WILDLIFE
Protected Area Network of Jammu & Kashmir

ATLAS

Executed by:
Department of Ecology, Environment & Remote Sensing
Government of Jammu and Kashmir

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PROTECTED AREA NETWORK
ATLAS OF J&K (UT) 2021

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Wildlife Protected Area Network Atlas of J&K (UT)

References to this Atlas to be made as follows:
"DEE&RS: Wildlife Protected Area Network Atlas of J&K (UT) – 2021"

Note: The extent of boundaries/mapping doesn't represent the legal boundaries of protected areas.

Department Of Ecology, Environment & Remote Sensing Jammu & Kashmir

DOCUMENT CONTROL SHEET

ITEM	DETAIL
Document title	Wildlife Protected Area Network Atlas of J&K (UT)
Report No.	DERS/PAN/1 of 2021
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Co-Authors	Muzamil Ahmad Rather, SRF.
	Bashir Ahmad Shiekh, JRF.
	Sohail Ahmad Wagay, ACF, DWLP
Originating unit	Department of Ecology, Environment and Remote Sensing
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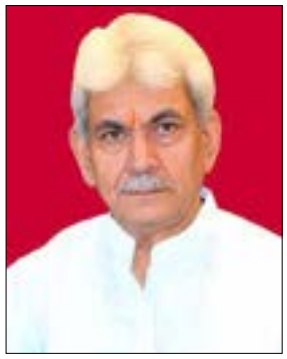
Abstract	A repository of spatial and non-spatial data in digital format on the protected areas of the J&K has been prepared. The GIS database shall help in development of Decision Support Systems to assist in formulation of conservation and management plans for management of national parks, sanctuaries and wetland reserves. The Atlas is going to lay foundation for utilization of near real time information for evolving effective wildlife conservation strategies. Now the basic geospatial database is created, the department shall have facilities for managing spatial databases relating to wildlife, initiating special studies on the habitat of individual species besides, developing Spatial Decision Support Systems for evolving judicious management action plans. The proposed GIS database shall help in assessing the following:- ▪ Wild animal population and its distribution. ▪ Habitat use and preferences ▪ Progress of conservation activities ▪ Status of biodiversity ▪ Monitoring and updating data on the man-animal conflict situation. ▪ Delineation of corridors of different species in the area. ▪ Monitoring the anthropogenic pressures, etc.

सत्यमेव जयते

Manoj Sinha
Lieutenant Governor
Jammu & Kashmir.



MESSAGE

Wildlife plays an invaluable role in sustaining the human and other forms of life and contributes towards the maintenance of the crucial ecological balance. Disturbances in our ecosystems endanger the precious biodiversity which is the basis of all life on planet Earth. The Union Territory of Jammu & Kashmir is facing varied ecological challenges which call for urgent and appropriate measures. Considering the scale of the existing and emerging environmental issues, it is important to have extensive information repositories of base line and advanced data on the protected areas of Jammu & Kashmir for their better planning and management.

Realizing the importance of reliable database on protected area, the Department of Ecology, Environment and Remote Sensing, in collaboration with the Department of Wildlife Protection, has published the Atlas of Protected Area Network for Jammu & Kashmir. The Atlas will provide information on location, geo-coordinates, spatial extent and other thematic layers such as landuse/landcover, vegetation, soil, geomorphology, lithology, slope, aspect, elevation, draining and road.

I convey my best wishes and congratulate the teams of Department of Ecology, Environment & Remote Sensing and Department of Wildlife Protection for this important endeavour which will be of great value for planners and managers of Protected Area Network in Jammu & Kashmir.

(Manoj Sinha)

सत्यमेव जयते

Arun Kumar Mehta, IAS
Chief Secretary
Government of Jammu & Kashmir

MESSAGE

The Jammu & Kashmir is known for its rich biodiversity. It harbors rich flora and fauna, such as Hangul, Musk Deer and Western Tragopan, which thrive in our varied natural habitats. With about 4907.41 Sq km of area under Protected Area Network, J&K has 4 National Parks, 14 Wildlife Sanctuaries, 16 Conservation Reserves and 14 Wetland Reserves notified to protect its unique biodiversity. The Protected Area Network is a critical tool to conserve biodiversity, providing safe habitation and protection to species. These areas also help to maintain ecological processes to achieve long term conservation of nature with associated ecosystem services. It is thus imperative on the part of policy makers to keep such precious natural resources in healthy conditions to ensure ecological balance and resilience to climate change. In this back ground, robust geospatial information on Protected Area network assumes utmost significance for devising strategies for their management with ultimate goal of species protection.

I congratulate and compliment the project team of the Department of Ecology, Environment & Remote Sensing and Department of Wildlife Protection for their efforts in bringing out this Atlas. I am confident that this publication will provide very important information on the protected area network and will facilitate formulation of suitable management programme for protected areas in Jammu & Kashmir.

(Arun Kumar Mehta)

सत्यमेव जयते

Sanjeev Verma, IAS
Commissioner/Secretary to Govt.,
Forest, Environment & Ecology
Government of Jammu & Kashmir.

MESSAGE

The biodiversity and gene pool resources of Jammu and Kashmir are priceless treasures that need to be conserved for present and future generations. Protected areas are important tools for the conservation of this biological diversity and are cornerstones of sustainable development strategies. In addition to the biodiversity benefits and ecosystem services that protected areas provide, they can also create economic opportunities through ecotourism. Protected areas can help guard against environmental disturbances and the impacts of climate change by helping society to both mitigate and adapt to stressors.

