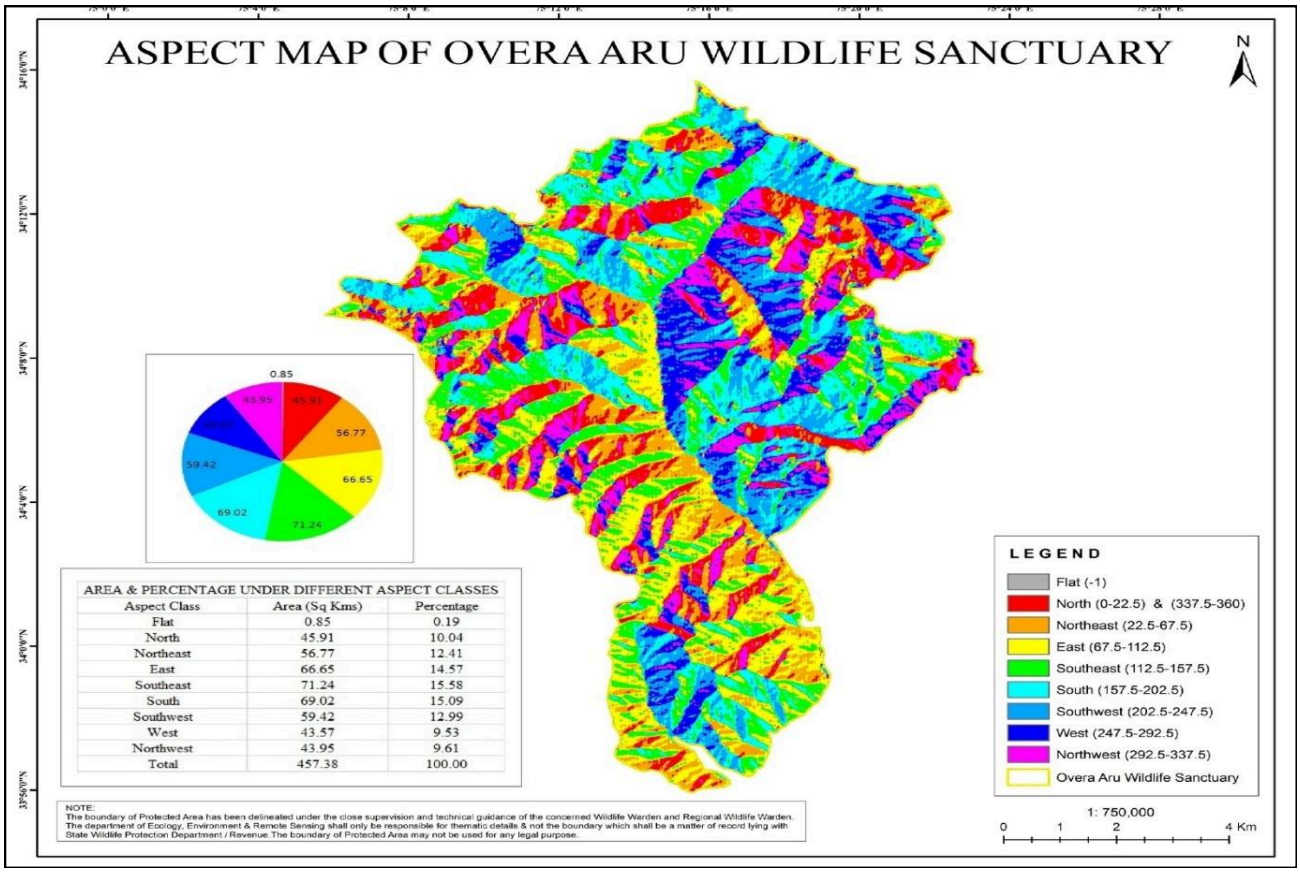


Plate 7: Map Showing Aspect of Overa-Aru Wildlife Sanctuary

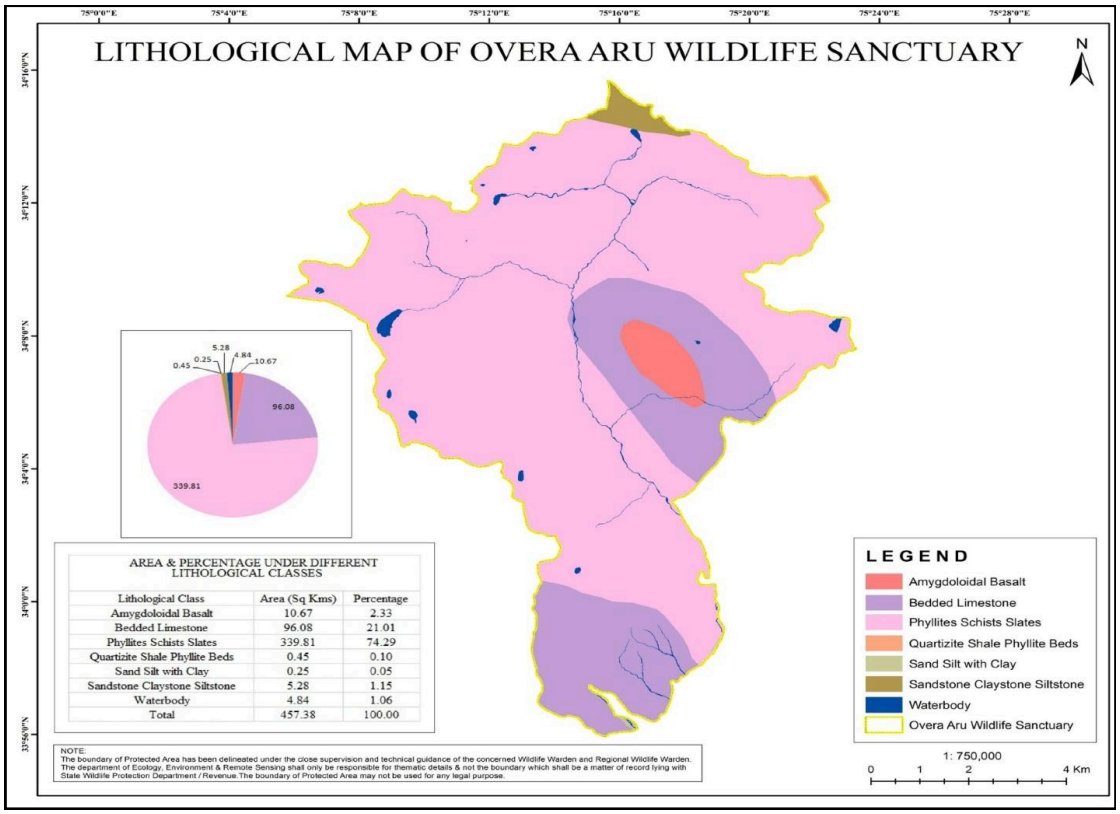


Plate 8: Lithological Map of Overa-Aru Wildlife Sanctuary

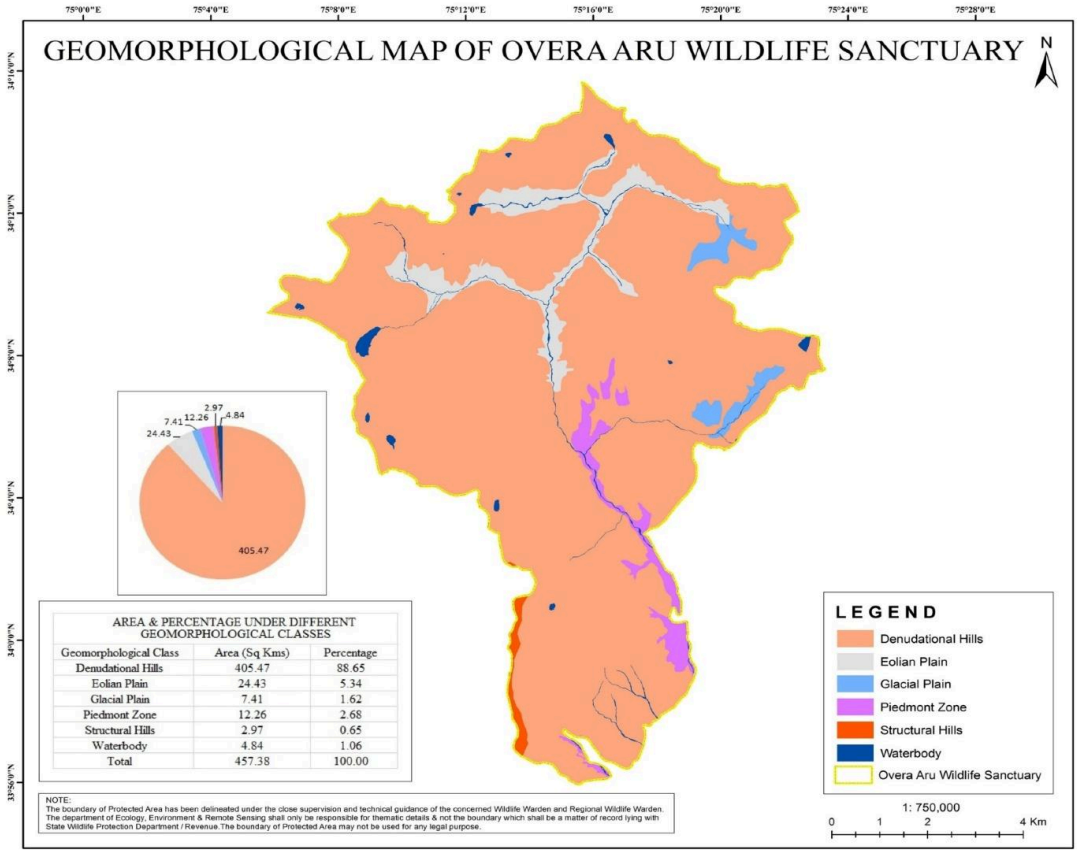


Plate 9: Geomorphological Map of Overa-Aru Wildlife Sanctuary

2.4 CLIMATE

The climate of Overa-Aru is classified as sub-Mediterranean, with a bixeric regime characterized by two distinct dry periods—one from April to June and the other from September to November (Singh and Kachroo, 1977, 1978). This climatic classification reflects a seasonal pattern where moisture availability fluctuates significantly throughout the year.

2.4.1 Rainfall & Temperature

The region experiences irregular weather conditions with substantial variations in precipitation levels both spatially and temporally. Snowfall constitutes the primary form of precipitation during the colder months, typically accumulating in the higher altitudes of the sanctuary. This snowpack serves as a critical water resource, melting gradually with the onset of warmer temperatures. In some areas, the snow persists into late spring and early summer, continuing to melt until June or July. This extended melt period plays a pivotal role in maintaining the hydrological cycle of the region, feeding streams and rivers, including the Lidder Nallah, which forms an integral part of the Jhelum River basin.

The irregularity in precipitation and dependency on snowmelt has significant ecological implications. The availability of water resources directly influences the growth cycles of vegetation and the habitat conditions for a diverse range of fauna. The dry spells, particularly during April-June, coincide with the early growth phase of many alpine plants, making moisture availability critical during this period. Similarly, the dry season in autumn, from September to November, impacts forage availability and water resources for both wildlife and local communities. These climatic patterns underscore the importance of understanding and monitoring climate dynamics within the sanctuary to ensure effective conservation management, particularly in the face of climate change, which may exacerbate precipitation irregularities and alter snowmelt regimes.

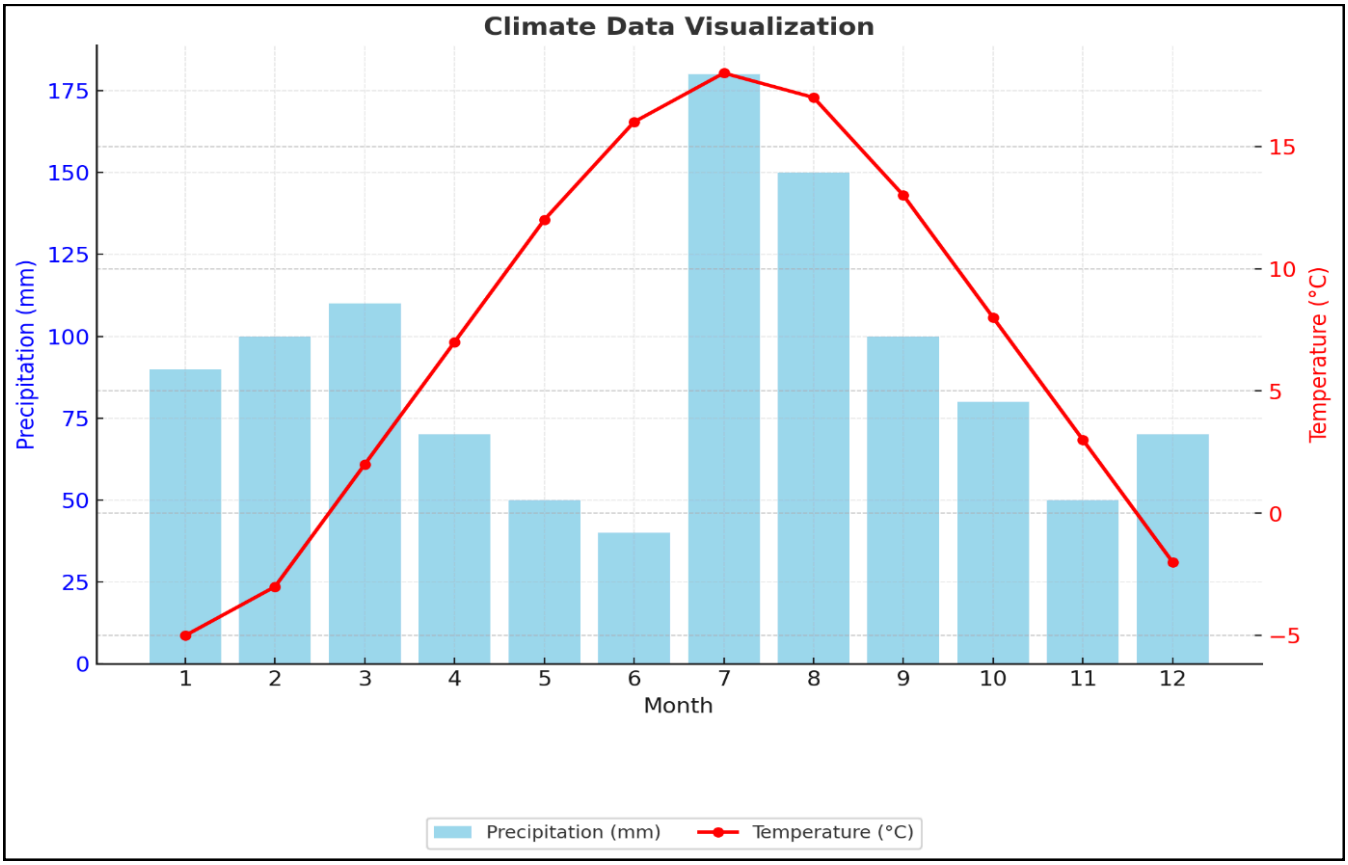


Plate 10: Temperature & Precipitation Data (IMD)

2.4.2 Drought

Drought occurrences in the Overa-Aru region are exceptionally rare and have not been recorded within the last 30 years. This can be attributed to the region's consistent precipitation patterns, primarily driven by snowfall during winter by Western Disturbances and intermittent rainfall during other seasons. Given the stable hydrological cycle and the area's natural ability to sustain its water resources, the risk of prolonged dry spells is minimal. Consequently, from a conservation and resource management perspective, drought mitigation measures are currently deemed unnecessary. However, continuous monitoring of climatic patterns remains essential, as the potential impacts of climate change could alter precipitation regimes and hydrological dynamics over time. This proactive approach ensures preparedness in the event of unexpected climatic anomalies.

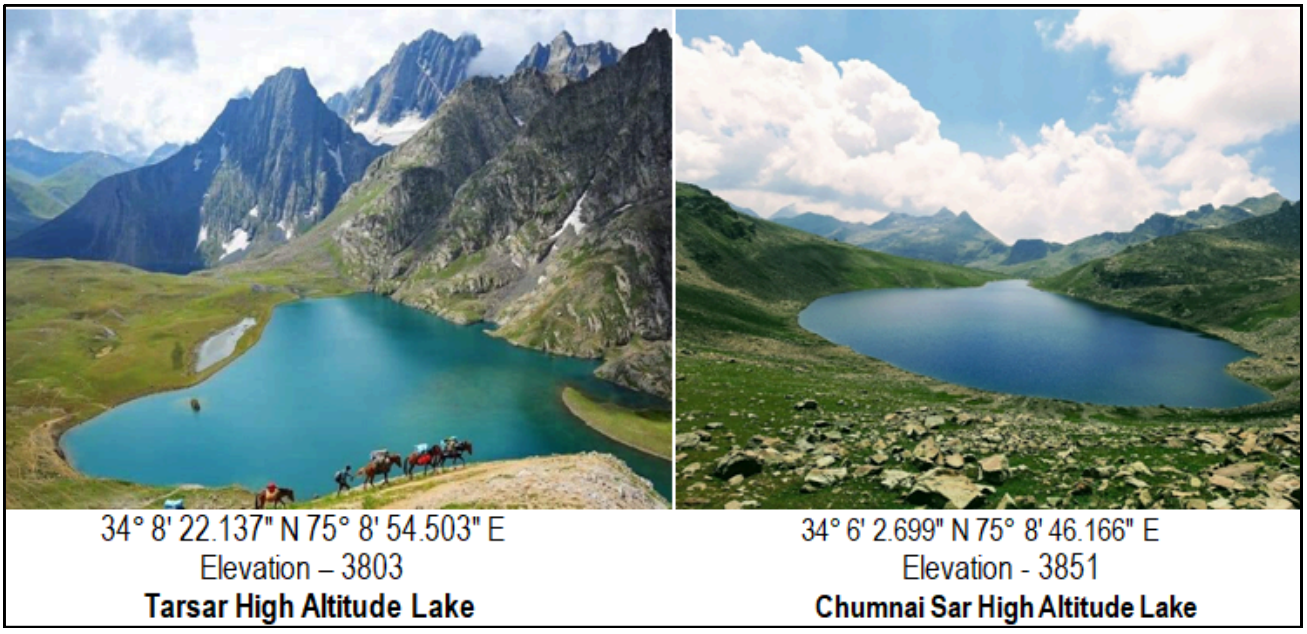
2.4.3 Water Sources

The Overa-Aru Wildlife Sanctuary is endowed with a network of abundant and perennial water sources, including streams, nallahs, springs, glaciers, and alpine lakes. These features collectively ensure a consistent and adequate water supply throughout the year. Among these water sources, the Lidder River, originating from the Tarsar Lake, serves as a major hydrological lifeline for the sanctuary. Tarsar Lake, a prominent alpine waterbody, is a critical feeder to the Lidder River, supporting both the ecological balance of the region and the downstream water demands.

The perennial streams and primary nallahs, including the Overa Nallah, play an essential role in providing drinking water for the diverse wildlife inhabiting the sanctuary. These water bodies form a vital part of the ecosystem, not only sustaining wildlife but also supporting the surrounding vegetation. The availability of fresh water creates suitable conditions for the survival and proliferation of many endangered and endemic species, including the critically endangered Hangul deer, Kashmir Musk deer, and other faunal populations.

Additionally, Sheshnag lake and Kolahoi glaciers act as natural reservoirs, ensuring the year-round availability of water by slowly releasing it during the warmer months. These glacial meltwaters are particularly crucial during summer, when snowmelt becomes the primary source of water. Springs within the sanctuary further contribute to the water supply, creating localized oases of moisture that support microhabitats for both flora and fauna.

The hydrological system of the sanctuary not only meets the needs of the wildlife within its boundaries but also plays a significant role in replenishing the water table and providing drinking and irrigation water to communities in the adjacent areas. The Lidder River, a vital tributary of the Jhelum River, is an essential source of drinking and irrigation water for human settlements
in its vicinity. This underscores the importance of conserving these water resources for both ecological and anthropogenic purposes.



34° 8' 22.137" N 75° 8' 54.503" E
Elevation – 3803
Tarsar High Altitude Lake

34° 6' 2.699" N 75° 8' 46.166" E
Elevation - 3851
Chumnai Sar High Altitude Lake

Table 1: List of rivers/ nallah and natural water resources in Overa-Aru Wildlife Sanctuary

S. No.	NAME OF RIVER/ NALLAH	WATER AVAILABILITY
ARU BLOCK		
1	Nafran Nallah	Perennial
2	Kolhoie Nallah	Perennial
3	Tarsar Nallah	Perennial
4	Chumnai Nallah	Perennial
PAHALGAM BLOCK		
1	Shikargah Nallah	Seasonal
2	Mammal Nallah	Seasonal
OVERA BLOCK		
1	Gamri Nallah	Seasonal
2	Kanjikole Nallah	Seasonal
3	Munwar Sar Nallah	Seasonal
4	Hakerhaji Nallah	Seasonal
5	Lorenadi Nallah	Seasonal
6	Reshinar Nallah	Seasonal

Table 2: High altitude lakes of Overa-Aru Wildlife Sanctuary

S. No.	Name of Spring/ Lake	Status
1	Gandpathar Sar	Perennial
2	Watis Sar	Perennial
3	Hoka Sar	Perennial
4	Chhumanai Gali Sar 1	Perennial
5	Chhumnai Sar 3	Perennial
6	Chhumnai Sar 2	Perennial
7	Gumhar Sar	Perennial
8	Katar Nag Sar Bod	Perennial
9	Unnamed	Perennial
10	Doda Sar	Perennial
11	Munwar Sar	Perennial
12	Budru Nag	Perennial
13	Chhumnai Sar1	Perennial
14	Dudhnag	Perennial
15	Chanda Sar	Perennial
16	Tson Sar	Perennial
17	Hirubagwan Sar	Perennial
18	Chhumhai Sar Bod	Perennial
19	Sona Sar Bod Basmai Gali	Perennial
20	Handilsar	Perennial
21	Har Nag	Perennial
22	Tarsar Lake	Perennial

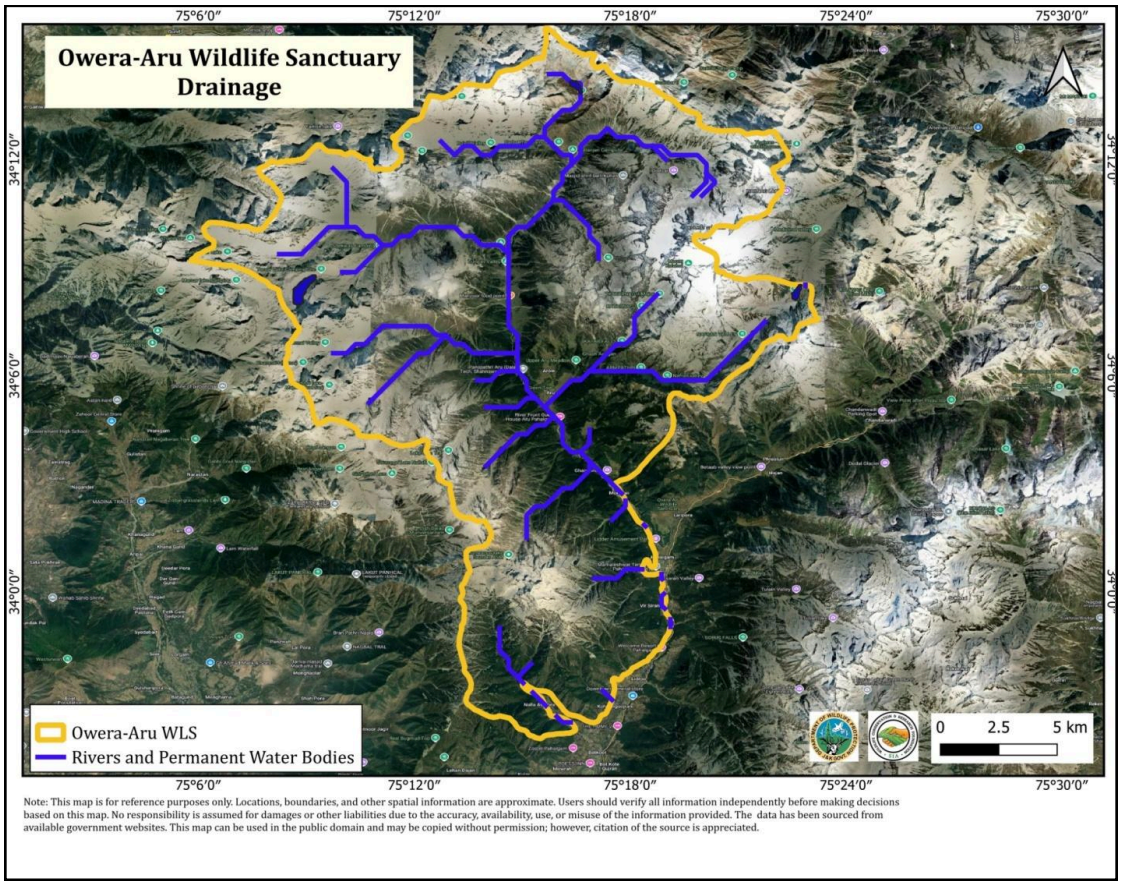


Plate 10: Map Showing Drainage of Overa-Aru Wildlife Sanctuary

2.5 RANGE OF WILDLIFE, STATUS, DISTRIBUTION, AND ATTRIBUTES

2.5.1 Vegetation

2.5.1.1 Bio-geographic Classification

Based on the bio-geographic classification proposed by Rodgers et al. (2002), Overa-Aru Wildlife Sanctuary falls under Zone 2A, which is a part of the larger biogeographical context of the region. This classification reflects the sanctuary's location within the Himalayan biogeographical zone, which influences its flora and fauna, making it an ecologically significant area.

Forest Types

According to the revised classification by Champion and Seth (1968), the vegetation in Overa-Aru Wildlife Sanctuary predominantly consists of

- **Himalayan moist temperate forests**
- **Sub-alpine Scrub**
- **Alpine Meadows**



Riverine Forest of Overa-Aru WLS

Riverine Vegetation

The riverine vegetation in the Overa-Aru Wildlife Sanctuary is dominated by Kail *(Pinus wallichaina)*, which is the most prominent tree species in the area. This tree is found in association with several broad-leaved species such as *Aesculus indica, Fraxinus hookeri, Parrotiopsis jacquemontiana,* and *Juglans regia*. The lower elevation regions also have interspersed patches of Kail, especially in areas with poorly-drained soils. Alongside these trees, the understory vegetation consists of a variety of shrubs and herbaceous species, including I*ndigofera heterantha, Lonicera species, Viburnum, Skimmia anquetilia* and *Jasminium* species, contributing to the diversity of plant life in the sanctuary.

This riverine vegetation not only plays a key role in stabilizing the soil along the riverbanks but also provides vital resources for wildlife, supporting both herbivorous and omnivorous species by offering food, shelter, and necessary ecological services.

Coniferous Forests (2200-3300 m ASL)

In the coniferous forests of Overa-Aru WLS, Fir (*Abies pindrow*) is the dominant species, particularly in lower elevations. This species coexists with Spruce (Picea smithiana) at around 2300 m. As the altitude increases, Abies pindrow transitions into Abies spectabilis at higher elevations. In the more exposed slopes, Kail (*Pinus Wallichiana*) also appears in mixed stands. At the upper reaches of the sanctuary, specifically at Lidderwath, Birch (*Betula utilis*) can be found growing in association with the other coniferous species. The coniferous woodlands extend into various nallahs, adding further ecological richness to the landscape.

Himalayan Sub-Alpine Birch

The Himalayan sub-alpine birch-rhododendron forest occurs at elevations above 3500 m, where the growth of Fir ceases. At these higher altitudes, Birch (*Betula utilis*) forests dominate, sometimes merging with Silver Fir *(Abies spectabilis)* at lower reaches. The higher areas are primarily composed of pure Birch patches. Key species in these forests include B*etula utilis, Rhododendron campanulatum, Syringa emodi, Lonicera discolor, Rhododendron anthopogon,* and *Juniperus recura.* The ground layer is rich in herbs, such as *Anemone obtusiloba, Sieversia elata, Aster thomsonii, Iris hookeriana, Fragaria vesca,* and *Stachys sericea*, which provide important forage for wildlife in these sub-alpine ecosystems.

Alpine Scrubs and Pastures (Beyond 3400 m ASL)

Above the tree line, the landscape of Overa-Aru WLS is characterized by alpine scrubs and treeless pastures. These areas, dominated by Birch *(Betula utilis*) near the tree line, support a variety of scrub vegetation. As one ascends higher, species such as *Juniperus recura, Rhododendron species, Viburnum species*, and *Lonicera* species become increasingly common, especially in shaded areas where Primula species also thrive. The alpine meadows, referred to as "Margs," are composed of perennial herbs and very few grasses. Notable herbaceous species in these meadows include *Primula spp*., *Anemone spp., Fritillaria imperialis, Iris spp., Gentiana spp.,* along with various species from the Ranunculaceae, Cruciferae, Compositae, and Caryophyllaceae families. These expansive alpine pastures support a rich diversity of plant life, with herbs and grasses that flourish in the cool, moist conditions. The alpine meadows are located in the upper reaches of areas like Sikiwas, Lidderwath, Chummnaii, and Kolhaie. The predominant shrubs in these areas are Myosotis species, Cynoglossum species, and *Betula utilis*, scattered throughout the meadows.

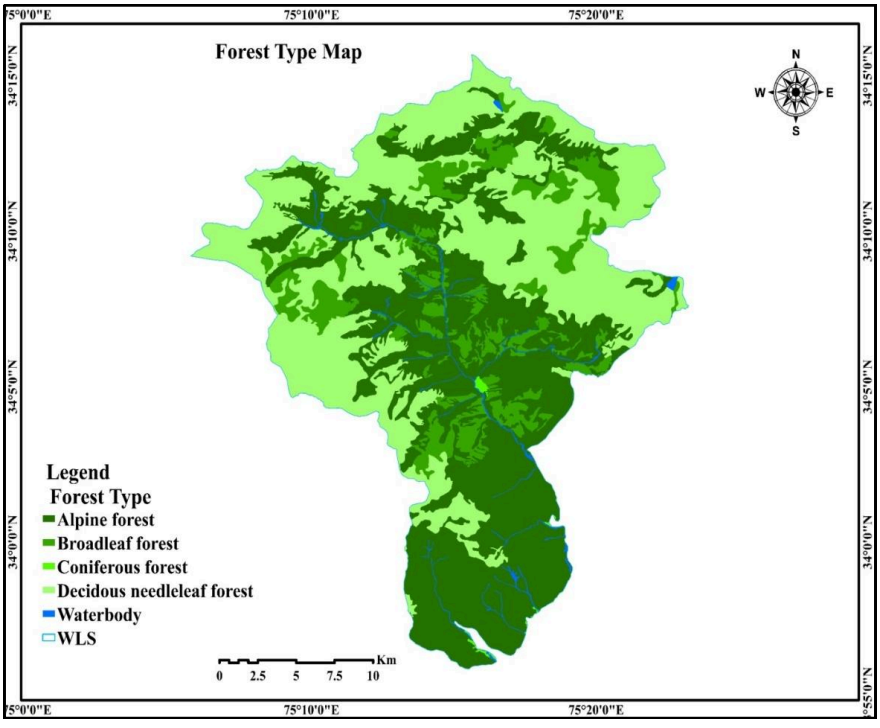


Plate 11: Map showing forest types in Overa-Aru Wildlife Sanctuary

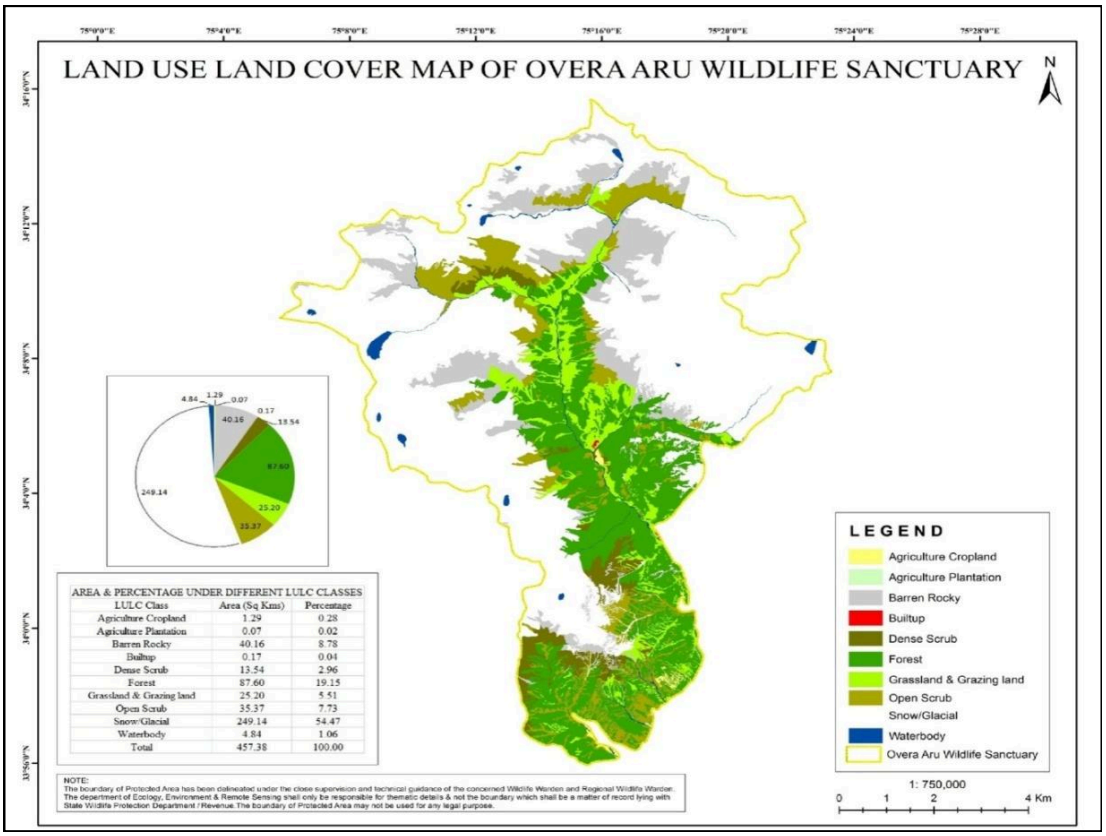


Plate 12: Map showing land-use land cover patterns of Overa-Aru Wildlife Sanctuary

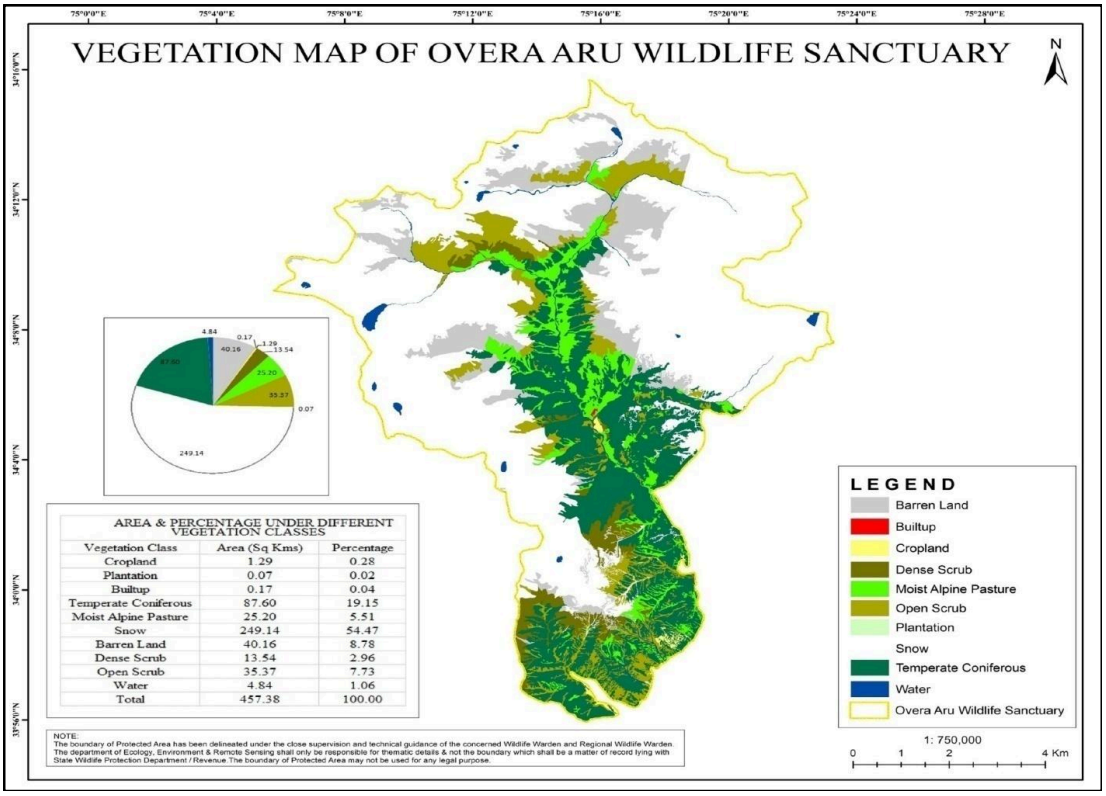


Plate 13: Vegetation map of Overa-Aru Wildlife Sanctuary

2.6 FAUNA

2.6.1 Vertebrates: Their Status, Distribution, and Habitats

The Overa-Aru WLS, in close proximity to Dachigam National Park, harbors a significant number of vertebrate species, including a variety of birds, mammals, and reptiles. These vertebrates are spread across different habitats within the sanctuary, from dense forests and alpine meadows to riverine areas, each supporting distinct wildlife communities.

Mammals: Status, Distribution, and Habitats

Overa-Aru WLS provides habitat for several important mammalian species, including some that are endangered or threatened. The sanctuary is particularly significant for the conservation of the Kashmir Stag (Hangul), a critically endangered species that relies on the protected corridors for migration and foraging. Other notable mammals in the area include the Himalayan Brown Bear, Asiatic Black Bear, Leopard, Wild Boar, Musk Deer, and Snow Leopard. These species occupy a range of habitats, from dense forests at lower elevations to high alpine meadows.

The Kashmir Musk Deer, in particular, is known to inhabit the coniferous and sub-alpine forests of the sanctuary, while species like the Himalayan Brown Bear and Asiatic Black Bear are more commonly found in the forested regions and alpine scrub areas. The Snow Leopard is a rare but critical species that occupies the higher altitudes, especially in rocky, rugged areas where it preys on ungulates and smaller mammals.

The sanctuary's varied topography and the availability of different vegetation types make it an ideal habitat for these species, each of which relies on specific ecological niches within the sanctuary's diverse ecosystems. Conservation efforts within the sanctuary are critical to maintaining these populations, ensuring that these species have the necessary space, resources, and protection for their survival.

THE KASHMIR MUSK DEER

The Kashmir Musk Deer (*Moschus cupreus*) is one of the key species found in the Overa-Aru Wildlife Sanctuary, where it enjoys a viable and relatively stable population due to the sanctuary's favourable habitat and year-round availability of food sources. This species, which is classified as "Endangered" by the International Union for Conservation of Nature (IUCN, 2020), is listed under Appendix I of the IUCN Red List and is also placed under Schedule I of the Wildlife Protection Act of 1972 in India. This status reflects the serious threats faced by the species, including poaching and habitat loss.

The Kashmir Musk Deer is a solitary and habitat-specialist species, predominantly found in the alpine shrublands and meadows, typically at altitudes ranging from 2600 to 4000 meters above sea level. These areas, characterized by cold temperatures and rugged terrain, provide the necessary conditions for the survival of this species. The Musk Deer belongs to the genus Moschus and the monotypic family Moschidae. Musk deer species are found across the Palearctic region, inhabiting fragmented areas like the Kashmir Himalayas, Tibetan Plateau, and parts of China and the Far East (Pan et al., 2015).

Globally, there are seven recognized species of Musk Deer, with five of them occurring in the Indian Himalayan range. These include the Kashmir Musk Deer, Alpine Musk Deer (*Moschus chrysogaster*), Himalayan Musk Deer (*Moschus leucogaster*), Forest Musk Deer (M*oschus berezovskii*), and Black Musk Deer (*Moschus fuscus*) (Grubb, 2005). However, the Kashmir Musk Deer remains one of the least studied among these species. Its fragmented and isolated habitat distribution combined with a lack of comprehensive ecological and genetic studies, means that there is limited baseline information available. Given this knowledge gap, there is an urgent need for detailed research on the Kashmir Musk Deer within the Overa-Aru Wildlife Sanctuary. This research should focus on population estimation, habitat use, and ecological parameters, which will be vital for the long-term conservation and management of this endangered species.

Threats to the Kashmir Musk Deer

The Kashmir Musk Deer faces several significant threats that are compromising its survival, particularly in the Overa-Aru region:

Grazing Competition from Livestock: Nomadic pastoralists, who graze livestock in the sanctuary's alpine meadows, often compete with wildlife for essential forage resources. This can lead to overgrazing, degradation of the habitat, and reduced availability of food for the Musk Deer.

Illicit Poaching for Musk: One of the primary threats to the Kashmir Musk Deer is poaching, particularly for its musk, which is highly prized in traditional medicine and the perfume industry. This illegal hunting has led to significant declines in Musk Deer populations across their range.

Habitat Degradation: Habitat destruction, caused by human encroachment, deforestation, and climate change, is another serious threat to the species. The fragmentation of their habitat due to these factors limits the deer's ability to find suitable breeding grounds and access critical resources.

Climate Change: Alterations in the climate, such as rising temperatures and changing precipitation patterns, could impact the high-altitude ecosystems that the Kashmir Musk Deer relies on. This could further fragment their already limited habitat, making survival more challenging.



Kashmir Musk deer

Given the increasing pressures from these threats, a strategic conservation approach is essential. This would include stricter law enforcement against poaching, sustainable grazing management, and focused habitat restoration efforts to secure the long-term survival of the Kashmir Musk Deer within the Overa-Aru Wildlife Sanctuary and its broader range.

THE HANGUL

The Kashmir Red Deer, also known as Hangul (*Cervus hanglu hanglu*), is a species that has been classified as “Critically Endangered” by the International Union for Conservation of Nature (IUCN, 2020) due to its rapidly declining population. This species is protected under Schedule I of the Wildlife Protection Act of 1972, amended up to 2022, and is also listed in Appendix I of the Convention on International Trade in Endangered Species (CITES), which bans its international trade. The Hangul is endemic to the Kashmir Valley, and its numbers have dwindled significantly over the past few decades, making it one of the most threatened large mammals in the region.

Hangul exhibits seasonal habitat preferences, adapting its behavior based on food availability, shelter, and the need for escape cover from predators (Ahmed et al., 2015). Studies have shown that the Hangul is a mixed feeder, consuming a variety of plant species depending on the season. Its diet is composed predominantly of dicotyledonous shrubs, trees, forbs, herbs, and grasses, with significant variations between the different seasons.

- **Winter Diet:** In winter, Hangul primarily feeds on browse (trees and shrubs), but it has been observed debarking trees, particularly *Pinus wallichiana, Lonicera quinquelocularis, and Parrotiopsis jacquemontiana*.
- **Spring Diet:** During spring, Hangul’s diet shifts to include a higher proportion of forbs and grasses, with browse still being a significant part of the diet.
- **Summer Diet:** In summer, grasses and sedges make up a larger portion of the diet (around 19.05% and 28%, respectively), while forbs and browse continue to constitute a substantial part of the diet.
- **Autumn Diet:** In autumn, debarking on species like *Prunus ceracifera* and *Parrotiopsis jacquemontiana* is observed, with an increase in the consumption of grasses and sedges.

Hangul is also known for seasonal migrations, and it may use the Overa-Aru Wildlife Sanctuary as a migratory corridor, passing through areas that are connected to other important habitats. Given its seasonal migration patterns, it is critical to protect and manage these migratory corridors. These corridors must be maintained through proper habitat management to prevent any anthropogenic pressures from disrupting the movements of the Hangul.

Threats to the Hangul

Several threats continue to endanger the survival of the Hangul, contributing to its ongoing population decline:

- **Declining Sex Ratio and Fawn to Female Ratio:** One of the primary concerns for the long-term conservation of Hangul is the declining sex ratio and the reduced fawn-to-female ratio. This imbalance affects the species' reproductive success, further threatening its survival in the wild.

- **Poaching:** Historically, poaching has been a major driver of the decline in Hangul populations. However, thanks to the tireless efforts of the Department of Wildlife Protection and regular patrolling by frontline staff, the incidence of poaching has significantly reduced in recent years.

- **Livestock Grazing:** Livestock grazing in Hangul's summer habitat has become a major concern. This activity not only increases competition for food and shelter but also exposes the Hangul to the risk of diseases and pests that are often introduced by domestic animals. These diseases can spread rapidly among wildlife populations, further exacerbating the pressures on the Hangul.



Hangul

In light of these threats, a multifaceted conservation approach is needed, focusing on habitat preservation, population monitoring and continued anti-poaching efforts. Protecting the Hangul's migratory corridors and reducing human-wildlife conflicts, especially related to livestock grazing, will be critical in ensuring the survival of this iconic species.

COMMON LEOPARDS

The Leopard *(Panthera pardus)* is the apex carnivore within the Overa-Aru Wildlife Sanctuary and plays a crucial role in the ecosystem as a top predator. The leopard is classified as "Vulnerable" on the IUCN Red List due to declining populations caused by habitat loss, poaching, and human-wildlife conflicts. It is listed under Appendix I of CITES, which restricts international trade in leopard products to prevent further population decline. In India, the leopard is protected under Schedule I of the Wildlife Protection Act, 1972, as amended up to 2022, which offers it the highest level of legal protection.

Leopards are known for their wide distribution, being the most widely spread of all wild cats. Their range extends across Africa, Central Asia, Southeast Asia, and parts of Russia (Nowell & Jackson, 1996). In the Indian subcontinent, leopards are found in a variety ofhabitats,excluding areas such as deserts, the Sundarbans mangroves, and highly urbanized regions (Khan, 1986; John Singh et al., 1991). In Kashmir, leopards are distributed throughout the forested areas, including the Overa-Aru Wildlife Sanctuary, where they thrive at elevations up to the tree line. This sanctuary provides a vital and suitable habitat for leopards, supporting a robust and viable population. However, there has been a limited amount of research on their population density, ecological requirements, and movement patterns in the region.

Despite their widespread presence, leopard-human conflicts have become a significant issue near the Overa-Aru Wildlife Sanctuary. Reports of such conflicts have increased in nearby villages, where leopards are often seen as a threat to livestock and human safety. In response, there have been incidents of retaliatory killings, with villagers seeking to reduce the perceived threat by killing leopards. This is a major threat to the leopard population and underscores the urgent need for conflict mitigation strategies.

To ensure the conservation of leopards in the sanctuary, there is a pressing need for long-term ecological studies. Such studies should focus on key aspects of leopard ecology, including population estimation, habitat use, ranging behavior, and movement patterns. Understanding these ecological parameters will be crucial for developing effective management strategies and ensuring the continued survival of leopards in the Overa-Aru Wildlife Sanctuary.



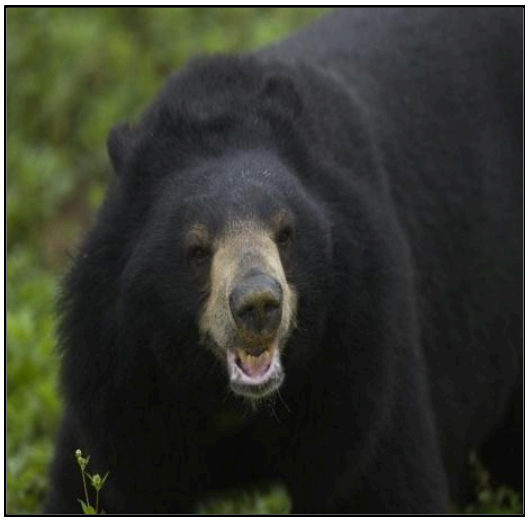
Common Leopard

Additionally, proactive measures to reduce human-leopard conflict through awareness, prevention programs, and community engagement will be essential for the protection of this iconic species.

ASIATIC BLACK BEAR

There are eight species of the Bears found worldwide of which four viz. The sloth bear *(Melursus ursinus)*, the Asiatic black bear *(Ursus thibetanus),* Himalayan brown bear *(Ursus arctos),* and the sun bear *(Helarctos malayanus)* are found in India. The Asiatic Black Bear is having ubiquitous distribution in the UT of Jammu and Kashmir. It is found in every protected area of the Kashmir and in almost every territorial forest area. The Asiatic Black Bear is listed as "Vulnerable" as per IUCN Red Data Book (IUCN, 2020). It is listed in Appendix I as per CITES and placed in Schedule I as per Indian Wildlife (Protection) Act 1972, amended up to 2022.

The Overa-Aru Wildlife Sanctuary holds a very fine and viable population of the Black Bears. The habitat of the Overa-Aru WLS is perfect to harbour finest populations of the Black Bears. However, there has been a little study on the population and ecology of the Black Bears in the Overa-Aru Wildlife Sanctuary. It is prescribed in the current management plan to undertake a full-fledged survey and census to estimate the population of the Black Bear in the Overa-Aru Wildlife Sanctuary.



Asiatic Black Bear

Threats

Black Bears are threatened due to poaching for gall bladder as (medicine), skin for (ornamental), retaliatory killings to reduce bear-human conflicts, and due to large-scale habitat degradation or loss. Because of these threats, the black bear population in India is decreasing in many areas. Existing information on black bear in India is either anecdotal or insufficient for effective conservation

BROWN BEAR

The Brown Bear *(Ursus arctos)* is an uncommon resident of the sanctuary, confined primarily to the higher mountainous regions such as Kolahai.

- Habitat and Behaviour: Brown bears in the sanctuary inhabit alpine meadows and sub-alpine forests, particularly during the summer months. They are omnivorous, feeding on a diverse diet of plants, fruits, insects, and small mammals.

- Conservation Concerns: The population of Brown Bears in Overa-Aru is threatened by habitat degradation and potential human-wildlife conflict.

SNOW LEOPARD

The Snow Leopard *(Panthera uncia)* has not been confirmed within the Overa-Aru Wildlife Sanctuary. However, suitable high-altitude habitats in the region suggest that occasional transient individuals might pass through, as its connectivity with Thajwas Wildlife Sanctuary where the snow leopard was reported in 2024.

OTHER ANIMALS

Besides, from the above mentioned animals, the Overa-Aru Wildlife Sanctuary is also having a good population of the Himalayan brown bear *(Ursus arctos),* Himalayan yellow Marten *(Martes flavigula),* Red fox *(Vulpes vulpes)*, Jackal *(Canis aureus)*, Small Indian civet *(Viverricula indica)*, Rhesus macaque *(Macaca mulatta*) Leopard cat *(Felis bengalensis)*, Common Mongoose *(Herpestes edwardsi)* and long tailed marmot *(Marmota caudata).*



Plate 14: Fauna of Overa-Aru Wildlife Sanctuary

Table 3: List of Rare and endangered Fuanal Species of Overa-Aru Wildlife Sanctuary

List of rare/endangered, endemic, threatened species of flora and fauna
List of Mammal Species

S. No.	Common Name	Scientific Name	Status		
			IUCN Category	CITES Appendix	IWPA Schedule
01	Hangul (Kashmir Red deer)	*Cervus hanglu hanglu*	CR	I	I
02	Kashmir Musk Deer	*Moschus cupreus*	EN	I	I
03	Asiatic Black Bear	*Ursus thibetanus*	LC	I	II
04	Himalayan Brown Bear	*Ursus arctos*	LC	II	I
05	Common Leopard	*Panthera pardus*	NT	I	I
06	Leopard Cat	*Prionailurus bengalensis*	LC	I	I
07	Jungle Cat	*Felis chaus*	LR	UL	II
08	Red Fox	*Vulpes vulpes*	LC	III	II
09	Siberian Weasel	*Mustela sibirica*	LC	III	I
10	Tibetan Wolf	*Canis lupus*	VU	I	UL
11	Golden Jackal	*Canis aureus*	LC	III	II
12	Yellow-throated Marten	*Martes flavigula*	LC	III	II
13	Kashmir Gray Langur	*Semnopithecus ajax*	EN	I	II
14	Rhesus Macaque	*Macaca mulatta*	LC	II	II
15	Indian Crested Porcupine	*Hystrix* indica	LC	III	IV
16	Himalayan Mouse Hare	*Ochotona roylei*	EN	UL	II
17	Long-Tailed Marmot	Marmota caudata	LC	III	II
18	Siberian ibex	Capra sibirica	NT	III	I

CR= Critically Endangered, EN=Endangered; NT=Near -Threatened, LR=Low Risk, LC=Least Concern; UL=Un -listed

AVIAN DIVERSITY

The Overa-Aru Wildlife Sanctuary is a significant avian habitat, harboring a rich diversity of bird species across varied elevations and ecosystems. With its location in the Western Himalayas, the sanctuary encompasses two distinct biomes—Biome-5 (Eurasian High Montane: Alpine and Tibetan) and Biome-7 (Sino-Himalayan Temperate Forest)—providing critical breeding grounds and habitats for several species, including globally threatened and restricted-range species.

Bird Diversity and Records

Overa Sanctuary located in the Western Himalayas, hosts 117 bird species, 89 of which breed within its boundaries. New records have been reported, including 113 species within the sanctuary in 2003. The sanctuary is home to species like the Himalayan Monal and Koklass Pheasant, though the Western Tragopan has not been seen. Eight species of sympatric warblers breed in Overa, including Tytler's Leaf Warbler and Orange-barred Leaf Warbler. Additionally, the Simla Black Tit and Rufous-bellied Crested Tit breed sympatrically here, with the Crested Black Tit being common near the tree line.

Overa falls within the Western Himalayas Endemic Bird Area and is home to several restricted-range species, including the Kashmir Flycatcher, which is globally threatened and likely breeds in the sanctuary. The sanctuary contains two biomes: Biome-5 (Eurasian High Montane) and Biome-7 (Sino-Himalayan Temperate Forest), supporting various biome-specific bird species. Overa is an important breeding site for some species, such as the Kashmir Flycatcher, contributing to its conservation significance. List of all the birds found in the sanctuary has been provided in Annexure 2.

Warblers & sympatric breeding species

Overa is notable for hosting eight sympatric species of leaf warblers (genus Phylloscopus), all of which breed within the sanctuary (Price and Jamdar, 1989, 1990, 1991):

▪ Tytler's Leaf Warbler (*Phylloscopus tytleri*)	▪ Pallas's Leaf Warbler (P. proregulus)
▪ Tickell's Leaf Warbler (*P. affinis*)	▪ Large-billed Leaf Warbler (*P. magnirostris*)
▪ Orange-barred Leaf Warbler (*P. pulcher*)	▪ Greenish Leaf Warbler (*P. trochiloides*)
▪ Hume's Yellow-browed Warbler (*P. inornatus*)	▪ Large-crowned Leaf Warbler (*P. occipitalis*) ▪

Additionally, the Strong-footed Bush Warbler *(Cettia fortipes)* is also known to breed in the sanctuary, highlighting the diversity of warbler species adapted to the region's varied elevations and vegetation types.

Tits and Biome-Specific Species

The sanctuary supports sympatric breeding populations of several tit species- Simla Black Tit *(Parus rufonuchalis),* Rufous-bellied Crested Tit *(P. rubidiventris*) and Crested Black Tit *(P. melanolophus)*, which is abundant near the tree line (Price and Jamdar, 1990).

These species are characteristic of the Biome-7 (Sino-Himalayan Temperate Forest), further emphasizing Overa's ecological importance for montane and temperate forest avifauna.

Globally Threatened and Restricted-Range Species

The Kashmir Flycatcher *(Ficedula subrubra)* is the only globally threatened species recorded in the sanctuary. This species, listed as Vulnerable by the IUCN, has a limited breeding range confined to the Northwest Himalayas. Overa-Aru Wildlife Sanctuary may serve as an important breeding ground for this species (Price and Jamdar, 1990). The Kashmir Flycatcher migrates to Sri Lanka and the Western Ghats during winter (Ali and Ripley, 1987; Grimmett et al., 1998). Between 1985 and 1987, 17 individuals of this species were mist-netted and ringed for research purposes, highlighting the potential conservation value of this site for its breeding population. The sanctuary is also part of the Western Himalayas Endemic Bird Area (EBA 128), which hosts 11 restricted-range species (Stattersfield et al., 1998). Four of these species have been confirmed in Overa, although more are likely to occur based on habitat characteristics.

Biome Distribution and Avian Habitat

Overa-Aru Wildlife Sanctuary spans two important avian biomes:

- Biome-5 (Eurasian High Montane: Alpine and Tibetan): Found above approximately 3,600 meters, this biome supports five species characteristics of alpine and high-altitude ecosystems.

- Biome-7 (Sino-Himalayan Temperate Forest): Ranging from 1,800 to 3,600 meters, this biome hosts 15 species, including the breeding populations of warblers and tit species mentioned above. Of the 112 species listed for this biome by BirdLife International, Overa supports a substantial proportion, emphasizing its ecological importance for temperate forest avifauna.

Conservation Significance and Threats

Overa-Aru Wildlife Sanctuary holds significant conservation value due to its role as a breeding ground for both endemic and globally threatened bird species. However, several challenges threaten the sanctuary's avifauna:

- **Habitat Degradation:** Encroachment, deforestation, and livestock grazing can lead to the destruction of critical breeding and foraging habitats for birds.
- **Climate Change:** Shifting temperature and precipitation patterns could alter the availability of suitable habitats, particularly for high-altitude species such as the Himalayan Monal and warblers.
- **Human Disturbance:** Increased human activity, including tourism and agricultural expansion, may disrupt the sanctuary's ecosystem balance.
- **Inadequate Monitoring:** Despite its significance, many bird species in Overa-Aru remain poorly studied, and long-term population monitoring is lacking.

Conservation Recommendations

- **Long-term Monitoring:** Systematic studies on population trends, breeding ecology, and habitat use of key species like the Kashmir Flycatcher, Himalayan Monal, and warblers are needed to guide conservation efforts.
- **Habitat Protection:** Effective habitat management, including the protection of critical forest and alpine zones, will help maintain the sanctuary's biodiversity.
- **Community Engagement:** Local communities should be involved in conservation efforts to reduce habitat degradation and human disturbance. Sustainable tourism practices and awareness programs can also mitigate anthropogenic pressures.
- **Collaborative Research:** Partnerships with ornithological organizations and research institutions will help enhance scientific understanding of the sanctuary's avifaunal diversity and its role in the Western Himalayan ecosystem.

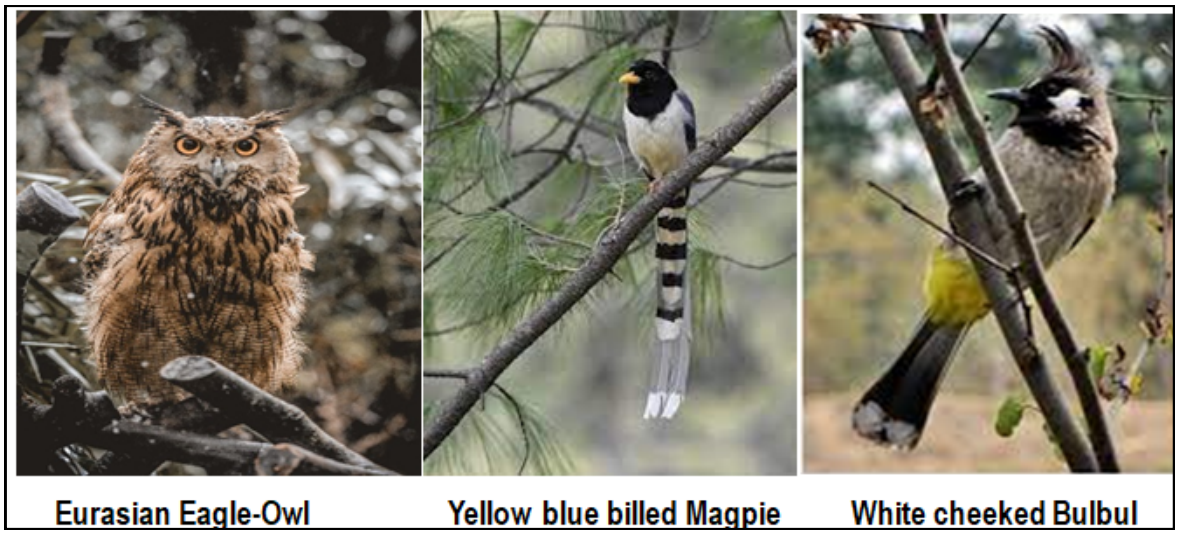


Plate 15: Aviauna of Overa-Aru Wildlife Sanctuary

The Overa-Aru Wildlife Sanctuary is a vital stronghold for the avifauna of the Western Himalayas, supporting a wide range of species across diverse habitats and elevations. With focused conservation efforts and continued research, this sanctuary can serve as a model for protecting avian biodiversity in the Himalayan region.

AQUATIC FAUNA

The aquatic fauna of the sanctuary is not yet evaluated and so there is no information is available to the department. The main Lidder river is the ideal habitat for the cold water fishes, and other aquatic forms of life.

External Interference

The entire Overa-Aru WLS is having external interference in the form of summer grazing in upper alpine grasslands of the sanctuary. No forest products exploited from the area excepting some human disturbance, collection of mushroom in spring season that too in some areas. In the Aru block of the sanctuary unorganized tourism can have adverse effects on the ecology of the sanctuary.

Epidemic

The animals of the park have not been affected by any serious epidemic disease in the recent years. The danger of spreading epidemic diseases is always there because of the presence of large nomadic grazers in summer season with large number of grazing livestock presence in upper areas.

Unsuitable period/Pinch period

In winter season period after snow is the most unsuitable period for the wildlife in the areas because of foraging grounds get covered by snow and getting food becomes difficult for many species. Supplementary feed is provided to the wild animals during pinch period.

Chapter 3
History of Management & Present Practices



3.1 GENERAL

The Overa-Aru Wildlife Sanctuary has a rich history, originally serving as a hunting reserve or 'rakh' for the Maharaja of Jammu and Kashmir from 1910 until 1947. In recognition of its rich biodiversity, the areas of Overa and Aru were designated as 'Reserves' under Cabinet Order No. 710-C of 1945 (G) on 17th July 1945. Over time, the status of this area was elevated to a Man and Biosphere Reserve to reflect its ecological significance. Initially managed by the Wildlife Wing of the Forest Department, the Overa-Aru region was eventually declared a sanctuary by the state government through SRO No. 154 on 19th March 1987, under Endorsement No. FST/WL/SAN/Overa/97 dated 18th March 1987. With the formation of the Department of Wildlife Protection, habitat management and improvement efforts, including plantation work, were undertaken to restore and enhance the sanctuary's biodiversity. In the past the Sanctuary was managed by the Annual Plan of operations (APO's) and activities were pursued as per the requirement in the field.

3.2 TIMBER OPERATION INCLUDING FIREWOOD HARVEST

The primary reason for declaring Overa-Aru as a sanctuary was to preserve its biodiversity and protect ecological processes. Initially, the focus was on wildlife protection, and no timber harvest activities were recorded in the sanctuary. The sanctuary status was meant to safeguard the region from exploitation while maintaining its natural resources and biodiversity. Therefore, the extraction of timber or firewood is strictly prohibited, ensuring that the area's ecological integrity remains intact.

3.3. NON-WOOD FOREST PRODUCE COLLECTION

Historically, during the time of the Maharaja, certain forest resources were collected, such as grass and firewood. These activities were regulated through strict guidelines to ensure that local needs, particularly for fuel and fodder during winter months, were met without compromising the forest's sustainability. Such practices were permitted under the condition that they did not affect the overall health and biodiversity of the sanctuary. However, with the establishment of the sanctuary and the enforcement of new regulations, the extraction of non-wood forest products has been highly regulated.

3.4 LEASES

No leases have been granted in the Overa-Aru Wildlife Sanctuary under the jurisdiction of the Wildlife Warden Central and South. The sanctuary is managed with the primary objective of wildlife protection, ensuring that no land is leased for commercial or non-conservation purposes. The area remains under full protection to maintain its ecological values and to support conservation efforts.

3.5 OTHER PROGRAMMES AND ACTIVITIES

The Department of Wildlife Protection has focused its efforts on the protection and conservation of the sanctuary's wildlife, including both flora and fauna. Although activities like community involvement in conservation are largely limited to the surrounding areas of the sanctuary, the department has engaged in various awareness programs and habitat restoration efforts. Furthermore, efforts to enhance the sanctuary's ecological stability through initiatives such as anti-poaching patrols and scientific research have been undertaken. However, more widespread community engagement and outreach are needed to foster better understanding and support for conservation in the region.

3.6 FOREST PROTECTION

3.6.1 Legal Status

The Overa-Aru region was initially designated as a reserve under Cabinet Order No. 710-C of 1945 to protect its rich wildlife. In recognition of its ecological importance, the area was later upgraded to a Man and Biosphere Reserve in 1981 (Govt. Order No. FST 20 of 1981). Finally, to ensure full legal protection for its wildlife and habitats, the area was declared a Wildlife Sanctuary by the Jammu and Kashmir government under SRO No. 154 on 19th March 1987, formally recognizing it as the Overa-Aru Wildlife Sanctuary. This legal status ensures that the sanctuary and its biodiversity are afforded full protection under the Wildlife Protection Act of 1972, amended upto 2023.

3.6.2 Hunting

Historically, the region witnessed widespread hunting, particularly by the elite classes, which severely impacted wildlife populations. However, after recognizing the urgent need for conservation, all hunting activities were banned following the enforcement of the J&K Wildlife (Protection) Act of 1978 (amended up to 2002). A total ban on hunting was confined later under the Wildlife (Protection) Act, 1972,(amended upto 2023), once Overa-Aru was declared a sanctuary. This ban has been crucial in curbing the poaching and illegal hunting that previously threatened local wildlife, including species such as the Kashmir Hangul and Black Bears.

3.6.3 Illegal Activities

While the Overa-Aru Wildlife Sanctuary is legally protected, poaching and other illegal activities have historically posed significant threats to wildlife populations, particularly for endangered species like the Kashmir Hangul, Musk Deer, and Black Bears. Poaching, coupled with habitat degradation, severely impacted these species, especially in the 1990s. However, due to increasing law enforcement and the restrictions imposed by the Jammu and Kashmir government, illegal activities have been significantly reduced over the past decade. Despite this, sporadic incidents of poaching and the presence of hunters within the sanctuary have been reported.

The turmoil in the region has also contributed to a decline in human interference, providing some respite to the wildlife. The anti-poaching efforts of the Department of Wildlife Protection have been particularly successful in stabilizing the populations of key species, but continued vigilance is needed to prevent the resurgence of illegal activities. Ongoing patrolling, community outreach, and surveillance are essential to ensure that the sanctuary's wildlife remains protected.

3.6.4 Livestock Grazing

The nomadic grazers and local villagers frequently move their livestock to the upland areas of the Overa-Aru Wildlife Sanctuary, with numbers reaching into the thousands. This influx of livestock, combined with uncontrolled overgrazing, has led to severe damage to the vegetative cover of the sanctuary. As a result, the soil becomes exposed, making it highly susceptible to erosion during periods of heavy rainfall. The loss of topsoil not only diminishes plant growth but also leads to flooding and degradation of nearby water bodies, which further compounds the problem of habitat destruction.

The depletion of the vegetative cover has significant consequences for the sanctuary's wildlife, especially for species such as the Kashmir Hangul, Musk Deer, Black Bear, and Brown Bear, all of which are listed under Schedule-I of the Wildlife Protection Act. These species rely heavily on the availability of fodder and vegetation for survival, and the destruction of their natural habitat reduces their food sources, further threatening their population.

To address this critical issue, a rehabilitation program has been proposed to mitigate the harmful effects of overgrazing. This program includes the establishment of alternative grazing grounds for the nomads and villagers, aiming to reduce pressure on the sanctuary's fragile ecosystems.

Additionally, pasture nurseries have been developed, and artificial feed is provided to livestock during lean periods, thereby ensuring that the local community's needs are met while simultaneously safeguarding the sanctuary's flora and fauna. These efforts are designed to strike a balance between supporting the livelihoods of local communities and protecting the ecological integrity of the Overa-Aru Wildlife Sanctuary. All stall feeding in the fringe area is encouraged.



Plate 16: Problem of Overgrazing in Overa-Aru Wildlife Sanctuary

3.6.5 Forest Fires

Induced forest fires, when carefully managed, can play a significant role in wildlife management by helping to clear old vegetation, allowing fresh grass, legumes, and other vegetation to grow, which in turn supports wildlife by providing them with new forage. However, uncontrolled fires caused by nomadic grazers and local villagers—often while collecting fuelwood, making charcoal, or conducting other activities during the winter months—pose a serious threat to the sanctuary. These illegal activities sometimes lead to large-scale forest fires that destroy a significant portion of the standing forest cover, which harms the ecosystem and threatens wildlife habitats.

To mitigate the risks of such fires and ensure effective management, Fire management plan have been proposed in a separate Chapter.

3.6.6 Wildlife Health (Insect Attacks and Pathological Problems)

During the summer months, the Overa-Aru Wildlife Sanctuary experiences a high influx of nomadic livestock, which raises concerns regarding the transmission of communicable diseases such as Foot and Mouth Disease, Anthrax, and other zoonotic infections. These diseases can spread when livestock and wildlife, including highly endangered species like the Hangul and Kashmir Musk Deer, which feed in close proximity. To mitigate the risks of disease transmission, the department has implemented precautionary measures such as establishing veterinary dispensary units, vaccinating local livestock, and providing immediate veterinary care to wild animals affected by diseases or natural calamities. The priority remains the prompt rescue and rehabilitation of any wild animals suffering from chronic diseases or injuries within the sanctuary.

3.7 ECOTOURISM

Tourism is a crucial sector for the state's economy, contributing significantly to its growth while fostering public awareness about the importance of nature, including its flora, fauna, and the need for their conservation. However, tourism development has often been approached from an engineering perspective, leading to habitat loss and environmental degradation. The construction of concrete structures such as five-star hotels, shopping malls, and extensive metallic roads in and around protected areas, particularly in health resorts, has adversely impacted the natural ecosystem. This development has resulted in the degradation of vegetation and disturbance to the wildlife habitat.

In contrast, the emerging concept of ecotourism presents a promising solution. Ecotourism, when implemented properly, can offer tourists a sustainable way to experience and appreciate nature while ensuring that natural habitats are preserved and protected. It supports both the growth of the tourism sector and the conservation of wildlife and their habitats, thus fostering a balanced relationship between human activity and environmental protection. Detailed Eco-tourism plan incorporated in separate chapter.

3.8 RESEARCH & MONITORING

All wildlife management practices will be ineffective unless research is incorporated into these efforts. Research plays a critical role in enhancing the impact of conservation strategies. To ensure the research is comprehensive and results-oriented, it will be conducted in consultation with renowned experts both nationally and internationally. Dedicated volunteers and NGOs will also be actively involved in these research activities to ensure the accuracy and effectiveness of the outcomes.

Research programs shall focus on monitoring the population fluctuations of key species such as the Kashmir Stag (Hangul), Musk Deer, and Brown Bear, which are on the brink of extinction. These studies will address various aspects of their survival, including behavioral patterns, adaptation to the harsh environment, the impact of biotic interference, and the underlying causes of their population decline. Such research will be crucial for formulating informed and targeted management practices to conserve these flagship species.

3.9 WILDLIFE CONSERVATION STRATEGIES

Wildlife conservation strategies focus primarily on two key components: Anti-poaching activities and Habitat manipulation. These strategies are critical for both protecting wildlife from illegal activities and improving their natural habitats to ensure their long-term survival.

Anti-poaching Activities

Anti-poaching efforts have been at the forefront of wildlife protection since the late 1980s and early 1990s. These initiatives were ramped up significantly as part of a broader strategy to counteract the growing threat of organized poaching gangs. Intensive measures were adopted to safeguard wildlife from illegal hunting, and the government took a proactive role in addressing the issue. These measures gained more traction in the early 1980s when the Chief Wildlife Warden became directly involved, engaging with various stakeholders and government departments to bolster efforts for wildlife protection.To enhance the effectiveness of these anti-poaching activities, the entire administrative setup was reorganized, leading to a more efficient structure for wildlife management. Regular patrolling, improved intelligence gathering, and stricter penalties for poachers became central to these efforts.

Habitat Manipulation

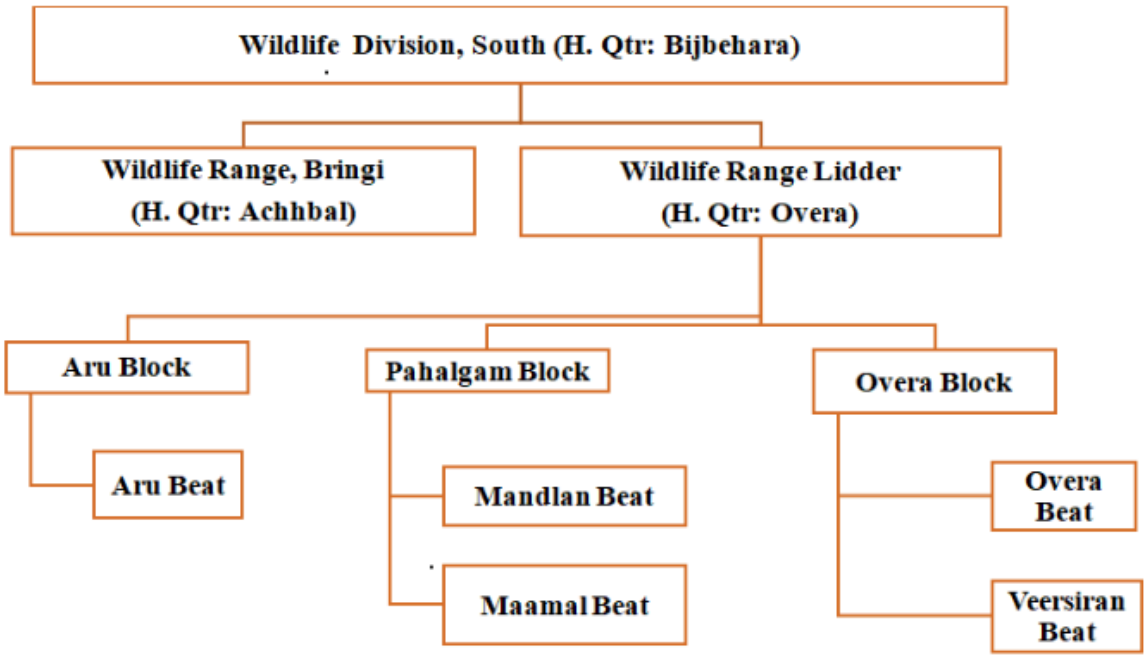
Habitat manipulation is another critical strategy to enhance the quality of wildlife habitats, especially in cases where ecological disturbances or degradation have occurred. This involves interventions aimed at improving the availability of food, water, and shelter for wildlife. Through habitat restoration techniques, such as the removal of invasive alien species, reforestation, and controlled burning, the sanctuary can ensure that its wildlife remains supported in a suitable environment. Both strategies—anti-poaching and habitat manipulation—are essential to wildlife conservation and work in tandem to provide long-term protection for the species within Overa-Aru Wildlife Sanctuary.

3.10 ADMINISTRATIVE SETUP

The Overa-Aru Wildlife Sanctuary falls under the Wildlife Division South, with its Headquarters located at Bijbehara. The sanctuary is managed and supervised by the Wildlife Warden South.
The division is further sub-divided into two wildlife ranges:

1. Wildlife Range Bringi (Headquarters at Achhbal)
2. Wildlife Range Lidder (Headquarters at Overa)

The Overa-Aru Wildlife Sanctuary falls under the Wildlife Range Lidder.



Current Staff Position:

S. No.	Designation	Posted as on 02.06.2025	Remarks
1.	Range officers	01	
2.	Forester	01	
3.	Field Assistant	00	
4.	Deputy Foresters	00	
5.	Wildlife Guards	05	03 of them working as I/C Foresters
6.	Watchers / Helpers	06	
7.	Rehbar e janglat	00	

Proposal for Creation of a New Management Range in Overa-Aru WLS

Context and Rationale

To bolster the administrative efficiency and strengthen wildlife conservation in the Overa-Aru Wildlife Sanctuary (WLS), it is proposed to create a new management range under the existing sanctuary jurisdiction. This proposed change aims to address emerging ecological priorities, streamline field operations, and ensure better coverage of ecologically sensitive areas.

Proposed Administrative Reorganization

The proposed administrative structure includes two main wildlife ranges:

- Wildlife Pahalgam Range
- Wildlife Range Overa

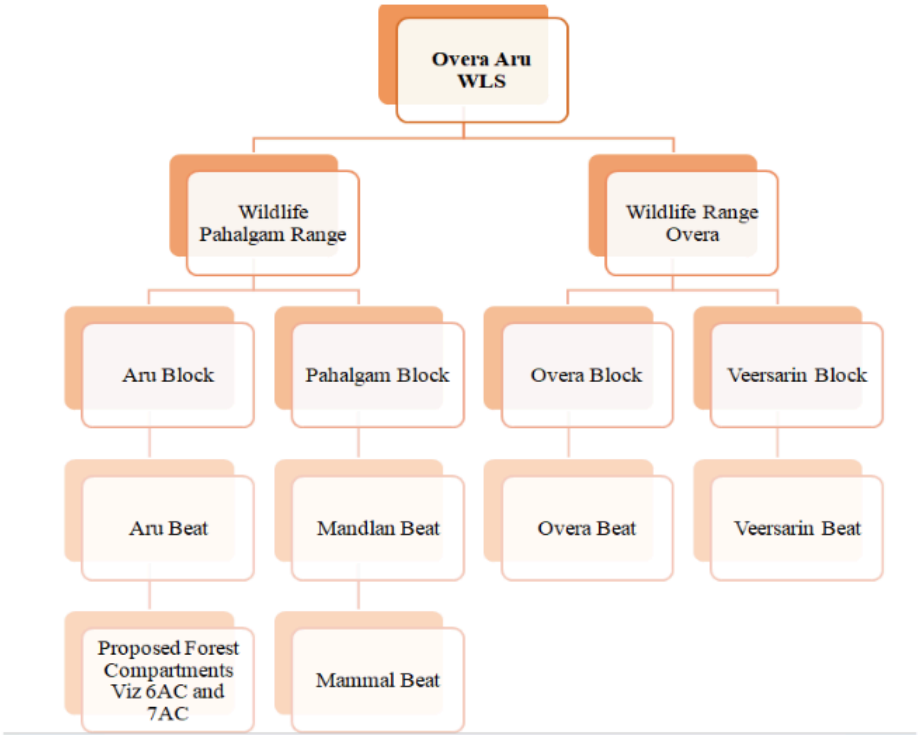
Each range manages multiple blocks and beats. To enhance ecological management, two territorial forest compartments 6AC (Chandanwari) and 7AC (Poshpathri) are proposed to be integrated under a newly constituted range. These compartments lie adjacent to or within the ecological boundary of the sanctuary and hold high conservation significance.

Ecological Significance of Proposed Compartments

- Habitat of Asiatic Ibex (Capra sibirica): Both 6AC and 7AC have confirmed populations of the Asiatic Ibex, a flagship species of high-altitude mountain ecosystems.
- Pristine Alpine Ecosystems: These compartments represent intact alpine and sub-alpine habitats, vital for the survival of rare and endangered species.
- Recent Sightings: The vicinity of Amarnath Cave, near Poshpathri (7AC), has recorded multiple sightings of Ibex, underlining its ecological importance.

Objectives of the New Range Creation

1. Improve Habitat Connectivity: Ensure ecological linkages between fragmented habitats, supporting seasonal movements and genetic diversity.
2. Enhance Ecological Integrity: Bring ecologically significant but previously unprotected areas under active conservation management.
3. Strengthen Conservation for Endangered Species: Focused monitoring and protection of Asiatic Ibex and other alpine fauna/flora.
4. Expand Management Efficiency: Reduce administrative burden on existing ranges by redistributing responsibility.



Proposed Staff Patterns:

Sl. No.	Proposed	Number
1.	Range officer	02
2.	Block Officers	04
3.	Deputy Foresters	08
4.	Wildlife Guard	24
5.	MTS	30

3.11 COMMUNICATION

The wireless communication system previously provided to the Department of Wildlife Protection by its sister agency, the J&K Forest Protection Force, has become obsolete with the advent of cellular technology. This system is now non-functional, as the primary operating infrastructure, which was under the control of the Forest Protection Force, is no longer operational.

In order to ensure effective surveillance, real-time coordination, and rapid response to wildlife protection challenges, in the year 2024-25, 13 No's of high frequency Walkie Talkies have been allotted to the Staff of Overa-Aru Wildlife Sanctuary, as it is imperative to upgrade the existing communication framework. The proposed solution in future involves phasing out the outdated wireless system and replacing it with modern cellular communication networks. This includes:

Deployment of Cellular Phones – Field staff and enforcement teams shall be equipped with mobile phones to facilitate seamless communication across different sections of the sanctuary.

Establishment of Cellular Towers – To address connectivity gaps and enhance network coverage, new cellular towers will be installed along the peripheral zones of the sanctuary, ensuring uninterrupted communication even in remote areas.

Integration with Digital Monitoring Systems – Advanced geospatial technologies, such as GPS tracking, drone surveillance, and automated data collection, will be linked to the upgraded cellular communication network to improve wildlife monitoring and anti-poaching measures. The wireless and communication framework has been improved by providing the staff of Overa-Aru WLS with Walkie Talkie(13) No's in the financial year 2024-25.

Emergency Response and Crisis Management – A well-structured communication protocol will be developed, enabling swift coordination during emergencies, such as wildlife distress, illegal poaching incidents, or natural calamities within the sanctuary.

The vast expanse and the difficult terrain of the WLS, maintenance of the habitat, rescue operations, patrolling exercise, etc require different types of vehicles for its proper management. A detail of the vehicles available with the WLS is given in table below.

List of Vehicles available at Overa-Aru Wildlife Sanctuary

S no.	Registration No.	Type	Present Status	Requirement	Remarks
1	JK03F-1382	Mahindra-Bolero	In Use	---	
2	JK03H-4860	Pulser	In Use	---	
3	JK03H-1834	Splender	In Use	---	
4	JK03C-4178	SF-709-EX (TATA)	In Use	---	
5	JK03H-1807	Splender	In Use	---	
6	JK03H-1869	Splender	In Use	---	
7	JK03C-4395	Yamaha	In Use	---	
8	----	Mahindra-Bolero (Pickup Vehicle – Rescue Vehicle)	In use	02	Purchased During CFY 2024-25
9	---	Mahindra-Bolero	---	01	
10	---	Pulsar (Bikes)	---	06	
11		Rescue Vehicles		04	

3.12 SUMMARY OF THE THREATS TO WILDLIFE

The Overa-Aru Wildlife Sanctuary faces multiple threats that are detrimental to its rich biodiversity and the wildlife it harbors. Some of the primary threats include:

- **Dwindling Biodiversity:** The rapid decline in the population of several key species due to a variety of factors, including habitat loss and poaching, is a significant concern. Many species, particularly those that are endemic or endangered, are at risk.

- **Habitat Degradation:** Continuous ecological degradation due to illegal logging, grazing, and human encroachment has contributed to the loss of critical wildlife habitats, leading to the displacement of native species.

- **Heavy Grazing in Ecologically Fragile Areas:** Overgrazing by livestock in sensitive areas, especially by nomadic herders, has caused severe soil erosion, depletion of vegetation, and reduced availability of food and shelter for wild animals, particularly those listed under Schedule I of the Wildlife Protection Act.

- **Epidemic Diseases from Livestock:** Diseases such as Foot and Mouth Disease and Anthrax, which are common among livestock, can spread to wildlife, particularly when domestic animals graze in close proximity to wildlife species. This poses a significant health risk to endangered species like the Hangul and the Kashmir Musk Deer.

- **Human-Wildlife Interactions:** The increasing human population in areas surrounding the Sanctuary, coupled with the growing encroachment on wildlife habitats, and change in land use has led to rising instances of human-wildlife Interactions. This includes retaliatory killings of wildlife and disturbances caused by human activities, further threatening the survival of the Sanctuary's inhabitants.

Efforts to mitigate these threats through appropriate management strategies, conservation programs, and continuous monitoring will be crucial in ensuring the long-term preservation of the Sanctuary's rich biodiversity.

Chapter 4
The Protected Area & The Interface Landuse Situation



4.1 THE EXISTING SITUATION IN THE ZONE OF INFLUENCE

The Overa-Aru Wildlife Sanctuary (WLS), though a protected area of considerable importance in terms of biodiversity conservation, is situated within a zone influenced by the livelihood activities of nearby villages. These villages, numbering ten, are located on the fringes of the sanctuary, and their economies are heavily dependent on agriculture, horticulture, animal husbandry, and other related activities.

The primary challenges arise due to the growing interaction between local human populations and the sanctuary's wildlife. Villagers experience crop damage, livestock depredation, and even loss of human life due to the incursion of wildlife from the sanctuary. Historically, the residents have been conservation-oriented, and there has not been significant alienation from conservation objectives. However, the increasing loss of crops and livestock to wild animals, such as Black Bears and Leopards, has resulted in a shift in attitudes, with some communities now perceiving wildlife as a threat to their livelihood.

In an effort to better manage human-wildlife interaction and enhance conservation efforts, the sanctuary is in the process of establishing a new zonation plan, which will include three distinct zones: Core Zone, Buffer Zone, and Eco-Tourism Zone.

1. **Core Zone:** This zone will be strictly protected and will have minimal human activity. Only essential activities such as research, monitoring, and wildlife conservation will be permitted. No human settlements or agricultural activities will be allowed in the Core Zone, which will focus on preserving the natural habitats and biodiversity of the sanctuary.
2. **Buffer Zone:** The Buffer Zone will act as a transition area between the sanctuary and human settlements. In this zone, sustainable livelihoods for local communities will be encouraged, such as controlled grazing, limited agricultural activities, and the cultivation of non-invasive species. There will also be an emphasis on wildlife monitoring and habitat restoration. Community-based initiatives such as eco-friendly practices and awareness programs will be promoted to mitigate the impact of wildlife incursions into nearby villages.
3. **Eco-Tourism Zone:** This zone will be developed for controlled eco-tourism activities, allowing for sustainable tourism that supports both conservation and the local economy. Activities in this zone could include wildlife watching, guided treks, and nature walks. Local communities will have opportunities to participate in eco-tourism initiatives, such as providing guided tours or selling local handicrafts, to generate income while also raising awareness about wildlife conservation. There is separate chapter for Eco- tourism.

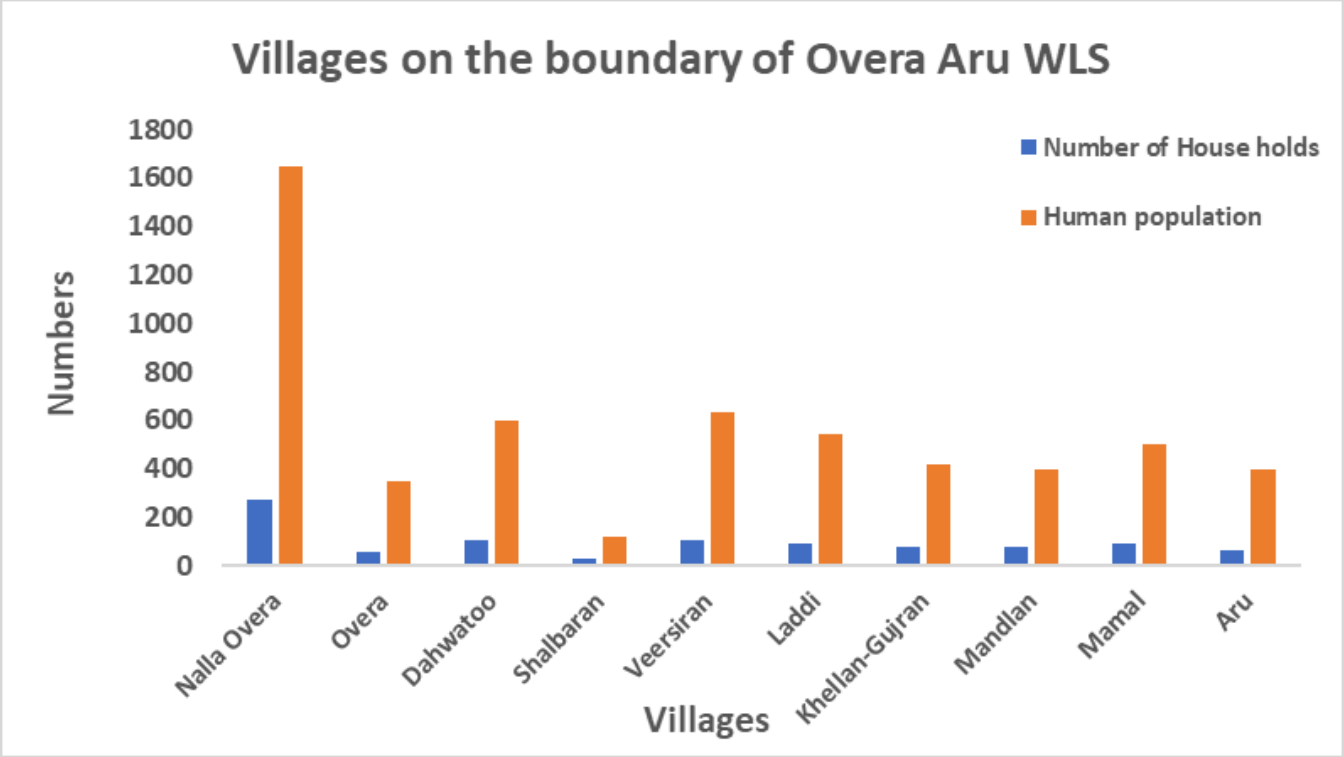
4.1.1 Villages inside & outside the protected area

There are no villages located inside the original boundaries of the Overa-Aru Wildlife Sanctuary. However, the surrounding areas experience varying levels of human encroachment, particularly in the form of livestock grazing in the summer months, especially in the alpine meadows.
The villagers in the surrounding zone belong predominantly to two communities:

1. **Kashmiris:** Primarily involved in agriculture, especially paddy and wheat cultivation, and horticulture, including the cultivation of orchards.
2. **Gujars:** A tribal community that relies on livestock farming (cows, sheep, goats) as their primary source of livelihood. The socio-economic status of the Gujar community is typically lower than that of the Kashmiri population, and they rely heavily on forest resources for fuelwood, herbs, and grazing lands.

The Gujar community in particular has a deep connection with the forests, using them for firewood collection, herbs gathering, and grazing their livestock. These activities often bring them into conflict with the sanctuary management, as traditional access to these resources is restricted. The community's lack of access to alternative economic activities and the loss of traditional grazing grounds have led to illegal activities, such as timber felling and grazing in reserved forests.

There is a significant socio-economic divide between the Kashmiri and Gujar communities. The Kashmiris often have better economic conditions, with many engaged in government jobs, business, and the burgeoning tourism industry, whereas the Gujars remain economically marginalized and dependent on the sanctuary's resources for their livelihood. This disparity has sometimes exacerbated the tensions between the communities and the management of the sanctuary.



4.1.2 State of the people's economy

The local economy in the Zone of Influence is predominantly agrarian, but the resources available to villagers are insufficient to provide a stable livelihood. Most households possess small agricultural holdings that are barely enough to support their families. As a result, these communities often face financial hardships, which are worsened by the unpredictable climatic conditions and the challenges of traditional farming methods.

- Agriculture remains the primary occupation, with orchid cultivation emerging as a key source of income in recent years. Orchards, particularly those producing apples, apricots, and other fruits, provide a significant portion of household income for many families. However, the shift to orchid farming is still recent, and it has not fully compensated for the loss of traditional agricultural practices.

- Livestock rearing plays a crucial role, with goat, sheep, and cow rearing being the norm. In some areas, the livestock is taken to alpine pastures for grazing during the summer months, which further leads to habitat degradation in the sanctuary's periphery.

The socio-economic divide is stark between the Kashmiri and Gujar communities. The Kashmiris often have better access to governmental support and income from the tourism industry, especially related to the sanctuary's scenic landscapes. In contrast, the Gujars remain economically marginalized and dependent on the sanctuary's resources for their livelihood, including grazing rights, firewood, and herbs.

In terms of economic development, some local people have adopted income-generating activities, such as Guchi mushroom harvesting in the spring season, which provides them with extra income. The mushrooms, which grow in the sanctuary, are highly valued in the market, and their collection has increased in recent years. This mushroom harvesting, however, is another factor contributing to the increasing human-wildlife conflict, as locals enter the protected areas to harvest the mushrooms, disturbing the habitat.

4.1.3 Implications of the land use & resource dependency for the conservation of the Protected Area

The land use and resource dependency of the surrounding villagers have significant implications for the conservation of the Overa-Aru WLS.

- **Landholding** is small and fragmented, making it difficult for the locals to rely solely on agriculture for a sufficient livelihood. Livestock rearing helps to bridge the gap, but many families still struggle to make ends meet. Consequently, villagers are heavily reliant on sanctuary resources, such as grazing lands and forest products.

- **Agriculture,** particularly in traditional farming systems, is not a reliable source of income, which leads to an over-reliance on forest resources. The growing demand for grazing lands, fuelwood, timber, and herbs often forces the local population into conflict with the protected area management.

- **Overgrazing** is a significant concern, especially during the summer months, when nomadic and local grazers bring their livestock to alpine meadows in the sanctuary for grazing. This leads to habitat degradation, especially in fragile alpine ecosystems, which affects the vegetative cover, increases the risk of soil erosion, and reduces the availability of food for wildlife.

- **Guchi Mushroom Harvesting:** The collection of Guchi mushrooms in the spring has become a lucrative source of income for locals. However, this activity contributes to further disturbance in the sanctuary, especially as people venture into the forest to harvest the mushrooms, which disrupts wildlife and negatively impacts the integrity of the ecosystem.

The increasing dependency of the local population on the sanctuary's resources places additional stress on its biodiversity and ecosystems. The situation demands a balance between meeting the needs of local communities and safeguarding the ecological integrity of the protected area.

4.1.4 Forest/protected Area Management Practices & Their Implications for Locals

The management practices employed in Overa-Aru WLS have direct implications for the surrounding communities, many of whom depend on the resources of the protected area for their livelihood.

Livestock Grazing:

Impact on Sanctuary Ecosystem: Livestock grazing, particularly uncontrolled grazing by nomadic grazers and local villagers, depletes vegetation and leads to soil erosion. This has resulted in a loss of habitat for wild species and a reduction in the availability of natural fodder for Schedule-I species such as the Hangul and Musk Deer. The depletion of the vegetative cover also leads to increased water runoff during the rainy season, which causes flooding and further degradation of water bodies in the sanctuary.

Proposed Mitigation Measures: The proposed rehabilitation program for providing alternative grazing grounds will help reduce the pressure on the sanctuary's resources. The creation of pasture nurseries and providing artificial feed during lean periods will help minimize the impact of grazing on the sanctuary's vegetation. Encouraging the stall feeding.

Delayed and Inadequate Compensation for Crop and Livestock Damage:

Impact on Locals: The delay in receiving compensation for human injuries caused by wildlife has created frustration among local communities. There is no provision for any compensation for crop damage by Black Bears and attacks on livestock by Leopards or Brown Bears and are left unresolved for long periods, leading to local anger and retaliatory killings of wildlife.

Impact on Wildlife: The retaliatory killings, often targeting species like the Black Bear and Leopard, result in the further depletion of vulnerable populations. This not only threatens the long-term survival of these species but also undermines conservation efforts in the region.

Recommendations: A comprehensive review and reform of the compensation scheme are necessary to address the growing dissatisfaction among villagers. The compensation should be expedited, and orchard crops and other non-traditional crops should be included in the compensation package.

4.2 THE DEVELOPMENT PROGRAMMES AND CONSERVATION ISSUES

The government and various development agencies, such as those responsible for rural development, education, agriculture, and animal husbandry, are involved in development activities within the Zone of Influence. These activities, such as road construction, livestock quality improvement, and education initiatives, can have both positive and negative impacts on the socio-economic conditions of local communities.

1. **Improvement in Socio-Economic Conditions:** The improvement of local livelihoods through various developmental activities will help reduce the dependence of villagers on sanctuary resources, thereby easing the pressure on the protected area's natural resources. If villagers are provided with alternative sources of income, such as through sustainable agriculture or ecotourism, their dependency on illegal resource extraction will diminish, benefiting both the local population and wildlife conservation.

2. Challenges and Problems Faced by Locals:

Shrinkage of Grazing Land: The encroachment of forested areas and the expansion of the sanctuary's protected zones have reduced the available land for grazing. This has led to a shortage of grazing land for livestock and has intensified the human-wildlife conflict.

Illegal Activities: The poor socio-economic condition of the locals often leads to illegal activities, such as timber felling, illegal grazing, and herb collection, which degrade the sanctuary's resources.

Poor Education and Awareness: Low levels of education and awareness about wildlife conservation have led to indifference toward the importance of preserving the sanctuary's biodiversity. Many locals lack sensitivity towards wildlife protection, particularly during incidents like forest fires or when animals stray into human settlements.

Eco-sensitive Zone

The final notification for the Eco Sensitive Zone (ESZ) of the Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary was issued on 16th of May 2024 by the Ministry of Environment, Forest and Climate Change (MOEF). This notification is a critical step towards ensuring the protection of the sanctuary and mitigating the adverse impacts of human activities in the surrounding area. The ESZ notification will help create a buffer zone around the sanctuary, reducing the encroachment of developmental activities and ensuring that the core area remains protected. This decision is expected to provide the sanctuary with much-needed legal protection and resources for effective management.

- Draft notification issued vide S.O. 4227(E), dated the 26th September, 2023.
- Area of ESZ as per proposal discussed in the 48th meeting of Expert Committee for ESZ in the MoEF&CC on 04-03-2022 was 448.00 Sq. kms.
- The distance of ESZ from boundary of national park/wildlife sanctuaries ranged from 200 mtr to 13.15 kms.
- The ESZ proposal was discussed in the 48th meeting of Expert Committee for ESZ in the MoEF&CC on 04-03-2022 and was cleared for final notification.
- Before the issuance of final notification, the Hon'ble Supreme Court order dated: 03-06-2022 whereunder it was ordered that minimum 1 km ESZ shall be maintained from boundary of National Park or Wildlife Sanctuary.
- MoEF&CC asked for revision of proposal as per directions of Hon'ble Supreme Court.
- The ESZ proposal has been accordingly revised and submitted for consideration and forwarding to MoEF& CC for consideration and issuance of final notification.
- Final notifications issued vide S.O. 2002(E), dated 16th of May 2024.

The Central Government notified anarea of200 meters to 13.15kilometers fromthe boundaryof Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary, in the Union territory of Jammuand Kashmir as 'Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa- AruWildlifeSanctuaryEco-sensitiveZone'.

Extent and boundaries of Eco-Sensitive Zone. – The extent of Eco-Sensitive Zone 200 m to 13.15 km from the boundary of Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa- Aru Wildlife Sanctuary and comprising of an Eco-sensitive Zone area of 448.00 sq.km and the extent of Eco- sensitive Zone in different directions (kilometres) are as given below: -

Direction	Extent	Location
West	200 m	PWD Water Tank and Reservoir
South	13.15 km	Khrew CR Boundary
South-West	5.0 km	Khanmoh CR Boundary
South-East	1.0 km	Mamal Forest, Lidder Nala
East	1.0 km	Nichhang, Alpine pasture
North- East	1.0 km	Serbal Village, Sindh Forest
North	1.0 km	Forest of Sindh
North-West	4.0 km	Lidwas, Alpine Pasture Dara CR Boundary

Committee Constituted vide Government Order No. 428-JK(GAD) of 2025 on April 3, 2025

Monitoring Committee for the Eco-sensitive Zones of Dachigam National Park, Overa-Aru Wildlife Sanctuary and Thajwas Wildlife Sanctuary:

1	Divisional Commissioner, Kashmir	Chairperson
2	Deputy Commissioner, Pulwama	Member
3	Deputy Commissioner, Srinagar	Member
4	Deputy Commissioner, Anantnag	Member
5	Deputy Commissioner, Ganderbal	Member
6	Municipal Commissioner, Srinagar	Member
7	Director Tourism, Kashmir	Member
8	Vice Chairperson, Srinagar Development Authority	Member
9	Regional Director, J&K State Pollution Control Board, Srinagar	Member
10	Senior Town Planner, Kashmir	Member
11	Divisional Forest Officer, Sindh Forest Division	Member
12	Divisional Forest Officer, Lidder Forest Division	Member
13	Divisional Forest Officer, Awantipora	Member
14	Divisional Forest Officer, Urban Forestry Srinagar	Member
15	Chief Executive Officer, Sonamarg Development Authority	Member
16	Chief Executive Officer, Pahalgam Development Authority	Member
17	Wildlife Warden, Central Division	Member
18	Wildlife Warden, South Division	Member
19	Regional Wildlife Warden, Kashmir	Member Secretary
20	Prof. Manzoor Ahmad Shah Director, Department of Botany, University of Kashmir	Member
21	Nazir-Be-Nazir, President, National Society for protection of Water Resources, Wetlands & Forests, Kashmir	Member
22	Dr. Anzar Khuroo, Department of Botany, University of Kashmir	Member

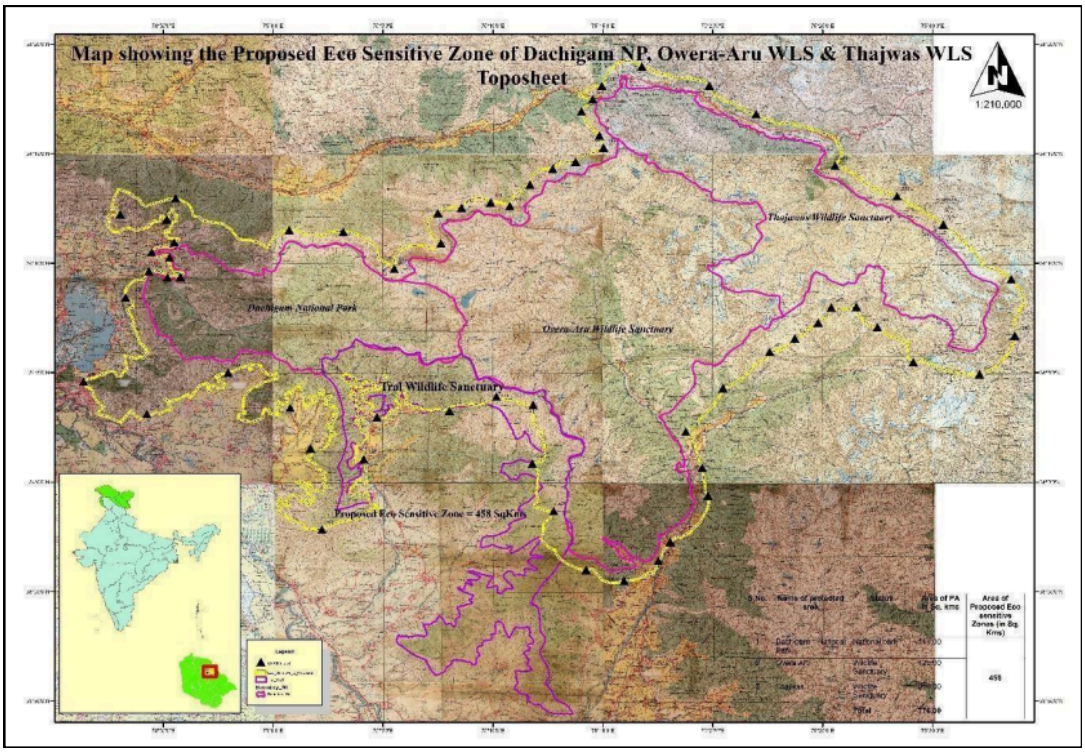


Plate 17: Toposheet Map Of Eco-Sensitive Zone Around Dachigam National Park, Thajwas (Baltal)Wildlife Sanctuary And Overa-Aru Wildlife Sanctuary

The Overa-Aru Wildlife Sanctuary faces several challenges in balancing conservation objectives with the needs of local communities. Addressing issues like livestock grazing, crop damage, illegal activities, and poor socio-economic conditions is essential for the long-term success of the sanctuary's conservation efforts. The issuance of the ESZ final notification by the MOEF is a significant step in ensuring the protection of the sanctuary and its biodiversity. However, the success of these efforts will depend on effective collaboration between the sanctuary authorities, local communities, and other stakeholders to create sustainable solutions that benefit both wildlife and people.

Status of Meetings for Implementation of ESZ Notification

Total Meetings Held with Monitoring Committee: 4

Dates:

1. 20th December 2024: Introductory Meet
2. 21st January 2025: Introductory Meet
3. 18th March 2025
4. 23rd May 2025

Third Meeting (18th March 2025):

1. Proposals Discussed: 9
2. Approved: 4
3. Rejected: 5

Fourth Meeting (23rd May 2025):

1. Proposals Discussed: 6
2. Status: Minutes of the meeting enclosed as annexure.

Chapter 5
Plan Objectives & Problems



5.1 OBJECTIVES OF THE MANAGEMENT PLAN

The objectives of the management plan for Overa-Aru Wildlife Sanctuary (WLS) are developed around the sanctuary's core values, focusing on preserving its biodiversity, enhancing research and educational outreach, and fostering community development. The following are the expanded objectives:

5.1.1 Conservation of Endangered and Vulnerable Species

1. **Main Goal:** The central goal is to maintain and, where necessary, restore the population of endangered, endemic, vulnerable, and rare species within the sanctuary, with a special focus on:
    - Hangul (Kashmir Stag)
    - Himalyan Brown Bear
    - Siberian Ibex
    - Additionally, other species such as the Kashmir Musk Deer and Kashmir Grey Langur and Snow Leopard also require protection efforts to prevent them from becoming endangered or extinct.

2. Restoration Efforts: In areas where species populations have declined, active restoration efforts will be introduced to help populations recover and thrive. This will involve habitat restoration, prey management, and the protection of breeding areas.

3. Prevention of Poaching: Ongoing monitoring and the installation of anti-poaching systems to prevent illegal hunting or trafficking of these vulnerable species will be a priority.

5.1.2 Promoting Research and Knowledge Enhancement

1. **Research Priorities:** The management plan will focus on establishing clear research priorities to guide scientific studies. These studies will be aimed at understanding the sanctuary's biodiversity, ecology, and the behavior of species.

2. **Enhancing Wildlife Science:** The creation of mechanisms to increase management capabilities in wildlife science, ensuring that both local and national wildlife management strategies are informed by up-to-date, scientifically backed data.

3. **Collaboration with Research Institutions:** Partnerships with leading universities and research organizations will be fostered to conduct specialized studies on the sanctuary's ecology, species conservation, and ecosystem dynamics.

4. Long-term Monitoring: The management plan will prioritize setting up monitoring programs for long-term ecological studies on the sanctuary's wildlife and plant species, including tracking behavioral patterns and population dynamics over extended periods.

5.1.3 Enhancing Public Education and Wilderness Experience

1. **Education Programs:** It is essential to educate the public on the importance of biodiversity and conservation. The plan aims to introduce and expand educational programs for schools, local communities, and tourists. This will involve:

- Educational workshops
- Interpretative programs for visitors
- Field-based education initiatives for students and local people

2. Tourism and Wilderness Experience: The sanctuary aims to enhance the tourism experience by offering responsible and educational tours that foster greater appreciation for the natural world. Sustainable tourism strategies will be implemented to ensure that the sanctuary's natural resources are not depleted.

3. Cultural Awareness and Sensitivity: Understanding the intersection of local cultures with the sanctuary's biodiversity is important. Community-based conservation initiatives will be designed to foster mutual respect between humans and wildlife.

5.1.4 Reducing Human Dependency on Forest Resources

1. **Eco-Development Initiatives:** To reduce dependency on the sanctuary's resources, alternative livelihood opportunities will be developed for local communities. These initiatives will involve sustainable practices like eco-tourism, organic farming, and handicrafts that provide income without depleting natural resources.

2. Fuel and Grazing Alternatives: The management plan will explore alternative sources of fuelwood, fodder, and grazing lands for the local population, reducing pressure on the sanctuary's resources.

3. Community Participation: Local communities will be actively engaged in conservation efforts, ensuring their involvement in the planning and execution of eco-development projects, which would help mitigate their dependence on the sanctuary.

5.2 PROBLEMS IN ACHIEVING OBJECTIVES

While the objectives are well-defined, achieving them will be challenging due to several constraints, which are listed below:

5.2.1 Constraints in Achieving Objective (Conservation of Species)

- **Poaching:** Despite a significant reduction in poaching due to improved surveillance and infrastructure, poaching still poses a significant threat, especially to flagship species like Hangul. Anti-poaching infrastructure needs to be regularly maintained and upgraded.

- **Boundary Demarcation:** While the legal boundaries of the sanctuary are clear, they have not been fully demarcated on the ground. This presents a challenge in monitoring and preventing illegal encroachments and activities.

- **Biotic Pressures:** Encroachment, illegal cattle grazing, fishing, and forest resource extraction continue to exert pressure on the sanctuary's resources. Grazing by livestock poses a significant problem as it leads to competition for food and may also result in the spread of diseases that could affect wildlife.

- **Financial and Logistic Constraints:** The sanctuary lacks the financial and logistic support required for effective management. Budgetary constraints limit the ability to deploy adequate staff and maintain infrastructure, including patrolling and surveillance equipment.

- Human-Wildlife Conflicts: Large mammals, such as the Asiatic Black Bear and Leopards, frequently move outside the sanctuary's boundaries into surrounding human settlements. This leads to human-wildlife conflict, which can result in casualties for both people and animals.

- Staff Shortages and Coordination Challenges: The sanctuary faces a shortage of trained staff, particularly in anti-poaching units and in managing human-wildlife conflict situations. In addition, there is inadequate coordination between departments that manage the sanctuary and other governmental agencies.

5.2.2 Constraints in Achieving Objective (Promoting Research and Knowledge Enhancement)

- **Lack of Comprehensive Resource Inventory:** There is no comprehensive, up-to-date inventory of the sanctuary's resources. Most monitoring has focused on large mammals, neglecting smaller species, plant diversity, and ecosystem functions.

- **Limited Ecological and Behavioral Studies:** Long-term studies on the ecology and behavior of species are lacking. There is no clear understanding of species movement patterns, habitat utilization, and ecological interactions, which are essential for adaptive management.

- **Carrying Capacity Studies Missing:** No research has been conducted to assess the sanctuary's carrying capacity for various species. This limits the ability to manage animal populations effectively, especially as species such as the Asiatic Black Bear and Leopard increase in numbers.

- **Insufficient Documentation of Research:** Much of the research conducted in the past has not been systematically documented or organized into a central database. This leads to lost opportunities for learning from past studies and makes it difficult to plan for future research.

- **Lack of Monitoring for Lesser-Known Species:** Monitoring efforts have primarily been focused on the more charismatic species like Hangul. However, many other species, including smaller and lesser-known ones, have not been adequately monitored, leaving gaps in the sanctuary's biodiversity knowledge.

- **Limited Collaboration with Research Institutions:** There is no formal system for collaborating with research institutions, universities, or non-governmental organizations. This lack of cooperation prevents a more interdisciplinary approach to managing the sanctuary's ecological and wildlife challenges.

- **Inadequate Research Facilities:** The sanctuary lacks a dedicated research and monitoring facility. A well-equipped research station would enable scientists and researchers to carry out ecological studies, document findings, and monitor species health.

- **Insufficient Training for Staff:** Ground-level staff, while trained in basic wildlife protection, are not sufficiently skilled in research techniques or wildlife monitoring. There is a lack of higher-level training for staff in modern wildlife management and research methodologies.

5.2.3 Constraints in Achieving Objective 3 (Enhancing Public Education and Experience)

- **Lack of Effective Tourism Management Plan:** There is no comprehensive tourism management plan, which makes it difficult to balance the growing number of visitors with the need for conservation. This lack of a structured plan leads to overcrowding in some areas, putting additional pressure on the sanctuary.

- **Absence of Scientific Study on Tourism Impact:** There is a lack of scientific studies assessing the impact of tourism on the sanctuary's ecosystem. Without these studies, it is difficult to determine the carrying capacity for visitors or the potential negative effects of tourism on wildlife.

- **Inadequate Staff and Infrastructure for Tourism:** The sanctuary is not equipped to handle the growing number of visitors. Staffing levels are insufficient, and existing facilities for tourists are outdated and lack necessary amenities. The infrastructure is in need of significant upgrades to accommodate visitors in a sustainable manner.

- **Limited Interpretation and Awareness:** The sanctuary's interpretation facilities are underdeveloped, and there is a lack of basic educational materials like pamphlets or websites. This prevents the sanctuary from fully capitalizing on its potential as a tool for environmental education.

5.2.4 Constraints in Achieving Objective 4 (Reducing Human Dependency on Forest Resources)

- **Lack of Socio-Economic Data:** The absence of comprehensive socio-economic data on the local population makes it difficult to design effective eco-development plans. A deeper understanding of local livelihoods, economic needs, and dependency on forest resources is essential to reducing pressure on the sanctuary.

- **Low Priority for Eco-Development:** Policymakers have not prioritized eco-development around the sanctuary, and there is limited historical work in this area. Eco-development needs to be integrated with conservation efforts to create a sustainable coexistence between human communities and wildlife.

- **Inadequate Staff and Infrastructure for Eco-Development:** The current staff lacks training in eco-development practices, and there are insufficient resources to implement community-based conservation initiatives. This leads to a disconnect between conservation goals and local community needs.

- **Political Interference and Unorganized Conflict Resolution:** Political interference and an uncoordinated approach to managing human-wildlife conflict have created obstacles in resolving these issues. A more systematic, multi-stakeholder approach is required to address the conflict and mitigate its negative impact on both people and wildlife.

5.3 SWOT ANALYSIS

A SWOT analysis helps evaluate the current strengths, weaknesses, opportunities, and threats faced by Overa-Aru Wildlife Sanctuary:

CATEGORY	DETAILS
STRENGTHS	- High biodiversity value with rich flora and fauna. - Presence of Rare, Endangered, and Threatened (RET) species like Hangul, Kashmir Musk Deer, Himalayan Brown Bear, and Kashmir Grey Langur. - Minimal anthropogenic pressure due to fewer surrounding villages. - Well-regenerating coniferous forests, supporting ecosystem stability. - Diverse avifauna, including endemic and migratory species.
WEAKNESSES	- Lack of a comprehensive management plan, leading to suboptimal conservation efforts. -Inadequate staffing and law enforcement capabilities. - Limited public awareness and outreach efforts for conservation advocacy. - Absence of a structured scientific research and monitoring framework.
OPPORTUNITIES	- Potential to develop as a RET species conservation hub. - Ample scope for ecological and wildlife research. - Promotion of Kashmir Musk Deer conservation. - Strengthening ecological corridors for Hangul migration.
THREATS	- Overdependence of local communities on forest resources (firewood, grazing, NTFP collection). - Rising human-wildlife Interactions leading to retaliatory killings of wild animals. - Seasonal livestock grazing, causing habitat degradation and competition with wildherbivores. - Persistent threat of poaching and illegal wildlife activities.

Chapter 6
The Strategies



6.1 BOUNDARIES

The delineation of the Overa-Aru Wildlife Sanctuary (WLS) is a critical aspect of its management, ensuring proper enforcement of conservation measures and habitat protection. The park's geographic limits have been discussed in Chapter 2, and further measures for boundary delineation and management are elaborated below.

6.1.1 Ecological Boudaries

Overa-Aru WLS was established through Government Notification SRO No. 154, dated 19.03.1987, which defines its official boundaries. The sanctuary is bordered by:

- North East: Thajwas Wildlife Sanctuary
- West: Dachigam National Park
- North-West: Basmai Forest
- South-West: Tral Wildlife Sanctuary
- South-East: Nunwan Forest
- South: Kular Forest
- East: Lidder Forest/Shishnag
-

In addition to these natural landmarks, the boundaries are further defined by physical barriers such as rock cliffs, gushing nallahs, and glaciated peaks, which, along with the presence of metallic roads and human settlements, automatically mark the sanctuary's periphery. The combination of these natural and artificial features plays a crucial role in delineating the sanctuary's boundaries.

However, the process of formal boundary demarcation, as outlined in the original notification, is still ongoing. This process is essential for addressing issues such as encroachment and facilitating effective management of the sanctuary.

Boundary Demarcation and Management

1. **Boundary Delineation**
    - The boundaries of the Overa-Aru Wildlife Sanctuary and the reserve forests shall be carefully verified and accurately marked on updated maps.
    - Existing boundary pillars, particularly in the artificial boundaries, shall be inspected regularly to ensure their integrity.
    - Where necessary, new pillars shall be erected on compartments and blocks to avoid confusion.
    - Beat maps/Compartment maps, clearly showing boundaries and key features, shall be maintained for easy reference.

2. Maintenance and Regular Monitoring

Each boundary pillar shall have identifiable markers, such as the block name, compartment number, and the pillar number, inscribed clearly on it.

Detailed records shall be kept in the office for future reference and audits.

Wildlife wardens and Range officers must include regular boundary checks as part of their routine inspections to ensure the boundaries remain clear and properly maintained.

3. Inter-Departmental Coordination

A close liaison should be established with the Revenue Authorities and the Forest Department to ensure the accurate and up-to-date documentation of land records related to the sanctuary.

Coordination with the Revenue Department is essential to resolve any discrepancies or misunderstandings regarding the sanctuary's boundaries and to clarify land use allocations.

6.2 THEME PLANS

Management strategies for the Overa-Aru Wildlife Sanctuary (WLS) that apply across the entire sanctuary, irrespective of specific zones, are discussed in the following theme plans. These strategies address various aspects of wildlife and habitat management, some of which were not previously covered in the plan. The theme plans include:

1. **Habitat Management**
2. **Control of Poaching**
3. **Control of Grazing and Other Biotic Disturbances**
4. **Weed Control and Control of Invasive Alien species**
5. **Controlling Ranging Patterns of Wild Animals Outside the Managed Habitat**
6. **Soil Erosion Monitoring and Control**
7. **Animal Health Surveillance**
8. **Man-Animal Interaction**
9. **Development of Infrastructure and Communication**
10. **Alpine Pasture Improvement and Management**

6.2.1 Theme Plan for Habitat Management

The objective of habitat management is to ensure that the habitat remains in its pristine condition, with all essential resources—shelter, food, and water—available throughout the year. The following strategies will be employed to maintain and improve the habitat, focusing on the needs of wildlife and ecological balance.

A) Restorative Strategies:

Restorative strategies aim to restore the habitat attributes that have been lost over time. This includes addressing the spread of invasive alien species and ensuring soil conservation to enhance the site's ecological potential.

Key Actions:

- Control of Invasive Species: Actively control and eradicate invasive species like Stipa sibirica, Isodon regosus, and Rumex dentatus, which threaten native biodiversity.
- Soil Conservation:Implement soil conservation measures such as the use of DRSM (Dry Root Soil Mulch) and crate wire bunds to restore the natural functions of the catchment area and prevent soil erosion.
- Habitat Enrichment: Enrich the habitat by planting or dibbling fruit-bearing plants and seeds, thereby augmenting food resources for wildlife, especially in Protected Areas (PAs).
- Pasture Development: Revitalize degraded pastures for wild herbivores by artificially seeding with native, nutritious, and palatable plant species to ensure a steady food supply.

- Forest Fire Control:
  - Establish fire lines and fire control rooms, involving local communities and tribal groups in participatory fire management.
  - Conduct awareness programs for fringe communities through talks, street plays, and village meetings to reduce the risk of forest fires.

- Water Management:
  - Construct artificial waterholes in areas with insufficient or no water sources, considering animal movement patterns and activity hotspots like resting or feeding areas.
  - Repair and maintain older waterholes to ensure continuous water supply throughout the year.

- Wildlife Corridors: Identify, protect, and improve wildlife corridors within the sanctuary, ensuring safe passage for animals.

- Fencing: Install fencing along boundaries where necessary to prevent encroachment and minimize human-wildlife conflict. The type of fencing will be tailored to the specific site.

- Tree Plantation:
  - Plant fruit-bearing trees and broadleaved species, mixed with coniferous plants, especially in areas where regeneration rates are low. This will help restrict wildlife movement inside the sanctuary and reduce human-wildlife conflict.
  - Maintain a plantation journal to track progress and manage plantations scientifically.

- Protection of Alpine Pastures: Temporarily protect heavily eroded and degraded alpine pastures to facilitate the regeneration of native grasses, herbs, and shrubs.

- Invasive Alien Species (IAS) Control:
  - Eradicate unpalatable grasses and invasive species like Solenanthus circinatus, Stipa siberica, Euphorbia spp., and Isodon regosus from Hangul habitat and corridors.
  - Replace these with indigenous, nutritious grass species such as red and white clover to improve the quality of grazing land for herbivores.

- Ecosystem Health Monitoring: Regularly evaluate and monitor the health of the ecosystem, focusing on plant health, disease assessment, and overall ecological balance.

B) Compensatory Strategies:

Compensatory strategies aim to mitigate habitat attribute loss due to human activities, such as reducing the dependence of grazers on meadows and curbing unsustainable tourism.

Key Actions:

- Reducing Grazing Pressure**:** Minimize the dependency of grazers on sanctuary meadows by providing alternative grazing areas outside protected zones.

- Local Resource Dependency: Reduce local community reliance on sanctuary resources by promoting sustainable practices and providing alternative livelihoods.

- Sustainable Tourism Practices: Implement measures to control unsustainable tourism activities that may negatively impact wildlife and habitats.

6.2.2 Theme Plan for Control of Poaching

Poaching has been a significant threat to the wildlife population in the Overa-Aru Wildlife Sanctuary, particularly to the endemic species such as the **Kashmiri Hangul, Black and Brown Bears, and Musk Deer**, as well as various pheasant species like the **Chakour, Koklas,** and **Monal.** Over the past decade, poaching activities have led to severe depletion in wildlife numbers. However, the situation has improved due to the natural restrictions imposed by the ongoing turmoil in the region, which has hindered poaching activities and allowed a viable wildlife population to begin recovering. Despite this positive trend, the situation remains fragile, and it is essential to strengthen anti-poaching measures continuously to ensure the sanctuary's biodiversity is preserved.

Effective control of poaching requires ongoing infrastructure improvements and comprehensive strategies to address the challenges posed by poachers. Below are the proposed strategies to further strengthen the sanctuary's anti-poaching efforts.

6.2.2.1 General Strategies for Controlling Poaching

To combat poaching and ensure the survival of the sanctuary's wildlife, the following strategies are recommended:

1.Anti-PoachingCamps

The Overa-Aru Sanctuary is located in a rugged terrain, which poses challenges for traditional communication and response systems. The existing roads and infrastructure are insufficient to meet the demands of urgent situations such as responding to poaching attempts or rescuing distressed wildlife. Therefore, it is essential to establish anti-poaching camps at strategic locations throughout the sanctuary. These camps should be strategically placed considering the inaccessibility of certain areas and the fact that these areas remain difficult to access for much of the year due to the terrain and weather conditions. The camps will serve as vigilant outposts to monitor and prevent illegal activities, ensuring quick responses to any poaching attempts or wildlife emergencies.

2. Staffing and Personnel

The current number of staff at the Overa-Aru Sanctuary is insufficient to meet the demands of effective wildlife protection. Anti-poaching camps are manned by foresters, forest guards, and watchers, but the number of personnel is inadequate. This shortage of staff reduces the efficiency of patrolling and enforcement, leaving several critical areas vulnerable to poaching activities. Therefore, additional recruitment is essential to ensure that each anti-poaching camp is sufficiently staffed and equipped. Moreover, enhancing staff training to improve their capability to detect, respond to, and prevent poaching activities will further strengthen the sanctuary's protection efforts.

3. Regular Patrolling and Surveillance

Regular patrolling of the sanctuary is crucial to ensure effective protection of the sanctuary's flora and fauna, especially for endangered species like the Hangul and other wild animals. Patrolling currently focuses on protecting habitats that are most at risk of poaching or human disturbance. The existing staff often patrols these vulnerable areas on foot, with special attention given to areas that are more prone to illegal activities. However, night patrolling has been largely discontinued due to the security situation in Kashmir. Many of the guard posts in the sanctuary have been destroyed due to militancy, which has hindered the sanctuary's ability to effectively monitor these areas at night.

Proposed Measures for Effective Patrolling:

- Enhanced Monitoring: Establish routine monitoring of patrolling activities to ensure consistency and accountability. Regular checks will allow for the evaluation of the patrolling system's effectiveness and provide real-time data for any adjustments needed.

- Clearing and Maintaining Patrolling Paths: The existing patrolling paths should be cleared and maintained at least three times annually to ensure safe movement for field staff. In areas where the existing paths are ineffective, new routes should be established to enhance accessibility. These paths should be carefully mapped and kept in good condition to facilitate effective coverage of the sanctuary.

- Logistics and Equipment: To support field staff during patrolling, it is essential to provide them with all necessary logistical equipment. This includes wireless communication devices, flashlights, ammunition, winter and summer gear, and other essentials. Additionally, adequate arms and ammunition must be provided to ensure that the staff is fully equipped to respond to poaching attempts or confrontations with poachers.

Community Involvement and Awareness

Engaging with local communities is vital in the fight against poaching. The sanctuary should establish community-based anti-poaching networks, where local villagers can act as informants and assist in reporting illegal activities. In exchange for their cooperation, these community members can be provided with incentives or involved in eco-development programs that provide alternative livelihoods, thereby reducing their reliance on poaching as a source of income.

Collaboration with Law Enforcement and Other Agencies

Strengthening partnerships with local law enforcement agencies, including the police, paramilitary forces, and forest protection units, will be crucial for combating poaching. These agencies should work together with the sanctuary management to create a unified response strategy for dealing with poaching and other illegal activities. Regular inter-agency meetings and joint patrols will help improve coordination and ensure timely actions against poachers.

Enforcement of Strict Penalties

Stringent laws and severe penalties for poaching activities should be enforced. The sanctuary management should advocate for the strict enforcement of wildlife protection laws and ensure that violators face adequate punishment. The deterrence effect of these penalties can reduce the likelihood of poaching activities occurring within the sanctuary's boundaries.

Registration of Firearms around the Park

There are villagers residing in the vicinity of the Overa-Aru Wildlife Sanctuary who possess firearms. Efforts are underway to compile a list of individuals owning such firearms and ensure they are registered with the sanctuary authorities in accordance with the existing Wildlife Protection Rules. It is essential to enforce strict adherence to the provisions outlined in the Wildlife Protection Act, 1972, to regulate the use and possession of firearms in areas surrounding the sanctuary. Proper registration and regulation will help prevent illegal use of firearms, mitigate poaching risks, and contribute to the overall protection of the wildlife sanctuary.

6.2.2.2 Control of Grazing & Other Biotic Disturbances

Grazing by migratory livestock in alpine areas is a major management challenge for Overa-Aru Wildlife Sanctuary (WLS). The sanctuary is increasingly under threat due to the seasonal migration of livestock into the alpine grasslands, particularly in the summer. A significant number of nomadic herders bring their livestock into the higher altitudes of the sanctuary, which impacts the ecological balance. Grazing by domestic animals in these high-altitude habitats is leading to the degradation of essential grasslands, threatening native flora and fauna.

Grazing in the alpine pastures of the WLS has led to considerable habitat degradation, especially in the summer pastures that are critical for many high-altitude wild animals. The loss of these habitats directly affects the species that rely on them, including the endangered Hangul population. The sanctuary's management must implement stringent measures to prevent livestock grazing in these areas to protect the fragile ecosystem.It is essential to expedite the legal processes related to grazing permissions and establish clear boundaries for livestock access to the sanctuary. If grazing is not effectively managed, it could lead to further loss of biodiversity and adversely affect the sanctuary's long-term conservation goals.Unregulated grazing poses significant threats to biodiversity by degrading habitats, reducing vegetation cover, and contributing to soil erosion.

Grazing Regulations

To effectively manage grazing within the sanctuary, a comprehensive livestock census shall be carried out. This will allow us to gather data on the number of, family and livestock, and distribution of livestock in and around the sanctuary, which will help assess the level of grazing pressure on key habitats and resources.

Data-Driven Decision Making

The results from the livestock census will guide our grazing management strategies. By understanding the grazing dynamics, overgrazed areas shall be identified, as well as those where grazing pressure is sustainable. This information will also help us set appropriate grazing limits to reduce the risk of habitat degradation and ensure the health of both wildlife and pastures.

Implement Rotational Grazing Systems to Prevent Overgrazing

Rotational Grazing Systems: To avoid overgrazing and allow vegetation to recover, implementation of rotational grazing system shall be introduced. This involves dividing the available grazing areas into sections and rotating livestock through these sections in a planned manner, giving each area time to rest and regenerate.

Rest Periods for Pastures: The rotational system will be designed to ensure that pastures are not overused, helping to maintain soil fertility, reduce erosion, and ensure that livestock have a steady supply of quality forage. It will also allow vegetation to recover after grazing, contributing to habitat restoration for wildlife.

Critical Habitats: Declaring critical areas within a sanctuary as zero grazing zones means prohibiting livestock grazing in these sensitive regions. To reduce damage caused by grazing, herders will be relocated to other areas where livestock grazing is permitted. This strategy helps protect the environment by preventing overgrazing, soil degradation, and disturbances to wildlife. It ensures that these ecosystems can thrive without the negative impacts of livestock, supporting biodiversity conservation while promoting sustainable land-use practices.

Engagement with Pastoral Communities for Participatory Decision-Making

Community Involvement in Grazing Management: Engaging local pastoral communities in decision-making is a cornerstone of our approach. Consultations, workshops, and community meetings to discuss grazing management strategies and solicit feedback on potential solutions have been already held.

Continuous Monitoring and Adaptation Based on Grazing Impact Studies

Ongoing Grazing Impact Studies: Regular grazing impact assessments on biodiversity within the sanctuary shall be carried out. These studies will include monitoring soil quality, vegetation cover, and wildlife populations in relation to grazing pressure.

Immunization of Livestock:

To protect the health of wildlife populations, especially from diseases carried by domestic animals, it is essential that the migratory livestock populations are immunized. A well-organized immunization program will be rolled out to cover all livestock within the sanctuary's zone of influence. This will help prevent disease transmission between domestic animals and wild animals, which could lead to epidemics affecting endangered species.

Immunization of the livestock will also include regular veterinary check-ups to monitor and control any potential outbreaks of zoonotic diseases, such as anthrax or foot-and-mouth disease, which can severely impact both livestock and wildlife populations.

6.2.3 Weed Control & Invasive Alien Species

The Overa-Aru WLS lacks a comprehensive survey and identification program for invasive alien weed species, which poses a threat to the sanctuary's ecosystems. Weeds can outcompete native plants, leading to reduced biodiversity and habitat degradation. Addressing this issue is vital to maintaining the integrity of the sanctuary's grasslands and forests, which serve as vital habitats for many species.

1. **Weed Identification and Management:**

- A complete survey will be initiated to identify and document the presence of invasive Alien species across the sanctuary. This survey will help determine which species are spreading rapidly and require immediate management. The data collected will form the basis for a robust weed management strategy.

- Control measures will include manual removal, chemical treatments, and biological control methods, depending on the species identified. The sanctuary will work in collaboration with local communities and experts in invasive alien species management to ensure the sustainability of these efforts.

2. Grassland Management:

- Along with controlling weeds, efforts will be made to promote the growth of native grasses and plants that provide food and shelter for wildlife. This will involve replanting native vegetation and improving soil health in areas degraded by invasive species.
- Education programs will also be initiated to raise awareness among local communities about the importance of managing invasive species and preventing the introduction of new weeds into the sanctuary.

6.2.4 Controlling Ranging Patterns of Wild Animals Outside Managed Habitat

The issue of wild animals straying outside the sanctuary boundaries is an ongoing challenge for the Overa-Aru WLS. Species such as black bears, leopards, and other large carnivores regularly move out of the sanctuary, leading to conflicts with local communities. These animals often cause significant damage to crops, livestock, and occasionally pose a danger to human life. It is crucial to address this issue to prevent further conflict and protect both wildlife and human interests.

1. **Consequences of Straying:**
    - The straying of wild animals has led to considerable damage to crops and livestock, which severely impacts the livelihood of fringe villages. The presence of large carnivores outside the sanctuary also increases the risk of human-wildlife conflicts, including attacks on humans.
    - To address these issues, a range of strategies will be employed, including tracking and monitoring of stray animals, to ensure that they are quickly located and brought back to the sanctuary. This will require coordination between wildlife officials, local communities, and research institutions.

2. Strategies to Mitigate Straying:

- Regular survey and tracking of stray animals will be carried out in collaboration with research institutes. This will involve the use of GPS collars and camera traps to monitor the movement of problem animals and anticipate potential conflicts before they occur.
- Tranquilization and relocation of problem animals will be the primary method for managing straying. However, the sanctuary will also explore non-invasive methods, such as creating natural barriers along the sanctuary boundary to deter animals from leaving the sanctuary in the first place.
- A compensation program will be established to provide financial support to local farmers and herders who suffer losses due to wildlife depredation. This program will help mitigate human-wildlife conflict and promote coexistence between local communities and wildlife.
- Mobile patrolling units will be deployed to monitor vulnerable areas and prevent stray animals from entering human settlements. These units will be equipped with tranquilizers, nets, and other tools to capture and relocate animals.

6.2.5 Soil Erosion Monitoring & Control

Soil erosion in Overa-Aru WLS is a significant concern, especially in the higher elevations where cloudbursts and heavy rainfall events cause soil displacement. Soil erosion not only degrades the quality of habitats but also leads to sedimentation in water bodies, affecting aquatic ecosystems. Continuous monitoring and proactive measures are required to address this issue and prevent long-term ecological damage.

1. **Monitoring and Assessment:**

Regular monitoring of erosion-prone areas will be conducted using satellite data, aerial surveys, and field inspections. This will help identify areas of concern and assess the rate of soil erosion over time. The data gathered will be used to develop a comprehensive erosion control plan for the sanctuary.

- The sanctuary will collaborate with local environmental agencies and research institutions to track changes in the landscape and identify the underlying causes of erosion. Special attention will be given to areas that experience frequent cloudbursts, as these events exacerbate erosion.

2. **Erosion Control Measures:**
   - Based on the findings of the monitoring program, appropriate soil conservation techniques, such as terracing, afforestation, and building erosion control structures (e.g., check dams), will be implemented.
   - In high-risk areas, native vegetation will be reintroduced to stabilize the soil and prevent further erosion. Additionally, community-based efforts, including soil erosion education programs, will be carried out to raise awareness about the importance of protecting the landscape.

6.2.6 Animal Health Surveillance

Monitoring the health of wild animals in Overa-Aru WLS is critical for early disease detection and the prevention of wildlife epidemics. Disease outbreaks can have devastating effects on both wildlife populations and domestic livestock, making it crucial to implement a comprehensive health surveillance program.

1. **Health Monitoring Systems:**
   - The sanctuary will adopt scientific protocols for health surveillance, including regular check-ups of high-risk species, particularly the Hangul and other vulnerable wildlife.
   - Data will be collected from both wildlife and livestock populations within the sanctuary's zone of influence. This data will be used to track potential disease outbreaks and inform vaccination campaigns for both wildlife and domestic animals.

2. Collaboration with Veterinary Authorities:
   - The sanctuary will collaborate closely with local veterinary authorities, especially the District Veterinary Officer, to ensure that livestock populations are regularly vaccinated and monitored for diseases that may affect wildlife.
   - An integrated approach will be developed that links the health monitoring of wildlife and livestock, focusing on preventing disease transmission between the two groups.

3. Public Awareness Programs:
   - Awareness campaigns will be organized to educate local communities about the importance of animal health and disease prevention. These programs will help prevent the spread of diseases to wildlife populations and encourage responsible practices in livestock management.



Health Checkups

6.2.7 Human-Animal Interaction

Human-wildlife conflict has become a significant issue around the Overa-Aru WLS. The destruction of crops and loss of livestock due to wildlife depredation severely impacts the livelihoods of local people. Managing this conflict is critical to the long-term success of the sanctuary's conservation efforts.

1. **Conflict Mitigation Strategies:**

2. Prompt Compensation: Immediate compensation should be provided for any injury or death of people due to attacks by wild animals. The provision of compensation for crop damage, livestock loss, and human injury will help reduce animosity towards wildlife and promote peaceful coexistence.

- Crop Protection Measures: Crop protection committees will be formed in high-conflict villages. These committees will be provided with tools such as firecrackers, solar lights, and torches to help deter wild animals from entering farmland.
- Flying Squads: A flying squad will be established to monitor crop damage during the harvesting season, particularly in areas with high risk of animal intrusion. The squad will patrol vulnerable areas during the night, using appropriate tools and techniques to protect crops.
- Fencing Solutions: Villagers will be encouraged to install animal-proof fencing around their farms and homes to minimize wildlife intrusion. Feasibility studies will be conducted to assess the most effective areas for fencing, and financial assistance may be provided to help with installation costs.
- Mobile Veterinary Camps: To assist local communities with animal health concerns, mobile veterinary camps will be organized to treat livestock, vaccinate them, and address any diseases or injuries that may lead to increased conflict with wildlife.

6.2.8 Development of Infrastructure & Communication

For effective management of Overa-Aru WLS, a robust infrastructure and communication network are crucial. Improving the sanctuary's physical infrastructure will enable better protection and monitoring of wildlife and ecosystems.

1. **Infrastructure Maintenance and Upgrades:**
    - Building Repairs: Office buildings and staff quarters within the sanctuary will be periodically repaired. Some quarters require major repairs or reconstruction to ensure that staff have suitable accommodations to carry out their duties effectively.
    - New Construction: Several new buildings, including residential quarters for the Wildlife Warden and Range Officers, will be constructed to accommodate the increasing staff requirements. Anti-grazing camps and watch towers will also be erected to improve surveillance and control grazing activities

2. Roads and Bridges:

- Many of the existing roads within the sanctuary are in poor condition and require urgent repair. These roads are essential for access to remote areas for patrolling and monitoring activities.
- The sanctuary will prioritize the construction of new roads and the upgrading of existing ones to ensure all regions of the sanctuary are accessible. Bridges and culverts will also be renovated or rebuilt where necessary to support year-round access.

3. Communication Infrastructure:

- A dedicated wireless communication system will be established to facilitate smooth communication between different ranges of the sanctuary. This will improve coordination during wildlife monitoring and crisis management.
- Existing vehicles used for surveillance and patrolling will be maintained to ensure they are in working condition. The provision of fuel and spare parts will be part of the regular maintenance program.

4. Annual Infrastructure Review:

- An annual review of the sanctuary's infrastructure needs will be conducted to assess the state of roads, buildings, and communication systems. This review will help prioritize repairs and upgrades, ensuring the sanctuary remains well-equipped to meet its conservation goals.

Chapter 7

Eco-tourism, Interpretation & Conservation Education



7.1 GENERAL

In recent times, wildlife sanctuaries and national parks have become important hubs for tourism. With the increasing interest in nature and wildlife, these protected areas serve as magnets for tourists, drawing people from around the world to experience and learn about the natural world. The Overa-Aru Wildlife Sanctuary (WLS), in particular, has become a significant destination for wildlife tourism, attracting visitors globally who come to witness its rich biodiversity and scenic beauty.

Tourism can have positive effects on wildlife conservation by raising awareness among the public about the vital role of wildlife in maintaining ecological balance. This awareness, in turn, can lead to stronger support for conservation efforts. As the number of tourists visiting the sanctuary continues to rise, it is essential to develop and implement a sustainable tourism strategy that balances the needs of tourism with the conservation of the sanctuary's natural resources.

7.2 THE OBJECTIVES

Tourism in Overa-Aru WLS presents various challenges for sanctuary management. These challenges need to be addressed to ensure that tourism remains sustainable and beneficial to both the sanctuary and its visitors. Some of the key issues to focus on include controlling the number of tourists to minimize disturbance to wildlife, ensuring equitable distribution of tourist pressure, and implementing a well-structured tourism plan. To manage these aspects effectively, the following objectives shall be pursued:

- To Sensitize Visitors for Nature Conservation:

Tourism should not only focus on entertainment but also on educating visitors about the importance of wildlife conservation. This awareness can help foster a sense of responsibility among tourists toward preserving the sanctuary and its inhabitants.

- To Maximize Visitor Experience Through Education, Interpretation, and Recreation:

Providing visitors with enriching experiences through guided tours, informative exhibits, and recreational activities will enhance their stay. The goal is to ensure that every visitor leaves with a greater understanding of wildlife and the environment.

- To Provide Educational Mementos for Visitors:

Creating and distributing items such as wildlife calendars, field guides, and books can help reinforce the educational message. These mementos not only serve as souvenirs but also act as reminders of the importance of wildlife protection.

- To Minimize the Negative Impact on the WLS and its Wildlife:

A critical aspect of tourism management is minimizing the environmental and ecological footprint of tourism. Efforts should be made to ensure that visitors' activities do not harm wildlife habitats, disturb ecosystems, or lead to pollution.

- To Develop a Database on Tourist Flow and Its Impact:

Collecting data on the number and type of tourists visiting the sanctuary, along with the activities they engage in, will help manage tourism more effectively. This data will provide insights into the impact of tourism on the sanctuary's resources and help in formulating better policies.

Observations in Existing Tourism Activities in Overa-Aru WLS

The current state of tourism in Overa-Aru WLS reveals both opportunities and challenges. Several observations about existing tourism activities highlight areas for improvement:

1. **Tourism Operations Are Not Seasonal Except for Winter:**

The sanctuary is open to tourists year-round, with no specific restrictions except during the harsh winter months. This unrestricted access may lead to overcrowding during peak seasons, causing strain on the sanctuary's resources.

2. Need for a Comprehensive Tourism Plan:

There is an urgent need for a more detailed and comprehensive tourism plan to address several key aspects of tourism management, such as:

- Limiting the Number of Tourists: Establishing daily visitor limits for specific routes to reduce pressure on the sanctuary's wildlife and ecosystem.
- Provision of Tourist Guides: Well-trained guides should accompany visitors to educate them about the sanctuary's wildlife, cultural heritage, and conservation efforts.
- Publicity and Wildlife Interpretation: Effective marketing and interpretation materials should be developed to inform tourists about the sanctuary's significance and its biodiversity.
- Strict Adherence to Do's and Don'ts: Guidelines for visitors should be clearly outlined and enforced to minimize negative impacts on wildlife and the environment.
- Addressing Tourism Pressure: Protocols should be established for handling tourism pressure, ensuring that the flow of visitors does not overwhelm the sanctuary's capacity.
- Involving Local Communities in Tourism: Local communities should be encouraged to participate in tourism activities, both as guides and in hospitality services, to promote sustainable livelihoods.
- Fixed Schedules for Trips: Strict adherence to fixed schedules for tourist trips will help manage traffic within the sanctuary, ensuring a balanced and sustainable approach to visitation.
- Staffing Needs for Tourism Management: Adequate staffing is essential for monitoring tourist activities and ensuring compliance with sanctuary rules.
- Complaint Mechanism: A formal mechanism should be set up to address tourist complaints, including issues related to service quality, safety, and the conduct of staff.

To develop the comprehensive tourism plan, all relevant stakeholders, including tour operators, hoteliers, government agencies, and NGOs, should be engaged in a participatory process. This will help create a plan that aligns with the needs and expectations of both the sanctuary and the visitors, ensuring long-term sustainability.

7.3 PROBLEMS

Several issues have been identified regarding tourism management in Overa-Aru WLS that need to be addressed to ensure the successful development of a sustainable tourism framework:

- **Lack of a Comprehensive Tourism Plan:**

The sanctuary currently lacks a unified and detailed tourism plan, which makes it difficult to manage tourism effectively and sustainably. Without clear guidelines and strategies, tourism can lead to overcrowding, environmental degradation, and disturbances to wildlife.

- **Poor Maintenance of Tourism Infrastructure:**

Many of the tourism-related facilities, such as rest houses, roads, and signage, are either poorly maintained or insufficient to accommodate the growing number of visitors. Upgrading and maintaining these infrastructures is essential for providing a quality experience to tourists while ensuring the sanctuary's integrity.

- **Absence of Nature Interpretation Center (NIC):**

There is a need for an Interpretation Center within the sanctuary to educate visitors about the sanctuary's biodiversity, wildlife, and conservation issues. Such a facility would provide a more interactive and educational experience, which could further raise awareness and promote conservation efforts.

- **Inadequate Staffing for Tourism Regulation:**

The current staff deployed to manage tourism activities is insufficient to handle the growing number of visitors. Additional staff should be trained and deployed to enforce rules, guide tourists, and ensure that tourism activities
do not negatively impact the sanctuary.

7.4 STRATEGIES

To address the problems and achieve the objectives outlined above, the following strategies should be implemented:

7.4.1 Identification of the Eco-tourism Zone

The first step in managing tourism effectively is to identify specific zones within the sanctuary that are suitable for tourism activities. Many of the current tourist trails run through sensitive biodiversity areas, which can be negatively impacted by high visitor numbers. Future tourism development should focus on creating designated zones that minimize disturbances to wildlife while still providing tourists with the opportunity to experience the sanctuary's beauty. Additional areas with high potential for eco-tourism should be identified and incorporated into the tourism plan.

7.4.2 Infrastructure Development

- **Lodging and Boarding Facilities:**

The sanctuary currently has limited facilities for tourists, with only a rest house at Pahalgam available for official stays. There is a need to develop additional rest houses or guest accommodations within the sanctuary or nearby areas to cater to tourist demand. These facilities should be eco-friendly and designed to blend with the natural environment, ensuring minimal impact on the surrounding ecosystem.

- **Interpretation and Conservation Education:**

Interpretation is a critical tool for educating visitors about the natural environment. The goal is to foster a deeper appreciation for wildlife, making visitors more conscious of the need for conservation. The sanctuary should invest in developing comprehensive educational materials, including brochures, videos, and interactive exhibits, to engage visitors and enhance their understanding of the sanctuary's importance. Interpretive signage along tourist trails can also provide valuable information about the flora, fauna, and history of the area.

- **Regulation, Monitoring, and Evaluation:**

A strict code of conduct for tourists should be enforced to ensure responsible behavior within the sanctuary. These guidelines should be clearly printed on tickets and displayed at the entrance to the sanctuary. Additionally, tourist vehicles should operate within scheduled times to reduce congestion, and guides should be trained to ensure they adhere to the sanctuary's regulations. A robust monitoring system should be established to track compliance and address any violations.

- **Awareness Creation:**

To increase the impact of conservation education, the sanctuary should organize awareness programs aimed at both tourists and local communities. Activities such as wildlife safaris, nature walks, film screenings, and exhibitions can be organized to raise awareness about the sanctuary's biodiversity. Additionally, a library or resource center could be established to provide visitors with access to books, documentaries, and other educational materials. Awareness campaigns targeting local politicians, public servants, and media personnel should also be implemented to generate broader support for conservation initiatives.

7.4.3 Visitors Analysis

A comprehensive visitors' analysis is essential to understand the patterns of eco-tourism and its impact on the sanctuary. The data collected from visitor surveys and feedback should be used to refine the tourism plan and improve the overall visitor experience. Regular assessments of visitor numbers, their activities, and their satisfaction levels will provide valuable insights into the effectiveness of the tourism management strategies. This data should be analyzed to identify peak tourist seasons, preferred routes, and potential environmental pressures.

Efforts should be made to incorporate the aspirations and expectations of visitors into the tourism development plan, ensuring that tourism growth is sustainable and beneficial for both the sanctuary and its stakeholders.

INNOVATIVE INTERVENTIONS THAT WILL BE INTRODUCED IN OVERA-ARU WILDLIFE SANCTUARY

The Tourist Information Guide Online System (TIS):

The Tourist Information System (TIS) aims to revolutionize both the way tourists experience Overa-Aru Wildlife Sanctuary and how the Wildlife Department manages the increasing number of visitors. This integrated system consists of an Android mobile application and a comprehensive web portal. The system will provide tourists with tools to explore the sanctuary, obtain permits, book tickets, and learn about the local wildlife and plants.

The web portal for administrators will facilitate real-time management of visitors, tracking revenue, permissions, and providing detailed reports that will help improve both tourism experiences and conservation efforts. The key goal of the system is to provide a seamless, informative, and interactive experience for tourists, while also supporting the sanctuary's sustainability and the Wildlife Department's conservation efforts.

The proposed **Tourist Information System (TIS)** is a technological solution that aims to enhance the experience for tourists and ease the management process for the administrators. By digitizing various aspects of the sanctuary visit — from permit applications to ticketing and real-time information — the TIS will reduce manual processes, provide valuable insights, and streamline tourism operations, ultimately contributing to better management of the sanctuary's natural resources and promoting responsible tourism.

System Overview

The mobile app will offer the following functionalities:

- **3D Maps and Video Tours in Overa-Aru Management Plan**

To ensure clear and comprehensive strategies for the Overa-Aru management plan, we have developed advanced 3D maps and video tours. These tools provide a detailed and immersive understanding of the landscape, enabling better planning, analysis, and decision-making. The 3D maps offer a realistic representation of the terrain, highlighting key features and potential areas of focus, while the video tours allow stakeholders to virtually explore the region. By incorporating these technologies, we aim to enhance communication, improve resource management, and ensure that strategies are aligned with the actual characteristics of the area.

- **Interactive 3D Maps:** Tourists can explore 3D maps of the sanctuary, which will showcase trails, viewpoints, and key amenities. These maps will provide real-time information about available routes, points of interest, and current conditions within the sanctuary.

- **Video Tours:** Tourists can watch pre-recorded video tours highlighting scenic areas, wildlife, and other key locations within the sanctuary, giving them an immersive preview before their visit.

- **Online Permit Application:** The app will allow tourists to apply for entry permits digitally by submitting an online form and uploading the required ID proof. This reduces the administrative burden and ensures a smooth and quick approval process.

- **Ticket Booking & Payments:** The system will allow tourists to securely book tickets through UPI or other online payment methods. Once tickets are booked, tourists will receive e-tickets for their visit.

- **Real-Time Information:** Tourists will receive live updates about the weather, safety protocols, and restricted areas within the sanctuary. In addition, they will get alerts on eco-tourism zones, making their visit safer and more enjoyable.

- **Offline Maps:** In areas with limited internet connectivity, tourists can download trekking maps, ensuring they can navigate the sanctuary even when they lose network coverage.

- **Public Amenities Guide:** The app will provide useful information on available public amenities, such as hotels, ATMs, transportation, and emergency helplines.

- **Flora and Fauna Database:** A rich collection of information on the sanctuary's wildlife and plants, including rare species like the Hangul deer, snow leopards, and medicinal plants. The database will include images, descriptions, conservation status, and even audio clips of animal sounds and bird calls for an immersive experience.

- **Emergency Helplines:** Direct access to emergency services for rescue operations, medical assistance, or any other urgent support needed during the visit.

Web Portal Features

The web portal for administrators will include the following features:

- **Sanctuary Information:** Detailed information about the sanctuary, its geography, fauna, flora, and eco-tourism zones. Administrators will have access to detailed maps and video tours.

- **Online Permit Management:** Admins will have the ability to review and approve/reject tourist permit applications, ensuring that all entry requirements are met.

- **Ticketing Management:** The portal will allow administrators to track ticket sales, monitor available slots, and generate revenue reports. Secure payment gateways will be integrated to facilitate smooth transactions.

- **Reporting & Data Analytics:** The system will offer robust reporting capabilities. Administrators can generate reports on visitor footfall, ticket sales, revenue generation, and other tourism metrics. The data will be presented in easy-to-read graphs and charts.

- **Permission Management:** Administrators can review, approve, and reject tourist entry applications. The system will automate notifications to inform tourists about the status of their permit application.

- **Tourist/User Workflow**

- **Download the App or Visit the Web Portal:** Tourists download the mobile app on their Android devices or access the web portal on a browser.

- **Explore the Sanctuary:** Tourists can browse information, including interactive maps, wildlife guides, and video tours.

- **Apply for Permit:** Tourists submit an application form along with required ID proof for permit approval.

- **Ticket Booking & Payment:** Tourists select their visit dates, book tickets, and complete payment securely through UPI or other available methods.

- **Visit the Sanctuary:** Upon confirmation, tourists can visit the sanctuary and enjoy a smooth experience with real-time alerts, location-based information, and easy access to amenities.

Admin Workflow

- **Admin Login:** Administrators log in to the portal using secure credentials.

- **Permit Review & Management:** Admins review incoming permit applications and approve or reject them based on predefined criteria.

- **Monitoring Ticket Sales:** Admins can track ticket sales and ensure the sanctuary's capacity limits are respected.

- **Generate Reports:** Admins can generate detailed reports on visitor activity, footfall, revenue, and permit statistics to aid in planning and conservation efforts.

Key Deliverables

- **Mobile Application:** A fully functional Android app for tourists that includes all interactive features, online permit applications, ticketing, and the flora/fauna database.

- **Web Portal:** A central administration platform for managing tourist data, applications, payments, and generating insightful reports.

- **Training:** Training sessions for the Wildlife Department staff on how to use the system, understand data reporting, and maintain security protocols.

- **Documentation:** Comprehensive user manuals for both tourists and administrators, as well as technical documentation for system maintenance and future upgrades.



Project Timeline

The development and implementation of the Tourist Information System will be carried out in multiple phases:

Phase	Duration	Deliverables
Data Generation	2 months	Creation of a comprehensive database with geo-tagged sanctuary assets, infrastructure, and scenic spots. Secure storage with role-based access controls.
App & Portal Development	3 months	Development of the Android app and web portal, integrating maps, ticketing, and permits.
Security Integration	1 month	Penetration testing, SSL/TLS setup, implementation of 2FA, and database encryption.
Payment Gateway Integration	1 month	Integration of PCI-DSS compliant payment gateway for secure payments via UPI, credit/debit cards, and net banking.
Security Audit & Compliance	1 month	Security audit, ISO 27001 certification, PCI-DSS compliance, GDPR data protection alignment.
Staff Training	2 weeks	Training Wildlife Department staff on the usage of the app and portal, and cybersecurity best practices.
Soft Launch & Testing	2 weeks	Beta testing with stakeholders to identify and fix any issues before the full launch.
Full Launch	2 weeks	Public release, marketing campaign, and 24/7 support services.

Security Considerations

To ensure the security and privacy of both tourists and administrative users, the following security measures will be implemented:

Penetration Testing: A thorough testing process to identify vulnerabilities and address them before the system goes live.
Data Encryption: All data, including sensitive tourist information and payment details, will be encrypted both during transmission and while stored in the database.

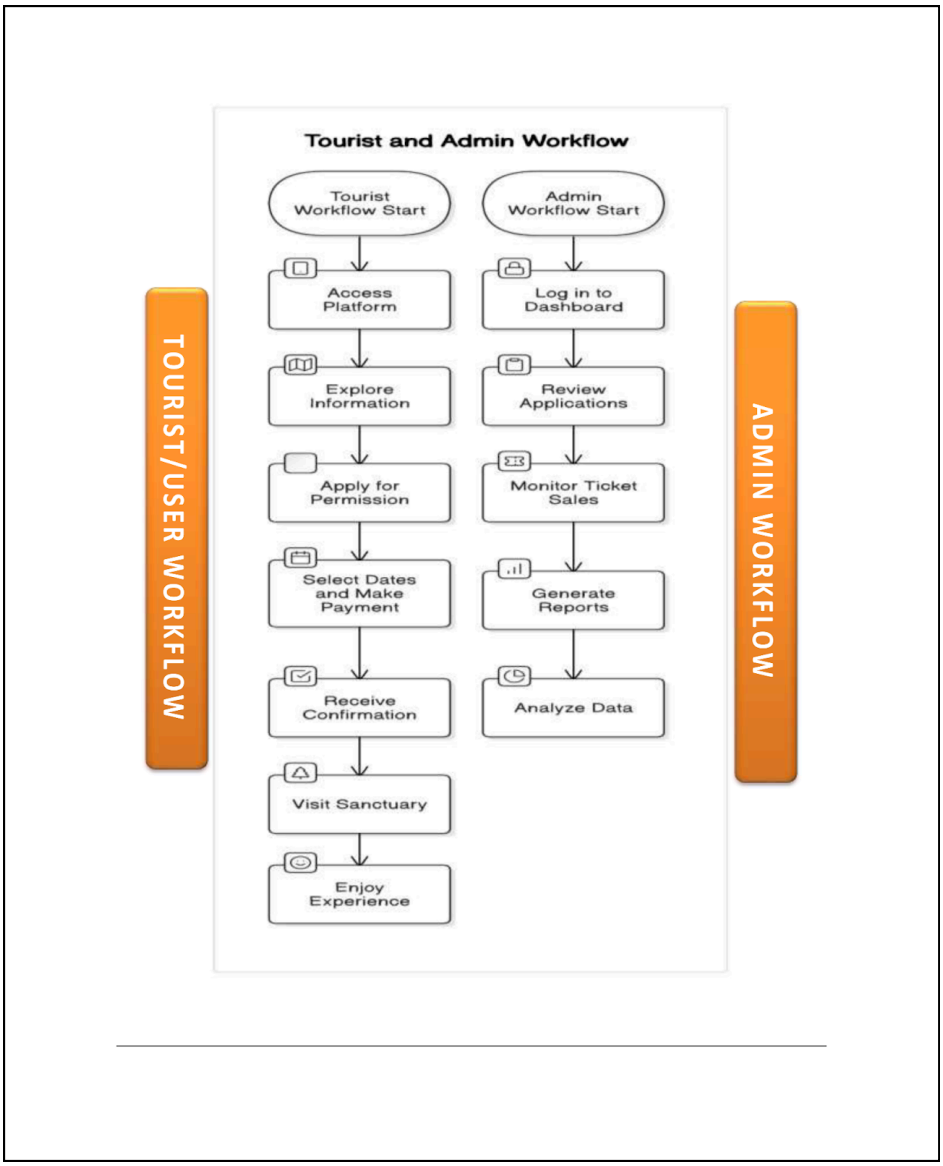
Two-Factor Authentication (2FA): To enhance the security of user accounts, both tourists and administrators will be required to use 2FA for logging in.

PCI-DSS Compliance: PCI-DSS (Payment Card Industry Data Security Standard) is a set of security standards designed to ensure that all companies handling credit card information maintain a secure environment. The standard is intended to protect sensitive payment card data from fraud and breaches. The payment gateway integration will adhere to PCI-DSS standards, ensuring that all financial transactions are secure.

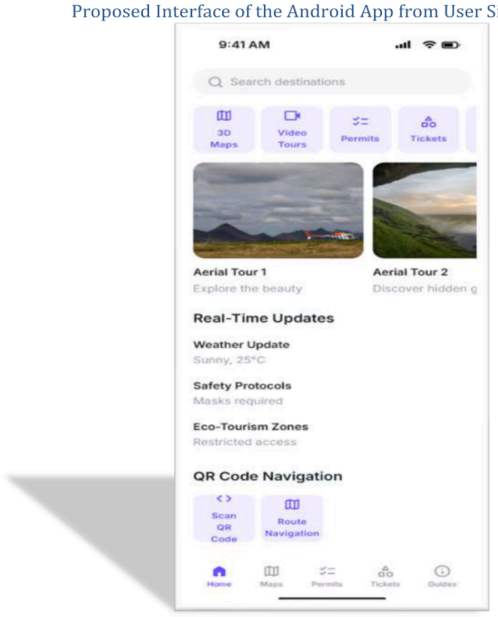
Training and Support

Training: Wildlife Department staff will undergo comprehensive training on using both the mobile app and the web portal. Topics will include permit approval, ticketing, data reporting, and maintaining security protocols.

Ongoing Support: 24/7 support will be available to both tourists and administrators for technical issues. Regular system updates and patches will also be provided to ensure smooth operation.



Proposed Interface of the Android App from User Side:



REVENUE GENERATED OVER LAST SIX YEARS

S No	Source of Revenue	Total Visitors	Revenue Gathered
	2019-20		
01	Entry fee recovered from Mandlan Gate of Aru WLS	13682	342040
02	Entry fee recovered from Mini Zoo Pahalgam	27863	475160
03	Entry fee recovered from Daksum Rajparian WLS	1780	19520
04	Rent Charges of Maharaja Hut Overa	x	0
05	Rent Charges of Inspection Hut Daksum	x	0
	Total 2019-20:	**43325**	**836720**
	2020-21		
01	Entry fee recovered from Mandlan Gate of Aru WLS	14509	362725
02	Entry fee recovered from Mini Zoo Pahalgam	1956	38580
03	Entry fee recovered from Daksum Rajparian WLS	x	0
04	Rent Charges of Maharaja Hut Overa	x	0
05	Rent Charges of Inspection Hut Daksum	x	0
	Total:	**16465**	**401305**
	2021-22		
01	Entry fee recovered from Mandlan Gate of Aru WLS	52341	1308525
02	Entry fee recovered from Mini Zoo Pahalgam	72587	1444870
03	Entry fee recovered from Daksum Rajparian WLS	1677	40234
04	Rent Charges of Maharaja Hut Overa	x	0
05	Rent Charges of Inspection Hut Daksum	x	0
	Total 2021-22:	**126605**	**2793629**
	2022-23		
01	Entry fee recovered from Mandlan Gate of Aru WLS	78574	1964350
02	Entry fee recovered from Mini Zoo Pahalgam	49688	888570
03	Entry fee recovered from Daksum Rajparian WLS	172	4300
04	Rent Charges of Maharaja Hut Overa	x	0
05	Rent Charges of Inspection Hut Daksum	x	0
	Total 2022-23:	**128434**	**2857220**

S No	Source of Revenue	Total Visitors	Revenue Gathered during 2023-24
	2023-24		
01	Entry fee recovered from Mandlan Gate of Aru WLS	83374	2084350
02	Entry fee recovered from Mini Zoo Pahalgam	55577	986120
03	Entry fee recovered from Daksum Rajparian WLS	738	14850
04	Rent Charges of Maharaja Hut Overa	x	0
05	Rent Charges of Inspection Hut Daksum	x	0
	Total 2023-24:	**139689**	**3085320**
	2024-25		
S No	**Source of Revenue**	**Total Visitors**	**Revenue Gathered during 2024-25**
01	Entry fee recovered from Mandlan Gate of Aru WLS	156835	3741700
02	Entry fee recovered from Mini Zoo Pahalgam	27445	478380
03	Entry fee recovered from Daksum Rajparian WLS	1636	31469
04	Rent Charges of Maharaja Hut Overa	x	125515
05	Rent Charges of Inspection Hut Daksum	x	9440
06	Excess Pay Recovery	x	2110
07	Fine Imposed to Employees	x	34734
	Total 2024-25:	**182916**	**4423348**

Chapter 8
Human-Wild Animal Interaction



Human-wildlife Interaction is an increasingly significant challenge for conservation efforts worldwide, and the Overa-Aru Wildlife Sanctuary is no exception. With the growing pressure from expanding human populations, increased agricultural activities, and encroachment into previously undisturbed wildlife habitats, conflicts between humans and wild animals have become more frequent and intense. These conflicts, especially involving large carnivores like, leopards, Bears, can have dire consequences for both human communities and wildlife. As such, addressing and mitigating human-wildlife conflict in Overa-Aru Wildlife Sanctuary is crucial to ensuring the protection of wildlife while maintaining peaceful coexistence with local communities.

8.2 STRATEGIES TO TACKLE HUMAN-WILDLIFE CONFLICT

The following objectives have been outlined to manage and mitigate human-wildlife conflict in Overa-Aru Wildlife Sanctuary

- Formation of Rapid Response Teams and Control Rooms: Establishing specialized teams to swiftly respond to human-wildlife conflicts, equipped with state-of-the-art equipment and technology.
- Installation of Fencing and Bio-Fencing: Implementing strategic fencing solutions around areas where human settlements are in close proximity to wildlife habitats.
- Compensation for Injuries and Mortality: Ensuring that ex-gratia compensation is provided promptly for both human casualties and livestock damage caused by wildlife.
- Promotion of Crop Insurance: Encouraging farmers living in the periphery of the sanctuary to avail themselves of crop insurance schemes like Pradhan Mantri Fasal Bima Yojana (PMFBY).
- Community Education and Awareness: Running extensive education and awareness campaigns to educate the local population about wildlife conservation, risk mitigation, and best practices to avoid conflicts.



Awareness on Human Animal Interaction

8.2 STRATEGIES TO TACKLE HUMAN-WILDLIFE CONFLICT

8.2.1 Formation of Rapid Response Teams

A key strategy to manage human-wildlife conflict effectively is the formation of Rapid Response Teams (RRTs) that can quickly address conflict situations as they arise. These teams will be equipped with the latest technology and tools to ensure prompt, efficient action in the face of human-wildlife encounters.

Equipped Response Units: Each Rapid Response Team will be equipped with a variety of tools, including:

- High-tech tranquilizing guns for safely immobilizing animals without harm.
- Trap cages, both small and large, for capturing and relocating wild animals that stray into human settlements.
- First aid kits, disinfectants, and Personal Protective Equipment (PPE) to safeguard the response teams during operations.
- Rescue vehicles, equipped with specially designed compartments for transporting captured animals safely.
- Night vision binoculars, folding staircases, nets, and other equipment necessary for navigating challenging terrains and dealing with large carnivores.
- Specialized Teams for Specific Conflicts: Depending on the nature of the conflict—whether it involves crop-raiding herbivores or aggressive carnivores—specialized teams will be deployed. These teams will be stationed at vulnerable areas within the sanctuary, ensuring a swift response when needed.
- Control Room Expansion: Currently, the sanctuary havethree control rooms, viz Divisional Control Room, Seer Shalia Control Room and Control Room Sirgufwara, but by the end of the plan period, two more control rooms will be set up at key locations. Each control room will be equipped with night stay facilities, cooking arrangements, and an integrated communication system to coordinate between response teams and field staff.

8.2.2 Fencing & Bio-fencing

To protect human settlements and agricultural lands from wildlife incursions, fencing and bio-fencing will be deployed in areas identified as conflict hotspots. The type of fencing will be selected based on the area's requirements, topography, and the species involved.

8.2.3 Compensation for Injury & Death

One of the significant issues that arises from human-wildlife conflict is the loss of human life, livestock, or crops. To maintain community support for wildlife conservation, the sanctuary management will prioritize the prompt compensation for individuals affected by conflict incidents.

Ex-Gratia Payment: In the unfortunate event of a human death or serious injury caused by wildlife, an ex-gratia payment will be provided without bureaucratic delays. The process will be streamlined, and a dedicated team will handle claims quickly.

Livestock Compensation: Farmers who lose livestock due to predation by carnivores or damage by herbivores will be compensated under the sanctuary's wildlife compensation program. The compensation will cover the market value of the animal, and an easy, user-friendly claim process will be introduced.

8.2.4 Promotion of Crop Insurance

Agricultural activities around the sanctuary often suffer due to wildlife damage, particularly crop raiding by herbivores. To mitigate this risk, it is crucial to promote crop insurance among farmers living in the fringes of the sanctuary. The government's Pradhan Mantri Fasal Bima Yojana (PMFBY) will be used as a tool to encourage farmers to insure their crops against damage from wildlife and natural disasters.
Awareness Campaigns: Information sessions, workshops, and seminars will be conducted to educate farmers about the importance of crop insurance and how it can help protect their livelihoods from wildlife-induced losses.

8.2.5 Community Education & Awareness

Raising awareness within local communities is essential for preventing human-wildlife conflicts and fostering positive attitudes toward wildlife conservation.

Educational Programs: Schools, local councils, and community centers will be targeted for educational programs. These programs will cover topics such as:

The importance of wildlife conservation.
Safe practices to avoid dangerous encounters with wildlife.
How to secure crops and livestock from wildlife damage.

Community Engagement: It is important to involve the local community in conservation efforts, as their cooperation is essential for the success of conflict mitigation strategies. Local communities will be trained in methods such as creating safe zones for both humans and animals and using non-lethal deterrents like noise-making devices and scent repellents to keep wildlife at bay. Installation of lights during nights near the houses will be encouraged.

8.3 ADDITIONAL STRATEGIES TO ADDRESS HUMAN-WILDLIFE CONFLICT

To effectively manage and adapt to human-wildlife conflict, a robust monitoring system will be established. This system will collect real-time data on wildlife movements, conflict incidents, and the effectiveness of mitigation efforts. In line with the recent guidelines from the Ministry of Environment, Forest and Climate Change (MoEF), we will implement the following measures:

- **Use of GPS and Remote Sensing Technologies:** To track wildlife movements and identify high-risk areas, we will integrate GPS collars, camera traps, and satellite imagery, as recommended by the MoEF's latest guidelines.
- **Data-Driven Decision Making:** The collected data will be used to inform adaptive management strategies, ensuring that mitigation measures are based on the latest available information, as outlined in the MoEF's approach to conflict resolution.
- **Community Engagement:** We will involve local communities in the monitoring process, ensuring that their observations and knowledge are included, as encouraged by the MoEF to foster greater collaboration and awareness.
- **Real-time Reporting and Response Systems:** A real-time reporting system will be implemented for immediate responses to conflict incidents, following the MoEF's guidance on improving rapid response frameworks.
- **Evaluation and Review:** Regular evaluations of the effectiveness of mitigation efforts will be conducted, and necessary adjustments will be made based on ongoing data collection and the MoEF's periodic review guidelines.

8.4 COLLABORATION WITH LOCAL AUTHORITIES AND NGOs

Collaboration with local law enforcement, conservation NGOs, and other stakeholders is essential for enhancing the effectiveness of conflict mitigation strategies.

Community Volunteers: Local volunteers will be trained to assist in monitoring wildlife movements, reinforcing barriers, and spreading awareness within their communities.

Joint Operations: Coordination with local authorities and other wildlife departments will help in addressing conflicts swiftly, especially in case of large-scale emergencies like animal predation or crop destruction incidents.





Training on Human-Animal Interaction Co-Existence

8.5 STRENGTHENED PATROLLING AND SURVEILLANCE

Patrolling and surveillance efforts in areas prone to human-wildlife conflict will be enhanced to ensure that issues are identified early and addressed quickly.

Increased Patrolling: In conflict-prone zones, patrol teams will be regularly deployed to monitor animal movements and deter any potential conflicts before they escalate.

Technology Integration: The use of drones, camera traps, and sensor-based systems will allow for efficient and continuous surveillance of critical areas, particularly at night when many carnivores are most active.

Adaptive Management and Continuous Improvement

Mitigating human-wildlife conflict requires continuous learning and improvement. Based on the data collected, the sanctuary will refine its strategies and explore new methods to reduce conflict.

Feedback Loops: Feedback from local communities and field staff will be used to modify the current conflict management strategies.

Review and Evaluation: An annual review of the human-wildlife conflict mitigation efforts will help assess the success of the strategies implemented and guide the development of future plans.

Human-wildlife conflict remains one of the most pressing issues for the Overa-Aru Wildlife Sanctuary. However, by adopting a proactive, integrated approach to conflict management—through the formation of Rapid Response Teams, effective fencing, prompt compensation, community engagement, and the use of advanced technologies—we can significantly reduce the frequency and severity of these conflicts. Furthermore, ongoing monitoring, collaboration with local stakeholders, and adaptive management will ensure that the sanctuary remains a safe haven for wildlife while fostering positive relationships with surrounding communities.



Human Wildlife Interaction and rescue operations



Distribution of Ex-gratia Cheques in Overa-Aru WLS with Hon'ble MLA Pahalgam



Purchase of Conflict Equipments

Chapter 9
FIRE MANAGEMENT



The Overa-Aru Wildlife Sanctuary is a critically important protected area that not only provides sanctuary to the critically endangered Hangul deer but also shelters a rich diversity of native flora and fauna. As a vital ecological corridor, the sanctuary connects various protected areas and plays a key role in the larger conservation network of the region. However, like many other wilderness areas worldwide, it is highly vulnerable to the devastating impacts of fire, which is one of the most destructive agents threatening wildlife, ecosystems, and local livelihoods. The destructive potential of forest fires requires the implementation of robust fire management strategies that mitigate the risk of wildfires while balancing conservation efforts with the needs of local communities.

9.1 GUIDELINES FOR THE FORMULATION OF SUPPLEMENTARY FIRE MANAGEMENT PLAN

The following guidelines are essential for formulating an effective and comprehensive fire management plan for the Overa-Aru Wildlife Sanctuary:

- **Area-Specific and Need-Based Fire Management Plans:** Each zone within the sanctuary should have its own fire management plan, tailored to the unique characteristics and needs of the area. These plans should reflect the environmental, ecological, and socio-economic conditions that vary across the sanctuary's different ecosystems.

- **Identification of the Causes and Consequences of Forest Fires:** Identifying the main causes of fires within the sanctuary—whether natural (lightning, etc.) or anthropogenic (accidental or intentional human activities)—is critical. Understanding these causes allows for the formulation of targeted preventive measures. Additionally, assessing the ecological and socio-economic consequences of forest fires, such as loss of habitat for endangered species, damage to vegetation, or harm to local communities, is crucial in shaping fire management strategies.

- **Fire-Prone Areas to Be Prioritized and Digitized Using GPS and GIS:** Certain areas within the sanctuary are more vulnerable to fires due to vegetation type, topography, or proximity to human settlements. These high-risk areas must be identified and mapped using advanced GPS and GIS techniques. This will help in visualizing fire-prone zones and strategically planning fire management measures.

- **Staff Training and Provision of Firefighting Facilities:** Adequate training must be provided to all staff members involved in fire management.

This training should cover a wide range of skills, from fire detection to emergency response procedures. Additionally, the sanctuary must equip the staff with necessary firefighting tools and safety equipment, such as fire-resistant clothing, water tanks, firebreaks, fire hoses, and portable fire pumps.

- **Procurement of Firefighting Equipment:** A variety of firefighting tools, including hand tools, fire extinguishers, firebreak machinery, and communication equipment, should be procured. The availability of reliable equipment is essential to ensure effective responses to fires, especially during the peak fire seasons.

- **Maintenance of Fire Incident Records:** The documentation and maintenance of detailed records on fire incidents, causes, affected areas, firefighting efforts, and outcomes should be done regularly at both range and division levels. This documentation will serve as a reference for future planning and will also help evaluate the effectiveness of fire management strategies over time.

- **Maintenance of Weather Station Maps:** Weather stations strategically placed within the sanctuary will collect critical environmental data. These stations will not only aid in fire risk assessment but also help monitor climate patterns and changing environmental conditions that may impact fire behavior.

9.2 STRATEGIES FOR FIRE MANAGEMENT

1. Fire Risk Assessment System

A comprehensive Fire Risk Assessment System is essential for assessing fire vulnerability across the sanctuary. By leveraging satellite data and remote sensing technology, the sanctuary can predict areas that are most susceptible to fire outbreaks, based on factors such as vegetation type, fuel loads, weather patterns, and historical fire data. This system will support real-time fire risk mapping and aid in making proactive decisions on where resources need to be allocated.

- **Fire Risk Zones:** The system will allow for the classification of areas into high, moderate, and low fire-risk zones. The high-risk zones will require the implementation of preventative measures such as creating firebreaks and maintaining fire lines, while the low-risk areas will be monitored for changes in conditions.
- **Monitoring and Early Detection:** The integration of remote sensing data will provide detailed analysis of vegetation health, soil moisture, and weather patterns. A robust early warning system will trigger alerts when certain risk parameters exceed predefined thresholds, thus facilitating rapid detection and response.

2. Establishment of Fire Lines and Firebreaks

Fire lines and firebreaks are crucial components of fire management. Fire lines are cleared areas where no vegetation exists, which serve to slow or stop the spread of fire. These should be strategically placed in areas with high fire risk and around habitats of endangered species like the Hangul.

- **Strategic Placement of Firebreaks:** High-risk zones, especially those adjacent to human settlements or areas rich in biodiversity, should have well-established firebreaks. These firebreaks will prevent wildfires from spreading into critical habitats and will be maintained on a regular basis.
- **Fire Line Maintenance:** The fire lines and firebreaks will be maintained throughout the year. This includes clearing out combustible materials, such as dry grasses and leaves, and ensuring that firebreaks are wide and unobstructed.

3. Staff Training and Equipment Procurement

An effective fire management system depends on well-trained personnel and the availability of proper equipment.

- **Staff Training:** Fire management staff will undergo comprehensive training programs on fire detection, firefighting techniques, safety protocols, and the use of modern firefighting equipment. Training will be conducted annually and updated with the latest techniques and tools.
- **Equipment Procurement:** Equipment such as fire-resistant suits, fire pumps, hand tools (axes, shovels), water tanks, and communication devices (radios, satellite phones) will be procured and regularly maintained. The sanctuary will also explore advanced firefighting technologies, including drones for aerial monitoring and rapid response.

4. Proposal for the Installation of Weather Stations at Strategic Locations

The installation of weather stations within the sanctuary will be integral to the early detection and monitoring of fire risk. These stations will collect real-time environmental data, including temperature, humidity, wind speed, and precipitation levels. This data will be used to assess the fire risk across the sanctuary. These stations will predict Fires, climatic dynamics, Baseline Data and Global Warming.

Key Objectives of Weather Stations:

- **Real-Time Fire Detection:** Weather stations will monitor parameters such as temperature, wind speed, and humidity that directly affect fire risk. Increases in temperature combined with dry conditions (low humidity) and high wind speeds are indicators of heightened fire risk.
- **Fire-Prone Area Identification:** Data from the weather stations will help identify areas most susceptible to fires. These areas will be highlighted as priority zones for fire management efforts.
- **Long-Term Fire Risk Trends:** Continuous monitoring will help identify seasonal fire patterns and enable long-term forecasting of fire risks, allowing for better preparedness in future fire seasons.

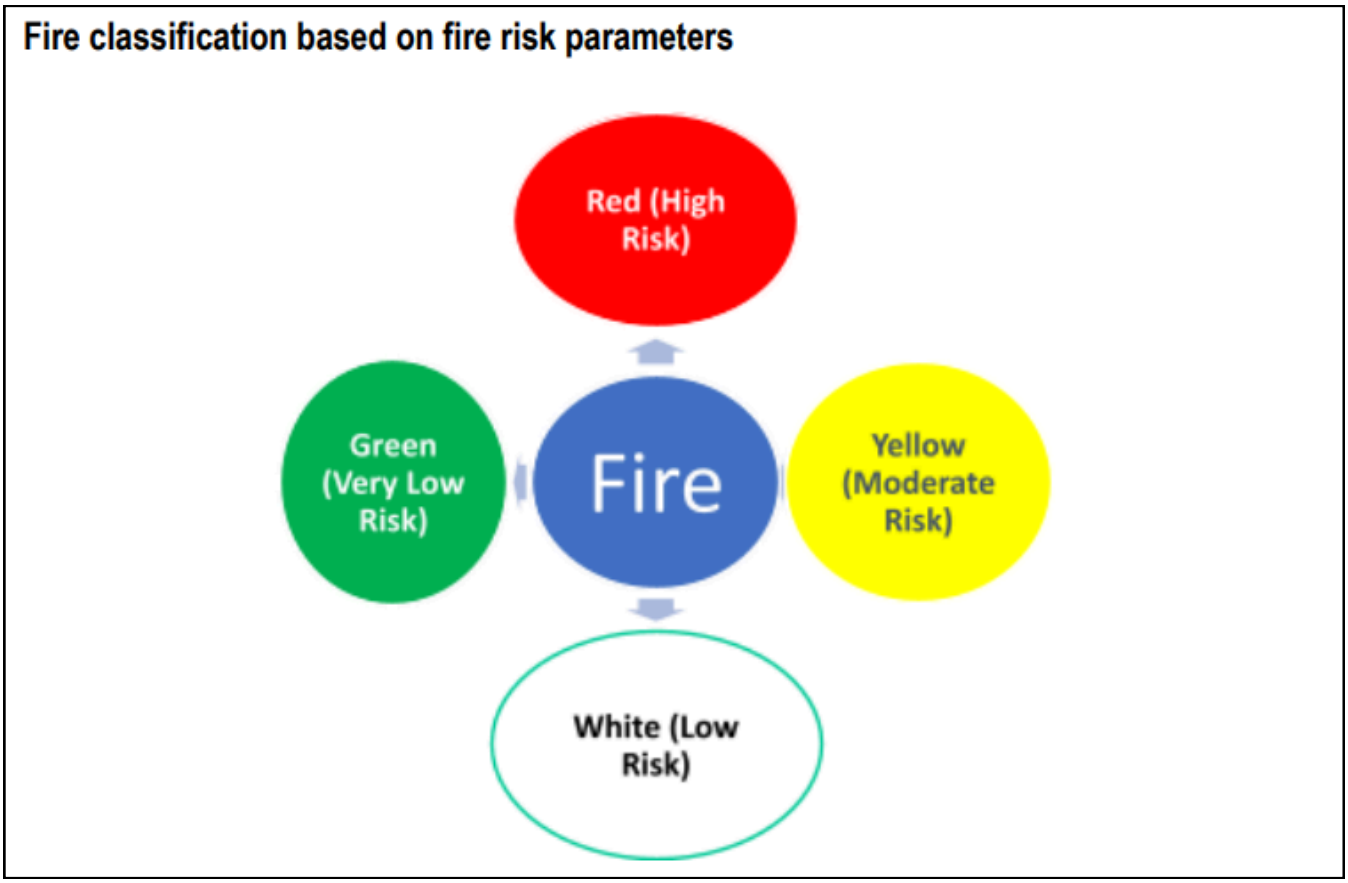
5. Fire Risk Classification and Compartmentalization

To make fire risk management more efficient, the sanctuary will implement a compartmentalized risk rating system. This system will categorize areas into different levels of fire risk based on environmental parameters, allowing for a more targeted response.

- Fire Risk Parameters: The key weather parameters that will influence the classification of fire risk include:
  - **Temperature:** Areas above 30°C are considered high risk, while areas with temperatures below 20°C are low risk.
  - **Humidity:** Low humidity (below 40%) greatly increases fire risk, while high humidity (above 70%) reduces it.
  - **Wind Speed:** Wind speeds above 20 km/h can rapidly spread fires, making areas with high winds high risk.
  - **Precipitation:** Low precipitation levels (<1 mm/day) increase the likelihood of fires, while higher rainfall reduces it.
  - **Soil Moisture:** Low soil moisture (<10%) indicates dry conditions that are more susceptible to fire, while high soil moisture (>30%) reduces fire risk.
  - **Drought Index:** A negative SPI (Standardized Precipitation Index) indicates dry conditions and an increased risk of fires.

Each compartment of the sanctuary will be color-coded based on these parameters:

- **Red (High Risk):** Areas most likely to experience fires.
- **Yellow (Moderate Risk):** Areas with moderate fire risk that require regular monitoring.
- **White (Low Risk):** Areas with low fire risk due to favorable environmental conditions.
- **Green (Very Low Risk):** Areas with very low fire risk due to high humidity, cooler temperatures, and ample soil moisture.



Explanation of Parameters:

- **Temperature:** Areas with temperatures above 30°C are considered high risk as they significantly increase the chance of fire ignition, especially when paired with low humidity and dry conditions.
- **Humidity:** Low humidity levels (below 40%) are a major risk factor, as they cause vegetation to dry out, making it more susceptible to catching fire. High humidity (above 70%) is generally safe and reduces fire risk.
- **Wind Speed:** Winds above 20 km/h can rapidly spread fires, especially when conditions are already dry. Areas with winds less than 5 km/h are considered low risk for fire spread.
- **Precipitation:** Areas receiving less than 1 mm of precipitation per day are at high risk due to dry conditions. Areas with more than 5 mm of rain/day are less likely to experience fires.
- **Soil Moisture:** Low soil moisture (below 10%) indicates dry ground, which is more likely to support fire ignition and spread. Higher soil moisture (above 30%) reduces the fire risk by keeping vegetation damp.
- **Drought Index (SPI):** The Standardized Precipitation Index (SPI) helps monitor drought conditions. A negative SPI value (below -1.5) indicates severe drought, increasing fire risk. Positive values indicate wetter conditions with less fire risk.

Moreover, entries and observations related to potential fire hazards shall be recorded in the concerned guard books by the forest staff. These records should include detailed descriptions of any signs of increased fire risk, such as dry conditions, presence of combustible vegetation, or other unusual occurrences that could lead to fire outbreaks. The concerned range officers will regularly check these records, verifying the accuracy of the observations and conducting field inspections to assess the situation. Based on these inspections and documented observations, areas identified as high-risk may be declared as fire-prone or fire-risk zones. This will allow for timely and informed decision-making to address fire hazards and manage the sanctuary's fire safety effectively.

6. Fire Alerts and Rapid Response Systems

Weather stations will be integrated into an automated fire alert system, which will send notifications to the fire management team whenever risk thresholds are breached. This system will enable rapid responses and deployment of firefighting resources to prevent fires from spreading uncontrollably.

7. Long-Term Monitoring and Data Analysis

The data collected from weather stations, fire incidents, and fire risk assessments will be analyzed over the long term. This continuous monitoring will not only help refine fire management strategies but will also contribute to research on the impact of climate change on fire regimes. Over time, this data will allow the sanctuary to predict fire patterns and improve the overall effectiveness of its fire management plan.

The Overa-Aru Wildlife Sanctuary faces significant challenges in managing fire risks, but with the implementation of a comprehensive fire management plan, these risks can be minimized. The plan integrates modern technologies, such as satellite data and weather stations, with traditional fire management techniques to protect the sanctuary's valuable biodiversity. By implementing fire lines, providing staff training, and establishing an effective fire risk assessment system, the sanctuary will be better equipped to respond to fire threats and safeguard its unique ecosystems for future generations.



Combating Forest fire in Overa-Aru WLS

Chapter 10
Eco-development



The Overa-Aru Wildlife Sanctuary (WLS) is located in an area surrounded by 10 villages, which rely heavily on agriculture and livestock rearing as their primary livelihood sources. These villages are predominantly inhabited by Scheduled Tribes (STs) and backward communities, whose socio-economic conditions are relatively underdeveloped compared to other areas. The introduction of conservation laws and restrictions in the sanctuary, particularly those limiting access to forest resources, has created significant challenges for the local population. The ban on traditional forest-based practices such as cattle grazing, wood collection, and fishing has forced the villagers to seek alternatives outside the sanctuary. At the same time, the increasing presence of wildlife in the surrounding areas, as well as the occasional encroachment of wild animals into agricultural zones, has led to instances of man-animal conflict, causing damage to crops, property, and even human lives. To address these pressing concerns, it is essential to implement a broad-based eco-development program that benefits the fringe villages while fostering a positive relationship between the wildlife authorities and the local community. This program will not only improve the socio-economic conditions of the people but also contribute to the long-term conservation of the sanctuary's biodiversity.

10.1 OBJECTIVES

The primary objectives of the eco-development program in the Overa-Aru WLS are as follows:

- To establish a congenial relationship between wildlife wardens and the local people, fostering trust and cooperation, which will act as a barrier against illegal activities such as poaching and other forms of exploitation by outsiders.

- To enhance the capacity of protected area management to conserve the sanctuary's resources while gaining local cooperation in achieving park management goals.

- To generate extensive support for eco-development initiatives, ensuring that the communities are engaged in sustainable development practices that complement conservation efforts.

10.2 SPECIFIC ISSUES

Several issues need to be addressed to ensure the successful implementation of eco-development initiatives in the buffer zones surrounding Overa-Aru WLS:

- Alternative livelihood strategies for the villagers to reduce their dependency on forest-based resources and mitigate the impact of conservation restrictions on their livelihoods.

- Improvement of living conditions in the villages, particularly in terms of healthcare, education, and access to basic amenities, which would improve the overall quality of life for the local population.
- Mitigating the negative impacts arising from man-animal conflicts, such as damage to crops, livestock, and property, by developing strategies for preventing such incidents and providing compensation where necessary.
- Community development work, which would empower local populations through participatory decision-making and the provision of essential services.
- Non-consumptive use of the protected area through eco-tourism, ensuring that tourism generates economic benefits for the local population without harming the sanctuary's ecosystem.
- Reducing the dependence of villagers on forest resources by promoting sustainable livelihoods and alternative sources of income that are not reliant on the exploitation of the sanctuary's natural resources.
- Sustainable use of forest resources to ensure that any resource extraction within the sanctuary and its buffer zones is done in a manner that supports conservation goals.

10.3 BROAD STRATEGIES

To address the above issues and achieve the desired objectives, the following broad strategies will be implemented:

- **Participatory micro-planning** will be carried out with the active involvement of the village communities, wildlife authorities, and NGOs. This process will help to develop and implement eco-development initiatives that are well-suited to local needs and priorities.
- **Provision of support for village eco-development programs,** which will include setting measurable goals for villagers and ensuring that these programs are aligned with conservation objectives. By doing so, the villagers will be directly involved in strengthening the sanctuary's conservation efforts.
- **Implementation of eco-development activities** that promote alternative livelihoods, sustainable resource use, and community empowerment, while ensuring that these activities contribute to the long-term conservation goals of the sanctuary.

10.4 VILLAGE LEVEL SITE SPECIFIC STRATEGIES

10.4.1 Participatory Micro-planning & Implementation Process

Micro-planning will be supported by teams consisting of protected area personnel, NGOs, and villagers, who will work together to develop detailed and context-specific micro-plans for each village. These plans will cover various aspects, including investment criteria, training programs, and schedules, ensuring that the villagers' needs are met and the set objectives are achieved. The micro-planning process will be dynamic, continuously evolving based on feedback and changing circumstances, with regular assessments to ensure the program stays on track.

10.4.2 Methodology to be Adopted for Eco-development

The methodology for implementing eco-development activities will involve the following steps:
Adhering to government-issued eco-development guidelines, which will ensure that all activities are aligned with national and regional conservation goals.

- Formation of eco-development committees (EDCs) within each village, consisting of representatives from all sections of society, including women, tribal members, backward castes, and local Panchayat members. This will ensure that the planning and decision-making process is inclusive and that all voices are heard.

- The Participatory Rural Appraisal (PRA) technique will be adopted to foster open communication and mutual understanding between the sanctuary management and the local communities. This technique will allow the villagers to identify their needs and resources, while also enabling the sanctuary authorities to share information about conservation priorities.

- The micro-plan format will be simplified to incorporate PRA results in an accessible and understandable way. The micro-plans will clearly outline the objectives, proposed activities, mutual obligations, approved investments, schedules, and mechanisms for monitoring and evaluating the success of the activities.

10.4.3 Methodology to be Adopted for Eco-development

Each village will establish its own Eco-development Committee (EDC), which will be responsible for overseeing the planning and execution of eco-development activities. These committees will be formed to ensure the active participation of all segments of society, especially marginalized sub-groups such as women, Scheduled Tribes, and backward castes. By ensuring broad representation in decision-making, the success of the eco-development program will be greatly enhanced, and the villagers will feel more empowered to take ownership of the conservation and development processes.

10.4.4 Village Institutions & Marginal Sub-groups

To ensure the success and sustainability of the eco-development program, a robust monitoring and evaluation (M&E) system will be established. This system will:

- Continuously assess the progress of eco-development activities and ensure that the initiatives are meeting their objectives.

- Identify any challenges or gaps in implementation and take corrective measures in a timely manner.

- Involve key stakeholders, including protected area personnel, EDC representatives, and NGOs, in the monitoring and evaluation process. Regular reports will be submitted to track progress and inform stakeholders of the status of ongoing activities.

The eco-development activities will include the following:

1. **Detailed socio-economic surveys** will be conducted in the fringe villages to gather data on the local population's needs, livelihoods, and challenges.

2. Identification and development of local organizations and institutions to support eco-development efforts and ensure community ownership of the initiatives.

3. Implementation of support programs, which will include:

- Vaccination programs to improve livestock health.

- Improvement of community facilities, such as healthcare centers, educational infrastructure, and access to clean water.

- Community welfare activities, including support for marginalized groups and individuals.

- Self-employment programs to generate income opportunities for villagers.
- Plantation programs to restore degraded land and enhance the local environment.
- Compensation schemes for crop and livestock damage caused by wild animals, reducing the burden on affected families.
- Miscellaneous income generation schemes designed to diversify sources of income and reduce reliance on forest resources.
- Creation of durable community assets, such as roads, water harvesting systems, and other infrastructure projects that benefit the entire community.

4**. PRA and micro-planning** will serve as the central tools for executing eco-development activities, ensuring that the needs and concerns of the community are integrated into the development process and aligned with conservation goals.

The eco-development program for the Overa-Aru Wildlife Sanctuary will play a crucial role in improving the socio-economic conditions of the surrounding villages while fostering a sense of ownership and responsibility for the conservation of the sanctuary. By addressing the challenges of livelihood, human-wildlife conflict, and environmental sustainability, the program will help create a harmonious relationship between the local communities and the sanctuary's wildlife management authorities.

Chapter 11
Research, Monitoring & Training



11.1 RESEARCH AND MONITORING

India's rich biodiversity is a cornerstone of its natural heritage, requiring substantial and sustained efforts for conservation. With increasing threats to wildlife and ecosystems, it becomes critical to adopt effective conservation strategies that are informed by accurate, up-to-date scientific data. The National Wildlife Action Plan (NWAP) recognizes the importance of this and recommends the establishment of a representative network of protected areas to ensure the long-term survival of species and ecosystems. In line with this, the management of protected areas must be equipped with detailed and reliable data on park resources, ongoing ecological processes, the nature of threats to these ecosystems, and potential opportunities for improvement. Such data forms the foundation for making informed decisions and adopting effective strategies to combat challenges in park management.

Research and monitoring are indispensable for improving the conservation and management of biodiversity in these areas. A well-coordinated research and monitoring strategy enables better decision-making, enhances the integrity of ecosystems, reduces management costs, and addresses both existing and emerging threats to wildlife. Furthermore, it plays a critical role in enhancing public awareness and increasing community participation in conservation efforts, which is crucial for the long-term sustainability of these initiatives.

To achieve these goals, it is essential that a robust information base is developed. The management of the sanctuary can greatly benefit from detailed research in several key areas, including improving benchmark knowledge, assessing threats, evaluating wildlife populations, and enhancing ecosystem services.

11.1.1 Overview of Research & Monitoring Activities

11.1.1.1 Research

Although the Overa-Aru Wildlife Sanctuary (WLS) has the potential to become an ideal location for scientific research due to its unique biodiversity, the area has been largely neglected by research institutions over the years. The political instability in the state of Jammu and Kashmir has been a significant barrier to conducting research in this region, which has led to inadequate scientific data on various management aspects. This lack of research presents a substantial challenge to effective decision-making and park management. Many areas within the sanctuary, especially those involving ecological processes, species health, and human-wildlife conflict, have not yet been thoroughly studied. A critical knowledge gap exists in understanding the socio-economic conditions of the local communities living around the sanctuary. The absence of baseline data regarding the local population's reliance on forest resources further hinders the formulation of targeted conservation strategies.

Research is vital to understanding the complex interactions between wildlife, habitat, and human activities. It can help assess the impacts of human encroachment, poaching, climate change, and other threats to wildlife, and can inform management decisions on habitat restoration, species protection, and eco-development initiatives for local communities. Establishing a robust research agenda for the sanctuary will fill these gaps and provide the necessary information to guide conservation efforts.

11.1.1.2 Monitoring

At present, the primary focus of monitoring activities in Overa-Aru WLS has been the estimation of wildlife populations, particularly the Hangul (Kashmir stag), which is an endangered species in the region. However, this monitoring is limited and does not encompass the full spectrum of wildlife and ecological parameters required for effective park management. The sanctuary management has identified several urgent areas that require immediate attention. These include monitoring the population dynamics of key species such as the Hangul, leopard, and Asiatic black bear, as well as tracking the availability of food resources and identifying emerging threats like poaching, habitat degradation, and human-wildlife conflict.

Unfortunately, despite the recognition of these monitoring needs, no substantial efforts have been initiated to address these gaps. A comprehensive monitoring system that includes regular population surveys, habitat assessments, and an understanding of human-wildlife interactions will significantly improve management decisions and lead to more targeted conservation actions. Furthermore, this monitoring system should involve both short-term assessments and long-term studies to identify trends and emerging issues.

11.1.1.3 Research Infrastructure & Present Status

The current state of research infrastructure at the Overa-Aru WLS is woefully inadequate. The lack of basic research facilities such as accommodation for researchers, field equipment, laboratory spaces, a museum for specimen storage, and even vehicles for field surveys hampers the ability to conduct research effectively. Without such infrastructure, it is nearly impossible to carry out systematic and detailed studies that are necessary for informed management decisions.
To address these limitations, the sanctuary needs to invest in establishing essential research facilities. This includes building dedicated research stations, providing field equipment, setting up laboratories for data analysis and specimen processing, and ensuring that there is adequate housing and support for researchers and field staff. Furthermore, establishing a well-equipped library and data management system will allow for better storage and retrieval of research data, helping to maintain a continuous flow of information for conservation efforts.

11.1.1.4 Research Advisory Committee

In order to streamline and guide the research efforts at the Overa-Aru WLS, it is essential to establish a Research Advisory Committee (RAC). The committee would play a pivotal role in advising the sanctuary management on various research-related matters, including the evaluation of research proposals, setting priorities for research, and ensuring that studies align with conservation objectives. Research permissions should be granted based on thorough evaluation of proposed projects by the RAC, ensuring that each project is relevant, effective, and adheres to scientific standards.

Composition of the Research Advisory Committee:

1. Chief Wildlife Warden (PCCF) – Chairman
2. Regional Wildlife Warden (Conservator of Forest) – Member
3. Two eminent scientists specializing in wildlife, ecological research, or biosciences from institutions like the Wildlife Institute of India (WII), the Indian Council of Forestry Research and Education (ICFRE), SKUAST-K (faculty of Forestry &Wildlife) – Members
4. One eminent scientist from Kashmir Central University – Member
5. One scientist with experience in research within the Overa-Aru WLS landscape – Member
6. Manager of Overa-Aru WLS – Member Secretary

The committee will not only evaluate research proposals but also provide guidance on the implementation of research findings and ensure that the sanctuary's research program contributes directly to conservation goals.

11.1.1.5 Research Funding

Adequate funding is critical to the success of any research program. To support the establishment of a thriving research ecosystem within the sanctuary, it is essential to allocate funds for various aspects of research, including field research, infrastructure development, and the coordination of research activities. The funding should prioritize:

- **Field Research and Monitoring:** Allocating funds for regular wildlife surveys, ecological assessments, and population monitoring.
- **Strengthening Research Infrastructure:** Investing in the development of laboratories, field stations, equipment, and staffing to support ongoing research.
- **Research Coordination Costs:** Providing financial support for the coordination of research activities, including meetings, project management, and communication between different stakeholders.

11.1.1.6 Identification of Research Thrust Areas and Research Topics

The sanctuary should focus its research efforts on several priority areas that are critical for conservation and effective management. These areas include:

A) Ecology (Including Habitat)

1. Biodiversity of Overa-Aru WLS – Understanding the overall biodiversity of the sanctuary and how various species interact within the ecosystem.
2. Vegetation Community Structure – Investigating the plant species composition and how it supports herbivores, carnivores, and other wildlife.
3. Habitat Ecology of Key Species – Studying the habitat needs and preferences of species like the Himalayan grey langur, common leopard, brown bear, and musk deer.
4. Population Ecology of Large Mammals – Understanding the population dynamics of species like the Asiatic black bear and common leopard to ensure their long-term survival.

B) Wildlife Population Surveys

Refining wildlife population estimation methods to ensure that estimates are accurate, reliable, and provide sufficient detail to guide management decisions.

C) Wildlife Disease Research

Conducting studies on wildlife diseases, zoonotic diseases, and livestock diseases that impact wildlife populations. Creating a database to track disease outbreaks and their impacts on species health.

D)Socio-Economic Studies

Researching the socio-economic status of local communities and understanding their reliance on sanctuary resources. This will help reduce human-wildlife conflict and develop strategies to promote coexistence.

E) Miscellaneous Research Areas

1. Satellite telemetry to monitor landscape use by Hangul, black bear and Common Leopards
2. Long-term studies on man-animal conflict
3. Impacts of tourism on park ecosystems
4. Effects of pesticide use in surrounding agricultural areas on wildlife
5. Studies on small mammals and insects to understand community structures

11.1.1.7 Management Information System (MIS)

The sanctuary lacks a formalized Management Information System (MIS), which leads to inefficiencies, delays, and a lack of coordination in day-to-day operations. The absence of a well-documented and organized information system is a major challenge for decision-making and effective management. Key problems due to the absence of an MIS include slow data retrieval, repetitive manual data processing, poor communication flow, and inconsistent information transmission.
To overcome these challenges, the development of a comprehensive MIS is essential. This system should be designed to collect, store, and analyze critical data on wildlife populations, ecological changes, legal matters, and socio-economic conditions in the surrounding areas. The MIS should also support GIS-based inventory and management of resources, and integrate monitoring and evaluation mechanisms to improve long-term planning and decision-making.

11.2 TRAINING

Wildlife management is a specialized science that requires staff to be trained in various disciplines, including conservation, law enforcement, and ecological research. The complexity of modern wildlife management demands that the staff be well-equipped with the latest skills and knowledge. Regular training and skill development programs for different levels of staff are essential for ensuring that they can effectively carry out their responsibilities.

Training programs should cover:

- Wildlife and Forest Protection Laws: Ensuring that staff is familiar with legal frameworks such as the Wildlife Protection Act, 1972, and the Forest Conservation Act.
- Handling Modern Arms and Combat Training: Providing practical training in the use of modern equipment and combat techniques.
- Management of Man-Animal Conflict: Developing strategies for handling human-wildlife conflict in and around the sanctuary.
- Ecology and Population Biology: Understanding the dynamics of species populations and their habitats.
- First Aid and Emergency Response: Ensuring staff can handle medical emergencies in the field.
- Basic Wildlife Forensics and Evidence Handling: Teaching staff to collect and preserve evidence related to wildlife crimes.

Additionally, field-level training courses should be organized regularly, and higher-level staff should have access to training at specialized institutions, both within India and internationally, to stay updated on global best practices in wildlife management.

11.2.1 Establishment of a Training Centre

To ensure long-term sustainability and continuity in staff development, it is crucial to establish a dedicated training center at the sanctuary headquarters. This centre will serve as a hub for ongoing staff education, skill development, and capacity building. The establishment of a well-equipped hostel with facilities for at least 5 staff members will ensure that the centre can accommodate trainers and trainees alike. The center will be a crucial part of ensuring the sustainability of wildlife management efforts and can serve as a model for other protected areas in the region.

Chapter 12
The Budget



Overa-Aru WLS gets funds from state government under various Plan and Non Plan budgets. The budgeting for plan has been done for the initial five years. After five years based on the impact of management prescriptions and local conditions, necessary changes in the management may be incorporated and the budgeting then will be accordingly designed for the future implementation of the plan. The major expenditure for maintenance of the WLS and other Anti-pouching activities are incurred from the fund under following Plan and Non-Plan Budgets:

12.1 PLAN

12.1.1 Central Sector

12.1.2 State Sector

1. Development and management of protected area.
2. Control of pouching.

Although the budget seems to be a big budget, some portion of amount is spent for the salaries of staff and wages for anti-pouching works. There is a scope for the developmental works and absolutely necessary logistic needs. This often results in accrual of huge amount as arrear for procurement of supplies and maintenance cost of assets on credit in effective protection of the sanctuary.

12.2 TIMELY ALLOCATION AND RELEASE OF FUNDS AND PLOUGHING BACK OF REVENUE GENERATED BY TOURISM

Every year the sanctuary envisages an Annual Plan of Operation (APO) based on various strategies proposed in the management plan. The grant is also sanctioned by the state government. However, the timely allocation of the funds usually does not take place. Sometimes it reaches late and as a result, there are difficulties in carry out the work allotted for that year. Several strategies therefore are suggested to streamline the funding processes which are as following:

Budget for 10 Year Plan Tenure (Amount in INR Lacs)															
S. No	Activity	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total (1st 5 Yrs)	6th Year	7th Year	8th Year	9th Year	10th Year	Total 2nd 5 Yrs	Grand Total	% of Grand Total
1	Habitat Management	81.1	64.99	67.58	72.05	75.28	361.000	64.22	79.78	72.13	74.91	68.98	360.020	721.020	**21.37**
2	Protection & Surveillance	37.41	26.14	35.82	26.14	24.39	149.900	28.14	23.82	26.14	28.64	32.46	139.200	289.100	**8.57**
3	Infrastructure Development	78.000	56.000	84.000	40.000	51.000	309.000	47.000	48.000	77.000	48.000	77.000	297.000	606.000	**17.97**
4	Human-wildlife Conflict Management	41.410	39.910	56.660	40.160	59.660	237.800	40.160	42.160	57.660	42.160	40.660	222.800	460.600	**13.65**
5	Wildlife Health Management	22.500	22.000	19.500	19.000	19.500	102.500	52.500	24.000	23.500	21.500	24.000	145.500	248.000	**7.352**
6	Eco-Development	10.000	15.000	15.000	10.000	10.000	60.000	10.000	10.000	10.000	10.000	10.000	50.000	110.000	**3.26**
7	Publicity & Awareness	10.750	10.750	10.750	10.750	10.750	53.750	10.750	10.750	10.750	10.750	10.750	53.750	107.500	**3.19**
8	Research & Monitoring	22.500	17.500	22.500	17.500	15.500	95.500	19.500	16.500	17.500	15.500	14.500	83.500	179.000	**5.31**
9	Eco-tourism	99.000	101.000	80.500	56.500	75.500	412.500	24.000	63.500	53.500	18.000	80.500	239.500	652.000	**19.33**
	Total	**402.67**	**353.29**	**392.31**	**292.10**	**341.58**	**1781.95**	**296.27**	**318.51**	**348.18**	**269.46**	**358.85**	**1591.27**	**3373.22**	**100.00**

1. HABITAT MANAGEMENT																							
Micro activity	Unit	Rate	Year-wise Physical & Financial Targets (Amount in Rs Lacs)																				
		(Rs.)	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10		Total 10 Yrs	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Plantation of Fruit-bearing Species	No	23.17	6750	1.56	5625	1.30	9950	2.30	6950	1.61	9950	2.30	5625	1.30	9950	2.30	6950	1.61	9950	2.30	9950	2.30	**81650**	**18.88**
Plantation of Conifer saplings	No	29.34	2000	0.59	0	0	2500	0.73	0	0	0	0	2500	0.59			2000	0.59					**9000**	**2.50**
Dibbling of Horse Chestnut, Oak	No	7.18	10000	0.72	10000	0.72	10000	0.72	10000	0.72	10000	0.72	10000	0.72	10000	0.72	10000	0.72	10000	0.72	10000	0.72	**100000**	**7.20**
Formation of Barbed Wire Enclosures on Angle Iron Posts	Rft	243	1800	4.37	1500	3.65	2650	6.44	1850	4.50	2650	7.20	1500	3.65	2650	7.20	1850	4.50	2650	7.20	2650	7.20	**21750**	**55.91**
Cost of Plantation of Fruit Bearing Species	No	7.44	6750	0.50	5625	0.42	9950	0.74	9950	0.74	9950	0.74	5625	0.42	9950	0.74	6950	0.52	9950	0.74	9950	0.74	**84650**	**6.30**
Maintenance of plantation closures by way of deweeding / grasses	LS			2.00		2.00		1.50						2.00		2.00		1.50				2.00		**13.00**
Eradication of weeds and unpalatable grasses in the wildlife habitat and corridors	LS			1.50		2.00		1.50		2.00		2.50		2.00		2.50		2.00		2.00		2.00		**20.00**
Bio fencing to augment artificial fencing	LS			2.50		2.50		2.50		2.00		2.50		2.00		2.00		2.50		2.50		3.00		**24.00**

Plantation of indigenous grass species such as red and white clover	LS			4.00		3.00		4.00		4.00		4.00		4.00		3.00		3.00		3.00		3.50		**35.50**
Check dams in DRSM	Cu ms	1099	110	1.21	145	1.59	170	1.87	150	1.65	110	1.21	140	1.54	160	1.76	110	1.21	120	1.32	110	1.21	**1325**	**14.57**
Crate Wire Bunds	Cu ms	1700	95	1.62	110	1.87	120	2.04	170	2.89	110	1.87	180	3.06	195	3.32	120	2.04	170	2.89	110	1.87	**1380**	**23.47**
Pasture Development		LS		5.50		5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50		**55.00**
Making of New Fire lines	Km	29250	5	1.46	3	0.877	4	1.17	3	0.877	4	1.17	3	0.877	4	1.17	3	0.877	4	1.17	3	0.877	**36**	**10.53**
Maintenance of old fire lines			5	0.75	5	0.75	5	0.75	5	0.75	5	0.75	5	0.75	5	0.75	5	0.75	5	0.75	5	0.75	**50**	**7.50**
Engagement of need based labourers for firefighting operations	MD	311	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	**15000**	**46.60**
Provision for part-removal of fallen, dried, decaying timber to control fire outbreak & spread		LS		1.50		1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		**15.00**
Running of Fire-fighting Control Rooms (logistics & Staff Amenities)		LS		1.50		1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		**15.00**
Construction of new fire watchtowers in fire prone areas	LS	---	1	8.00					1	8.00	1	8.00			1	8.00	1	8.00	1	8.00				**48.00**
Control burning by way of engagement of labour force	MD	311	1333	1.156	1333	1.156	1333	1.156	1333	1.156	1333	1.156	1333	1.156	1333	1.156	1333	1.156	1333	1.156	1333	1.156	**13330**	**11.56**
Conducting of awareness programmes / seminars to educate people especially living near forests with regard to Dos and Don'ts while forest fires	LS			4.00		4.00		4.00		4.00		4.00		4.00		4.00		4.00		4.00		4.00		**40.00**
Purchase of firefighting suits	LS			2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		**20.00**
Purchase of firefighting equipment's	LS			7.50		7.50		7.50		7.50		7.50		7.50		7.50		7.50		7.50		7.50		**75.00**
Providing of Supplementary Food during Leans		LS		5.00		7.00		5.00		6.00		5.00		5.00		6.00		5.00		6.00		5.00		**55.00**
Providing of salt/mineral licks		LS		3.50		3.50		3.50		3.50		3.50		4.50		4.50		4.50		4.50		5.00		**40.50**
Making of Water Holes	No	100000	4	4.000	6	6.000	5	5.000	5	5.000	6	6.000	4	4.000	6	6.000	5	5.000	4	4.000	5	5.000		**50.00**
Preparation of Management Plan for Overa Aru Wildlfie Sacnctury 2025-2035	0	0	1	10.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**10.00**
Total				**81.096**		**64.993**		**67.576**		**72.053**		**75.276**		**64.223**		**79.776**		**72.133**		**74.906**		**68.983**		**721.015**

2. PROTECTION & SURVEILLANCE

Micro activity	Unit	Rate (Rs.)	Year-wise Physical & Financial Targets																				Total 10 Yrs	
			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10			
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Correction and re-fixing of boundary pillars	No.		64	3.52			50	2.50			50	2.50			50	2.50			50	2.50				**13.52**
Consolidation of Boundaries by Chain-link Fencing	Rft	1150	500	5.75			450	5.175			500	5.75			450	5.175					550	6.32	**2450**	**28.17**
Digitization of records		LS		10.00		10.00		10.00		10.00				10.00				10.00		10.00		10.00		**80.00**
Construction of Patrolling Paths		LS		2.00				2.00						2.00									**0**	**6.00**
Deployment of Seasonal Labors to assist the staff in Surveillance	MD	311	1733	5.39	1733	5.39	1733	5.39	1733	5.39	1733	5.39	1733	5.39	1733	5.39	1733	5.39	1733	5.39	1733	5.39	**8665**	**53.90**
Procurement of Protection/Surveillance Equipment (Binoculars, Search Lights, Field Gear, Tents, Sleeping Bags)		LS		7.5		7.5		7.5		7.5		7.5		7.5		7.5		7.5		7.5		7.5		**75.00**
Running of Anti-poaching/Anti-grazing Camps) & Contingencies				2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		**25.00**
Law Charges & Documentation				0.75		0.75		0.75		0.75		0.75		0.75		0.75		0.75		0.75		0.75		**7.50**
Total				**37.41**		**26.14**		**35.82**		**26.14**		**24.39**		**28.14**		**23.82**		**26.14**		**28.64**		**32.46**		**289.09**

3. INFRASTRUCTURE DEVELOPMENT

Micro activity	Unit	Rate	Year-wise Physical & Financial Targets																				Total 10 Yrs	
			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10			
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Nature Interpretation Centre	No.	LS															0.50	40.00			0.50	40.00		**80.00**
Construction of Wildlife Warden Office	No.		0.50	50.00			0.5	50.00																**100.00**
Range Office - 2 No.	No.								1	18.00	1	18.00												**36.00**
Staff Quarter (block Officer)	No.	LS			1	16.00	1	16.00											1	16.00				**48.00**
Guard Hut	No.	LS							1	15.00	1	15.00			1	15.00					1	15.00		**60.00**
Foot Bridge	No.	LS	1	4.00					1	4.00			1	4.00			1	4.00	1	4.00	1	4.00		**24.00**
Equipment (Office/Field/Photographic)		LS		3.00		3.00		3.00		3.00		3.00		3.00		3.00		3.00		3.00		3.00		**30.00**
Ticket Both							1	15.00					1	15.00										**30.00**
Cefeteria													1	25.00					1	25.00				**50.00**
Kiosk					1	15.00					1	15.00									1	15.00		**45.00**
Inspection hut			0.5	21.00	0.5	22.00									0.50	30.00	0.50	30.00						**103.00**
				78.00		**56.00**		**84.00**		**40.00**		**51.00**		**47.00**		**48.00**		**77.00**		**48.00**		**77.00**		**606.00**

4. HUMAN-WILDLIFE CONFLICT

Micro activity	Unit	Rate	Year-wise Physical & Financial Targets																					
			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10		Total 10 Yrs	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Procurement of equipment for chemical restrain (Tranquillizer Guns, Accessories, Drugs)		LS		15.50		15.50		15.50		15.50		15.50		15.50		15.50		15.50		15.50		15.50		155.00
Procurement of equipment for physical-restrain (Cages, Nets, Ladders, Deterrents, Ropes, Search Lights, Night Vision)		LS		8.00		8.00		8.00		8.00		8.00		8.00		8.00		8.00		8.00		8.00		80.00
Purchase of Vehicle to deal with Human Wildlife Conflict Situations		LS					1	15.00			1	18.00					1	18.00					0	51.00
Provision for Fuel for Rescue Vehicles		LS		1.75		1.75		2.00		2.00		2.00		2.00		2.50		2.50		2.50		2.50		21.50
Provision for hiring of private transport for attending man-wildlife Conflict situations		LS		2.50				2.50				2.50				2.50				2.50				12.50
Deployment of personnel to assist the regular staff in tackling man-wildlife conflict	MD	311	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	1500	4.66	7500	46.60
Running of Control Rooms/Camps (Provision for logistics)		LS		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		20.00
Purchase of low-cost sensors for to mitigate Human Animal interaction				7.00		7.00		7.00		7.00		7.00		7.00		7.00		7.00		7.00		7.00		70.00
Purchase of Bikes to deal with Human Wildlife Conflict Situations/anti-poaching and anti-grazing and anti-smuggling activities					1	1.00			1	1.00			1	1.00							1	1.00		4.00
TOTAL				41.41		39.91		56.66		40.16		59.66		40.16		42.16		57.66		42.16		40.66		460.60

5. WILDLIFE HEALTH MANAGEMENT

Micro activity	Unit	Rate	Year-wise Physical & Financial Targets																					
			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10		Total 10 Yrs	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Disease investigation & collection of baseline data		LS		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		50.00
Vaccination of domestic livestock of nomadic herders		LS				2.50				2.50						2.50						2.50		10.00
Procurement of Drugs & Medicines		LS		4.00		4.00		4.00		4.00		5.00		6.00		6.00		6.00		6.00		6.00		51.00
Following trainings for front line staff: a) Use of tranquilizing guns b) Intelligence gathering, c) Wildlife crime detection, d) Preparation of offence reports, e) Wild plant and animal identification, f) Unarmed combat and survival skills g) Handling of Man-Animal Conflict situations, h) Swimming, driving and first aid, i) Use of GPS and making of KMZ, KML, polygons, tracks & way points, j) Damage / poaching / grazing / encroachment cases, k) Fire fighting	LS			7.00		5.00		3.00		2.00		2.00		5.00		5.00		5.00		4.00		4.00		42.00
Procurement of field equipment's	LS			4.00		3.00		5.00		3.00		5.00		4.00		3.00		5.00		4.00		4.00		40.00
Providing of field gears to front line staff	LS			2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		25.00
Contruction of Rescue centre													1.00	30.00										30.00
				22.50		22.00		19.50		19.00		19.50		52.50		24.00		23.50		21.50		24.00		248.00

6. ECO-DEVELOPMENT																								
Micro activity	Unit	Rate	Year-wise Physical & Financial Targets																					
			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10		Total 10 Yrs	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Distribution of fuel-efficient devices in the fringe villages (LPG connections, Solar lights, Pressure cookers)		LS		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		**50.00**
Livelihood development		LS		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		**50.00**
Conducting of awareness & Capacity Building workshops in fringe communities		LS				5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		**45.00**
				10.00		**15.00**		**15.00**		**10.00**		**10.00**		**10.00**		**10.00**		**10.00**		**10.00**		**10.00**		**110.00**

7. AWARENESS & PUBLICITY																								
Micro activity	Unit	Rate	Year-wise Physical & Financial Targets																					
			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10		Total 10 Yrs	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Provision for Equipping the NIC		LS		1.50		1.50		1.50		1.50		1.50		1.50		1.50		1.50		1.50		1.50		**15.00**
Guided Tours & Awareness Workshops for Students/ Locals		LS		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		**10.00**
Printing of Publicity material (Pamphlets, Posters, Calendars, Souvenirs, Stickers, pocket books)		LS		4.00		4.00		4.00		4.00		4.00		4.00		4.00		4.00		4.00		4.00		**40.00**
Observation of Foundation Day & Wildlife Week		LS		1.75		1.75		1.75		1.75		1.75		1.75		1.75		1.75		1.75		1.75		**17.50**
Hoardings & Signages		LS		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		**25.00**
				10.75		**10.75**		**10.75**		**10.75**		**10.75**		**10.75**		**10.75**		**10.75**		**10.75**		**10.75**		**107.50**

8. RESEARCH & MONITORING																								
Micro activity	Unit	Rate	Year-wise Physical & Financial Targets																					
			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10		Total 10 Yrs	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Census of musk deers/Hangul/Flying Squirrel etc.				5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		50.00
Census of leopard and black bears				1.50		1.50		1.50		1.50		1.50		1.50		1.50		1.50		1.50		1.50		15.00
Purchase of census / survey equipment's				6.00		6.00		6.00		6.00		6.00		6.00		6.00		6.00		6.00		6.00		60.00
Establishment of Research & Training Centre																								
Maintenance of research and training centre in Overa-Aru WLS				10.00		5.00		10.00		5.00		3.00		7.00		4.00		5.00		3.00		2.00		54.00
				22.50		**17.50**		**22.50**		**17.50**		**15.50**		**19.50**		**16.50**		**17.50**		**15.50**		**14.50**		**179.00**

9. ECO-TOURISM																								
Micro activity	Unit	Rate	Year-wise Physical & Financial Targets																					
			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10		Total 10 Yrs	
			Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
Training of Local Youth as Nature/Eco-guides								2.50		2.50		2.50				2.50		2.50				2.50		**15.00**
Procurement of Camping Gear (High end Tents, Sleeping Bags)		LS		8.00		8.00		8.00		8.00		8.00		8.00		8.00		8.00		8.00		8.00		**80.00**
Construction of Souvenir Stall		APE					1	12.00			1	12.00												**24.00**
Construction of View Points using locally available environment friendly material		LS			1	7.00	1	7.00			1	7.00			1	7.00	1	7.00			1	7.00		**42.00**
Theme Based information displays in tourism and awarness zones and development of Tourist information System (TIS)				20.00		50.00				10.00								5.00				5.00		**90.00**
Conducting of seminars, workshops and publish report annually				3.00		3.00		3.00		3.00		3.00		3.00		3.00		3.00						**24.00**
Development of website for WL sanctuary				8.00				8.00										8.00				8.00		**32.00**
Construction of toilet blocks, Ecotourism Cefeteria at feasible locations																10.00		10.00				20.00		**40.00**
Awarness camps for schools and colleges						3.00				3.00		3.00		3.00		3.00								**15.00**
Creation of professional short movies and documentaries based on nature education				3.00		3.00		3.00		3.00		3.00		3.00		3.00		3.00		3.00		3.00		**30.00**
Installation of CCTV and metal detectors				2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		**25.00**
Development of website for information decimation and online permission				2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		**20.00**
Conducting of seminars, workshops and publish report annually				2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		2.50		**25.00**
Theme based information displays in tourism and awareness zones				30.00		0.00		30.00				30.00		0.00										**90.00**
Establishment of Souvenir shop cum cafeteria in tourism zone for display of information of endemic wildlife				20.00		20.00				20.00						20.00						20.00		**100.00**
				99.00		**101.00**		**80.50**		**56.50**		**75.50**		**24.00**		**63.50**		**53.50**		**18.00**		**80.50**		**652.00**

FORM 1

Restoration of habitat: Control of regeneration of woody species in grasslands

S. No.	Location and name of site	Year	Extent of area (ha)	Species controlled	Operation	Total cost	Cost per ha
1	2	3	4	5	6	7	8

Note: Location : By compartment, site name, etc.

Species controlled : List the species.

Operation : Uprooting, cutting, burning etc. manual or mechanized methods.

Remarks : The measure of success, suitability of methods, problems encountered.

FORM 2

Restoration of habitat: Prescribed burning

S. No.	Location and name of site	Year	Extent of area (ha)	Area treated (ha)	Period	Total cost	Cost per (ha)	Remarks
1	2	3	4	5	6	7	8	9

Note: Location : By compartment, site name, etc.

Period : Date of starting and completion

Remarks : Mention resultant structure e.g. a mosaic, & burnt, % intact

Problems encountered in conducting the operation – e.g. fire escape.

FORM 3

Restoration of habitat: Soil conservation measures – initial operations and subsequent maintenance

S. No.	Location and name of site	Year	Extent of area (ha)	Area treated (ha)	Operations	Total cost	Cost per (ha)	Remarks
1	2	3	4	5	6	7	8	9

Note: Location : By compartment, site name, or landmarks

Extent of area : Total area identified for such treatment. In case of streams or gullies, the length involved.

Area Treated : If linear feature then quote length; otherwise area.

Operation : Structures involved such as gully plugs, trench-cum-mound, terracing, spurs and bunds etc. quote quantity nos. and cmt. Of earthwork.

Remarks : Mention if initial work or maintenance.

FORM 4

Restoration of habitat: Planting, sowing – initial operation

S. No.	Location	Year	Extent of area (ha)	Species	Planting stock	Spacing	Operations	Total cost	Cost per (ha)	Remarks
1	2	3	4	5	6	7	8	9	10	11

Note: Location : By compartment, or landmarks and describe the site factors e.g. vegetation cover, soil, perturbations etc.

Planting Stick : Kind and condition e.g. root shoot, naked root seedling, seedlings in polythene bags, age or average size.

Operation : Mention site preparation if any, crowbar holes, pits and pit size, trench, seed sowing (rate), tussock planting (norms), protection measures.

Remarks : Mention operational problems if any.

FORM 5

Restoration of habitat: Response of Planting, sowing and subsequent operations

S. No.	Location	Year	Extent of area (ha)	Species	Survival %	Casualty replacement	Operations	Total cost	Cost per (ha)	Remarks
1	2	3	4	5	6	7	8	9	10	11

Note: Location : By compartment, or landmarks.

Casualty replacement : Mention planting stock by species, number and kind (polythene bag, root shoot, rhizome etc.)

Operation : Planting, sowing technique, protection measures.

Remarks : Operational problems, protection problems, any other useful information.

Assess and mention survival percentage and growth before taking up casualty replacement.

FORM 6

Restoration of habitat: Area under protection / closure

S. No.	Location and name of site	Year	Extent of area (ha)	Description of site	Regulations or protection measures	Response	Remarks
1	2	3	4	5	6	7	8

Note: Location : By compartment, or landmarks.

Description of site : % tree, shrub, ground cover, main species, impact of factors causing perturbations.

Regulations & : Social fencing, power or other kind of fencing, enforced protection by patrolling, fire protection Protection measures etc.

Response : To be recorded annually. Consider trend of regeneration, vegetation cover, change in structure and composition, Wildlife use index.

Remarks : State problems or any other useful information, including alternatives if area being used by people for specific purposes

FORM 7

Animals: Measuring trends in populations

S. No.	Species	Population estimation methodology	Adult		Sub Adults		Yearlings	Fawns	Cubs	Total	Remarks
			Male	Female	Male	Female					
1	2	3	4	5	6	7	8	9	10	11	12

Note: Population Estimation : e.g. pugmark, line transect, scan, roadside counts etc. area covered, sampling intensity, data treatment, extrapolation where involved. In case of indices of density or dung count mention those figures under the remarks column, use details as pertinent. Describe age classes for each species.

Remarks : Operational problems, protection problems, any other useful information. Indices of density or dung count details to be recorded here.

FORM 8

Animals: New Records

S. No.	Species	Location	Year	How discovered	Details of number, age, sex	Habitat description	Remarks
1	2	3	4	5	6	7	8

Note: Animals will include vertebrates and invertebrates.

How discovered : Sighting, dead specimen, reliability of sighting, captured specimen, incontrovertible other evidence.

Number, age, sex etc. : As applicable to vertebrates

Habitat description : Broad habitat description such as vegetation, and elements such as water, large old trees, den trees, snags

down log material. Use microhabitat descriptors only if relevant.

Remarks : Any other useful information.

FORM 9

Animals: Mortality other than that attributable to an offence

S. No.	Species	Location	Year	Sex	Number	How discovered	Cause of mortality	Remarks
1	2	3	4	5	6	7	8	9

Note: Location : By compartment, landmark etc.

Sex and age : As per parameters for age class. Sex, if possible to identify.

How discovered : Carcass, complete or partial. Skull or any other recognizable remains collected where only some remains of an animal are found.

Cause of mortality : If known e.g. territorial fight, accident, possible disease (following postmortem results), old age, cause difficult to determine, predation etc.

Remarks : Any other useful information.

FORM 10

Animals: Mortality attributed to poaching or an act of vandalism

S. No.	Species	Location	Cause of mortality Number, sex, age class	Remarks
1	2	3	4	5

Note: Location : By compartments, or landmarks

Cause of mortality : Whether the animal was intact or remains found, article or trophy to be recorded. Cause if known

e.g. animal sanred, shot or poisoned etc.

Remarks : Any other useful information, especially matters of illegal trade.

FORM 11

Animals: Predation on domestic livestock by wild carnivores

S. No.	Range	Month	Category of livestock killed	Location	Numbers	Compensation paid (Rs.)	Carnivore involved	No. of cases undecided	Remarks
1	2	3	4	5	6	7	8	9	10

Note: Category of livestock killed : Buffalo, cow, bullock (adult, sub-adult, calf), camel, horse, donkey, sheep, goat, poultry etc.

Location : Comptt. No. or landmark where killed and the village of the owner.

Carnivore involved : Indicate species responsible for the kill of identity is confirmed.

No. of cases undecided : Either in progress or dropped.

Remarks : Record observations like – attended or unattended animal, killed in forest or waterhole or in the

pen/shed. Field and whether kill was in area closed to livestock trespass.

FORM 12

Animals: Killing of a human by wildlife or injury caused

S. No.	Range	Month	No. of incidents	No. of people killed age and sex	Location, circumstances and species	No. of people injured, age and sex	Location circumstances and species	Compensation (Rs.)
1	2	3	4	5	6	7	8	9

Note: Location, circumstances and species : Location by comptt no. the village to which the person belongs and a description of

the site and activity such as – open grassy patch, cutting grass, or under a mahua tree collecting flowers etc.

Mention species on proof.

FORM 13

Animals: Wildlife damage to private or public property

S. No.	Range	Month	The category of property	Extent of damage	Species involved and number	Remarks
1	2	3	4	5	6	7

Note: Location : By comptt. No. village survey no. name of village or landmark.

Category of property : e.g. agriculture filed – wheat, huts in a village, any kind of vehicle.

Extent of damage : Crop damage by area, estimated loss of produce and monetary loss. Similar yardsticks for other

items like partial or total destruction of huts and belongings with estimated monetary loss.

Remarks : Any relevant information or circumstances e.g. a wild elephant was provoked by people.

FORM 14

Grazing of domestic livestock

Year

S. No.	Grazing unit no.	List of villages in the unit	Village wise listed population of cattle	Capacity of the unit (cattle units) and number of cattle grazed	Total cattle units grazed		Remarks
					Legal	Illegal	
1	2	3	4	5	6	7	8

Note: Remarks : (i) Mention number of cattle immunized against FMD, RP, anthrax as the case might be and

the number of cattle without the prophylactic cover.

(ii) If grass is allowed to be cut for cattle being stall-fed, mention the village and number of such cattle.

FORM 15

Inter-agency programmes: Agencies and schemes (Government)

Year

S. No.	Name of agency	Central or State	Number and name of scheme operated	Physical and financial targets		Area and location	Remarks
				Given	Achieved		
1	2	3	4	5	6	7	8

Note: Name of the scheme : To include all activities in the Govt. sector. I.e. Construction, use of resources, development

processes etc. mention names of schemes, projects or normal operations. This will address all departments in the management area and those activities outside but capable of influencing the management area.

Remarks : Success, adverse impacts, incompatibility with PA management objectives or failures should be mentioned.

Detailed notes to go in the PA book

FORM 16

Programmes of NGOs

Year

S. No.	Name of agency	HQ Location	Nature of the scheme operated	Physical and financial targets		Area and location	Remarks
				Given	Achieved		
1	2	3	4	5	6	7	8

Note: Remarks : Success or adverse impacts, incompatibility with PA management objectives or failures should be

mentioned. Detailed notes to go in the PA book. These programmes and activities could be within the management area or those that are outside the management area but are capable of influencing the state of the management area – either complementing the efforts or adversely impacting

FORM 17

Construction/maintenance of infrastructure: roads and bridges (*existing / new)

Year

S. No.	Category	Range	Surface	Name or number	Length covered (km)	Cross drainage works. Bridges with types	Total cost and status
1	2	3	4	5	6	7	8

Note: **Category of road** : National highway, State Highway, district road etc. public road or open only to managers should be stated

Surface type : Black topped, metal, earth etc. Applies to roads.

Name or number : As the case may be.

Cross drainage type : e.g. for culverts – box, hume pipe culverts etc.

Bridge type : Wooden trestle, suspension, metal multi span, masonry arch etc.

Status : Work completed or ongoing. State also the agency responsibility; state whether operational or non operational.

* : Strike out which is not applicable. Use separate forms as required; for construction and for maintenance details.

FORM 18

Construction*/maintenance* of infrastructure: buildings (*existing / new)

Year

S. No.	Range	Name of the building	Location	Type of construction	Numbers	Total cost	Status
1	2	3	4	5	6	7	8

Note: Nature of the building: e.g. residential (guard), office, store, chauki, watch tower, tourist facility, hide, barrier, patrolling camp

(Temporary or permanent) etc.

Location : By compartment or village or landmark as appropriate.

Type of construction : Masnory (brick / stone), log or wooden, metal, local material etc.

Status : Completed or ongoing.

* : Strike out which is not applicable. Use separate forms as required; for construction and for maintenance details.

FORM 19

Development */maintenance* of infrastructure: communication (*existing / new)

Year

S. No.	Range	Type of facility	Location	Number	Cost	Advantage gained	Remarks
1	2	3	4	5	6	7	8

Note: Type of facility : e.g. telephone, wireless.

Location : Staff HQ location, village, landmark etc.

Advantage gained : Area served, staff locations connected etc.

Remarks : Record status – complete, ongoing, functional, nonfunctional.

* : Strike out that is not applicable. Use separate forms as required; for new facility and maintenance

FORM 20

Development */maintenance* of infrastructure: vehicles (*existing / new)

Year

S. No.	Kind of vehicle	Number	HQ if any	Intended use	Cost	Remarks
1	2	3	4	5	6	7

Note: Kind of vehicle : Jeep, trailer, tractor, truck, minibus, tanker, motorcycle, bicycle, boat (Paddle or motor), launch, car, riding elephant, ponies etc.

Intended use : Management support, patrolling / anti-poaching etc.

Remarks : Any other useful information. Mention written off vehicles, retired or dead animals.

* : Strike out the inapplicable. Use separate forms as required to indicate acquisition, maintenance.

FORM 21

Development of infrastructure: manpower recruitment /existing manpower

Year

S. No.	Category of post	Number	Status		Scale of pay	Intended deployment / deployed as	Remarks
			Recruited	Vacant			
1	2	3	4	5	6	7	8

Note: Status : Permanent, temporary, contractual.

Intended deployment : State purpose e.g. conservation education, research, anti-poaching etc. as applicable.

Remarks : Any other useful information. New recruits within the year should be mentioned. This will also include offers and staff obtained on transfer / deputation. Likewise changes due to personnel going out on transfer, deputation, retirement, removal, resignation, death should be reflected in this column.

* : Strike off that which is not applicable. Accordingly, use additional forms. One for recruitment and one for the existing manpower.

FORM 22

Developing infrastructure: fire lines (existing / new)

Year

S. No.	Range	Fireline category or width	Name of points connected	Length (Meters)	Cost	Remarks
1	2	3	4	5	6	7

Note: Category : Main or subsidiary etc. Record width.

* : Strike out that inapplicable. Use one form each for maintenance of existing fire-line and creation of new.

FORM 23

Tourism

Total number of visitors all categories: **Year** **Name of the Complex:**

Total revenue earned:

S. No.	The category of visitors by month and number					Indian			Number day visitors	No. staying overnight and revenue
	Adult			Children	Foreigners	Rural	Urban	Revenue		
	Month	Male	Female							
1	2	3	4	5	6	7	8	9	10	11

Note: columns 2 to 5 will be written in three successive lines for the month pertinent, one below the other. First line information

pertains to foreign tourists. Put a tick (√) in column 6. second- and third-line details rural and urban tourists respectively. Put a tick (√) in column 7, column 8 as applicable

FORM 24

Eco tourism – partners

Year

S. No.	Identity of eco-tourism entrepreneur	Infrastructure	Programmes	Investment	Kind and extent of benefits to local people	Benefit to PA and resources
1	2	3	4	5	6	7

FORM 25

Outbreak of fires

Year

S. No.	Range	Location	Extent (ha)	Dates		Reasons	Estimated loss	Remarks
				Detected	Controlled			
1	2	3	4	5	6	7	8	9

Note Location : By compartment s

Reasons : Established or suspected

Estimated loss : e.g. number of trees damaged, stacked firewood/timber/bamboo destroyed/damaged by volume and cost,

wild animals dead, particulars of sensitive sites affected, other property or life destroyed.

Remarks : State particularly problems encountered in detection and suppression and any other useful information.

State also whether the extent of fire has been mapped.

FORM 26

Offence cases detected

Year

S. No.	Range	Category	Numbers	Number of cases decided		Number of cases under process	Number of cases compounded	Remarks
				Successful	Failure			
1	2	3	4	5	6	7	8	9

Note Category : e.g. illegal cutting of trees, illegal firewood, illegal NWP, poaching, encroachment, illegal cattle grazing

etc. category by codified by letters of alphabet.

Remarks : Any other useful information. This should also include the number of cases pending decision with the

department.

The cases under column 8 pertain to area of non-PA status under management which do not involve an

endangered species (Schedule – I)

FORM 27

Research projects under implementation by other agencies

Year

S. No.	Title	Completed	Ongoing	New	Status	Financial outlay (RS)	Expenditure incurred (RS)	Remarks
1	2	3	4	5	6	7	8	9

Note Completed : State date of completion and the status of the project report.

Ongoing : State since when the project is under operation and expected period of completion.

New : State the date of commencement and duration.

Status : State the progress towards achievement of objectives, or project which has been dropped or held in abeyance etc.

Remarks : Any other relevant information. State the name of the agency. If animal / plant species are being collected, state authority and where the collections are being housed.

FORM 28

Eco development Programme: Targets and implementation

Year

S. No.	Name of the programme	Sector (Central / State) or NGO sponsored	Target set		Achievements		Village (Buffer / enclaved)	Remarks
			Physical	Financial	Physical	Financial		
1	2	3	4	5	6	7	8	9

Note Nature of the programme : e.g. pasture development, fodder plantations, establishing biogas units, livestock improvement, establishment and development of sericulture, revival of local skills such as handicraft, water harvesting systems, adults education etc.

Village : Site where programme is being implemented – whether buffer or inside PA.

Remarks : State problems, state failures and reasons for not attaining targets, for non-implementation or deviation etc. state whether it is on the right tracks in context of achievement of objective

FORM 29

A summary of allotment of funds, revenue and expenditure

Year

S. No.	Plan/non-plan/any other grant	Sector (Central / State/other)	Allotment received		Expenditure incurred		Revenue realized	Remarks
			Non-recurrent	Recurrent	Non-recurrent	Recurrent		
1	2	3	4	5	6	7	8	9

Note Explain under expenditure, over expenditure, savings and surrenders. State the extent of demand for the year as per the schedule of operations / APO.

FORM 30

Existing corridors – conservation inputs accomplished

S. No.	Identity of the corridor	Length / section addressed	Nature of inputs / treatment	Agency	Target set	Achievement	Constraints	Investment	Remarks
1	2	3	4	5	6	7	8	9	10

Government of Jammu & Kashmir
Office of the Pr. Chief Conservator of Forests (Wildlife)/
Chief Wildlife Warden, *J&K*
Silk Factory Road, Rajbagh, Srinagar/ Wildlife Complex, Manda, Jammu

Subject: Approval of Management Plan for Overa- Aru Wildlife Sanctuary.

Whereas, the Draft Management Plan of Overa- Aru Wildlife Sanctuary has been prepared by Wildlife Warden, South Division.

Whereas, the draft of said Management Plan has undergone various reviews at different levels and suggestions and observations made by the participants have been incorporated.

Whereas, the committee constituted vide this office order No: 58-(WL) of 2025 dated: 26.03.2025 discussed the Draft Management Plan of Overa- Aru Wildlife Sanctuary in its meeting held on 19.03.2025.

Whereas, the committee recommended approval of Management Plan of Overa- Aru Wildlife Sanctuary for a period 2024-2034 in its final meeting held on 11.06.2025 subject to the incorporation of suggestions made in the meeting.

Whereas, the Regional Wildlife Warden, Kashmir vide No: RWLW/K/Tech/2025-26/854-55 dated: 23.08.2025 has intimated that the suggested points in the final meeting have been incorporated in the Management Plan and has recommended for its approval.

Considering the above, the undersigned accords approval to the Management Plan of Overa- Aru Wildlife Sanctuary for the period 2024-2034, in terms of Section 33 of Wildlife Protection (Act), 1972.

(Sarvesh Rai) IFS
Pr. Chief Conservator of Forest (Wildlife)/
Chief Wildlife Warden
J&K Govt.

No: WLP/Res/2025-26/544-47 Date: 18 /09/2025

Copy to the:

1. Commissioner Secretary to Govt., Forest, Ecology and Environment Department, Civil Secretariat, Jammu for kind information.
2. Regional Wildlife Warden Kashmir Region, Srinagar.
3. Wildlife Warden South Division.
4. Pvt Secretary to Principal Chief Conservator of Forest/ HoFF, J&K for kind information of PCCF/HoFF.

GOVERNMENT OF JAMMU AND KASHMIR
CIVIL SECTT: FOREST DEPARTMENT
(WILDLIFE PROTECTION)

.....

NOTIFICATION

JAMMU, THE , 1987

SRO 154 :- Whereas, it appears to the Government that the area specified in Annexure "A" to this Notification, has adequate ecological, faunal, floral, geomorphological significance for purposes of protecting, propagating and developing Wildlife or its environment.

Now, therefore, in exercise of the powers conferred by section 17 of the Jammu and Kashmir Wildlife (protection) Act, 1978, the Government hereby declare the said area as a sanctuary

By Order of the Government of Jammu and Kashmir.

Sd/-
(N. R. Gupta)
Secretary to Government.

NO: For/WL/San/Overa/87 Dated: 19.3.1987

Copy for information and necessary action to the:-

1. Secretary to Government, Law Department.
2. Secretary to Government, Revenue Department
3. Chief Wildlife Warden, Srinagar
4. Deputy Commissioner of the concerned District
5. Manager Government press for favour of Publication in Government Gazette.
6. Stock File.

19/3
(Hamid-Ullah)
Deputy Secretary to Government
Forest Department

Hamdard 19/3

Status Survey Report of the Proposed

OVERA - ARU

Wildlife - Sanctuary

Nomenclature :-

Names after the villages of Overa and Aru falling in the out skirits at the extremities of the said tract.

Location and limits :-

The tract situated in Jammu and Kashmir State about 70 Kms. to the south-east of Srinagar is located between 75°-37' to 75°- 22' east longitude and 33°-55' to 34°-15' north latitude.

Boundaries :-

North ..... Sindh Forest Division.
South ..... Lidder Forest Division.
East ..... Tourist/Health resort-Pahalgam, Sindh Lidder Forest Divison.
West ..... Dachigam National Park and Sindh Forest Division.

Area :-

The Reserve encompasses an area of roughly 425 Sq.Kms and includes famous Overa Wildlife Sanctuary and a part of Lidder Forest Division, between Overa and Kolohoic glacier enrouting the Aru. It occupies the right bank of river Lidder and the rough shape is of human brain.

Configuration :-

The tract is of mountaineous type, conspicuously steep, and broken by rocky cliffs, extending over an elevation ranging from 2,250 mtrs. to about 6,000 mtrs. (near Kolahai glacier). The area abounds-in, lofty, snow peaked mountains and is drained by various nallas into the lidder river.

Communications :-

The Preserve is well connected to Srinagar, Anantnag and Pahalgam by a nice road, fringing its south-eastern border.

Geology, rock and soil :-

Diverse geological formations are negotiated. The tract is rich is Shales and slates. Panjal trap is well exhibited in the higher reaches whereas lime-stone outcrops are exposed in the interior valleys.

Climate :-

The climate is characteristically nearly arctic in upper reaches and temperate, distinctly cooler in the lower reaches. Snowfall occuring heavily in winter, in the main source of precipitation which melts up till May, June in many parts. Monsoons are conspicuously absent. A temperature range from 80 Zero to 90°F has been experienced.

Flora :-

Due to the variation in altitude, aspects and soil, a diversity of vegetation is discernible in the tract as discussed below:-

(1) Coniferous Forests:-

The three principal conifers viz; Pinus griffithii, Cedrus deodara and Abies pindrow are met with, following their characteristic altitudinal zonation, getting purer in their respective zones and interspersed by the suprua (Picea spp) or yew (Taxus wallichiana) at places. The undergrowth consists mainly of viburnum spp; Skimmia laureola, Indigofera heterantha, Lonicera spp; Jasminum spp; Parrotiopsis jacquemontiana etc. The herbaceous ground cover consists of Fragaria vesca, Rumex patientia, Polygonum spp; Trifolium spp; Thymus serpylum, Primula spp. Cl[illegible] spp etc.

(2) Riverian Forests:-

The broad-leaved associates include Padus cornuta, Fraxinus spp; Rhus succedanea, Pyrus lanata, Juglans regia Rhododendron campanulatum etc. which richly occupy moist pockets and depressions.

(3) Birch Forests:-

In upper reaches Betula utilis, Juniperus recurva, Juniperus communis and Rhododendron spp are met with.

(4) Alpine Pastures:-

The alpine pastures locally called margs are confine-d to the zone above 3,000 mtrs, altitude and mainly constitutes the herbaceous cover mixed with isolated clumps of Indigofera heterantha etc.

Fauna :-

The project area presents an abundance of pockets very richly blessed with Wild animals and avi-fauna. It overlaps the Wildlife rich, Overa Wildlife Sanctuary which also will help to serve as core area for the Preserve. The Wild animals harboured by the area include the Kashmir Stag (Cervus elaphus hanglu), the Musk Deer (Moschus moschiferus) the Himalayan Black Bear (Selenarctos thibetanus) the Himalayan Brown Bear (Ursus arctos) The Himalayan Mouse Hare (Ochotena roylei) the Himalayan Langur (Presbytis entellus) the Snow Leopard (Panthera unica) etc. The tract is endowed with a beautiful and rich asset of avi-fauna consisting of pheasants viz; the Monal (Lophophorus impeyanus), the Koklas (Pucrasia macrolopha) and birds such as the Black-eared kite (Milvus migrans), the Himalayan Griffon vulture (Gyps himalayensis) the Red Turtle dove (Streptopelia tranquebarica) the European Hoopoe (Upupa epops epops) the yellow fronted pied wood peeker (Picoides mahrathensis) besides Minivets, fly catchers, thrushes, wagtails buntings etc.

Landscape:-

The tract is viewed with high appreciation for its unparallel scenery, picturesque snow peaked mountains, green meadows and snow fed gurgling brooks and streams. The Deodar and pine tree clad mountains, enclose numerous beautiful valleys full of greenly. The world renowned health resort - Pahalgam located adjacent to Reserve reflects heavenly beauty of the tract.

Past History and
Legal Status :-

The demarcated Game Reserve which constitutes the upper reaches of the catchment was the Rakh in the days of late Maharaja and at present is not under the proper administrative and technical control of this Department.

Zonation :-

The entire catchment encompassed and area of about 26 sq.kms in identified to be declared as a Wildlife Sanctuary, when the existing Game Reserve i.e; the top catchment spread over an area of about 12 sq..kms will represent the core area and the balance area towards the south constituting 10 to 19 compartments will be delineated as the buffer zone of the Wildlife Sanctuary. where the rights of the habitation will be considered without conflicting the norms of the Wildlife Sanctuary. The demarcated Game Reserve i.e. the core area which is devoid of any humsn settlement will be kept free from any biotic disturbance and the non-local graziers will be accommodated in other open forest areas during the summer.

Recommendations :-

The area shelters the unique majesti Wild goat namely the Markhor and stray heads of Musk Deer and Leopard. Besides this the area bear high potential of the pheasants like Monals, Kokless and Chakores and reportedly the Tragopans and Snow Cocks and the threatned Vulture i.e. Bearded Vulture. The number of these coulorful pheasant is drastically declining due t habitat destruction and indiscriminate poaching through out the Himalayan range. Steps are on to conserve these innocent attrative pheasants by the World Pheasant Association. The supurb and endangered Markhir now taking shelter in a few corners of the vale which includes the said area also.

To conserve protect and multiply the precious wild wealth of the area it is recommended to be declared as wildlife sanctuary under section 17 of Jammu and Kashmir Wildlife (Protection) Act of 1978.

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Annexure 1

Inventory of flora, life History traits and conservation status recorded in Overa-Aru Wildlife Sanctuary

S.No.	Scientific Name	Family	Growth form/life span	IUCN Status
1	Abies pindrow (Royle ex D.Don) Royle	Pinaceae	Tree/Perennial	Least Concern
2	Acer caesium Wall.ex Brandis	Sapindaceae	Tree/Perennial	Data Deficient
3	Achillea millefolium L.	Asteraceae	Herb/Perennial	Not Evaluated
4	Achnatherum sibiricum (L.) Keng ex Tzvelev	Poaceae	Herb/Perennial	Not Evaluated
5	Achyranthes aspera L.	Amaranthaceae	Herb/Perennial	Not Evaluated
6	Aconitum chasmanthum Stapf	Ranunculaceae	Herb/Perennial	Critically Endangered
7	Aconitum heterophyllum Wall. ex Royle	Ranunculaceae	Herb/Perennial	Endangered
8	Actaea spicata L.	Ranunculaceae	Herb/Perennial	Not Evaluated
9	Aesculus indica (Wall. ex Cambess.) Hook	Sapindaceae	Tree/Perennial	Least Concern
10	Agrimonia pilosa Ledeb	Rosaceae	Herb/Perennial	Not Evaluated
11	Ailanthus altissima Sw.	Simaroubaceae	Tree/Perennial	Not Evaluated
12	Ainsliaea aptera DC	Asteraceae	Herb/Perennial	Not Evaluated
13	Ajuga integrifolia Buch.-Ham. ex D.Don	Lamiaceae	Herb/Perennial	Not Evaluated
14	Ajuga parviflora Benth.	Lamiaceae	Herb/Perennial	Not Evaluated
15	Alchemilla mollis (Buser) Rothm.	Rosaceae	Herb/Perennial	Not Evaluated
16	Amaranthus retroflexus L.	Amaranthaceae	Herb/Perennial	Not Evaluated
17	Anaphalis busua (Buch.-Ham.) DC	Asteraceae	Herb/Perennial	Not Evaluated
18	Anaphalis nepalensis var. monocephala (DC.)	Asteraceae	Herb/Perennial	Not Evaluated
19	Anaphalis royleana DC.	Asteraceae	Herb/Perennial	Not Evaluated
20	Anaphalis triplinervis (Sims) Sims ex C.B.Clarke	Asteraceae	Herb/Perennial	Not Evaluated
21	Androsace rotundifolia Hardw.	Primulaceae	Herb/Perennial	Not Evaluated
22	Androsace saementosa Wall.	Primulaceae	Herb/Perennial	Not Evaluated
23	Anemonastrum obtusilobum (D.Don) Mosyakin	Ranunculaceae	Herb/Perennial	Not Evaluated
24	Angelica glauca Edgew.	Apiaceae	Herb/Perennial	Endangered
25	Anthemis Cotula L.	Asteraceae	Herb/Perennial	Not Evaluated
26	Aquilegia fragrans Benth	Ranunculaceae	Herb/Perennial	Not Evaluated
27	Aquilegia pubiflora Wall. ex Duby	Ranunculaceae	Herb/Perennial	Not Evaluated
28	Arabidopsis thaliana (l.) Heynh.	Brassicaceae	Herb/Annual	Not Evaluated
29	Ababis amplexicaulis Edgew.	Brassicaceae	Herb/Perennial	Not Evaluated
30	Aralia cachemirica Decne.	Araliaceae	Herb/Perennial	Not Evaluated
31	Arctium lappa Willd.	Asteraceae	Herb/Perennial	Not Evaluated
32	Arenaria serpyllifolia L.	Carophyllaceae	Herb/Annual	Not Evaluated
33	Arisaema jacquemontii Blume	Araceae	Herb/Perennial	Least Concern
34	Arisaema tortuosum (Wall.) Schott	Araceae	Herb/Perennial	Not Evaluated
35	Arnebia benthamii (Wall. ex G.Don) I.M.Johnst.	Boraginaceae	Herb/Perennial	Not Evaluated
36	Artemisia absinthium L.	Asteraceae	Herb/Perennial	Not Evaluated
37	Artemisia gmelinii Weber ex stechm.	Asteraceae	Herb/Perennial	Not Evaluated
38	Artemisia indica Willd.	Asteraceae	Herb/Perennial	Not Evaluated
39	Artemisia japonica Thunb.	Asteraceae	Herb/Perennial	Not Evaluated
40	Artemisia roxburghiana Wall. Ex Besser	Asteraceae	Herb/Perennial	Not Evaluated
41	Artemisia vestita Kitag.	Asteraceae	Herb/Perennial	Not Evaluated
42	Aster falconeri (C. B. Clarke) Hutch	Asteraceae	Herb/Perennial	Not Evaluated
43	Astragalus chlorostachys Lindl.	Fabaceae	Herb/Perennial	Not Evaluated
44	Astragalus grahamianus Benth.	Fabaceae	Subshrub/Perennial	Not Evaluated
45	Astragalus rhizanthus Benth.	Fabaceae	Herb/Perennial	Not Evaluated
46	Atropa acuminata Royle ex Lindl.	Solanaceae	Herb/Perennial	Not Evaluated
47	Aulacospermum stiosum (C.B.Clarke) Rech. F. & Riedl	Apiaceae	Herb/Perennial	Endangered
48	Bellis perennis L.	Asteraceae	Herb/Perennial	Not Evaluated
49	Berberis asiatica Roxb. Ex DC.	Berberidaceae	Shrub/Perennial	Not Evaluated
50	Berberis lycium Royle	Berberidaceae	Shrub/Perennial	Not Evaluated
51	Bergenia ciliata (Haw.) Sternb.	Saxifragaceae	Herb/Perennial	Least Concern
52	Bergenia stracheyi (Hook.f. & Thomson) Engl.	Saxifragaceae	Herb/Perennial	Not Evaluated
53	Berula erecta (Huds.) Coville	Apiaceae	Herb/Perennial	Not Evaluated
54	Betula utilis D. Don	Betulaceae	Tree/Perennial	Least Concern
55	Bistorta affinis (D.Don) Greene	Polygonaceae	Herb/Perennial	Not Evaluated
56	Bistorta amplexicaulis (D.Don) Greene	Polygonaceae	Herb/Perennial	Not Evaluated
57	Blitum virgatum L.	Amaranthaceae	Herb/Annual	Not Evaluated

Inventory of flora, life History traits and conservation status recorded in Overa-Aru Wildlife Sanctuary				
S.No.	Scientific Name	Family	Growth form/life span	IUCN Status
58	Bromus cathartious Vahl	Poaceae	Herb/Annual	Not Evaluated
59	Bromus japonicus Houtt.	Poaceae	Herb/Annual	Not Evaluated
60	Buglossoides arnesis (L.) I.M.Johnst.	Boraginaceae	Herb/Annual	Not Evaluated
61	Bupleurum candollei Wall. ex DC	Apiaceae	Herb/Annual	Not Evaluated
62	Bupleurum longicaule Wall. ex DC	Apiaceae	Herb/Annual	Not Evaluated
63	Caltha alba Cambess.	Ranunculaceae	Herb/Annual	Not Evaluated
64	Campanula aristata L.	Campanulaceae	Herb/Perennial	Not Evaluated
65	Campanula cashmeriana Royle	Campanulaceae	Herb/Perennial	Not Evaluated
66	Campanula latifolia L.	Campanulaceae	Herb/Perennial	Not Evaluated
67	Campanula pallida Wall.	Campanulaceae	Herb/Perennial	Not Evaluated
68	Cannabis sativa L.	Cannabaceae	Herb/Perennial	Not Evaluated
69	Capsella bursa-pastoris (L.) Medik	Brassicaceae	Herb/Annual	Not Evaluated
70	Cardamine hirsuta L.	Brassicaceae	Herb/Annual	Not Evaluated
71	Cardamine macrophylla Willd	Brassicaceae	Herb/Annual	Not Evaluated
72	Carex canescens L.	Cyperaceae	Herb/Perennial	Not Evaluated
73	Carex nubigena D.Don	Cyperaceae	Herb/Perennial	Not Evaluated
74	Carpesium abrotanoides L.	Asteraceae	Herb/Perennial	Not Evaluated
75	Carpesium cernumm L.	Asteraceae	Herb/Perennial	Not Evaluated
76	Cedrus deodara (Roxb. ex D.Don) G.Don	Pinaceae	Tree/Perennial	Least Concern
77	Celtris australis L.	Cannabaceae	Tree/Perennial	Least Concern
78	Cenchrus orientalis (Rich.) Morrone	Poaceae	Herb/Perennial	Least Concern
79	Cerastium davuricum Fisch. Ex Spreng	Carophyllaceae	Herb/Perennial	Not Evaluated
80	Cerastium glomeratum Thuill.	Carophyllaceae	Herb/Perennial	Not Evaluated
81	Chaerophyllum refexum var. acuminatum (Lindl.)	Apiaceae	Herb/Annual	Not Evaluated
82	Chenopodium album L.	Amaranthaceae	Herb/Annual	Not Evaluated
83	Chrysopoogon gryllus (L.) Trin	Poaceae	Herb/Perennial	Not Evaluated
84	Circhorium intybus L.	Asteraceae	Herb/Perennial	Not Evaluated
85	Circaea alpina L.	Onagraceae	Herb/Perennial	Not Evaluated
86	Circaea cordata Royle	Onagraceae	Herb/Perennial	Not Evaluated
87	Cirsium arvense (L.) Scop	Asteraceae	Herb/Perennial	Not Evaluated
88	Cirsium falconeri (Hook. f.) Petr	Asteraceae	Herb/Perennial	Not Evaluated
89	Cirsium wallichii DC.	Asteraceae	Herb/Perennial	Not Evaluated
90	Clematis montana Buch.-Ham. ex DC.	Ranunculaceae	Climber/Perennial	Not Evaluated
91	Clinopodium umbrosum (M.Bieb.) K.Koch	Lamiaceae	Herb/Perennial	Not Evaluated
92	Clinopodium vulgare L.	Lamiaceae	Herb/Perennial	Not Evaluated
93	Codonopsis rotundifolia Benth.	Campanulaceae	Climber/Perennial	Not Evaluated
94	Colchicum luteum Baker	Colchicaceae	Herb/Perennial	Not Evaluated
95	Convolvulus arvensis L.	Convolvulaceae	Climber/Perennial	Not Evaluated
96	Cordiofontis flexuousa (Royle ex. Lindl.) G.L.Nesom	Asteraceae	Herb/Perennial	Not Evaluated
97	Corydalis cornuta Royle	Papaveraceae	Herb/Biennial	Not Evaluated
98	Corydalis diphylla Wall.	Papaveraceae	Herb/Perennial	Not Evaluated
99	Corylus jacquemontii Decne.	Betulaceae	Tree/Perennial	Data Deficient
100	Cotoneaster affinis Lindl.	Rosaceae	Shrub/Perennial	Not Evaluated
101	Cotoneaster microphyllus Wall. ex Lindl.	Rosaceae	Shrub/Perennial	Not Evaluated
102	Crataegus songarica K. Koch	Rosaceae	Tree/Perennial	Least Concern
103	Crepis sancta (L.) Bornm.	Asteraceae	Herb/Annual	Not Evaluated
104	Crucihimalaya himalaica (Edgew.) Al-Shehbaz	Brassicaceae	Herb/Biennial	Not Evaluated
105	Cupressus sempervirens L.	Cupressaceae	Tree/Perennial	Least Concern
106	Cuscuta refelexa Roxb.	Convolvulaceae	Climber/Annual	Not Evaluated
107	Cynodon dactlon (L.) Pers.	Poaceae	Herb/Perennial	Not Evaluated
108	Cynoglossum lanceolatum Forssk.	Boraginaceae	Herb/Perennial	Not Evaluated
109	Cynoglossum wallichi (Wall. Ex Benth.) Kazmi	Boraginaceae	Herb/Perennial	Not Evaluated
110	Dactylis glomerata L.	Poaceae	Herb/Perennial	Not Evaluated
111	Dactylorhiza hatagirea (D.Don) Soó	Orchidaceae	Herb/Perennial	Not Evaluated
112	Datura srtamonium L.	Solanaceae	Herb/Perennial	Not Evaluated
113	Daucus carota L.	Apiaceae	Herb/Perennial	Not Evaluated
114	Decalepidanthus moltkioides (Benth.) Dickore & Hilger	Boraginaceae	Herb/Perennial	Not Evaluated

Inventory of flora, life History traits and conservation status recorded in Overa-Aru Wildlife Sanctuary				
S. No.	Scientific Name	Family	Growth form/life span	IUCN Status
115	Delphinium pyramidale Royle	Ranuncylaceae	Herb/Perennial	Not Evaluated
116	Delphinium roylei Munz	Ranuncylaceae	Herb/Perennial	Not Evaluated
117	Dianthus falconeri Edgew. & Hook.F.	Carophyllaceae	Herb/Perennial	Not Evaluated
118	Dichodon cerastoides (L.) Rchb.	Carophyllaceae	Herb/Perennial	Not Evaluated
119	Digitaria sanguinalis (L.) Scop.	Poaceae	Herb/Perennial	Not Evaluated
120	Dioscorea deltoidea Wall. Ex Griseb.	Dioscoreaceae	Climber/Annual	Not Evaluated
121	Dipsacus inermis Wall	Caprifoliaceae	Climber/Annual	Not Evaluated
122	Dolomiaea costus (Falc.) Kasana & A.K.Pandey	Asteraceae	Herb/Perennial	Not Evaluated
123	Dolomiaea macrocephala DC. ex Royle	Asteraceae	Herb/Perennial	Not Evaluated
124	Doronicum kamaonense (DC.) Aly.Fern	Asteraceae	Herb/Perennial	Not Evaluated
125	Draba verna L.	Brassicaceae	Herb/Perennial	Not Evaluated
126	Elsholtzia cliata (Thunb.) Hyl.	Lamiaceae	Herb/Perennial	Not Evaluated
127	Elsholtzia fruticosa (D.Don) Rehder	Lamiaceae	Shrub/Perennial	Least Concern
128	Epilobium clindrcum D.Don	Onagraceae	Herb/Perennial	Not Evaluated
129	Epilobium hirsutum L.	Onagraceae	Herb/Perennial	Not Evaluated
130	Epilobium royleanum Haussk n	Onagraceae	Herb/Perennial	Not Evaluated
131	Epipactis royleana Lindl.	Orchidaceae	Herb/Perennial	Not Evaluated
132	Erigeron acris var. multicaulis (Wall.ex DC.) C.B.Clarke	Asteraceae	Herb/Perennial	Not Evaluated
133	Erigeron canadensis L.	Asteraceae	Herb/Annual	Not Evaluated
134	Erigeron multiradiatus (Lindl.ex DC.) Benth. ex C. B. Clarke	Asteraceae	Herb/Annual	Not Evaluated
135	Erodium cicutarium (L.) L'Hér	Geraniaceae	Herb/Annual	Not Evaluated
136	Euonymus Hamiltonianus Wall	Celastraceae	Tree/Perennial	Not Evaluated
137	Euonymus japonicus Thunb	Celastraceae	Tree/Perennial	Not Evaluated
138	Euphorbia cornigera Boiss	Euphorbiaceae	Herb/Perennial	Not Evaluated
139	Euphorbia helioscopia L.	Euphorbiaceae	Herb/Annual	Not Evaluated
140	Euphorbia peolus L.	Euphorbiaceae	Herb/Annual	Not Evaluated
141	Euphorbia wallichii Hook.f.,	Euphorbiaceae	Herb/Perennial	Not Evaluated
142	Euphrasia himalayica Wettst.	Orobanchaceae	Herb/Annual	Not Evaluated
143	Euphrasia platphylla Pennell	Orobanchaceae	Herb/Annual	Not Evaluated
144	Fagopyrum tataricum (L.) Gaertn	Polygonaceae	Herb/Annual	Not Evaluated
145	Filipendula vestita (Wall. ex G.Don) Maxim	Rosaceae	Herb/Perennial	Not Evaluated
146	Fragaria nubicola (lindl. ex Hook.f.) Lacaita	Rosaceae	Herb/Perennial	Not Evaluated
147	Fraxinus hookeri Wenz	Oleaceae	Tree/Perennial	Not Evaluated
148	Fumaria indica (Haussk n.) Pugsley	Papaveraceae	Herb/Perennial	Not Evaluated
149	Gagea lutea (L.) Ker Gawl.	Liliaceae	Herb/Perennial	Not Evaluated
150	Galinsoga parviflora Cav.	Asteraceae	Herb/Annual	Not Evaluated
151	Galium aparine L.	Rubiaceae	Climber/Annual	Not Evaluated
152	Galium asperuloides Edgew.	Rubiaceae	Herb/Perennial	Not Evaluated
153	Galium boreale L.	Rubiaceae	Herb/Perennial	Not Evaluated
154	Gaultheria trichophylla Royle	Ericaceae	Subshrub/Perennial	Not Evaluated
155	Gentiana capitata Buch.-Ham ex D.Don	Gentianaceae	Herb/Annual	Not Evaluated
156	Gentiana carinata (D.Don) Griseb	Geraniaceae	Herb/Annual	Not Evaluated
157	Geranium pratense L.	Geraniaceae	Herb/Perennial	Not Evaluated
158	Geranium robertianum L.	Geraniaceae	Herb/Perennial	Not Evaluated
159	Geranium wallichianum D.Don ex Sweet	Geraniaceae	Herb/Perennial	Not Evaluated
160	Geum aleppicum Jacq.	Rosaceae	Herb/Perennial	Not Evaluated
161	Geum elatum Wall. ex Hook.f	Rosaceae	Herb/Perennial	Not Evaluated
162	Geum roylei Wall.	Rosaceae	Herb/Perennial	Not Evaluated
163	Hackelia uncinata (Benth.) C.E.C.Fisch	Boraginaceae	Herb/Perennial	Not Evaluated
164	Heracleum candicans Wall.ex DC	Apiaceae	Herb/Perennial	Not Evaluated
165	Hylotelephium ewersii (Ledeb.) H.Ohba	Crassulaceae	Herb/Perennial	Not Evaluated
166	Hymenidium stellatum DC	Apiaceae	Herb/Perennial	Not Evaluated
167	Hyosyamus niger L.	Solanaceae	Herb/Biennial	Not Evaluated
168	Hypericum perforatum L.	Hypericaceae	Herb/Perennial	Not Evaluated
169	Impatiens brachycentra Kar. & Kir	Balsaminanceae	Herb/Annual	Not Evaluated
170	Impatiens edgeworthii Hook. f.	Balsaminanceae	Herb/Perennial	Not Evaluated
171	Impatiens clandulifera Royle	Balsaminanceae	Herb/Perennial	Not Evaluated

Inventory of flora, life History traits and conservation status recorded in Overa-Aru Wildlife Sanctuary				
S.No.	Scientific Name	Family	Growth form/life span	IUCN Status
172	Impatiens scabida DC	Balsaminanceae	Herb/Annual	Not Evaluated
173	Impatiens thomsonii Hook. f.	Balsaminanceae	Herb/Annual	Not Evaluated
174	Indigofera hebepetala Benth. ex Baker	Fabaceae	Shrub/Perennial	Least Concern
175	Indigofera heterantha Brandis	Fabaceae	Shrub/Perennial	Not Evaluated
176	Inula royleana DC	Asteraceae	Herb/Perennial	Not Evaluated
177	Iris hookeriana Foster	Iridaceae	Herb/Perennial	Not Evaluated
178	Isodon rugosus (Wall. ex Benth.) Codd	Lamiaceae	Shrub/Perennial	Not Evaluated
179	Jacobaea analoga (DC.) Veldkamp	Asteraceae	Herb/Perennial	Not Evaluated
180	Jaeschkea canaliculata (Royle ex G.Don) Knobl.	Gentianaceae	Herb/Biennial	Not Evaluated
181	Jasminum grandiflorum L.	Oleaceae	Climber/Perennial	Least Concern
182	Juglans regia L.	Juglandaceae	Tree/Perennial	Least Concern
183	Juncus effusus L.	Juncaceae	Herb/Perennial	Least Concern
184	Juniperus communis L.	Cupressaceae	Shrub/Perennial	Not Evaluated
185	Juniperus squamata Buch.-Ham. ex D.Don	Cupressaceae	Shrub/Perennial	Not Evaluated
186	Jurinea albescens (DC.) N.Garcia, Herrando & Susanna	Asteraceae	Herb/Perennial	Not Evaluated
187	Koenigia alpina (All.) T. M. Schust. & Reveal	Polygonaceae	Herb/Annual	Not Evaluated
188	Koenigia delicatula (Meisn.) H.Hara	Polygonaceae	Herb/Annual	Not Evaluated
189	Lactuca dissecta D.Don	Asteraceae	Herb/Annual	Not Evaluated
190	Lactuca dolichophylla Kitam.	Asteraceae	Herb/Annual	Not Evaluated
191	Lactuca serriola L.	Asteraceae	Herb/Annual	Not Evaluated
192	Lamium album L.	Lamiaceae	Herb/Annual	Not Evaluated
193	Lapsana communis L.	Asteraceae	Herb/Annual	Not Evaluated
194	Lavendula officinalis Chaix	Lamiaceae	Shrub/Perennial	Not Evaluated
195	Leontopodium nivale (Ten.)	Asteraceae	Herb/Perennial	Not Evaluated
196	Leonurus cardiaca L.	Lamiaceae	Herb/Perennial	Not Evaluated
197	Lepidium virginicum L.	Brassicaceae	Herb/Biennial	Not Evaluated
198	Leucanthemum vulgare (Vaill.) Lam.	Asteraceae	Herb/Annual	Not Evaluated
199	Ligusticopsis wallichiana (DC.) Pimenov & Kljuykov	Apiaceae	Herb/Perennial	Not Evaluated
200	Ligustrum lucidum W.T.Aiton	Oleaceae	Tree/Perennial	Not Evaluated
201	Lindelofia longiflora (DC.) Baill	Boraginaceae	Herb/Perennial	Not Evaluated
202	Lolium perenne L.	Poaceae	Herb/Perennial	Not Evaluated
203	Lomatogonium caeruleum (Royle) Harry Sm. Ex B.L.Burtt	Gentianaceae	Herb/Perennial	Not Evaluated
204	Lonicera angustifolia Wall. ex DC.	Caprifoliaceae	Shrub/Perennial	Not Evaluated
205	Lonicera obovata Royle ex Hook. f. & Thomson	Caprifoliaceae	Shrub/Perennial	Not Evaluated
206	Lonicera quinquelocularis Hard	Caprifoliaceae	Shrub/Perennial	Not Evaluated
207	Lotus corniculatus L.	Fabaceae	Herb/Perennial	Not Evaluated
208	Malus domestica (Suckow) Borkh.	Rosaceae	Tree/Perennial	Not Evaluated
209	Malva cachemiriana (Cambess.) Alef.	Malvaceae	Herb/Perennial	Not Evaluated
210	Malva neglecta Wallr.	Malvaceae	Herb/Perennial	Not Evaluated
211	Marrubium vulgare L.	Lamiaceae	Herb/Perennial	Not Evaluated
212	Matricaria discoidea DC.	Asteraceae	Herb/Annual	Not Evaluated
213	Mazus pumilus (Burm. f.) Steenis	Mazaceae	Herb/Annual	Not Evaluated
214	Meconopsis aculeata Royle	Papaveraceae	Herb/Perennial	Not Evaluated
215	Medicago polymorpha L.	Fabaceae	Herb/Annual	Not Evaluated
216	Melanoseris brunoniana (Wall ex DC.)	Asteraceae	Herb/Perennial	Not Evaluated
217	Melanoseris macrorhiza (Royle) N. Kilian	Asteraceae	Herb/Perennial	Not Evaluated
218	Mentha longifolia (L.) L.	Lamiaceae	Herb/Perennial	Not Evaluated
219	Morina Longofolia Wall ex DC.	Caprifoliaceae	Herb/Perennial	Not Evaluated
220	Morus alba L.	Moraceae	Tree/Perennial	Not Evaluated
221	Morus nigra L.	Moraceae	Tree/Perennial	Not Evaluated
222	Myosotis alpestris F. W. Schmidt	Boraginaceae	Herb/Perennial	Not Evaluated
223	Myosotis scorpioides L.	Boraginaceae	Herb/Perennial	Not Evaluated
224	Myosotis sylvatica Hoffm.	Boraginaceae	Herb/Perennial	Not Evaluated
225	Myriactis nepalensis Less.	Asteraceae	Herb/Perennial	Not Evaluated
226	Myriactis wallichii Less.	Asteraceae	Herb/Perennial	Not Evaluated
227	Narcissus pseudonarcissus L.	Amaryllidaceae	Herb/Perennial	Least Concern
228	Nasturtium officinale W.T.Aiton	Brassicaceae	Herb/Perennial	Not Evaluated

Inventory offlora, life History traits and conservation status recorded in Overa-Aru Wildlife Sanctuary				
S. No.	Scientific Name	Family	Growth form/life span	IUCN Status
229	Nepeta cataria L.	Lamiaceae	Herb/Perennial	Not Evaluated
230	Nepeta erecta (Royle ex Benth.) Benth	Lamiaceae	Herb/Perennial	Not Evaluated
231	Nepeta govaniana (Wall. ex Benth.) Benth.	Lamiaceae	Herb/Perennial	Not Evaluated
232	Nepeta linearis Royle ex Benth.	Lamiaceae	Herb/Perennial	Not Evaluated
233	Nepeta laevigata (D. Don) Hand.-Mazz.	Lamiaceae	Herb/Perennial	Not Evaluated
234	Noccaea cochlearioides (Hook.f. & Thomson)	Brassicaceae	Herb/Perennial	Not Evaluated
235	Origanum Vulgare L.	Lamiaceae	Herb/Perennial	Not Evaluated
236	Oxalis acetosella L.	Oxalidaceae	Herb/Perennial	Not Evaluated
237	Oxalis corniculata L.	Oxalidaceae	Herb/Perennial	Not Evaluated
238	Oxyria digyna (L.) Hill	Polygonaceae	Herb/Perennial	Least Concern
239	Oxytropis cachemiriana Cambess.	Fabaceae	Herb/Perennial	Least Concern
240	Paconia emodi Royle	Ranunculaceae	Herb/Perennial	Not Evaluated
241	Papaver rhoeas L.	Papaveraceae	Herb/Perennial	Least Concern
242	Parrotiopsis jacquemontiana (Decne.) Rehder	Hamamelidaceae	Shrub/Perennial	Not Evaluated
243	Parthenocissus semicordata (Wall.) Planch.	Vitaceae	Herb/Perennial	Not Evaluated
244	Pedicularis pectinata Wall. ex Benth.	Orobanchaceae	Herb/Perennial	Not Evaluated
245	Pedicularis punctata Decne.	Orobanchaceae	Herb/Perennial	Not Evaluated
246	Pedicularis pyramidata Royle ex Benth.	Orobanchaceae	Herb/Perennial	Not Evaluated
247	Pedicularis tenuirostris Benth.	Orobanchaceae	Herb/Perennial	Least Concern
248	Persicaria hydropiper (L.) Delarbre	Polygonaceae	Herb/Annual	Not Evaluated
249	Persicaria nepalensis (Meisn.) H.Gross	Polygonaceae	Herb/Annual	Not Evaluated
250	Phalaris aquatica L.	Poaceae	Herb/Perennial	Least Concern
251	Phleum alpinum L.	Poaceae	Herb/Perennial	Not Evaluated
252	Phlomoides bracteosa (Royle ex Benth.)	Lamiaceae	Herb/Perennial	Not Evaluated
253	Phlomoides spectabilis (Falc. ex Benth.)	Lamiaceae	Herb/Perennial	Not Evaluated
254	Phytolacca acinosa Roxb.	phytolaccaceae	Herb/Perennial	Least Concern
255	Picea smithiana (Wall.) Boiss.	Pinaceae	Tree/Perennial	Least Concern
256	Pinus wallichiana A. B. Jackson	Pinaceae	Tree/Perennial	Least Concern
257	Plantago himalaiica Pilg.	Plantaginaceae	Herb/Perennial	Not Evaluated
258	Plantago lanceolata	Plantaginaceae	Herb/Perennial	Least Concern
259	Plantago major L.	Plantaginaceae	Herb/Perennial	Data Deficient
260	Platanus orientalis L.	Platanaceae	Tree/Perennial	Not Evaluated
261	Platycladus orientalis (L.)	Cupressaceae	Tree/Perennial	Least Concern
262	Poa amma L.	Poaceae	Herb/Annual	Not Evaluated
263	Poa bulbosa L.	Poaceae	Herb/Perennial	Not Evaluated
264	Poa pratensis L.	Poaceae	Herb/Perennial	Not Evaluated
265	Podophyllum hexandrum Royle	Berberidaceae	Herb/Perennial	Not Evaluated
266	Polemonium caeruleum L.	Polemoniaceae	Herb/Perennial	Not Evaluated
267	Polygonatum verticalitatum (L.)	Asparagaceae	Herb/Perennial	Not Evaluated
268	Polygonum aviculare L.	Polygonaceae	Herb/Annual	Least Concern
269	Polygonum plebeium R. Br.	Polygonaceae	Herb/Annual	Least Concern
270	Populus ciliata Wall. ex Royle	Salicaeae	Tree/Perennial	Not Evaluated
271	Populus deltoides W. Bartram ex Marshall	Salicaeae	Tree/Perennial	Not Evaluated
272	Populus nigra L.	Salicaeae	Tree/Perennial	Not Evaluated
273	Potentilla argyrophylla Wall. ex Lehm.	Rosaceae	Herb/Perennial	Not Evaluated
274	Potentilla indica (Andrews) Th.Wolf	Rosaceae	Herb/Perennial	Not Evaluated
275	Potentilla reptans L.	Rosaceae	Herb/Perennial	Not Evaluated
276	Primula denticulata Sm.	Rosaceae	Herb/Perennial	Not Evaluated
277	Primula macrophylla D.Don	Primulaceae	Herb/Perennial	Least Concern
278	Prunella vulgaris L.	Lamiaceae	Herb/Perennial	Not Evaluated
279	Prunus armeniaca L.	Rosaceae	Tree/Perennial	Not Evaluated
280	Prunus cornuta (Wall. ex Royle) Steud	Rosaceae	Tree/Perennial	Not Evaluated
281	Prunus persica (L.) Batsch	Rosaceae	Tree/Perennial	Not Evaluated
282	Pseudostellaria himalaica (Franch.) Pax	Caryophyllaceae	Herb/Perennial	Not Evaluated
283	Pyrus communis L.	Rosaceae	Tree/Perennial	Not Evaluated
284	Ranunculus arvensis L.	Ranunculaceae	Herb/Perennial	Not Evaluated
285	Ranunculus distans D. Don	Ranunculaceae	Herb/Perennial	Not Evaluated

Inventory of flora, life History traits and conservation status recorded in Overa-Aru Wildlife Sanctuary				
S.No.	Scientific Name	Family	Growth form/life span	IUCN Status
286	Ranunculus sceleratus L.	Ranunculaceae	Herb/Perennial	Not Evaluated
287	Rhamnus purpurea Edgew.	Ranunculaceae	Tree/Perennial	Not Evaluated
288	Rheum webbianum Royle	Ranunculaceae	Herb/Perennial	Not Evaluated
289	Rhodiola himalensis (S. H. Fu) S. H. Fu	Crassulaceae	Herb/Perennial	Not Evaluated
290	Rhodiola wallichiana (Hook. f.) S. H. Fu	Crassulaceae	Herb/Perennial	Not Evaluated
291	Rhododendron anthopogon D. Don	Ericaceae	Shrub/Perennial	Not Evaluated
292	Ribes orientale Desf.	Grossulariaceae	Shrub/Perennial	Least Concern
293	Robinia pseudoacacia L.	Fabaceae	Tree/Perennial	Not Evaluated
294	Rorippa islandica (Oeder) Borbás	Brassicaceae	Herb/Biennial	Not Evaluated
295	Rosa brunonii Lindl.	Rosaceae	Shrub/Perennial	Not Evaluated
296	Rosa canina L.	Rosaceae	Shrub/Perennial	Not Evaluated
297	Rosa indica L.	Rosaceae	Shrub/Perennial	Not Evaluated
298	Rosa sericea Lindl.	Rosaceae	Shrub/Perennial	Not Evaluated
299	Rosa webbiana Wall. ex Royle	Rosaceae	Shrub/Perennial	Not Evaluated
300	Rubia cordifolia L.	Rosaceae	Shrub/Perennial	Not Evaluated
301	Rubus niveus Thunb.	Rosaceae	Shrub/Perennial	Not Evaluated
302	Rubus ulmifolius Schott	Rosaceae	Shrub/Perennial	Not Evaluated
303	Rumex acetosella L.	Polygonaceae	Herb/Perennial	Not Evaluated
304	Rumex dentatus L.	Polygonaceae	Herb/Perennial	Not Evaluated
305	Rumex nepalensis Spreng.	Polygonaceae	Herb/Perennial	Not Evaluated
306	Sagina micropetala (H. J. K. Hans)	Caryophyllaceae	Herb/Perennial	Not Evaluated
307	Salix alba L.	Salicaeae	Tree/Perennial	Not Evaluated
308	Salix babylonica L.	Salicaeae	Tree/Perennial	Not Evaluated
309	Salix denticulata Andersson	Salicaeae	Tree/Perennial	Not Evaluated
310	Salix elegans Roxb. ex D. Don	Salicaeae	Tree/Perennial	Not Evaluated
311	Salix kashmiriana Andersson	Salicaeae	Tree/Perennial	Not Evaluated
312	Salix purpurea L.	Salicaeae	Shrub/Perennial	Not Evaluated
313	Salvia lanata Roxb. ex Benth.	Lamiaceae	Herb/Perennial	Not Evaluated
314	Salvia moorcroftiana Wall. ex Benth.	Lamiaceae	Herb/Perennial	Not Evaluated
315	Salvia nubicola Wall. ex Sweet –	Lamiaceae	Herb/Perennial	Not Evaluated
316	Sambucus wightiana Wall. ex Wight & Arn.	Viburnaceae	Herb/Perennial	Not Evaluated
317	Sanchezia albomarginata C.B. Clarke	Asteraceae	Herb/Perennial	Not Evaluated
318	Sanchezia sanguinea (Fielding & Gardner) Lipoch.	Asteraceae	Herb/Perennial	Not Evaluated
319	Sanguisorba saura Ledeb.	Asteraceae	Herb/Perennial	Not Evaluated
320	Saxifraga macrostigma (Ser.) Wall. ex Seroth	Saxifragaceae	Herb/Perennial	Not Evaluated
321	Saxifraga sibirica L.	Saxifragaceae	Herb/Perennial	Not Evaluated
322	Scrophularia koelzi Pennell	Scrophulariaceae	Herb/Perennial	Not Evaluated
323	Sedum multicaule Wall. ex Lindl.	Crassulaceae	Herb/Perennial	Not Evaluated
324	Sedum sedoides (Jacquem. ex Decne.) Pau	Crassulaceae	Herb/Perennial	Not Evaluated
325	Senecio kraschennikovii Schischk.	Asteraceae	Herb/Perennial	Not Evaluated
326	Setaria viridis (L.) P. Beauv.	Poaceae	Herb/Perennial	Not Evaluated
327	Sibbaldia cuneata Edgew. –	Rosaceae	Herb/Perennial	Not Evaluated
328	Sigesbeckia orientalis L.	Asteraceae	Herb/Annual	Not Evaluated
329	Silene baccifera (L.) Roth	Caryophyllaceae	Herb/Perennial	Not Evaluated
330	Silene cashmeriana (Royle ex Benth.) Majumdar	Caryophyllaceae	Herb/Perennial	Least Concern
331	Silene vulgaris (Moench) Garcke	Caryophyllaceae	Herb/Perennial	Not Evaluated
332	Sisymbrium loeselii L.	Brassicaceae	Herb/Annual	Not Evaluated
333	Sisymbrium officinale (L.) Scop.	Brassicaceae	Herb/Annual	Not Evaluated
334	Skimmia anquetilia N.P. Taylor & Airy Shaw	Rutaceae	Shrub/Perennial	Not Evaluated
335	Smilax vaginata Decne.	Smilacaceae	Shrub/Perennial	Not Evaluated
336	Solanum nigrum L.	Solanaceae	Herb/Annual	Not Evaluated
337	Solidago virgaurea L.	Asteraceae	Herb/Perennial	Not Evaluated
338	Sonchus arvensis L.	Asteraceae	Herb/Perennial	Not Evaluated
339	Sonchus asper (L.) Hill	Asteraceae	Herb/Perennial	Not Evaluated
340	Sonchus oleraceus L.	Asteraceae	Herb/Perennial	Not Evaluated
341	Sorbaria tomentosa (Lindl.) Rehder	Rosaceae	Shrub/Perennial	Not Evaluated
342	Spergularia rubra (L.) J. Presl & C. Presl	Caryophyllaceae	Shrub/Perennial	Not Evaluated

Inventory of flora, life History traits and conservation status recorded in Overa-Aru Wildlife Sanctuary				
S.No.	Scientific Name	Family	Growth form/life span	IUCN Status
343	Spiraea canescens D. Don	Rosaceae	Shrub/Perennial	Not Evaluated
344	Stachys floccosa Benth.	Lamiaceae	Herb/Perennial	Not Evaluated
345	Stachys sericea Cav.	Lamiaceae	Herb/Perennial	Not Evaluated
346	Ulmus wallichiana Planch.	Ulmaceae	Tree/Perennial	Not Evaluated
347	Urtica dioica L.	Urticaceae	Herb/Perennial	Not Evaluated
348	Valeriana hardwickii Wall.	Caprifoliaceae	Herb/Perennial	Not Evaluated
349	Valeriana pyrolifolia Decne.	Caprifoliaceae	Herb/Perennial	Not Evaluated
350	Verbascum thapsus L.	Scrophulariaceae	Herb/Biennial	Not Evaluated
351	Veronica anagallis-aquatica L.	Plantaginaceae	Herb/Perennial	Least Concern
352	Veronica beccabunga L.	Plantaginaceae	Herb/Perennial	Not Evaluated
353	Veronica biloba Schreb. ex L.	Plantaginaceae	Herb/Perennial	Not Evaluated
354	Veronica lanata Benth.	Plantaginaceae	Herb/Perennial	Not Evaluated
355	Veronica persica Poir.	Plantaginaceae	Herb/Perennial	Not Evaluated
356	Veronica persica subsp. hirsuta (T. Yamaz.) T. Yamaz.	Plantaginaceae	Herb/Annual	Not Evaluated
357	Veronicastrum erycifolium L.	Plantaginaceae	Herb/Perennial	Not Evaluated
358	Viburnum cotinifolium D. Don	Viburnaceae	Shrub/Perennial	Not Evaluated
359	Viburnum grandiflorum Wall. ex DC	Viburnaceae	Shrub/Perennial	Not Evaluated
360	Vicia bakeri Ali	Fabaceae	Herb/Perennial	Not Evaluated
361	Vinca major L.	Apocynaceae	Climber/Perennial	Not Evaluated
362	Vincetoxicum auriculatum (Royle ex Wight) Kuntze	Apocynaceae	Climber/Perennial	Not Evaluated
363	Viola canescens Wall.	Violaceae	Herb/Perennial	Not Evaluated
364	Viola odorata L.	Violaceae	Herb/Perennial	Not Evaluated
365	Viola pilosa Blume	Violaceae	Herb/Perennial	Not Evaluated
366	Viola reichenbachiana Jord. ex Boreau	Violaceae	Herb/Perennial	Not Evaluated
367	Viola rupestris F.W. Schmidt	Violaceae	Herb/Perennial	Not Evaluated
368	Viscum album L.	Santalaceae	Shrub/Perennial	Not Evaluated
369	Xanthium spinosum L. – Asteraceae – Herb/Annual – NE	Asteraceae	Herb/Annual	Not Evaluated

Source: Islam, T., Khuroo, A. A., & Nawchoo, I. A. (2023). An annotated checklist of flora of Overa-Aru wildlife sanctuary, Kashmir Himalaya. *Phytotaxa*, 599(1), 1–30.

ANNEXURE - 2

List of Bird Fauna reported in Overa-Aru Wildlife Sanctuary

1)	The Black Eared Kite	*Milvus migrans*
2)	The Himalayan Griffon Vulture	*Gyps himalayansis*
3)	The White Backed Vulture	*Psedopus bengalensis*
4)	The Monal	*Lephphorus impeyanus*
5)	The Himalayan Snow Cock	*Tetragallus himalayansis*
6)	The Chucker	*Alectoris chakur*
7)	The Koklas	*Pucrsia macrolopha*
8)	The Blue Rock Pigeon	*Columba livia*
9)	The Himalayan Rufus Turtle dove	*Streptopelia orientalis*
10)	The Ring Dove	*S. decaota*
11)	The Red Turtle Dove	*S. tranqubarica*
12)	The Asiatic Cuckoo	*Cuculus canorus telephones*
13)	The Alpine Swift	*Apus melba melba*
14)	The Kashmir Roller	*Crocias gasrullus semenwi*
15)	The European Hoopoe	*Upopa epops epops*
16)	The Kashmiri Woodpecker	*Trybatus himalaynasis*
17)	The Common Swallow	*Hirunda rustica*
18)	The Rufus Backed Shrike	*Lanius schack*
19)	The Golden Oriole	*Oriolus. o. kunde*
20)	The Indian Myna	*Acridotheres tristis*
21)	The Himalayan Jungle Crow	*Corvus macrorkychos*
22)	The Large Spotted Nutcracker	*Nucifrage muhipunctata*
23)	The White Checked Bulbul	*Pycnonotus leucogenus*
24)	The Streaked Laughing Thrush	*Trocralopterum linnactum*
25)	The Kashmir Wren	*Troglodyles t. neglectus*
26)	The Grey Tit	*Parus major cahmiriensis*
27)	The Kashmir House Sparrow	*Passere domesticus*

Annexure 3

List of rivers/ nallah and natural water resources in Overa-Aru Wildlife Sanctuary

S No.	NAME OF RIVER/ NALLAH	WATER AVAILABILITY
	ARU BLOCK	
1	Nafran Nallah	Perennial
2	Kolhoie Nallah	Perennial
3	Tarsar Nallah	Perennial
4	Chumnai Nallah	Perennial
	PAHALGAM BLOCK	
1	Shikargah Nallah	Seasonal
2	Mammal Nallah	Seasonal
	OVERA BLOCK	
1	Gamri Nallah	Seasonal
2	Kanjikole Nallah	
3	MunwarSar Nallah	
4	Hakerhaji Nallah	
5	Lorenadi Nallah	
6	Reshinar Nallah	

Natural Water Resources in Overa-Aru Wildlife Sanctuary

S no.	Name of Spring/ Lake	Water Availability
1	Tarsar lake	All throughout the year
2	Maqbolsar lake	All throughout the year
3	Doodsar	All throughout the year
4	Katrenag	All throughout the year
5	Chumasr	All throughout the year
6	Sundersar	All throughout the year
7	Munwarsar	All throughout the year

Annexure 4

MINISTRYOFENVIRONMENT,FORESTANDCLIMATECHANGE NOTIFICATION

NewDelhi,the16thMay,2024

S.O. 2002(E).—WHEREAS, a draft notification was published in the Gazette of India, Extraordinary, *vide* notification of the Government of India in the Ministry of Environment, Forest and Climate Change number S.O. 4227(E), dated the 26th September, 2023, inviting objections and suggestions from all persons likely to be affected thereby within the period of sixty days from the date on which copies of the Gazette containing the said notification were made available to the public;

AND WHEREAS, copies of the Gazette containing the said draft notification were made available to the public on the 26th September, 2023;

AND WHEREAS, objections and suggestions received from persons in response to the said draftnotification have been considered by the Central Government;

AND WHEREAS, the Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary is spread over an area of 776 sq.km and is located in the Srinagar, Ganderbal and Anantnag Districts in Kashmir of the Union territory of Jammu and Kashmir;

AND WHEREAS, the Dachigam National Park, comprising an area of 141 sq.km. has been notified as National Park, *vide* notification No. S.R.O:134, dated the 10th April, 1990 and the Overa Aru Wildlife Sanctuary comprising an area of 425 sq.km has been notified as Wildlife Sanctuary *vide* S.R.O: 154 dated the 19th March, 1987 andThajwas(Baltal)Wildlife Sanctuarycomprisinganarea of210sq.kmhasbeennotifiedasWildlifeSanctuary *vide* S.R.O: 156 dated the 19th March, 1987;

AND WHEREAS, the Dachigam National Park is located at a distance of 21 km, North-East from Srinagar city. The park lies in the great Zanskar mountain range between altitudes of 1600 metres to 4250 meters above mean sealeveland formsthe North-Westbranchofthe CentralHimalayanaxis.TheDachigamisfamousfor harbouring the lastviableand endemicpopulationofHangul(Kashmirred deer),theonlyabodeleftinSouth-East Asia.Theparkhas the prestige to be the recipient of the award for the best managed National Park in the country;

AND WHEREAS, the Thajwas (Baltal) Wildlife Sanctuary is located at a distance of 105-kilometer North- East from Srinagar. The sanctuary lies between 34°37' N Latitude and 74°29' to 74°36' E Longitude andcovers an altitudinal range of 3,015 mto 5,466 mabove mean sealevel. It comprises of forest compartment numbers from56/S to 62/S of Sindh Forest Division. The main faunal attraction of this area is the Kashmir musk deer (*Moschus cupreus)* and Himalayan brown bear (*Ursus arctos isabellinus)*. The sanctuary is connected with other important wildlife areas, like Aru, Upper Dachigam and the Sindh Forest. The Wildlife Sanctuary is flanked by the large snow laden peaks of 'Sonamarg' and the Sindh River, which is famous for its trout and mahseer population. Thajwas glacier is one of the tourist attractions visited by tourists in the summer months;

AND WHEREAS, the Overa-Aru Wildlife Sanctuary is located at a distance of 76 kilometers from South- East of Srinagar. It lies between 33°55'0"N to 34°20'0" N Latitude and 75°5'0" E to 75°32'30" E Longitude and falls in the Anantnag District of the Kashmir Valley. The main faunal attraction of this area is the Kashmir musk deer (*Moschus cupreus*), Asiatic Ibex (*Capra sibirica*), Himalayan Serow (*Capricornis thar*) and Himalayan brown bear (*Ursus arctos isabellinus*). The forests of Overa-Aru sanctuaryare blessed with a number of lakes and glaciers, which happen to be invaluable sources of water, feeding numerous streams that flowdown into the villages situated near the periphery;

ANDWHEREAS, theDachigamNationalParkcomesunder 2Aprovinceofbio-geographicclassificationas suggestedbyRodgersetal.,2002.AsperrevisedChampionandSeth(1968),thevegetationofDachigamNational

Park is typically Himalayan moist temperate forest, sub-alpine forest and alpine forest type and can be classified into moist temperate deciduous forest, Parrotia (pohu) scrub forest, west Himalayan low level blue pine forest, western mixed coniferous forest, deciduous alpine scrub, west Himalayan sub-alpine birch-rhododendron forest, dwarf juniper scrub, dry temperate scrub;

AND WHEREAS, some of the notable flora and fauna of the Dachigam National Park include *Ulmus wallichiana, Salix alba,* Populus sp., *Prunus armeniaca, Quercus robur, Robina pseudoacacia, Parrotiopsis jacquemontiana, Rosa webbiana, Rubus niveus, Aesculus indica, Juglans regia, Pinus griffithi, Lychniscornaria* (L.)Desr)., Bajardantu(*Potentilla atrosanguina Lodd.),* trumbadu(*Picrishieracioides),*Ghudkhura (*Tussilago farfara),* dodad (*Codonopsis ovate),* ratanjot (*Onosmahispidum wallichex),* Kashmir red deer (*Cervus hanglu hanglu*), Kashmir muskdeer(*Moschuscupreus*),commonleopard(*Pantherapardus*),Himalayanbrownbear(*Ursusarctosisabellinus*), Asiatic black bear (*Ursus thibetanus*), Kashmir gray langur (*Semnopithecus ajax*), Himalayan griffon vulture (*Gyps himalayensis*), bearded vulture (*Gypaetus barbatus*), Kashmir flycatcher (*Ficedula subrubra*), etc;

AND WHEREAS, the area of Thajwas Wildlife (Baltal) Sanctuary is covered mostly under thick snow, round the year. The tree species such as*Abies pindrow, Betula ultilis, Juglans regia* and *Picea* sp. constitute the major assemblage of tree flora. *Indigofera hetranth, Berberies lycicum,* and *Rosa webbiana* constitute the major shrub cover of the area. The important faunal species of the area are grey langur (*Presbytis entellus),* Rhesus macaque (*Macaca mulatta),* common leopard (*Panthera pardus),*snow leopard *(Panther unica),* leopard cat *(Felis bengalensis),* jackal *(Canis aureus),* red fox (*Vulpes vulpes),* Himalayan brown bear (*Ursus arctos),* Asiatic black bear (*Ursus thibetanus),* Yellow throated martin (*Martis flavigula),* long-tailed marmot (*Mannota bobak),* Royle's pika (*Ochotona roylei),* Asiatic ibex(*Capra sibrica),* Kashmir musk deer *(Moschus cupreus) etc;*

AND WHEREAS, due to variation in altitude, aspect and soil, a diversity of vegetation is discernible in the Overa-Aru Wildlife Sanctuary. The vegetation of the Sanctuary is mainly fir (*Abis pindrow*) with kail (*Pinus wallichiana*) in the lower elevations near Nallas. On varied physical variations the forest types found are Riverian Vegetation(1600-2300meters above mean sea level), Coniferous Forests:(2300-3000 meters above mean sea level), AlpineScrubs and Pastures:(Beyond 3000-3500meters above mean sea level), Rock Faces:(Beyond 3500metersabove mean sea level). The Overa-Aru forests are blessed with numerous plant species of great medicinal value.Some of the medical plants growing wild in the area include *Aconitum heterophyllum, Arnebia benthamii, Artemisia absinthium, Berberis lycium, Bergenia lingulata, Datura stramonium, Dioscore adeltoidea, Lavatera cashmeriana, Saussurea costus* and *Taxus wallichina;*

AND WHEREAS, the Overa-Aru Wildlife Sanctuary falls in the North-West province (Province 2A) of the Himalayan Zone as per the bio-geographic demarcation by Rodgers and Panwar (1998). This province includes the whole Kashmir valley, characterized by temperate and sub-tropical climate Kashmiri stag or hangul (*Cervus hanglu hanglu),* Kashmir musk deer (*Moschus cupreus),* Himalayan black bear (*Ursus thibetanus),* Himalayan brown bear (*Ursus arctos),* common leopard (*Panthera pardus),* Himalayan grey langur (*Presbytis ajax),* Rhesus macaque(*Macaca mulata),* red fox (*Vulpus vulpes),* brown musk shrew (*Crocidura murina),* yellow throated martin (*Martes flavigula),* long-tailed marmot (*Marmot himaliyana),* Kashmir vampire(*Mergaderma spectrum),* Leisler's Hairy – armed bat (*Nyctalus lessleri),* Kashmir house rat(*Rattus rattus),* birch mouse (*Sicista indica),* Kashmir flying squirrel (*Eoglaucomys fimbriatus),* serow (*Capricornis sumatraensis thar),* Roule's pika (*Ochotona royelii),* Himalayan griffon vulture (*Gyps himalayensis*), bearded vulture (*Gypaetus barbatus*), Kashmir flycatcher (*Ficedula subrubra*) etc;

AND WHEREAS, the natural boundaries of Dachigam National Park, Overa-Aru Wildlife Sanctuary and Thajwas Wildlife (Baltal) Sanctuary are connected at landscape level.The boundary of Dachigam National Park on North and North Eastern side merges with Overa-Aru Wildlife Sanctuary while as Overa–Aru Wildlife Sanctuary on its North and North-Eastern side merges with Thajwas Wildlife Sanctuary. The protected areas together form a landscape of rich biodiversity and hold good population of some of the important/endemic species of animals, birds and vegetation. The Eco-sensitive zone proposed makes these areas as one unit and will help gene flow across these areas to flourish the biodiversity;

AND WHEREAS, it is necessary to conserve and protect the area, the extent and boundaries of Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary which are specified in paragraph 1 as Eco-Sensitive Zone from ecological, environmental and biodiversity point of view and to prohibit industries or class of industries and their operations and processes in the said Eco-Sensitive Zone;

NOW, THEREFORE, in exercise of the powers conferred by sub-section (1) and clauses (v) and (xiv) of sub-section (2) and sub-section (3) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) (hereafter in this notification referred to as the Environment Act), read with sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government herebynotifies anarea of200 meters to

13.15kilometers fromthe boundaryof Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary, in the Union territory of Jammuand Kashmir as '**Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa-AruWildlifeSanctuaryEco-sensitiveZone**'(hereafterinthisnotificationreferredtoastheEco-sensitiveZone),the

details of which are specified in paragraph 1, for the purpose of protecting and improving the quality of environment and preventing, controlling and abating environment pollution and takes the following measures, namely:

1. **ExtentandboundariesofEco-SensitiveZone**.–(1) The extent of Eco-SensitiveZoneshall beof 200m to13.15 km fromthe boundary of Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa- AruWildlifeSanctuaryandcomprisingofanEco-sensitive Zoneareaof448.00sq.kmandtheextentofEco- sensitive Zone in different directions (kilometres) are as given below: -

Direction	Extent	Location
West	200m	PWDWaterTankandReservoir
South	13.15km	KhrewCRBoundary
South-West	5.0 km	KhanmohCRBoundary
South-East	1.0 km	MamalForest,LidderNala
East	1.0 km	Nichhang,Alpinepasture
North-East	1.0 km	SerbalVillage,SindhForest
North	1.0 km	ForestofSindh
North-West	4.0 km	Lidwas,AlpinePastureDaraCRBoundary

(2) The boundary description of the Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary and its Eco-Sensitive Zone is appended as **Annexure-I.**

(3) The maps of the Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary demarcating Eco-Sensitive Zone along with boundary details and latitudes and longitudes are appended as **Annexure-IIA, Annexure-IIB**, **Annexure-II C, Annexure-IID** and **Annexure-II E** respectively.

(4) Lists of geo co-ordinates of the boundary of Dachigam National Park, Thajwas (Baltal) Wildlife Sanctuaryand Overa-Aru Wildlife Sanctuary and Eco-Sensitive Zone are given in Table **A** and Table **B** of **Annexure-III**.

(5) The list of villages falling in the Eco-Sensitive Zone along with their geo co-ordinates at prominent points is appended as **Annexure-IV.**

2. **Zonal Master Plan for Eco-Sensitive Zone** - (1) The Union territory administration shall, for the purposes of the Eco-Sensitive Zone prepare and notify a Zonal Master Plan within a period of two years from the date of publication of this notification in the Official Gazette, in consultation with local people.

(2) The Zonal Master Plan for the Eco-sensitive Zone shall be prepared in the manner as specified in this notification and also in consonance with the relevant Central and laws for the time beinginforce and the guidelines issued by the Central Government, if any.

(3) The Zonal Master Plan shall be prepared in consultation with the following Departments of the Union territory administration, for integrating the ecological and environmental considerations into the said plan, namely: -

(i) Environment;

(ii) Forests;

(iii) Agriculture;

(iv) Revenue;

(v) UrbanDevelopment;

(vi) Tourism;

(vii) RuralDevelopment;

(viii) Irrigation&FloodControl;

(ix) PollutionControlBoard;

(x) Municipality;

(xi) PanchayatiRaj;and

(xii) PublicWorksDepartment.

(4) The Zonal Master Plan shall not impose any restriction on the approved existing land use, infrastructure and activities, unless so specified in this notification and shall factor in improvement of all infrastructure and activities to be more efficient and eco-friendly.

(5) TheZonalMasterPlanshallprovideforrestorationofdenudedareas,conservationofexisting water bodies, management of catchment areas, watershed management, groundwater management, soiland moisture conservation, needs of local community and such other aspects of the ecology and environment that need attention.

(6) The Zonal Master Plan shall demarcate all the existing worshipping places, villages and urban settlements, types and kinds of forests, agricultural areas, fertile lands, green area, such as, parksand like places, horticultural areas, orchards, lakes and other water bodies with supporting maps giving details of existing and proposed land use features.

(7) The Zonal Master Plan shall regulate development in Eco-Sensitive Zone and adhere to prohibited and regulated activities listed in the Table in paragraph 4 and also ensure and promote eco-friendly development for security of local communities' livelihood.

(8) TheZonalMasterPlanshallbeco-terminuswiththeRegionalDevelopmentPlan.

(9) TheZonalMaster Plan so proposed and notified shallbethe reference document for theMonitoring Committee for carrying out its functions of monitoring in accordance with the provisions of this notification.

3. Measuresto betaken by the Union Territory Government -TheUnion territoryadministration shalltakethe measures for giving effect to the provisions of this notification, namely: -

(1) **Land use** – (a) Forests, horticulture areas, agricultural areas, parks and open spacesearmarked for recreational purposes in the Eco-Sensitive Zone shall not be used or converted into areas for commercial or residential or industrial activities:

Provided that the conversion of agricultural and other lands, for the purposes other than that specifiedat part (a) above, within the Eco-sensitive Zone may be permitted on the recommendation of the Monitoring Committee, and with the prior approval of the competent authority under Regional Town Planning Act and other rules and regulations of Central Government or Union territory administration as applicable and provisions of thisnotification, to meet the residential needs of the local residents and for activities such as-

(i) wideningandstrengtheningofexistingroadsandconstructionofnewroads;

(ii) constructionandrenovationofinfrastructureandcivicamenities;

(iii) smallscaleindustriesnotcausingpollution;

(iv) cottageindustriesincludingvillageindustries;conveniencestoresandlocalamenities supporting eco-tourism including home stay; and

(v) promotedactivitiesgiveninparagraph4:

Provided further that no use of tribal land shall be permitted for commercial and industrialdevelopment activities without the prior approval of the competent authority under Regional Town Planning Act and other rules and regulations of the Union territory administration and without compliance of the provisions of Article 244 of the Constitution or the law for the time being in force, including the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (2 of 2007):

Provided also that any error appearing in the land records within the Eco-SensitiveZone shall be corrected by the Union territory administration, after obtaining the views of MonitoringCommittee, onceineachcaseand thecorrectionofsaiderrorshallbeintimatedto the Central Government in the Ministry of Environment, Forest and Climate Change:

Providedalsothatthecorrectionoferrorshallnotincludechangeoflanduseinany case except as provided under this sub-paragraph.

(b)Effortsshallbemadetoreforesttheunusedorunproductiveagriculturalareaswithafforestation and habitat restoration activities.

(2) **Natural water bodies-**The catchment areas of all natural springs shall be identified and plans for their conservation and rejuvenation shall be incorporated in the Zonal Master Plan and the guidelines shall be drawn up by the Union Territory Government in such a manner as to prohibit development activities at or near these areas which are detrimental to such areas.

(3) **Tourism or eco-tourism -** (a) All new eco-tourism activities or expansion of existing tourism activities within the Eco-Sensitive Zone shall be as per the Tourism Master Plan for the Eco-Sensitive Zone.

(b) TheTourismMasterPlanshallbepreparedbytheDepartmentofTourism, Union territory administrationin consultation with the Departments of Environment and Forests of the Union Territory.

(c) TheTourismMasterPlanshallformacomponentoftheZonalMasterPlan.

(d) The Tourism Master Plan shall be drawn based on carrying capacity study of the Eco- Sensitive Zone.

(e) Theactivitiesofeco-tourismshallberegulatedasunder,namely:-

(i) Establishment of new hotels and resorts shall be permitted only in pre-defined and designated areas for eco-tourism facilities as per Tourism Master Plan;

(ii) A Committee comprising of the Principal Secretary (Environment and Forests), Chairman,PollutionControlCommittee,anexperteachinecologyandenvironment and civil constructions from an institute of repute such as IIT, Jammu, and a representative fromtheDepartmentofEnvironmentandForests,shallbeconstituted for suggesting the environmental safeguards or measures for new construction of hotels and resorts, which shall form a component of the Tourism Master Plan. The said Committee shall put in place a risk assessment study on landslide, slopestability and seismicity and recommend environmental friendly and safeconstruction measures to be adopted.

(iii) all new tourism activities or expansion of existing tourism activities within the Eco- Sensitive Zone shall be in accordance with the guidelines issued by the Central Government and the eco-tourism guidelines issued by the National Tiger Conservation Authority (as amended from time to time) with emphasis on eco- tourism, eco- education and eco-development;

(iv) until the Zonal Master Plan is approved, development for tourism and expansionof existingtourismactivitiesshallbepermittedbytheregulatoryauthorities concerned based on the actual site specific scrutiny and recommendation of the Monitoring Committee.

(4) **Naturalheritage.-** AllsitesofvaluablenaturalheritageintheEco-Sensitive Zone, suchasthegene pool reserve areas, rock formations, waterfalls, springs, gorges, groves, caves, points, walks, rides, cliffs, etc. shall be identified and a heritage conservation plan shall be drawn up for their preservation and conservation as a part of the Zonal Master Plan.

(5) **Man-made heritage sites.-** Buildings, structures, artefacts, areas and precincts of historical, architectural, aesthetic, and cultural significance shall be identified in the Eco-Sensitive Zone and heritage conservation plan for their conservation shall be prepared as partof the Zonal Master Plan.

(6) **Noise pollution.-** Prevention and control of noise pollution in the Eco-Sensitive Zone shall be carriedoutinaccordance withtheprovisionsoftheNoisePollution(RegulationandControl)Rules, 2000 and as amended from time to time under the Environment.

(7) **Air pollution.-** Prevention and control of air pollution in the Eco-Sensitive Zone shall be carriedoutinaccordance withtheprovisionsofthe Air(PreventionandControlofPollution) Act, 1981(14 of 1981) and the rules made there under.

(8) **Discharge of effluents.**- Discharge of treated effluent in Eco-Sensitive Zone shall be in accordance with the provisions of the General Standards for Discharge of Environmental Pollutants covered under the Environment Act and the rules made there under or standards stipulated by the Union territory Government, whichever is more stringent.

(9) **Solidwastes.**-DisposalandManagementofsolidwastesshallbeasunder:-

(a) the solid waste disposal and management in the Eco-Sensitive Zone shall be carried outin accordance with the Solid Waste Management Rules 2016, and the rules made there under. The inorganic material maybedisposed inanenvironmentalacceptablemanner atsite identified outside the Eco-Sensitive Zone;

(b) safe and Environmentally Sound Management of Solid wastes in conformity with the existing rules and regulations using identified technologies may be allowed within Eco-Sensitive Zone.

(10) **Bio-Medical Waste.**–Bio-MedicalWasteManagementshallbeas under:-

(a) the Bio-Medical Waste disposal in the Eco-Sensitive Zone shall be carried out in accordance with the Bio-Medical Waste Management Rules, 2016 and the rules made there under.

(b) safeand EnvironmentallySound Managementof Bio-MedicalWastes in conformity with the existing rules and regulations using identified technologies may be allowed within the Eco- Sensitive Zone.

(11) **Plastic waste management**.- The plastic waste management in the Eco-Sensitive Zone shall be carried out as per the provisions of the Plastic Waste Management Rules, 2016 and the rules made there under

(12) **Construction and Demolition waste management.**- The construction and demolition waste managementintheEco-SensitiveZoneshallbecarriedoutasper theprovisionsoftheConstruction and Demolition Waste Management Rules and as amended from time to time.

(13) **E-waste.**- The e - waste management in the Eco-Sensitive Zone shall be carried out as per the provisions of the E-Waste Management Rules, 2016 and the rules made there under

(14) **Vehicular traffic.**– The vehicular movement of traffic shall be regulated in a habitat friendly manner and specific provisions in this regard shall be incorporated in the Zonal Master Plan and till such time as theZonal Master plan is prepared and approved by the competent authority in the Union territory Government, the Monitoring Committee shall monitor compliance of vehicular movement under the relevant Acts and the rules and regulations made thereunder.

(15) **Vehicular pollution** .- Prevention and control of vehicular pollution shall be incompliance with applicable laws and efforts shall be made for use of cleaner fuels.

(16) **Industrial units.**– (a), No new polluting industries shall be permitted to be set up within the Eco- Sensitive Zone on or after the publication of this notification in the Official Gazette.

(b) Only non-polluting industries shall be allowed within Eco-Sensitive Zone as per the classification of Industries in the guidelines issued by the Central Pollution Control Board in February, 2016, as amended fromtimetotimeunlesssospecifiedinthisnotification,andinaddition,thenon-polluting cottage industries shall be promoted.

(17) **Protectionofhillslopes.**-Theprotectionofhillslopesshallbeasunder:-

(a) The Zonal Master Plan shall indicate areas on hill slopes where no construction shall be permitted;

(b) Constructiononexistingsteep hillslopesorslopes witha highdegreeoferosionshall not bepermitted.

4. **List of activities prohibited or to be regulatedwithinEco-sensitive Zone.**-All activities inthe Eco sensitive Zone shall be governed bythe provisions of the Environment (Protection) Act, 1986 the rules made there under and other notifications, laws and acts of the Government of India pertaining to environment, forests andwildlife, in the erstwhile Ministry of Environment and Forest, vide number 1533(E), dated the 14th September, 2006 and laws for the time being in force in the manner and as amended from time to time specified in theTable below, namely:-

TABLE

Sl.No.	Activity	Description
		A.ProhibitedActivities
1.	Commercial mining, stone quarrying and crushing units.	(a) All new and existing mining (minor and major minerals), stone quarryingand crushingunitsshallbe prohibited withimmediate effect except for meeting the domestic needs of bona fide local residents including diggingof earth for construction or repair of houses within Eco- Sensitive Zone; (b) The mining operations shall be carried out in accordance with theorder(s)oftheHon'bleSupremeCourtinthe matterofT.N. Godavarman Thirumulpad Vs. UOI in W.P.(C) No.202 of 1995 and Goa Foundation Vs. UOI in W.P.(C) No.435 of 2012 andIANo.1000of2003judgmentdated03.06.2022and subsequentIANo.131377of2022judgmentdated26.04.2023 and28.04.2023espand.
2.	Setting of industries causing pollution (Water, Air, Soil, Noise, etc.).	Newindustries and expansion of existing polluting industries in the Eco-sensitive Zone shall not be permitted: Provided that, non-polluting industries shall be allowed within Eco-Sensitive Zone as per classification of Industries in the guidelines issued by the Central Pollution Control Board in February, 2016, as amended from time to time, unless so specified in this notification andinaddition,thenon-pollutingcottageindustriesshallbe promoted.
3.	Establishmentofmajor hydroelectric project.	Prohibited.
4.	Useorproductionor processingofanyhazardous substance.	Prohibited.
5.	Dischargeofuntreatedeffluents innaturalwaterbodiesorland area.	Prohibited.
6.	Settingupofnewsawmills.	Neworexpansionofexistingsawmillsshallnotbepermittedwithin the Eco-sensitive Zone.
7.	Settingupofbrickkilns.	Prohibited.
8.	Undertaking other activities related to tourism like overflying over the Eco-sensitive Zone area by hot air balloon, helicopter,drones,Microlites, etc.	Prohibited.

TABLE

Sl.No.	Activity	Description
		A.ProhibitedActivities
1.	Commercial mining, stone quarrying and crushing units.	(a) All new and existing mining (minor and major minerals), stone quarryingand crushingunitsshallbe prohibited withimmediate effect except for meeting the domestic needs of bona fide local residents including diggingof earth for construction or repair of houses within Eco- Sensitive Zone; (b) The mining operations shall be carried out in accordance with theorder(s)oftheHon'bleSupremeCourtinthe matterofT.N. Godavarman Thirumulpad Vs. UOI in W.P.(C) No.202 of 1995 and Goa Foundation Vs. UOI in W.P.(C) No.435 of 2012 andIANo.1000of2003judgmentdated03.06.2022and subsequentIANo.131377of2022judgmentdated26.04.2023 and28.04.2023espand.
2.	Setting of industries causing pollution (Water, Air, Soil, Noise, etc.).	Newindustries and expansion of existing polluting industries in the Eco-sensitive Zone shall not be permitted: Provided that, non-polluting industries shall be allowed within Eco-Sensitive Zone as per classification of Industries in the guidelines issued by the Central Pollution Control Board in February, 2016, as amended from time to time, unless so specified in this notification andinaddition,thenon-pollutingcottageindustriesshallbe promoted.
3.	Establishmentofmajor hydroelectric project.	Prohibited.
4.	Useorproductionor processingofanyhazardous substance.	Prohibited.
5.	Dischargeofuntreatedeffluents innaturalwaterbodiesorland area.	Prohibited.
6.	Settingupofnewsawmills.	Neworexpansionofexistingsawmillsshallnotbepermittedwithin the Eco-sensitive Zone.
7.	Settingupofbrickkilns.	Prohibited.
8.	Undertaking other activities related to tourism like overflying over the Eco-sensitive Zone area by hot air balloon, helicopter,drones,Microlites, etc.	Prohibited.

18.	Protection of Hill Slopes and river banks.	Regulated as per the applicable laws.
19.	Movement of vehicular traffic at night.	Regulated for commercial purposes as per the applicable laws.
20.	Ongoing agriculture and horticulture practices by local communities along with dairies, dairy farming, aquaculture and fisheries.	Permitted as per the applicable laws for use of locals.
21.	Establishment of large-scale commercial livestock and poultry farms by firms, corporate and companies.	Regulated as per the applicable laws except for meeting local needs.
22.	Discharge of treated waste water/effluents in natural water bodies or land area.	The discharge of treated waste water effluents shall be avoided to enter into the water bodies and efforts shall be made for recycle and reuse of treated waste water. Otherwise, the discharge of treated waste water/effluent shall be regulated as per the applicable laws.
23.	Commercial extraction of surface and groundwater.	Regulated as per the applicable laws.
24.	Open Well, Bore Well, etc. for agriculture or other usage.	Regulated and the activity should be strictly monitored by the appropriate authority.
25.	Solid Waste Management.	Regulated as per the applicable laws.
26.	Introduction of exotic species.	Regulated as per the applicable laws.
27.	Eco-tourism.	Regulated as per the applicable laws and para 3(3).
28.	Use of polythene bags.	Regulated as per the applicable laws.
29.	Commercial Signboards and hoardings.	Regulated as per the applicable laws.
	C. Promoted Activities	
30.	Rainwater harvesting.	Shall be actively promoted.
31.	Organic farming.	Shall be actively promoted.
32.	Adoption of green technology for all activities.	Shall be actively promoted.
33.	Cottage industries including village artisans, etc.	Shall be actively promoted.
34.	Use of renewable energy and fuels.	Bio-gas, solar light etc. shall be actively promoted.
35.	Agro-Forestry.	Shall be actively promoted.
36.	Plantation of Horticulture and Herbals.	Shall be actively promoted.
37.	Use of eco-friendly transport.	Shall be actively promoted.
38.	Skill Development.	Shall be actively promoted.

39.	RestorationofDegradedLand/ Forests/ Habitat.	Shallbeactivelypromoted.
40.	EnvironmentalAwareness.	Shallbeactivelypromoted.

5. Monitoring Committee for Monitoring the Eco-Sensitive Zone Notification – There shall be a committee to beknownasMonitoring Committee for effective monitoringoftheprovisionsof thisnotificationcomprisingof the following, namely: -

Sl.No.	ConstituentoftheMonitoringCommittee	Designation
1.	DivisionalCommissioner,Kashmir	Chairman,*ex-officio*;
2.	Anexpert in ecologyand environment to be nominated bythe Union territoryNon-Official Member; administration of Jammu and Kashmir for a term of three years each.	
3.	OnerepresentativeofaNon-GovernmentalOrganizationworkinginthefieldNon-Official Member; ofenvironmentconservation*tobenominatedbythe*Unionterritory administrationofJammuandKashmirforatermofthreeyearseach.	
4.	AnexpertinBiodiversitytobetobenominatedbytheUnionterritoryNon-Official Member; administration of Jammu and Kashmir for a term of three years each.	
5.	Deputy Commissioner,Srinagar	Member,*ex-officio*;
6.	Deputy Commissioner,Ganderbal	Member,*ex-officio*;
7.	Deputy Commissioner,Anantnag	Member,*ex-officio*;
8.	Deputy Commissioner,Pulwama	Member,*ex-officio*;
9.	MunicipalCommissioner,Srinagar	Member,*ex-officio*;
10.	DirectorTourism,Kashmir	Member,*ex-officio*;
11.	Vice-chairman, SrinagarDevelopmentAuthority	Member,*ex-officio*;
12.	RegionalDirector,J&KStatePollutionControlBoard,Srinagar	Member,*ex-officio*;
13.	SeniorTownPlanner,Kashmir	Member,*ex-officio*;
14.	DivisionalForestOfficer,SindhForestDivision	Member,*ex-officio*;
15.	DivisionalForestOfficer,LidderForestDivision	Member,*ex-officio*;
16.	DivisionalForestOfficer,Awantipura	Member,*ex-officio*;
17.	DivisionalForestOfficer,UrbanForestry Srinagar	Member,*ex-officio*;
18.	ChiefExecutiveOfficer,SonmargDevelopmentAuthority	Member,*ex-officio*;
19.	ChiefExecutiveOfficer,PahalgamDevelopmentAuthority	Member,*ex-officio*;
20.	WildlifeWarden,CentralDivision	Member,*ex-officio*;
21.	WildlifeWarden,SouthDivision	Member,*ex-officio*;
22.		Regional Wildlife Warden, Kashmir
		MemberSecretary,*ex- officio.*

6. FunctionsoftheMonitoring Committee: (1)The Monitoring Committee shall, based on the actual site-specific conditions scrutinize, the activities that are covered in the Schedule to the notification of the Government of India in the erstwhile Ministryof Environment and Forest number S.O. 1553 (E), dated the 14th September, 2006, and are falling in the Eco-sensitive Zone, except for the prohibited activities as specified inthe Table under paragraph 4 thereof, and referred to the Central Government in the Ministry of Environment, Forestand Climate ChangeortheStateEnvironmentImpact

Assessment Authority, as the case may be, for prior environmental clearances under the provisions of the said notification.

(2) The activities that are not covered in the Schedule to the notification of the Government of India in the erstwhile Ministry of Environment and Forests number S.O. 1533 (E), dated the 14th September, 2006 and are falling in the Eco-sensitive Zone, except for the prohibited activities as

specified in the Table under paragraph 4 thereof, shall be scrutinized by the Monitoring Committee based on the actual site-specific conditions and referred to the concerned Regulatory Authorities.

(3) The Member Secretary of the Monitoring Committee or the concerned Collector(s) or the concerned Deputy Conservator of Forests shall be competent to file complaints under section 19 of the Environment (Protection) Act, 1986 against any person who contravenes the provisions of this notification.

(4) The Monitoring Committee may invite representatives or experts from concerned Departments, representatives from industry associations or concerned stakeholders to assist in its deliberations depending on the requirements on issue-to-issue basis.

(5) The Monitoring Committee shall submit the annual action taken report of its activities as on 31st March of every year by 30th June of that year to the Chief Wildlife Warden in the state as per pro- forma appended at **Annexure V**.

(6) The Central Government in the Ministry of Environment, Forest and Climate Change may give such directions, as it deems fit, to the Monitoring Committee for effective discharge of its functions.

Additional measures -The Central Government and Union TerritoryGovernment may specifyadditional measures, if any, for giving effect to provisions of this notification.

[F.No.25/19/2020-ESZ]

DR.S.KERKETTA,Scientist'G'

ANNEXURE- I

BOUNDARY DESCRIPTION OF ECO-SENSITIVE ZONE AROUND DACHIGAM NATIONAL PARK, THAJWAS(BALTAL)WILDLIFESANCTUARYANDOVERA-ARUWILDLIFESANCTUARYINTHE UNION TERRITORY OF JAMMU & KASHMIR

The description of the boundaries of eco-sensitive zone proposed around Dachigam National Park, Overa – Aru and Thajwas Wildlife Sanctuary in physical terms (like roads, hills, river bodies etc.) by starting from a point on the boundary and then moving clockwise along the boundary and reaching back to the starting point is described as under:

Sl.No.	Clockwise point markedon map (Annexure -IIB)	Latitude	Longitude	Distance fromPA boundary	Description
1	A79	34°3'15.251"N	75°8'0.671"E	4000m	TralWildlifeSanctuary Boundary
2	A80	34°2'58.075"N	75°4'43.320"E	5800m	TralWildlifeSanctuary Boundary
3	A78	34°3'54.827"N	75°10'9.078"E	1000 m	CO22/TralForest Area,PambachKhod
4	A77	34°3'32.136"N	75°11'49.204"E	1000 m	CO13/TralForest Area
5	A76	34°0'51.106"N	75°11'47.399"E	1500 m	CO24/ForestArea
6	A75	33°58'40.560" N	75°12'45.305"E	1000m	CO3ForestArea, Watwagar
7	A74	33°55'59.424" N	75°14'14.040"E	1000m	CO51/LForestArea
8	A73	33°55'30.071" N	75°15'57.718"E	1000m	CO50/L,OWUR VILLAGE, LidderForest

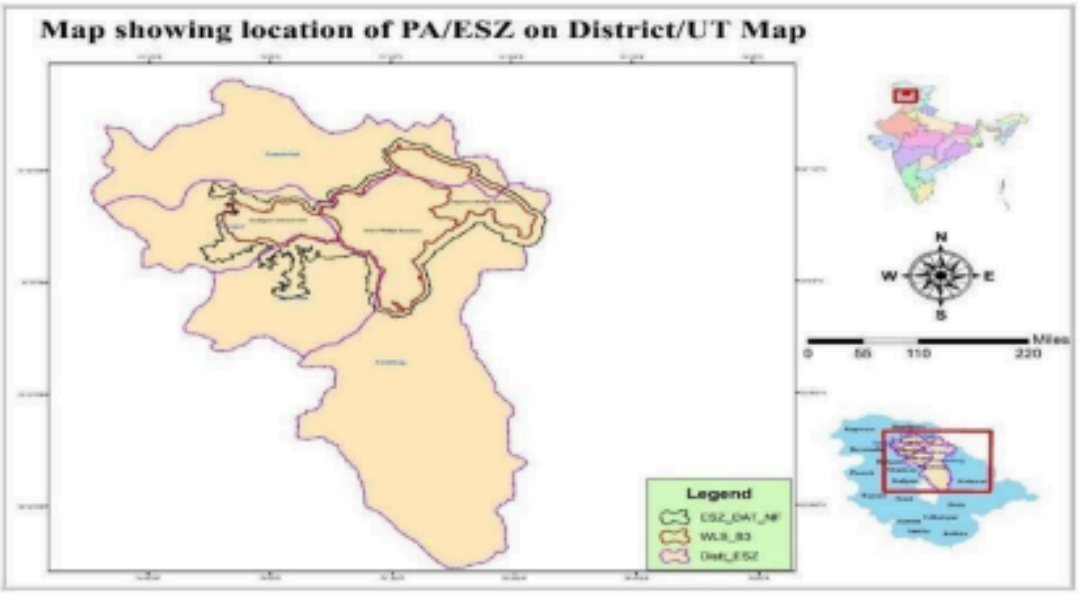
9	A72	33°56'24.120" N	75°17'31.265"E	1000m	CO45/L,LidderNala
10	A71	33°57'15.929" N	75°18'3.605"E	1000m	KhelanForest
11	A70	33°59'22.631" N	75°19'46.479"E	1000m	MamalForest,Lidder Nala
12	A69	34°0'39.145"N	75°19'30.680"E	1000M	MamalVillageLidder Forest
13	A68	34°2'18.510"N	75°18'46.000"E	1000m	Wachran,LidderForest
14	A67	34°4'17.693"N	75°20'27.833"E	2000 m	CO19/L,ForestArea, Sangam
15	A66	34°5'56.905"N	75°22'34.820"E	2000 m	CO16,Alpine Pasture,Sarnar
16	A65	34°6'33.678"N	75°23'43.486"E	2000 m	RazdanNar,Alpine Pasture
17	A64	34°7'17.036"N	75°24'47.423"E	2000 m	CO12/L,Alpine Pasture
18	A63	34°7'58.882"N	75°25'23.100"E	2000 m	Rabemarg,AlpinePasture
19	A62	34°8'0.552"N	75°26'31.540"E	2000 m	ChhutPass,Alpine Pasture
20	A61	34°7'4.716"N	75°27'28.791"E	2000 m	Astanmarg,AlpinePasture
21	A60	34°5'29.317"N	75°29'6.805"E	3500m	WahabalTop,Alpine Pasture
22	A59	34°4'56.071"N	75°32'7.704"E	2000m	GuidiGali,AlpinePasture
23	A58	34°6'41.702"N	75°33'43.985"E	2000m	AlpinePasture
24	A57	34°9'16.025"N	75°33'34.143"E	1000M	NICHHANG, ALPINE PASTURE
25	A55	34°13'3.553"N	75°28'22.872"E	1000M	NaginpatharSindhForest
26	A54	34°14'27.098" N	75°25'33.864"E	1000M	DOMELFOREST,SINDH Forest
27	A53	34°16'48.778" N	75°21'57.738"E	1000M	SERBAL VILLAGE,SINDHForest
28	A52	34°18'6.772"N	75°19'50.204"E	1000M	ICHAMARGSindhForest
29	A51	34°18'58.878" N	75°16'46.479"E	1000 m	ForestofSindh
30	A50	34°18'5.637"N	75°14'56.678"E	1000M	SINDHRIVER
31	A49	34°17'29.286" N	75°14'31.634"E	300 M	SINDHRIVER
32	A48	34°16'56.159" N	75°14'1.212"E	1000 m	CO53/S,AlpinePasture
33	A47	34°15'49.113" N	75°14'49.986"E	1000M	GANJFORESTS,SINDH DIVN
34	A46	34°15'16.878" N	75°15'1.176" E	1000 m	CO53/S,AlpinePasture
35	A45	34°14'37.991" N	75°13'45.388"E	1000 m	CO53/S,AlpinePasture

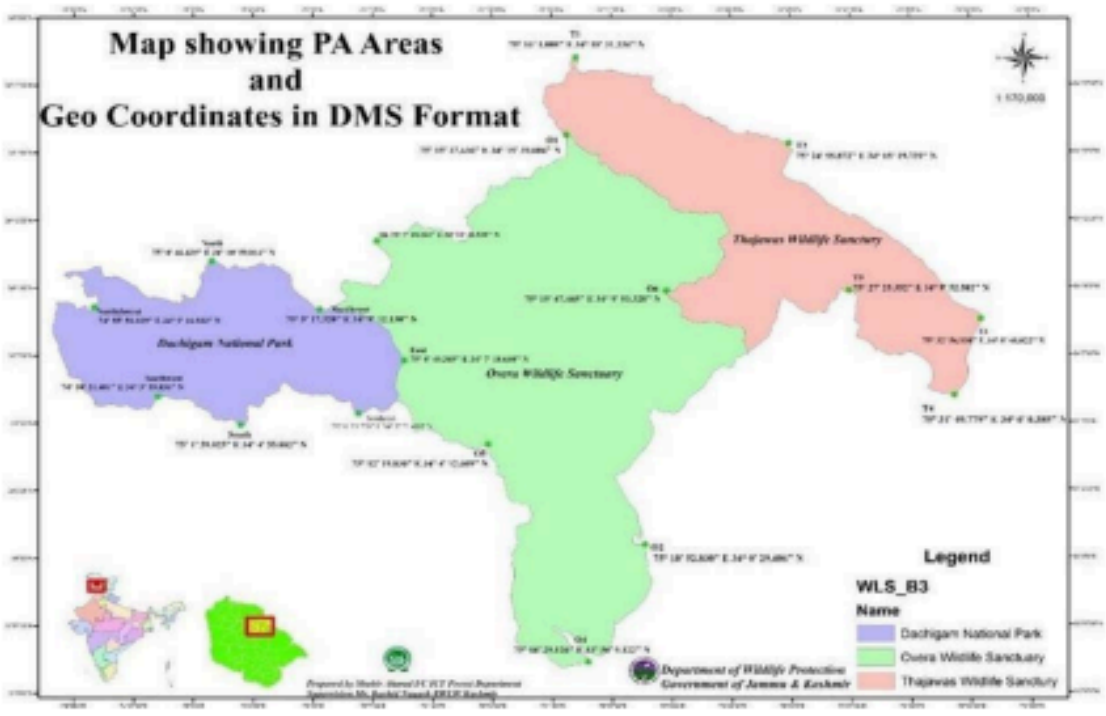
36	A44	34°14'18.503"N	75°12'42.915"E	1000 m	CO53/S,AlpinePasture
37	A43	34°13'35.740" N	75°11'40.523"E	1000 m	CO49/S,AlpinePasture
38	A42	34°12'36.944" N	75°10'45.661"E	1000 m	CO45/S,AlpinePasture
39	A41	34°12'46.428" N	75°9'53.324"E	1000 m	CO44/S,AlpinePasture
40	A40	34°12'31.919" N	75°8'33.634"E	1000 m	CO41/S,AlpinePasture
41	A39	34°12'17.483" N	75°7'29.182"E	1000 m	CO39/S,AlpinePasture
42	A38	34°10'54.508" N	75°7'37.519"E	1000 m	CO34/MBL,AlpinePasture
43	A37	34°9'44.700"N	75°5'30.248"E	1000 m	HokaSar,AlpinePasture
44	A36	34°11'25.897" N	75°3'11.160" E	1000 m	SuraPharaoForest,Sindh
45	A35	34°11'30.915" N	75°0'43.381"E	1000 m	Lidwas,AlpinePasture
46	A34	34°12'58.353" N	74°55'33.494"E	4000 m	Lidwas,AlpinePasture DaraCRBoundary
47	A33	34°12'14.645" N	74°53'2.294"E	4000 m	Tulapather,ForestsDaraCR Boundary
48	A32	34°12'0.537" N	74°55'9.431"E	2500m	DaraNala,Darawan, ForestsDaraCRBoundary
49	A31	34°10'56.846" N	74°55'30.008"E	500 m	Chak-i-Daravillage
50	A30	34°10'30.271" N	74°54'28.658"E	200 m	MurinderbaghVillage, Waterbody
51	A29/1	34°10'16.143" N	74°55'17.265"E	200 m	AgricultureLand,NuThid Village
52	A29	34°9'22.069"N	74°55'46.856"E	200 m	MahadeoNar,Agriculture Land
53	A28	34°9'21.172"N	74°55'11.641"E	200 m	MavasKol
54	A27	34°9'38.496"N	74°54'20.173"E	200 m	PWDWaterTank &Reservior
55	A26	34°8'25.731"N	74°53'17.089"E	1220m	NishatCRBoundary
56	A25	34°4'35.364"N	74°51'21.879"E	6500m	KhanmohCRBoundary ZawanForest
57	A24	34°3'6.963"N	74°54'15.042"E	5000m	KhanmohCRBoundary
58	A23	34°5'0.460"N	74°57'56.832"E	1000m	openscrub
59	A22	34°3'23.601"N	75°0'45.759"E	3350m	KhanmohCRBoundary
60	A21	34°1'32.777"N	75°1'41.557"E	6000m	KhrewCRBoundary
61	A20	33°57'50.300" N	75°2'12.931"E	13150m	KhrewCRBoundary
62	A56	34°11'46.161" N	75°30'28.774"E	1000m	Panjtarni,SindhForest

ANNEXURE-IIA

LOCATION MAP OF ECO-SENSITIVE ZONE OF DACHIGAM NATIONAL PARK, THAJWAS

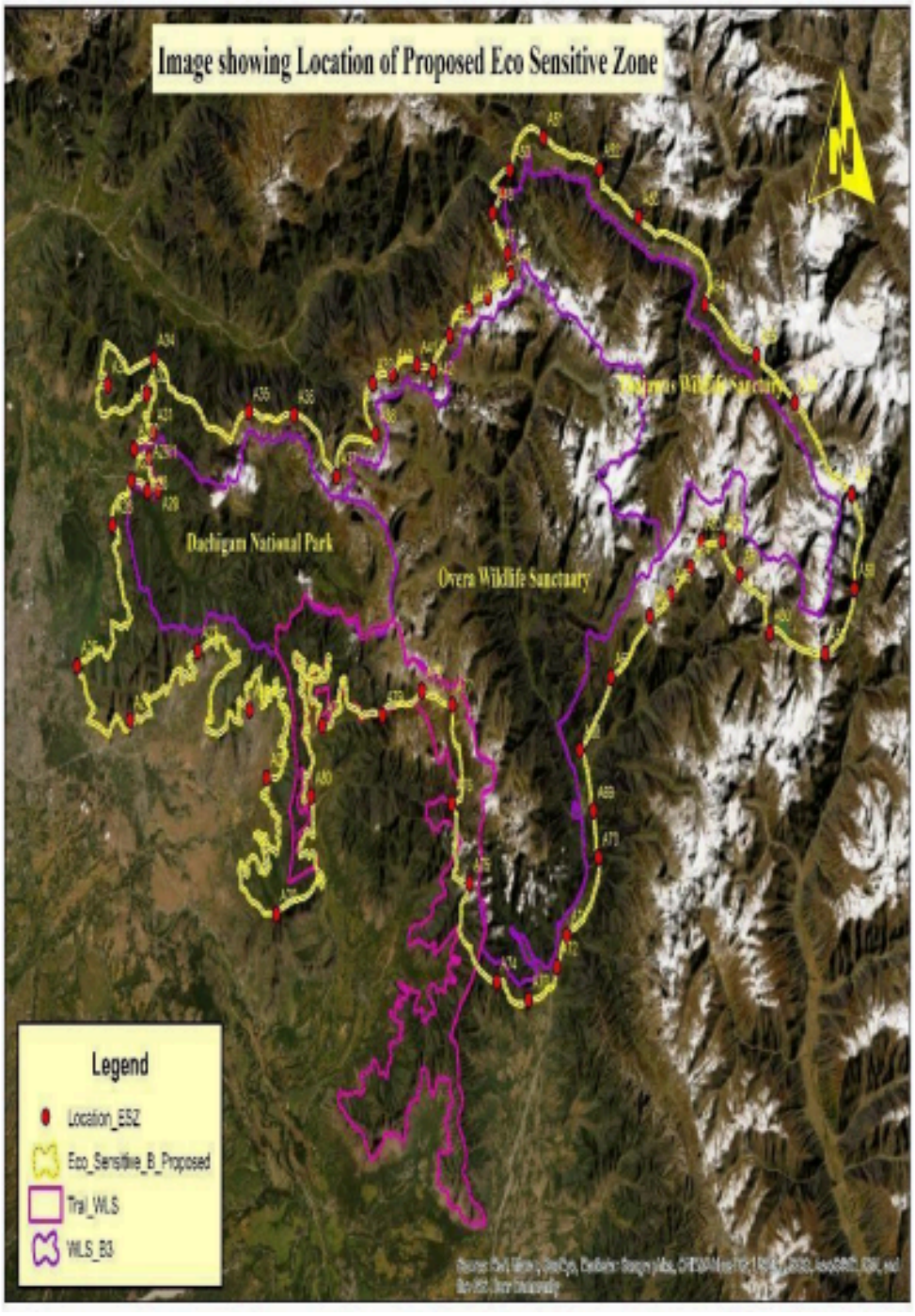
(BALTAL)WILDLIFESANCTUARYANDOVERA-ARUWILDLIFESANCTUARYALONGWITH LATITUDE AND LONGITUDE OF PROMINENT LOCATION





ANNEXURE-II

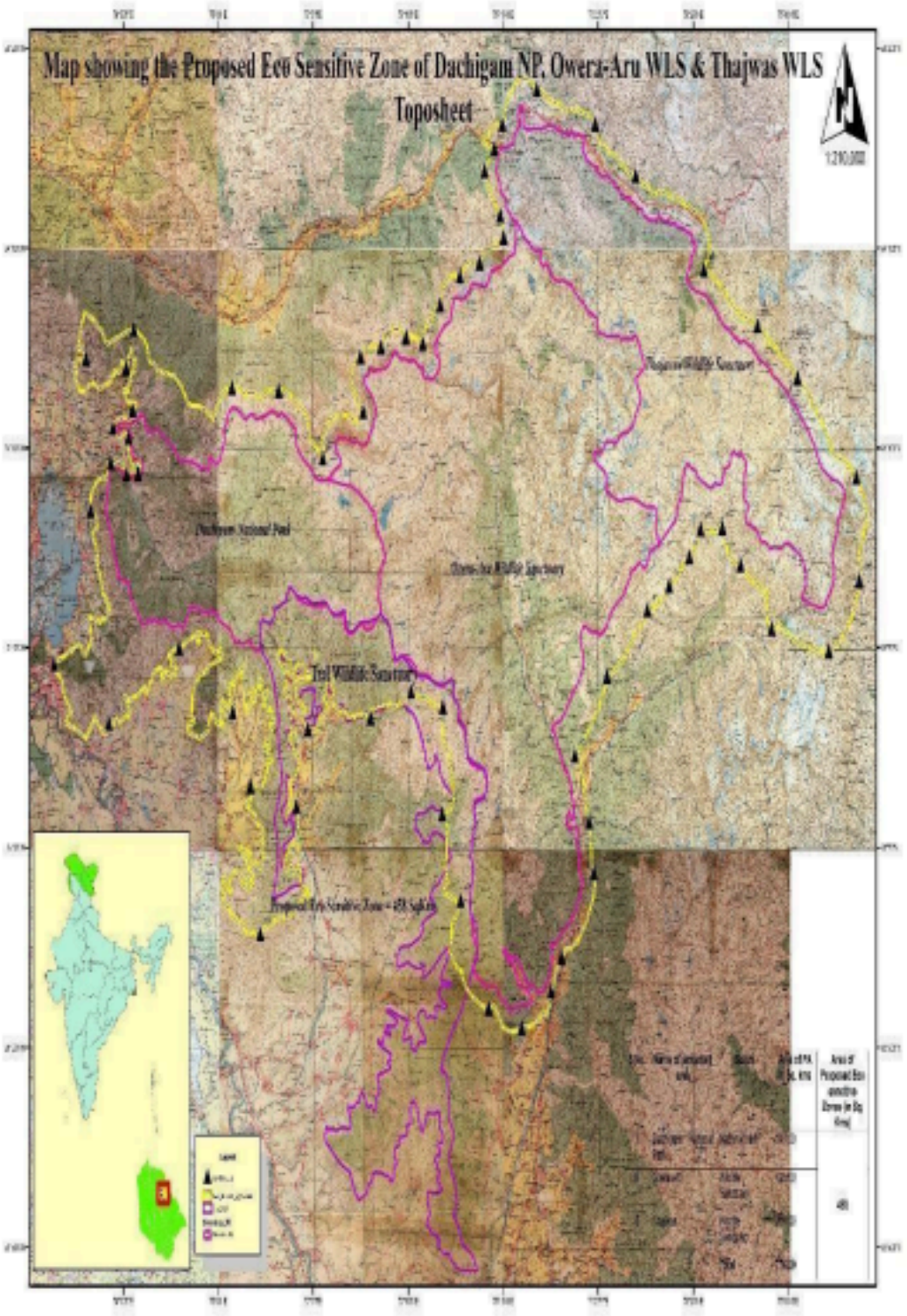
B SATELLITE MAP SHOWING BOUNDARIES OF ECO-SENSITIVE ZONE AROUNDDACHIGAM NATIONALPARK,THAJWAS(BALTAL)WILDLIFESANCTUARYANDOVERA-ARUWILDLIFE SANCTUARYALONGWITHLATITUDEANDLONGITUDEOFPROMINENTLOCATION



ANNEXURE-IIC

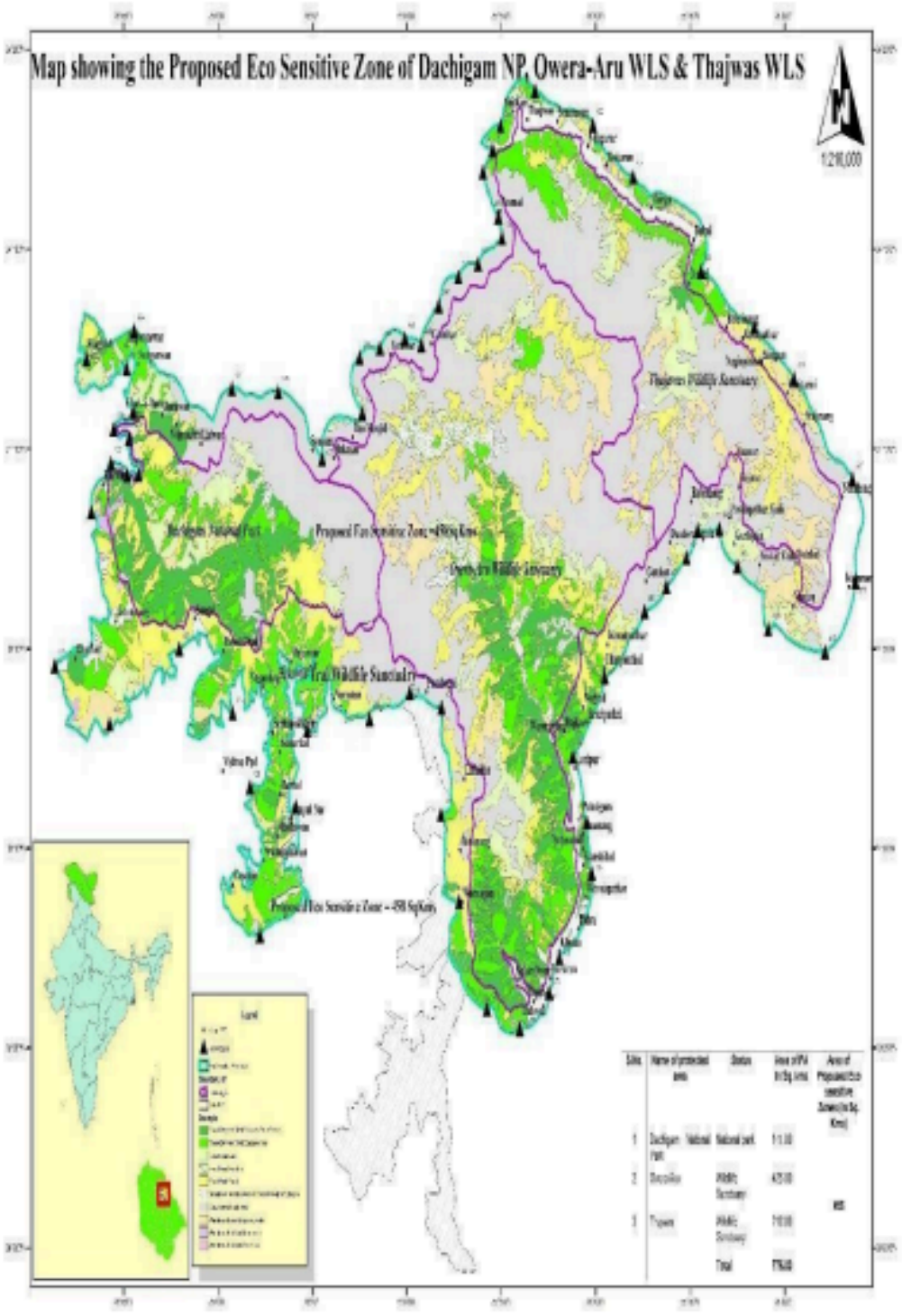
TOPOSHEET MAPOF ECO-SENSITIVEZONE AROUNDDACHIGAMNATIONAL PARK, THAJWAS

(BALTAL)WILDLIFESANCTUARYANDOVERA-ARUWILDLIFESANCTUARY



ANNEXURE-IID

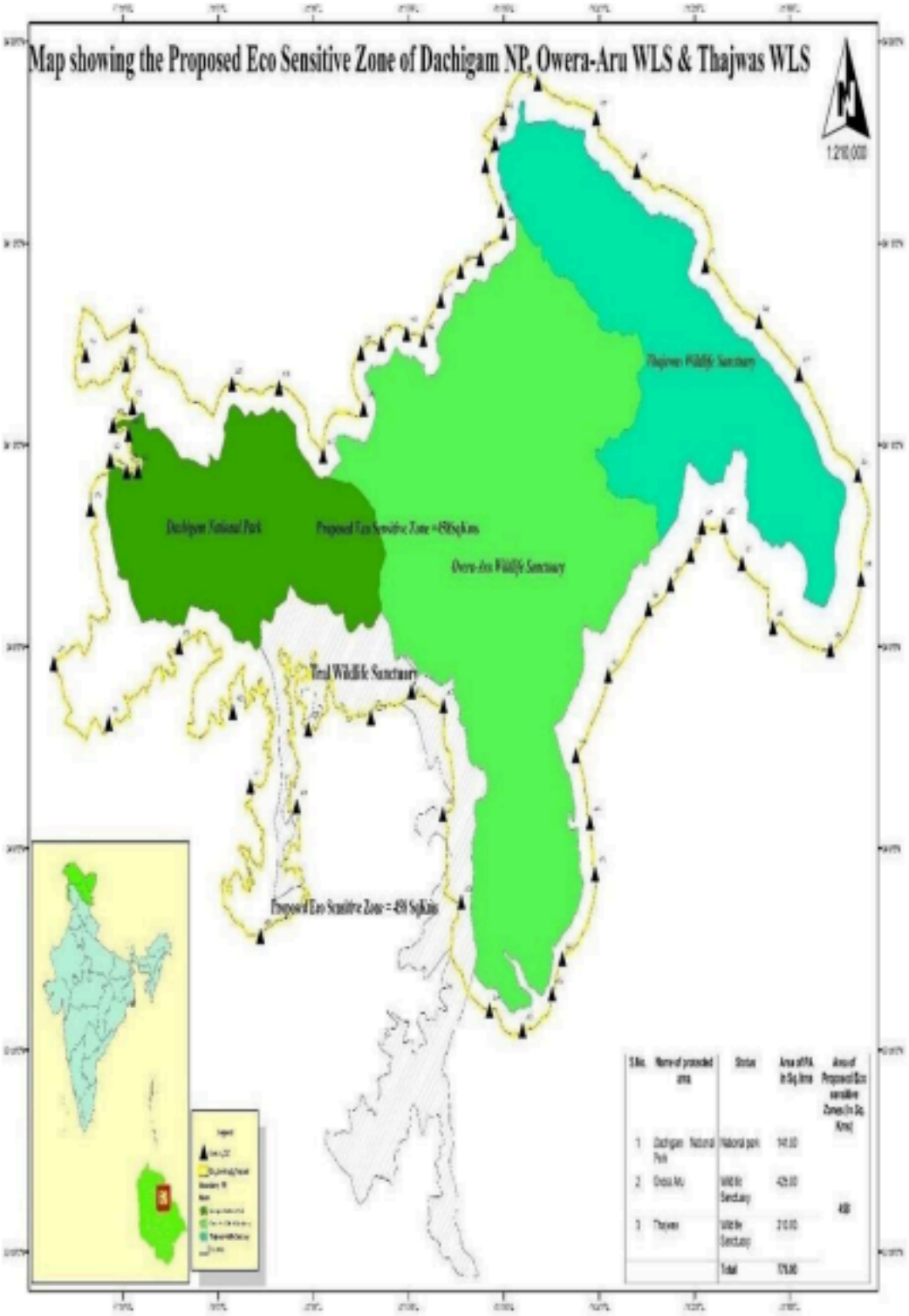
LAND USE LAND COVER MAP OF ECO-SENSITIVE ZONE AROUND DACHIGAM NATIONAL PARK, THAJWAS(BALTAL)WILDLIFESANCTUARYANDOVERA-ARUWILDLIFESANCTUARY



ANNEXURE-IIE

MAPOFECO-SENSITIVEZONEAROUNDDACHIGAMNATIONALPARK,THAJWAS(BALTAL)

WILDLIFESANCTUARYANDOVERA-ARUWILDLIFESANCTUARY



ANNEXURE-III

TABLE SHOWING THE GEO-COORDINATES OF THE PROTECTED AREA OF DACHIGAM NATIONALPARK,THAJWAS(BALTAL)WILDLIFESANCTUARYANDOVERA-ARUWILDLIFE SANCTUARY

Sl.No.	GPSPoint	Latitude	Longitude
1	T1	34°18'31.334"N	75°16'1.008"E
2	T2	34°15'19.739"N	75°24'55.872"E
3	T3	34°8'48.822" N	75°32'56.938"E
4	T4	34°6'0.385"N	75°31'49.779"E
5	T5	34°9'52.582" N	75°27'25.352"E
6	O1	34°15'39.604"N	75°15'37.636"E
7	O2	34°0'29.406" N	75°18'52.83"E
8	O3	34°11'44.538"N	75°7'40.264"E
9	O4	33°56'9.122" N	75°16'29.126"E
10	O5	34°4'12.609" N	75°12'19.830"E
11	O6	34°9'53.328" N	75°19'47.445"E
12	North	34°10'59.814"N	75°0'46.439"E
13	East	34°7'18.640" N	75°8'49.395"E
14	South	34°4'55.882" N	75°1'59.025"E
15	Northwest	34°9'16.933" N	74°55'51.029"E
16	Northeast	34°9'12.130" N	75°5'17.320"E
17	Southwest	34°5'59.836" N	74°58'31.401"E
18	Southeast	34°5'34.450" N	75°6'53.738"E

B.TABLESHOWINGTHEGEO-COORDINATESOFTHEECO-SENSITIVEZONEBOUNDARIESOF DACHIGAM NATIONAL PARK, THAJWAS (BALTAL) WILDLIFE SANCTUARY AND OVERA-ARU WILDLIFESANCTUARY

Sl No.	Clockwisepointmarkedonmap	Latitude	Longitude
1	A79	34°3'15.251"N	75°8'0.671"E
2	A80	34°2'58.075"N	75°4'43.320" E
3	A78	34°3'54.827"N	75°10'9.078" E
4	A77	34°3'32.136"N	75°11'49.204"E
5	A76	34°0'51.106"N	75°11'47.399"E
6	A75	33°58'40.560"N	75°12'45.305"E
7	A74	33°55'59.424"N	75°14'14.040"E
8	A73	33°55'30.071"N	75°15'57.718"E
9	A72	33°56'24.120"N	75°17'31.265"E
10	A71	33°57'15.929"N	75°18'3.605" E
11	A70	33°59'22.631"N	75°19'46.479"E
12	A69	34°0'39.145"N	75°19'30.680"E

13	A68	34°2'18.510" N	75°18'46.000"E
14	A67	34°4'17.693"N	75°20'27.833"E
15	A66	34°5'56.905"N	75°22'34.820"E
16	A65	34°6'33.678"N	75°23'43.486"E
17	A64	34°7'17.036"N	75°24'47.423"E
18	A63	34°7'58.882"N	75°25'23.100"E
19	A62	34°8'0.552"N	75°26'31.540"E
20	A61	34°7'4.716"N	75°27'28.791"E
21	A60	34°5'29.317"N	75°29'6.805" E
22	A59	34°4'56.071"N	75°32'7.704" E
23	A58	34°6'41.702"N	75°33'43.985"E
24	A57	34°9'16.025"N	75°33'34.143"E
25	A55	34°13'3.553" N	75°28'22.872"E
26	A54	34°14'27.098"N	75°25'33.864"E
27	A53	34°16'48.778"N	75°21'57.738"E
28	A52	34°18'6.772"N	75°19'50.204"E
29	A51	34°18'58.878"N	75°16'46.479"E
30	A50	34°18'5.637"N	75°14'56.678"E
31	A49	34°17'29.286"N	75°14'31.634"E
32	A48	34°16'56.159"N	75°14'1.212" E
33	A47	34°15'49.113"N	75°14'49.986"E
34	A46	34°15'16.878"N	75°15'1.176" E
35	A45	34°14'37.991"N	75°13'45.388"E
36	A44	34°14'18.503"N	75°12'42.915"E
37	A43	34°13'35.740"N	75°11'40.523"E
38	A42	34°12'36.944"N	75°10'45.661" E
39	A41	34°12'46.428"N	75°9'53.324" E
40	A40	34°12'31.919"N	75°8'33.634" E
41	A39	34°12'17.483"N	75°7'29.182" E
42	A38	34°10'54.508"N	75°7'37.519" E
43	A37	34°9'44.700"N	75°5'30.248" E
44	A36	34°11'25.897"N	75°3'11.160"E
45	A35	34°11'30.915"N	75°0'43.381" E
46	A34	34°12'58.353"N	74°55'33.494"E
47	A33	34°12'14.645"N	74°53'2.294" E
48	A32	34°12'0.537"N	74°55'9.431" E
49	A31	34°10'56.846"N	74°55'30.008"E
50	A30	34°10'30.271"N	74°54'28.658"E
51	A29/1	34°10'16.143"N	74°55'17.265"E
52	A29	34°9'22.069"N	74°55'46.856"E

53	A28	34°9'21.172"N	74°55'11.641"E
54	A27	34°9'38.496"N	74°54'20.173"E
55	A26	34°8'25.731"N	74°53'17.089"E
56	A25	34°4'35.364"N	74°51'21.879"E
57	A24	34°3'6.963"N	74°54'15.042"E
58	A23	34°5'0.460"N	74°57'56.832"E
59	A22	34°3'23.601"N	75°0'45.759" E
60	A21	34°1'32.777"N	75°1'41.557" E
61	A20	33°57'50.300"N	75°2'12.931" E
62	A56	34°11'46.161"N	75°30'28.774"E

ANNEXURE-IV

LIST OF VILLAGES FALLING UNDER ECO-SENSITIVE ZONE AROUND DACHIGAM NATIONAL PARK,THAJWAS(BALTAL)WILDLIFESANCTUARYANDOVERA-ARUWILDLIFESANCTUARY ALONG WITH GEO-COORDINATES

Thefollowingvillages/townshipsfallwithintheproposedESZofDachigamNationalPark,Thajwas (Baltal) Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary:

TableA:ListofVillagesfallingintheextentoftheESZwithGeo-coordinates(DachigamNationalPark)

Direction	Nameofthevillage	Latitude(N)	Longitude(E)
West	Harwan	34°9'6.755"N	74°53'55.414"E
North-West	Sangarwan	34°12'7.839" N	74°55'44.493"E
	Alipatanwar	34°12'34.883" N	74°55'7.277" E
	Sangrish	34°12'23.998" N	74°53'1.689" E
	Nilpanchal	34°10'36.535" N	74°57'48.842"E
	Lidwas	34°10'7.469" N	74°59'6.327" E
	Sonasar	34°9'58.283" N	75°4'59.318" E
	Chak-i-Dara	34°10'55.184" N	74°55'42.793"E
	Darawan	34°10'50.716" N	74°57'3.790" E
South-East	Narastan	34°3'44.756" N	75°6'8.078"E
	Parangom	34°4'37.377" N	75°5'10.638" E
	Zuastan	34°4'28.826" N	75°4'43.266" E
	Hajannar	34°4'40.119" N	75°3'51.195" E
South	Hakawan	34°4'9.288"N	75°3'11.158" E
	Arapal Nar	34°0'45.312" N	75°3'50.430" E
	Wahabkharun	33°59'41.933"N	75°2'26.015" E
	Mashawan	34°0'19.134" N	75°3'7.192"E
South	Sangri	34°5'44.981" N	74°58'47.442"E
South	PahalChak	34°4'57.139" N	75°0'16.550" E
South-East	Guasain	33°59'5.227" N	75°0'46.357" E
	Darbal	34°1'21.075" N	75°3'18.698" E
	Sutturbal	34°2'25.226" N	75°3'15.799" E

North-East	Sethapokhirin	34°2'54.372" N	75°2'53.756" E
	Nagandar	34°4'2.450"N	75°2'22.903" E
	VishnuPad	34°1'56.086" N	75°0'15.121" E
	Hokasar	34°9'46.028" N	75°6'6.465"E
South-West	Gharkut	34°4'45.188" N	74°52'26.657"E
	ChashmaShahi	34°5'4.522"N	74°53'19.845"E
	Astanmarg	34°5'41.483" N	74°54'35.626"E

TableB:ListofVillagesfallingintheextentoftheESZwithGeo-coordinates(Overa-AruWildlifeSanctuary)

Direction	Nameofthevillage	Latitude (N)	Longitude(E)
North-East	Gonhar	34°6'41.460" N	75°22'38.632"E
	Koranpathar	34°5'6.212"N	75°20'37.691" E
	Chuspanthal	34°4'30.433" N	75°20'25.571"E
	Naginpathri	34°3'48.163" N	75°19'55.467"E
	Nagrad	34°3'32.064" N	75°19'20.233"E
	Zarajtsak	34°3'14.452" N	75°18'25.916"E
	Hajkut	34°2'56.095" N	75°18'19.490"E
	Braripathri	34°3'9.923"N	75°19'31.748"E
	Zambarub	34°3'4.085"N	75°19'1.421" E
	Wowurgasu	34°2'49.620" N	75°17'52.905"E
East	Laripur	34°2'0.264"N	75°18'54.076"E
	Pahalgam	34°0'48.271" N	75°19'15.500"E
South-East	Kaumarg	34°0'21.628" N	75°19'19.049"E
	Nunwanah	33°59'59.090" N	75°19'18.119"E
	Ganshibal	33°59'34.662" N	75°19'21.691"E
	Nitroispathar	33°58'46.269" N	75°19'31.091"E
	Rakidar	33°58'18.367" N	75°19'16.612"E
	Lidru	33°57'59.147" N	75°19'3.859" E
	Khelan	33°57'25.722" N	75°18'3.718" E
South	Varsiran	33°56'44.701" N	75°17'35.401"E
	Lar	33°56'2.720" N	75°17'14.693"E
	Owar	33°56'10.072" N	75°16'43.168"E
	NalarOwur	33°56'42.348" N	75°15'53.970"E
	Dahwot	33°55'43.079" N	75°16'39.136"E
South-West	Watwagan	33°58'39.156" N	75°12'55.367"E
	Banimarg	33°59'57.120" N	75°12'48.798"E
	Lichidor	34°1'43.928" N	75°13'2.038" E
	Pambagai	34°3'55.140" N	75°11'1.623" E
	PambachKhod	34°4'28.345" N	75°9'52.002" E

North	DeoMasjid	34°10'17.132" N	75°7'8.045"E
	Yamhar	34°12'21.636" N	75°9'7.605"E
	Gumbar	34°12'38.221" N	75°11'16.754"E

TableC:ListofVillagesfallingintheextentoftheESZwithGeo-coordinatesThajwasWildlifesanctuary

Direction	Nameofthevillage	Latitude (N)	Longitude(E)
North-East	Shitkari	34°18'27.051" N	75°15'37.234"E
	Thajwas	34°18'14.630" N	75°16'22.825"E
North	Sonamarg	34°18'12.004" N	75°17'57.697"E
North-West	Nilagarar	34°17'33.985" N	75°19'33.272"E
	Kokaran	34°17'5.503" N	75°20'34.803"E
	Ranga	34°16'1.997" N	75°22'56.646"E
	Baltal	34°15'13.873" N	75°25'10.132"E
	Domel	34°14'8.346" N	75°24'57.546"E
	Brarimarg	34°13'2.859" N	75°26'55.023"E
	Kuthpathar	34°12'47.019" N	75°27'46.960"E
	Naginpathar	34°12'27.517" N	75°28'20.634"E
	Sangam	34°12'8.537" N	75°28'47.432"E
East	Panjtarni	34°11'24.006" N	75°30'7.580" E
	Prajmarg	34°10'36.596" N	75°31'0.492" E
South-East	Nichhang	34°8'47.776" N	75°33'2.310" E
	Kainmar	34°6'33.065" N	75°33'22.637"E
	Vaujan	34°6'4.290"N	75°30'27.261"E
	Wahbal	34°7'8.131"N	75°30'35.322"E
	SaskatGulu	34°7'5.742"N	75°28'40.851"E
	Gurlopun	34°7'37.227" N	75°27'19.300"E
South	PoshapatharGulu	34°8'16.873" N	75°27'7.015" E
	Naunar	34°9'43.038" N	75°27'22.340"E
South-West	Keinar	34°9'2.534"N	75°27'35.277"E
	Rabemarg	34°8'40.610" N	75°25'2.823" E
	Danderangulu	34°7'39.144" N	75°23'54.155"E

ANNEXURE-V

Performa ofActionTakenReport:-

1. Numberanddateofmeetings.
2. Minutesofthemeetings:(mentionnoteworthypoints.Attachminutesofthemeetingas separate Annexure).
3. StatusofpreparationofZonalMasterPlanincludingTourismMasterPlan.
4. Summaryofcasesdealtwithrectificationoferrorapparentonfaceoflandrecord(Eco- sensitive Zone wise). Details may be attached as Annexure.

5. Summaryofcasesscrutinized foractivitiescoveredundertheEnvironmentImpactAssessment Notification, 2006 (Details may be attached as separate Annexure).
6. SummaryofcasesscrutinizedforactivitiesnotcoveredundertheEnvironmentImpactAssessm ent Notification, 2006 (Details may be attached as separate Annexure).
7. SummaryofcomplaintslodgedunderSection19oftheEnvironment(Protection)Act,1986.
8. Anyothermatterofimportance.

Annexure 5

List of revenue villages surrounding Over-Aru WLS with house hold.

S No.	Village	Number of House holds	Human population
1	Nalla Overa	275	1650
2	Overa	58	348
3	Dahwatoo	103	600
4	Shalbaran	27	120
5	Veersiran	105	630
6	Laddi	91	540
7	Khellan-Gujran	78	420
8	Mandlan	79	400
9	Mamal	88	500
10	Aru	61	400

ANNEXURE - 6

List of vehicles in Overa-Aru Wildlife Sanctuary

S no.	Registration No.	Type	Present Status	Remarks
1	JK03F-1382	Mahindra-Bolero	In Use	
2	JK03H-4860	Pulser	In Use	
3	JK03H-1834	Splender	In Use	
4	JK03C-4178	SF-709-EX (TATA)	In Use	
5	JK03H-1807	Splender	In Use	
6	JK03H-1869	Splender	In Use	
7	JK03C-4395	Yamaha	In Use	

ANNEXURE- 7

List of infrastructure present in Overa-Aru Wildlife Sanctuary

Block	Type of Asset	Location	No. of units
Aru	Staff Quarter (Brick)	Aru	01 No.
Aru	Ticket Booth	Mandlan	01 No.
Overa	Rest House / Maharaja Hut (Wooden)	Nallah Overa	01 No.
Overa	Kitchen	Nallah Overa	01 No.
Overa	Watch Tower	Nallah Overa	01 No.
Overa	Range Office (Brick)	Overa	01 No.
Overa	Staff Quarter (Prefabricated)	Laddi Veersiran	01 No.
Overa	Rescue Centre (Stone/Brick)	Overa	01 No.
Overa	Staff Quarter	Overa	01 No.
Mamal	Staff Quarter	Overa	01 No.
Pahalgam	Kashmir Zoo	Pahalgam	01 No.
Pahalgam	Inspection Hut	Mini-Zoo, Pahalgam	01 No.
Pahalgam	Fodder Shed	Mini-Zoo, Pahalgam	01 No.
Pahalgam	Snow Shed	Mini-Zoo, Pahalgam	01 No.
Pahalgam	Kiosk	Mini-Zoo, Pahalgam	01 No.
Pahalgam	Cafeteria	Mini-Zoo, Pahalgam	01 No.
S no.	**Year**	**Sanctuary (Rs)**	**Mini-Zoo (Rs)**
1	2018-19	249600	347640
2	2019-20	342040	475160
3	2020-21	362725	38580
4	2021-22	1308525	1744870
5	2022-23	1964350	888570

Annexure 8 Details of Boundary Pillars

S. No.	Range	FileName	BP No.	Geo-Cordinates	
				Latitude	Longitude
1	Lidder	Mundlana	M 001	34.04831667	75.29211944
2	Lidder	Mundlana	M002	34.05302778	75.28863333
3	Lidder	Mundlana	M 003	34.05409444	75.28863333
4	Lidder	Mundlana	M 004	34.05331111	75.29163611
5	Lidder	Mundlana	M 005	34.05339722	75.29220556
6	Lidder	Mundlana	M 006	34.05364167	75.29294167
7	Lidder	Mundlana	M 007	34.05531389	75.29391944
8	Lidder	Mundlana	M 008	34.05573333	75.29425833
9	Lidder	Mundlana	M 009	34.05653056	75.29438889
10	Lidder	Mundlana	M 010	34.05743333	75.29428056
11	Lidder	Mundlana	M 011	34.05810833	75.29311667
12	Lidder	Mundlana	M 012	34.05871667	75.29201111
13	Lidder	Mundlana	M 013	34.05990278	75.29129722
14	Lidder	Mundlana	M 014	34.06186667	75.28968333
15	Lidder	Mundlana	M 015	34.06025278	75.29024167
16	Lidder	Mundlana	M 016	34.05998333	75.29053333
17	Lidder	Mundlana	M 017	34.05731111	75.29128889
18	Lidder	Mundlana	M 018	34.05553611	75.28826111
19	Lidder	Mundlana	M 019	34.05481111	75.28801111
20	Lidder	Mundlana	M 020	34.05427222	75.28784167
21	Lidder	Mundlana	M 021	34.05379722	75.28817778
22	Lidder	Mundlana	M 022	34.05969722	75.28301111
23	Lidder	Mundlana	M 023	34.05996667	75.28184722
24	Lidder	Mundlana	M 024	34.06004167	75.28111944
25	Lidder	Mundlana	M 025	34.06783333	75.27008333
26	Lidder	Mundlana	M 026	34.07107500	75.27017500
27	Lidder	Mundlana	M 027	34.07138889	75.27100278
28	Lidder	Mundlana	M 028	34.07386944	75.26959444
29	Lidder	Mundlana	M 029	34.07550556	75.26861389
30	Lidder	Mundlana	M 030	34.07581944	75.26880556
31	Lidder	Mundlana	M 031	34.08208889	75.26669444
32	Lidder	Mundlana	M 032	34.08586389	75.26490000
33	Lidder	Mundlana	M 033	34.08628333	75.26452778
34	Lidder	Mundlana	M 034	34.08736111	75.26375000
35	Lidder	Mundlana	M 035	34.08783333	75.26397222
36	Lidder	Langabal/Veersiran	M 001	33.97003333	75.31244722
37	Lidder	LangalbaL/Veersiran	M002	33.96907222	75.30977778
38	Lidder	Langalbal/Veersiran	M 003	33.96900556	75.30980000

39	Lidder	Langalbal/Veersiran	M 004	33.96795000	75.30896389
40	Lidder	Aru	M 001	34.09058333	75.26472778
41	Lidder	Aru	M002	34.09183889	75.26509722
42	Lidder	Aru	M 003	34.09325000	75.26462222
43	Lidder	Aru	M 004	34.09177500	75.25881111
44	Lidder	Aru	M 005	34.09011389	75.25858889
45	Lidder	Aru	M 006	34.08913333	75.25822222
46	Lidder	Chelnod-Mamel	M 001	34.08911111	75.25822222
47	Lidder	Chelnod-Mamel	M002	34.09138889	75.26536111
48	Lidder	Chelnod-Mamel	M 003	34.08461111	75.26155556
49	Lidder	Chelnod-Mamel	M 004	34.08430556	75.26108333
50	Lidder	Chelnod-Mamel	M 005	34.08380556	75.26125000
51	Lidder	Chelnod-Mamel	M 006	34.08302778	75.26158333
52	Lidder	Chelnod-Mamel	M 007	34.03633333	75.30258333
53	Lidder	Chelnod-Mamel	M 008	34.03627778	75.30219444
54	Lidder	Chelnod-Mamel	M 009	34.03566667	75.30238889
55	Lidder	Chelnod-Mamel	M 010	34.03500000	75.30263889
56	Lidder	Chelnod-Mamel	M 011	34.03355556	75.30322222
57	Lidder	Chelnod-Mamel	M 012	34.03247222	75.30447222
58	Lidder	Chelnod-Mamel	M 013	34.02697222	75.30911111
59	Lidder	Chelnod-Mamel	M 014	34.02663889	75.30919444
60	Lidder	Chelnod-Mamel	M 015	34.02616667	75.30938889
61	Lidder	Chelnod-Mamel	M 016	34.02522222	75.30972222
62	Lidder	Chelnod-Mamel	M 017	34.02452778	75.30972222
63	Lidder	Chelnod-Mamel	M 018	34.02397222	75.31022222
64	Lidder	Chelnod-Mamel	M 019	34.02313889	75.31030556
65	Lidder	Chelnod-Mamel	M 020	34.02275000	75.31086111
66	Lidder	Chelnod-Mamel	M 021	34.02244444	75.31027778
67	Lidder	Chelnod-Mamel	M 022	34.02191667	75.31027778
68	Lidder	Chelnod-Mamel	M 023	34.02127778	75.31063889
69	Lidder	Chelnod-Mamel	M 024	34.02008333	75.31105556
70	Lidder	Chelnod-Mamel	M 025	34.01919444	75.30875000
71	Lidder	Chelnod-Mamel	M 026	34.01755556	75.31275000
72	Lidder	Chelnod-Mamel	M 027	34.01677778	75.31269444
73	Lidder	Chelnod-Mamel	M 028	34.01513889	75.31255556
74	Lidder	Chelnod-Mamel	M 029	34.01077778	75.31230556
75	Lidder	Chelnod-Mamel	M 030	34.01019444	75.31122222
76	Lidder	Chelnod-Mamel	M 031	34.01050000	75.30975000
77	Lidder	Chelnod-Mamel	M 032	34.01177778	75.30925000
78	Lidder	Chelnod-Mamel	M 033	34.01400000	75.30883333
79	Lidder	Chelnod-Mamel	M 034	34.01275000	75.30761111

S. No.	Range	FileName	BP No.	Geo-Cordinates	
				Latitude	Longitude
80	Lidder	Chelnod-Mamel	M 035	34.01011111	75.30638889
81	Lidder	Chelnod-Mamel	M 036	34.00952778	75.30566667
82	Lidder	Chelnod-Mamel	M 037	34.00944444	75.30483333
83	Lidder	Chelnod-Mamel	M 038	34.00891667	75.30569444
84	Lidder	Chelnod-Mamel	M 039	34.00808333	75.30691667
85	Lidder	Chelnod-Mamel	M 040	34.01155556	75.26216667
86	Lidder	Chelnod-Mamel	M 041	34.02722222	75.25788889
87	Lidder	Overa	M 001	33.96205556°N	75.29983333°E
88	Lidder	Overa	M002	33.96093056°N	75.29954444°E
89	Lidder	Overa	M 003	33.96011389°N	75.29877778°E
90	Lidder	Overa	M 004	33.95988889°N	75.29836111°E
91	Lidder	Overa	M 005	33.95980556°N	75.29783333°E
92	Lidder	Overa	M 006	33.95963889°N	75.29608333°E
93	Lidder	Overa	M 007	33.95815278°N	75.29443056°E
94	Lidder	Overa	M 008	33.95727778°N	75.29391667°E
95	Lidder	Overa	M 009	33.95677778°N	75.29419444°E
96	Lidder	Overa	M 010	33.95600000°N	75.29469444°E
97	Lidder	Overa	M 011	33.95561111°N	75.29547222°E
98	Lidder	Overa	M 012	33.95555556°N	75.29483333°E
99	Lidder	Overa	M 013	33.95794444°N	75.29283333°E
100	Lidder	Overa	M 014	33.95719167°N	75.29147222°E
101	Lidder	Overa	M 015	33.95500000°N	75.29222222°E
102	Lidder	Overa	M 016	33.95522222°N	75.29252500°E
103	Lidder	Overa	M 017	33.95502778°N	75.29288889°E
104	Lidder	Overa	M 018	33.95438889°N	75.29297222°E
105	Lidder	Overa	M 019	33.95402778°N	75.29311111°E
106	Lidder	Overa	M 020	33.95225000°N	75.29291667°E
107	Lidder	Overa	M 021	33.95186111°N	75.29280556°E
108	Lidder	Overa	M 022	33.95172222°N	75.29252778°N
109	Lidder	Overa	M 023	33.95133333°N	75.29033333°E
110	Lidder	Overa	M 024	33.95019444°N	75.29144444°E
111	Lidder	Overa	M 025	33.94866667°N	75.29200000°E
112	Lidder	Overa	M 026	33.94811111°N	75.29202778°E
113	Lidder	Overa	M 027	33.94763889°N	75.29188889°E
114	Lidder	Overa	M 028	33.94611111°N	75.29080556°E
115	Lidder	Overa	M 029	33.94466667°N	75.28997222°E
116	Lidder	Overa	M 030	33.93800000°N	75.28502778°E

117	Lidder	Overa	M 031	33.93644444°N	75.28397500°E
118	Lidder	Overa	M 032	33.93515556°N	75.28181389°E
119	Lidder	Overa	M 033	33.93506667°N	75.28141944°N
120	Lidder	Overa	M 034	33.93522222°N	75.28055556°E
121	Lidder	Overa	M 035	75.28055556°N	75.27611111°E
122	Lidder	Overa	M 036	33.93986111°N	75.27458333°E
123	Lidder	Overa	M 037	33.93994444°N	75.27391667°E
124	Lidder	Overa	M 038	33.94051389°N	75.27344722°E
125	Lidder	Overa	M 039	33.94100000°N	75.27169444°E
126	Lidder	Overa	M 040	33.94133333°N	75.27177778°E
127	Lidder	Overa	M 041	33.94183333°N	75.27069444°E
128	Lidder	Overa	M 042	33.94180556°N	75.26952778°E
129	Lidder	Overa	M 043	33.94386111°N	75.26772222°E
130	Lidder	Overa	M 044	33.94720000°N	75.26433333°E
131	Lidder	Overa	M 045	33.95047222°N	75.26175000°E
132	Lidder	Overa	M 046	33.95233889°N	75.25841111°E
133	Lidder	Overa	M 047	°33.95111944N	75.25661389°E
134	Lidder	Overa	M 048	33.94952778°N	75.25772222°E
135	Lidder	Overa	M 049	33.94746944°N	75.25817500°E
136	Lidder	Overa	M 050	33.94698056°N	75.25813889°E
137	Lidder	Overa	M 051	33.94611111°N	75.25944444°E
138	Lidder	Overa	M 052	33.94555556°N	75.25975000°E
139	Lidder	Overa	M 053	33.94508611°N	75.26061667°E
140	Lidder	Overa	M 054	33.94353889°N	75.26133333°E
141	Lidder	Overa	M 055	33.94256944°N	75.26375833°E
142	Lidder	Overa	M 056	33.94244444°N	75.26344444°E
143	Lidder	Overa	M 057	33.94227500°N	75.26367778°E
144	Lidder	Overa	M 058	33.94128056°N	75.26282222°E
145	Lidder	Overa	M 059	33.94050000°N	75.26233333°E
146	Lidder	Overa	M 060	33.94084167°N	75.26400000°E
147	Lidder	Overa	M 061	33.94115000°N	75.26460000°E
148	Lidder	Overa	M 062	33.94091389°N	75.26489167°E
149	Lidder	Overa	M 063	33.94072222°N	75.26508333°E
150	Lidder	Overa	M 064	33.94069444°N	75.26527778°E
151	Lidder	Overa	M 065	33.94072222°N	75.26555556°E
152	Lidder	Overa	M 066	33.94063889°N	75.26586111°E
153	Lidder	Overa	M 067	33.94064722°N	75.26610000°E
154	Lidder	Overa	M 068	33.94052778°N	75.26641667°E
155	Lidder	Overa	M 069	33.94038889°N	75.26675000°E

156	Lidder	Overa	M 070	33.93939444°N	75.26803889°E
157	Lidder	Overa	M 071	33.93827778°N	75.26986111°E
158	Lidder	Overa	M 072	33.93741667°N	75.27158333°E
159	Lidder	Overa	M 073	33.93575000°N	75.27333333°E
160	Lidder	Overa	M 074	33.93447222°N	75.27347222°E
161	Lidder	Overa	M 075	33.93311111°N	75.27366667°E
162	Lidder	Overa	M 076	33.93241667°N	75.27458333°E
163	Lidder	Overa	M 077	33.93088889°N	75.27463889°E
S. No.	Range	FileName	BP No.	Geo-Cordinates	
				Latitude	Longitude
164	Lidder	Overa	M 078	33.93055556°N	75.27452778°E
165	Lidder	Overa	M 079	33.93069444°N	75.27400000°E
166	Lidder	Overa	M 080	33.92902778°N	75.27333333°E
167	Lidder	Overa	M 081	33.92880556°N	75.27308333°E
168	Lidder	Overa	M 082	33.92841667°N	75.27300000°E
169	Lidder	Overa	M 083	33.92819444°N	75.27327778°E
170	Lidder	Overa	M 084	33.92797222°N	75.27347222°E
171	Lidder	Overa	M 085	33.92736111°N	75.27355556°E
172	Lidder	Overa	M 086	33.92694444°N	75.27372222°E
173	Lidder	Overa	M 087	33.92638889°N	75.27361111°E
174	Lidder	Overa	M 088	75.27361111°N	75.27363889°E
175	Lidder	Overa	M 089	33.92452778°N	75.27216667°E
176	Lidder	Overa	M 090	33.92339167°N	75.27114167°E

S. No.	Activity	Timeline	Remarks
1	ESZ final notification	2024	Achieved
2	Finalization of Zonation Plan	2025–2027	GIS-based mapping and legal notification
3	Up gradation of Mini-Zoo Pahalgam	2025-27	Technical and financial planning
4	Baseline survey of RET species	2025–2027 (Continuous)	Camera trapping, DNA studies
5	Invasive species removal & habitat restoration	2025–2028	Focus on key compartments
6	Fire management infrastructure setup	2025–2027	Watch towers, fire lines, Installation of Weather stations, weather data base
7	NIC construction	2025–2029	Tourist and educational hub
8	Eco-tourism and livelihood programs	2025–2028	Community-based initiatives, Implementation of TIS
9	Conflict mitigation mechanisms	2025–2029	Fencing, compensation mechanism, Low Cost Sensors
10	Capacity building of staff	2025–2026, ongoing	Quarterly training sessions
11	Formation & strengthening of EDCs	2025–2029	Community involvement
12	Research on medicinal plants & sustainable use	2026–2028	MAP conservation action plan
13	Scientific monitoring partnerships	2025–2030	Long-term ecological research
14	Wildlife Census & Hangul Monitoring	Annually starting 2025	February-March census
15	Awareness & education programs	2024–2034 (Continuous)	Regular outreach and education

Priority Actions for 2024–2026

- ❑ Zonation finalization
- ❑ Conflict mitigation infrastructure (fencing, control rooms)
- ❑ Fire management system development
- ❑ Baseline population surveys of Hangul and RET species
- ❑ Eco-tourism infrastructure initiation (Eco-park, NIC)
- ❑ Staff recruitment, training, and provisioning of essential equipment
- ❑ Tourist Information system (TIS)

Institutional Collaborations Needed

Stakeholder	Role
MoEFCC / CZA	Technical and financial support for Mini Zoo Pahalgam
Wildlife Institute of India (WII)	Research, training, monitoring partnerships
Jammu & Kashmir Forest & Revenue Depts.	Land and boundary regularization
Universities, NGOs	Community development, monitoring, education
Local Communities	Eco-tourism, conflict mitigation, conservation

Conclusion

- ❖ The Overa-Aru Wildlife Sanctuary management plan holds the potential to become a model for species recovery, eco-tourism, and integrated habitat management in Jammu and Kashmir.
- ❖ Timely implementation of this action plan will ensure sustainable conservation outcomes and enhanced community livelihoods.

Government of Jammu & Kashmir
Office of the Pr. Chief Conservator of Forests (Wildlife)/
Chief Wildlife Warden, J&K
Silk Factory Road, Rajbagh, Srinagar/ Wildlife Complex, Manda, Jammu
****

The Regional Wildlife Warden
Kashmir Region, Srinagar

No: WLP/Res/2025-26/77-78
Date: 22/04/2025

Subject: Management Plan of Overa- Aru Wildlife Sanctuary
Reference: WLW South letter No: 2658-59/WLWS dated 18.03.2025.
Sir,

With regard to the subject and referenced communication, suggestive format for finalization of Management Plan of Overa-Aru Wildlife Sanctuary is given as under:

Chapter 1: Introduction (To be Incorporated)

- Update historical background with detailed dates and notifications.
- Clearly mention legal status references (SRO 154/1987, etc.).
- Specify exact coordinates, extent, and strategic significance in relation to Dachigam and Tral WLS.

Chapter 2: Background and Attributes (To be Incorporated)

- Include summarized geology, terrain, and climatic conditions.
- Highlight hydrological importance (Lidder River and glacial lakes).
- List key biodiversity attributes and their conservation significance.

Chapter 3: SWOT Analysis (New Section To be Added)

- Insert comprehensive SWOT table.
- Explain Strengths, Weaknesses, Opportunities, and Threats in bullet points for easy understanding.

Chapter 4: Management Challenges and Opportunities (To be Incorporated)

- Summarize issues: grazing pressure, habitat degradation, human-wildlife conflict.

- Link challenges with management opportunities (community involvement, ecotourism).

Chapter 5: Management Strategies (To be Updated)

- **Zonation**: Attach GIS-based maps clearly demarcating Core, Buffer, and Eco-tourism zones.
- **Boundary Rationalization**: Formalize and map human-used and wildlife habitat zones.
- **Corridor Connectivity**: Define Dachigam-Overa-Tral-Thajwas linkage explicitly.
- **Eco-tourism Management**: Conduct and append Carrying Capacity Evaluation.
- **ESZ Management**: Incorporate Government Order No. 428-JK(GAD) of 2025 fully.

Chapter 6: Institutional Framework (To be Added)

- Establish Sanctuary Management Committee (SMC).
- Formulate Village Eco-Development Committees (VEDCs).
- Specify Research, Monitoring, and Surveillance protocols.

Chapter 7: Financial Management and Budget (To be Updated)

- Revise budget estimates using latest SOR 2024.
- Create a Wildlife Management Fund (eco-tourism linked revenue, ESZ funds).

Chapter 8: Inventory and Status of Infrastructure (New Section To be Added)

- **Inventory of Existing Infrastructure:** List all existing buildings, patrolling huts, watch towers, roads, bridges, tourist facilities, anti-poaching camps, etc., with condition assessment.
- **Inventory of Proposed Infrastructure:** Outline proposed structures like new eco-tourism camps, interpretation centers, ranger stations, trails, fire lines, and patrolling tracks.

Chapter 9: Action Plan Calendar (2025–34) (To be Incorporated)

- Present year-wise activities table with clear deliverables, responsibility centers, and budgets.

Chapter 10: Conclusion (To be Incorporated)

- Summarize strategic goals: biodiversity conservation, sustainable ecotourism, community involvement, and climate resilience.

Chapter 11: Annexures (Expanded Section)

- GIS Maps (Vegetation, Zonation, Corridors, ESZ buffer).
- Eco-tourism Carrying Capacity Report.
- Updated List of Flora and Fauna.
- Notifications related to:
    - Declaration of Sanctuary (SRO 154/1987)
    - Eco-Sensitive Zone (ESZ) Notifications
    - Boundary Rationalization Notifications
    - Proclamation Orders
    - Any other relevant legal and administrative orders.
- Demarcation and Proclamation Reports.
- Field Survey Reports.

Special Notes for Finalization

- Ensure all updated Government Orders (boundary rationalization, ESZ notification) are cited.
- Maintain alignment with MoEF&CC's Guidelines and National Wildlife Action Plan (2017–2031).
- Keep tone professional, structured, and legally referential.
- Add Certificate of Approval by Chief Wildlife Warden / Regional Wildlife Warden.
- Add Preface/Foreword signed by the Chief Wildlife Warden.

As such, I am directed to convey you that above suggestions may be incorporated for preparing the final Draft of the Management Plan for Overa – Aru Wildlife Sanctuary and may submit the same within a week's time positively.

Yours faithfully,

(Rashid Yahya Naqash)
Regional Wildlife Warden
Headquarters, J&K

Copy to the:

1. Wildlife Warden, South Wildlife Division, Bijbehara for necessary compliance, please.

Government of Jammu & Kashmir
Office of the Pr. Chief Conservator of Forests (Wildlife)/
Chief Wildlife Warden, J&K
Silk Factory Road, Rajbagh, Srinagar / Wildlife Complex, Manda, Jammu
****

Sub: Minutes of the Standing Committee for approval of management plan held on 11th June 2025.

A meeting of Standing Committee for Approval of Management Plans was convened on 11th June 2025 under chairmanship of Principal Chief Conservator of Forests (Wildlife)/Chief Wildlife Warden, J&K to scrutinise the draft Management Plans for Gulmarg Wildlife Sanctuary, Overa-Aru Wildlife Sanctuary and Kishtwar High Altitude National Park.

The following officers/ members of the Standing Committee attended the meeting:
- Regional Wildlife Warden, Kashmir
- Regional Wildlife Warden, Jammu
- Regional Wildlife Warden, Headquarters
- Special Secretary (Technical), Forest, Ecology & Environment Department
- Sh. Anzar Ahmad Khuroo, Professor, Department of Botany, University of Kashmir
- Wildlife Warden, North
- Wildlife Warden, South
- Wildlife Warden, Kishtwar
- Wildlife Warden, Research
- Wildlife Warden, Technical
- Wildlife Warden (Technical), O/o Regional Wildlife Warden, Kashmir
- Wildlife Warden, Headquarters

A) Management Plan of Gulmarg Wildlife Sanctuary

Wildlife Warden, North made a PowerPoint presentation highlighting the salient features of the draft Management Plan. After detailed deliberations, the committee unanimously recommended approval of the plan, subject to incorporation of the following points:

- Inclusion of a separate chapter on weed management.
- Findings of a survey to identify historic Markhor movement corridors along Pir Panjal axis.
- Recommendation for rationalization of sanctuary boundary with specific reference to the Gulmarg Tourism Bowl.

Wildlife Warden, North to incorporate the aforementioned points and submit the final draft within one month for necessary approval.

B) Management Plan of Overa-Aru Wildlife Sanctuary

Wildlife Warden, South presented the salient features of the draft Management Plan, covering management objectives, historical context, topography, key ecological features, as well as issues and challenges. Management prescriptions were presented in detail. After detailed deliberations, the committee recommended/decided as under:

- To delete the chapter on Mini Zoo, which needs to be examined separately.
- To revise the plan to made it more practical, realistic, and implementable.
- The revised plan to be circulated among all members of the Standing Committee within one month for their comments.

C) Management Plan of Kishtwar High Altitude National Park

Wildlife Warden, Kishtwar informed the committee that the draft Management Plan was submitted in 2022 by Sh. Rohit Rattan, Associate Coordinator, WWF. It had been deliberated upon in various meetings, including one chaired by the Regional Wildlife Warden, Jammu, in which several suggestions were made for incorporation in the plan.

Wildlife Warden confirmed that all suggested modifications were incorporated in the revised draft.

Committee directed Wildlife Warden, Chenab Kishtwar, to circulate the plan among all Standing Committee members for their comments.

The meeting concluded with a vote of thanks to the Chair.

(Rashid Yahya Naqash)
Regional Wildlife Warden
Headquarters, J&K
23/06

No: WLP/Res/2025-26/348-60 Date: 23/06/2025

Copy for information and necessary action to:

01. Regional Wildlife Warden Kashmir.
02. Regional Wildlife Warden Jammu.
03. Regional Wildlife Warden Headquarters.
04. Special Secretary (Technical), Forest, Ecology and Environment Department.
05. Sh. Anzar Ahmad Khuroo, Professor, Department of Botany University of Kashmir.
06. Wildlife Warden North.
07. Wildlife Warden South
08. Wildlife Warden Kishtwar.
09. Wildlife Warden Research.
10. Wildlife Warden Technical.
11. Wildlife Warden Technical, O/O Regional Wildlife Warden, Kashmir.
12. Wildlife Warden Headquarter.
13. Senior Private Secretary to PCCF (WL) / CWLW for kind information of PCCF (WL)/ CWLW.

Decisions taken and discussions held in the meeting taken by Shri Vijay Kumar Bidhuri, IAS Divisional Commissioner Kashmir on 18 March 2025 regarding notification of Eco-Sensitive Zone (ESZ) for Dachigam National Park, Thajwas Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary Preparation of Zonal Master Plan (ZMP) thereof.

The following officers were present in the meeting: -

1. Deputy Commissioner, Srinagar
2. Deputy Commissioner, Ganderbal
3. Deputy Commissioner, Anantnag
4. Deputy Commissioner, Pulwama
5. Municipal Commissioner, Srinagar
6. Director Tourism, Kashmir.
7. Vice-Chairman, Srinagar Development Authority
8. Regional Wildlife Warden, Kashmir (Member Secretary)
9. Regional Director, J&K State Pollution Control Board, Srinagar
10. Chief Town Planner, Kashmir
11. Wildlife Warden, Central Division
12. Wildlife Warden, South Kashmir Division.
13. Chief Executive Officer, Sonmarg Development Authority
14. Chief Executive Officer, Pahalgam Development Authority
15. Divisional Forest Officer, Sindh Forest Division
16. Divisional Forest Officer, Lidder Forest Division
17. Divisional Forest Officer, Awantipura
18. Divisional Forest Officer, Urban Forestry Srinagar

The decisions taken and direction issued in the meeting are as follows:

Sr. No.	Brief of the Issue	Discussions held	Action to be taken by
1.	Furnishing of information and coordination with the Wildlife Protection Department	The Chair urged the Deputy Commissioners to coordinate closely with the Wildlife Protection Department, ensuring that all necessary information and data of all line departments viz Revenue, SMC, ULB's, Rural Development and Panchayat Raj, Agriculture, Horticulture, I&FC, R&B, Tourism (development authorities) Town Planning, DEERS, Forest etc. provided for the formulation of the Zonal Master Plan.	The information is still awaited from many departments except JKPCC & Water Works Division Srinagar (Jal Shakti Department).

		norms, and failure to meet the requisite legal and technical requirements. Furthermore, the Chair has directed all concerned departments to **expedite the processing of any pending cases** and ensure their timely clearance.	

Pending Cases on the Online Building Portal System

Sl. NO	ARN	Name of the Applicant	Action to be taken by
REPAIRS/RENOVATION			
1	20240100042	GHULAM MOHAMMAD MALIK	The committee directed that applications for the NOCs of minor modifications and repairs to existing structures need not be placed in this committee and decision to give environmental clearance be dealt by DFO/Wild Life Warden concerned strictly in accordance with the applicable rules, ensuring compliance with all relevant regulations and guidelines.
NEW CONSTRUCTION			
2	202401000130 Approved	SHUJA ABBAS BHAT	The committee, subject to conditions for clearance approval, has cleared the proposal from an environmental perspective, based on the No Objection Certificates (NOCs) from the forest and Wildlife Authorities.
3	202401000148 Approved	FAYAZ AHMAD DARZI	The committee, subject to conditions for clearance approval, has cleared the proposal from an environmental perspective, based on the No Objection Certificates (NOCs) from the forest and Wildlife Authorities.
4	202401000219	FAYAZ SHEIKH	The case could not be considered by the committee for want of NOC from the Forest/Wildlife Authorities and accordingly the committee directed to expedite the process of issuance of NOCs
5	202401000230 Rejected	Riyaz Ahmad Shahdad	This case has been reviewed and subsequently rejected by the Monitoring Committee due to non-compliance with the required regulations and guidelines.
6	202401000258	Yasir Sediq Kanue and others	The case could not be considered by the committee for want of NOC from the Forest/Wildlife Authorities and accordingly the committee directed to expedite the process of issuance of NOCs

7	202401000284	Mahoor Mifta Shah and Others	The case could not be considered by the committee for want of NOC from the Forest/Wildlife Authorities and accordingly the committee directed to expedite the process of issuance of NOCs.
8	202401000299	1.Mr Gourav Luthra and 2.Mr Niear Shazad Tak	This case has been reviewed and subsequently rejected by the Monitoring Committee due to non-compliance with the required regulations and guidelines.
9	202301000381	Faizan Mantoo	The committee, subject to conditions for clearance approval, has cleared the proposal from an environmental perspective, based on the No Objection Certificates (NOCs) from the forest and Wildlife Authorities.

Conditions for Clearance Approval:

- The clearance given by the Monitoring Committee shall be treated only in respect of environmental aspects.
- Any other required clearance shall be obtained separately from the concerned departments. The clearance shall not be considered final; cases will be further processed by BOCA/Regulatory Authorities for final disposal as per prevailing rules and regulations.
- Compliance with all applicable laws, bylaws, and guidelines issued by the relevant authorities shall be mandatory.
- Any deviation from the approved norms may lead to reconsideration or cancellation of the clearance.
- The applicant shall be responsible for fulfilling all statutory obligations before commencing any work.
- The Monitoring Committee reserves the right to review or modify its recommendations based on new environmental assessments or regulatory changes.

The meeting ended with an acknowledgment of the collective responsibility to protect the natural heritage of Kashmir. The Divisional Commissioner reiterated the need for proactive and coordinated actions to preserve the unique ecosystems of Dachigam, Thajwas, and Overa-Aru, recognizing that the success of the Eco-Sensitive Zone implementation would be critical in ensuring the long-term environmental health of these vital areas. The next meeting will serve as a follow-up to review progress and resolve any outstanding issues related to the Zonal Master Plan.

The meeting concluded with a vote of thanks, acknowledging the active participation of all stakeholders and their commitment to the cause of environmental conservation.

(Tawheed Ahmad Deva, IFS)
Regional Wildlife Warden,
Kashmir
(Member Secretary)

No:RWLW/Kmr/ Tech/2024-2025/2117-36 **Dated: March -____-2025**

7	202401000284	Mahoor Mifta Shah and Others	The case could not be considered by the committee for want of NOC from the Forest/Wildlife Authorities and accordingly the committee directed to expedite the process of issuance of NOCs.
8	202401000299	1.Mr Gourav Luthra and 2.Mr Niear Shazad Tak	This case has been reviewed and subsequently rejected by the Monitoring Committee due to non-compliance with the required regulations and guidelines.
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(Tawheed Ahmad Deva, IFS)
Regional Wildlife Warden,
Kashmir
(Member Secretary)

No:RWLW/Kmr/ Tech/2024-2025/2117-36 **Dated: March -____-2025**

Copy to the:-

1. Chief Wildlife Warden, J&K Govt., Jammu for information.
2. Deputy Commissioner, Srinagar for information and necessary action.
3. Deputy Commissioner, Ganderbal for information and necessary action.
4. Deputy Commissioner, Anantnag for information and necessary action.
5. Deputy Commissioner, Pulwama for information and necessary action.
6. Municipal Commissioner, Srinagar for information and necessary action.
7. Director Tourism, Kashmir for information and necessary action.
8. Vice-Chairman, Srinagar Development Authority for information and necessary action.
9. Regional Director, J&K State Pollution Control Board, Srinagar for information and necessary action.
10. Chief Town Planner, Kashmir for information and necessary action.
11. Wildlife Warden, Central Division for information and necessary action.
12. Wildlife Warden, South Division for information and necessary action.
13. Chief Executive Officer, Sonmarg Development Authority for information and necessary action.
14. Chief Executive Officer, Pahalgam Development Authority for information and necessary action.
15. Divisional Forest Officer, Sindh Forest Division for information and necessary action.
16. Divisional Forest Officer, Lidder Forest Division for information and necessary action.
17. Divisional Forest Officer, Awantipura for information and necessary action.
18. Divisional Forest Officer, Urban Forestry Srinagar for information and necessary action.
19. Private Secretary to the Divisional Commissioner, Kashmir for information of the Divisional Commissioner.

Regional Wildlife Warden,
Kashmir.
(Member Secretary)

Decisions taken and discussions held in the meeting taken by the Divisional Commissioner, Kashmir on 23rd May 2025 regarding notification of Eco-Sensitive Zone (ESZ) for Dachigam National Park, Thajwas Wildlife Sanctuary and Overa-Aru Wildlife Sanctuary Preparation of Zonal Master Plan (ZMP) thereof.

The following officers were present in the meeting: -

1. Deputy Commissioner, Srinagar
2. Deputy Commissioner, Ganderbal
3. Deputy Commissioner, Anantnag
4. Deputy Commissioner, Pulwama
5. Municipal Commissioner, Srinagar
6. Director Tourism, Kashmir.
7. Vice-Chairman, Srinagar Development Authority
8. Regional Wildlife Warden, Kashmir (Member Secretary)
9. Regional Director, J&K State Pollution Control Board, Srinagar
10. Chief Town Planner, Kashmir
11. Wildlife Warden, Central Division
12. Wildlife Warden, South Kashmir Division.
13. Chief Executive Officer, Sonmarg Development Authority
14. Chief Executive Officer, Pahalgam Development Authority
15. Divisional Forest Officer, Sindh Forest Division
16. Divisional Forest Officer, Lidder Forest Division
17. Divisional Forest Officer, Awantipura
18. Divisional Forest Officer, Urban Forestry Srinagar
19. Prof. Manzoor Ahmad Shah, Director, Department of Botany, University of Kashmir.
20. Shri. Nazir -Be-Nazir, President, National Society for protection of Water Resources, Wetlands & Forests Kashmir.
21. Dr. Anzar Khuroo, Department of Botany, University of Kashmir.

The decisions taken in the meeting area as follows:-

Sl. NO	Application ID	Name of the Applicant	Action to be taken by
		Change of Land Use Cases	
1	0609160820 2421409352	RIFAT BASHIR	The committee considered the proposal based on the No Objection Certificates (NOCs) issued by the Forest. However, objections have been raised by some departments regarding the proposed change of land use from agricultural to commercial purposes. In view of the regulatory provisions outlined in the ESZ Final Notification - particularly the restrictions on the conversion of agricultural land, as specified in ***Para 3: Measures to be taken by the Union Territory Government, Part (1): Land Us*** – now the matter shall be placed before the committee for reconsideration in the forthcoming meeting
2	0609200320 2421072834	Manzoor Ahmad Khan	The committee considered the proposal based on the No Objection Certificates (NOCs) issued by the Forest. However, objections have been raised by some departments regarding the proposed change of land use from agricultural to commercial purposes. In view of the regulatory provisions outlined in the ESZ Final Notification - particularly the restrictions on the conversion of agricultural land, as specified in ***Para 3: Measures to be taken by the Union Territory Government, Part (1): Land Us*** – now the matter shall be placed

			before the committee for reconsideration in the forthcoming meeting
3	0609210420 2421141235	MstNasee ma	The committee considered the proposal based on the No Objection Certificates (NOCs) issued by the Forest. However, objections have been raised by some departments regarding the proposed change of land use from agricultural to commercial purposes. In view of the regulatory provisions outlined in the ESZ Final Notification - particularly the restrictions on the conversion of agricultural land, as specified in ***Para 3: Measures to be taken by the Union Territory Government, Part (I): Land Us*** – now the matter shall be placed before the committee for reconsideration in the forthcoming meeting
4	0609130120 2521736169	IQBAL ARSHAD AND NISAR ALI	The committee considered the proposal based on the No Objection Certificates (NOCs) issued by the Forest. However, objections have been raised by some departments regarding the proposed change of land use from agricultural to commercial purposes. In view of the regulatory provisions outlined in the ESZ Final Notification - particularly the restrictions on the conversion of agricultural land, as specified in ***Para 3: Measures to be taken by the Union Territory Government, Part (I): Land Us*** – now the matter shall be placed before the committee for reconsideration in the forthcoming meeting.
Other Cases			
1	Application From Shri Zahid Ahmad Lone for Outsourcing of PDA Assets		The case has been thoroughly re-evaluated and thereafter no objection from Environmental prespective has been agreed by the Monitoring Committee in strict adherence to the applicable rules and regulations, while ensuring full compliance with all relevant statutory provisions, guidelines, and procedural norms.
2	Installation of BSNL Tower at NallaAwoora Under 4G Saturation Project		The case has been thoroughly re-evaluated and thereafter no objection from Environmental prespective has been agreed by the Monitoring Committee in strict adherence to the applicable rules and regulations, while ensuring full compliance with all relevant statutory provisions, guidelines, and procedural norms.

Terms and conditions for cases for which no objection from Environmental prespective has been agreed:

- Any other required clearance shall be obtained separately from the concerned departments.
- Compliance with all applicable laws, bylaws, and guidelines issued by the relevant authorities shall be mandatory.
- Any deviation from the approved norms may lead to reconsideration or cancellation of the no objection accorded by Monitoring Committee.
- The applicant shall be responsible for fulfilling all statutory obligations before commencing any work.
- The Monitoring Committee reserves the right to review or modify its recommendations based on new environmental assessments or regulatory changes.

The meeting concluded with a strong reaffirmation of the collective commitment to preserving the rich natural heritage of the Kashmir region. In his concluding remarks, the Divisional Commissioner underscored the urgent need for sustained, proactive, and well-coordinated action among all stakeholder departments to ensure the conservation of the ecologically sensitive and biodiverse landscapes of Dachigam, Thajwas, and Overa-Aru. He highlighted that the successful implementation of the Eco-Sensitive Zone (ESZ) Notification

is not merely a statutory obligation but a critical measure for securing the long-term environmental stability and ecological health of these vital protected areas. It was unanimously agreed that the forthcoming meeting will serve as a review forum to evaluate the progress made on key action points and to resolve any pending issues related to the finalization, approval, and operationalization of the Zonal Master Plan in conformity with the provisions of the ESZ Notification.

The meeting concluded with a vote of thanks, acknowledging the active participation of all stakeholders and their commitment to the cause of environmental conservation.

Issued with the approval of Divisional Commissioner, Kashmir, (Chairman) ESZ Monitoring Committee.

Dr. Anzar Khuroo
Department of Botany
University of Kashmir

Shri. Nazir -Be-Nazir, President,
National Society for protection of Water Resources
Wetlands & Forests Kashmir

Prof. Manzoor Ahmad Shah
Director, Department of Botany
University of Kashmir

Divisional Forest Officer
Urban Forestry Srinagar

Divisional Forest Officer
Awantipura,

Divisional Forest Officer,
Lidder Forest Division

Divisional Forest Officer,
Sindh Forest Division

Chief Executive Officer, *Phalgam*
Development Authority

Chief Executive Officer,
Sonmarg Development Authority

Wildlife Warden,
South Division

Wildlife Warden,
Central Division

Chief Town Planner
Kashmir

Regional Director, J&K State Pollution
Control Board, Srinagar

Vice-Chairman, Srinagar
Development Authority

Director Tourism
Kashmir

Sd/-
Municipal Commissioner
Srinagar

Sd/-
Deputy Commissioner
Pulwama

Sd/-
Deputy Commissioner,
Anantnag,

Sd/-
Deputy Commissioner
Ganderbal

Sd/-
Deputy Commissioner
Srinagar

Regional Wildlife Warden
Kashmir Region
(Member Secretary)

Divisional Commissioner
Kashmir
(Chairperson)

No: RWLW/K/Tech/A/2025-26/305-06 Dated: 29-05-2025

Copy to the:-

1. Chief Wildlife Warden, J&K Govt., Jammu for information.
2. Deputy Commissioner, Srinagar for information and necessary action.
3. Deputy Commissioner, Ganderbal for information and necessary action.
4. Deputy Commissioner, Anantnag for information and necessary action.
5. Deputy Commissioner, Pulwama for information and necessary action.
6. Municipal Commissioner, Srinagar for information and necessary action.
7. Director Tourism, Kashmir for information and necessary action.
8. Vice-Chairman, Srinagar Development Authority for information and necessary action.
9. Regional Director, J&K State Pollution Control Board, Srinagar for information and necessary action.
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21. Dr. Anzar Khuroo, Department of Botany, University of Kashmir.
22. PA to the Divisional Commissioner, Kashmir for information and necessary action.

Government of Jammu & Kashmir
Office of the Pr. Chief Conservator of Forests (Wildlife)/
Chief Wildlife Warden, *J&K*
Silk Factory Road, Rajbagh, Srinagar/ Wildlife Complex, Manda, Jammu

Subject: Approval of Management Plan for Overa- Aru Wildlife Sanctuary.

Whereas, the Draft Management Plan of Overa- Aru Wildlife Sanctuary has been prepared by Wildlife Warden, South Division.

Whereas, the draft of said Management Plan has undergone various reviews at different levels and suggestions and observations made by the participants have been incorporated.

Whereas, the committee constituted vide this office order No: 58-(WL) of 2025 dated: 26.03.2025 discussed the Draft Management Plan of Overa- Aru Wildlife Sanctuary in its meeting held on 19.03.2025.

Whereas, the committee recommended approval of Management Plan of Overa- Aru Wildlife Sanctuary for a period 2024-2034 in its final meeting held on 11.06.2025 subject to the incorporation of suggestions made in the meeting.

Whereas, the Regional Wildlife Warden, Kashmir vide No: RWLW/K/Tech/2025-26/854-55 dated: 23.08.2025 has intimated that the suggested points in the final meeting have been incorporated in the Management Plan and has recommended for its approval.

Considering the above, the undersigned accords approval to the Management Plan of Overa- Aru Wildlife Sanctuary for the period 2024-2034, in terms of Section 33 of Wildlife Protection (Act), 1972.

(Sarvesh Rai) IFS
Pr. Chief Conservator of Forest (Wildlife)/
Chief Wildlife Warden
J&K Govt.

No: WLP/Res/2025-26/ 544-47 Date: 18 /09/2025

Copy to the:

1. Commissioner Secretary to Govt., Forest, Ecology and Environment Department, Civil Secretariat, Jammu for kind information.
2. Regional Wildlife Warden Kashmir Region, Srinagar.
3. Wildlife Warden South Division.
4. Pvt Secretary to Principal Chief Conservator of Forest/ HoFF, J&K for kind information of PCCF/HoFF.