With the advent of space based inputs, mapping the natural resources get facilitated at much faster rate and more cost-effective prices. Thus, it is important not only develop Remote Sensing based base line data of the Protected Area Network, but also continuously improve upon it to ensure effective conservation programmes.

It gives me great pleasure to introduce this Atlas, prepared by Department of Ecology, Environment, and Remote Sensing. This Atlas comprises of maps and information on protected areas of UT of J&K which can play a very vital role in formulating the management plans of the protected areas. I congratulate Department of Ecology, Environment & Remote Sensing and Department of Wildlife Protection for this initiative.

Sanjeev Verma

Dr. Neelu Gera, IFS
PCCF/ Director,
Ecology, Environment & Remote Sensing,
Government of Jammu & Kashmir.

FOREWORD

GIS technology is an effective tool for mapping, analyzing, visualizing and presenting the wildlife related data in order to target areas where conservation practices are required. An attempt has been made by the Department of Ecology, Environment and Remote Sensing J&K to generate database of different thematic layers pertaining to Protected Areas. The Project was planned in collaboration with Department of Wildlife Protection J&K, with the prime objective to create the basic geospatial data databases pertaining to Protected Areas of J&K for their better management.

This Atlas is first of its kind in Jammu and Kashmir involving mapping of natural and manmade resource layers such as landuse/landcover, vegetation, soil, geomorphology, lithology, slope, aspect, elevation, drainage and road with respect to Protected Area Network. The database has been generated using LISS IV + Cartosat 1 data sets of ancillary data in the form of already published map along with limited field checks and ground truthing. These ecosystem maps finally make it possible to carry out unbiased gap/presence analysis.

I appreciate the hard work rendered by Mr Majid Farooq, Scientist of this Department and his excellent technical team for bringing out the Atlas of protected areas of UT of Jammu and Kashmir. I am certain that this Atlas will be of great use for researchers, planners & policy makers in utilization, conservation & management of natural resources

Dr Neelu Gera

Suresh Kumar Gupta, IFS
Chief Wildlife Warden
Jammu & Kashmir.

PREFACE

Wildlife is an essential natural resource which plays an important role in maintaining the composite ecological balance necessary for survival of human lives and the environment surrounding them. Our Protected Areas which include National Parks, Wildlife Sanctuaries and Conservation Reserves are important treasure houses of biodiversity. Jammu & Kashmir houses some of the very rare and endangered fauna like Hangul, Markhor, Musk deer, snow leopard, etc. The urbanization and other developmental activities often result in loss of forests, wildlife and impact the nature and environment. Better conservation and management strategies of natural resources, is need of the hour.

To ensure better management of these Protected Areas, it is imperative to have a base line data of different thematic layers which will help in formulating the strategy & management action plan for sustainable, wise-use and conservation planning of wildlife resources.

I congratulate Department of Ecology, Environment & Remote Sensing, especially Mr. Majid Farooq & his team for taking a step towards this concern and mapping and generating database of different thematic layers using Remote Sensing and GIS technologies. I hope this Atlas will act as a useful source of information for the Department of Wildlife Protection.

Suresh Kumar Gupta

Majid Farooq
Principal Investigator, PAN Mapping Project
Ecology, Environment & Remote Sensing,
Government of Jammu & Kashmir.

ACKNOWLEDGMENTS

Life on Earth is under stress and will continue to do so unless urgent action is taken. Well designed and effectively managed systems of Protected Areas are a vital tool for reducing biodiversity loss while delivering environmental goods and services that underpin sustainable development. Keeping in view the implementation of good governance initiatives, the GIS database of Protected Area Network has been generated and presented in the form of Atlas.

This Atlas was developed with the generous financial support of the Department of Wildlife Protection, Govt. of J&K.

This report could not have come into being without the help and support of many people as well as institutions. However, I realized that it is impossible to name them all here. The help of those whose names are not mentioned is as greatly appreciated as the help of those whose names are.

I am highly thankful to Dr. Neelu Gera, IFS PCCF/Director Ecology, Environment & Remote Sensing, J&K for her valuable guidance and abundant support in realising this project. She deserves special mention for her tireless efforts in reviewing the entire document which helped in presenting the report in more user-friendly manner. Thanks are also due to Sh. Suresh Kumar Gupta, IFS, Chief Wildlife Warden, J&K for providing necessary field support, guidance and technical insights.

The team acknowledges the unstinted technical and logistic support provided by: Sh. M.K. Kumar, RWLW(J), Sh. Rashid Naqash, RWLW(K) and Wildlife Wardens of respective Divisions especially, Rouf Ahmad Zargar, Imtiyaz Ahmad Lone, Intesar Suhail, Ifshan Deewan, Altaf Ahmad, Maqbool Ahmad Baba, Amit Sharma, Majid Bashir, Nain Chand Sharma, Choudhry Mushtaq Ahmad, Vijay Kumar, Anil Atri and their staff. Sohail Ahmad Wagay, ACF, DWLP helped with technical revisions of the document.

I extend my profound gratitude to Mr. Humayun Rashid (Scientist) and Dr. Tasneem Keng (Scientist) whose guidance enabled me to tackle with practical problems during this project.

If anyone in this compilation truly deserves a commendation, it is my teammates Mr. Muzamil Ahmad Rather, Senior Research Fellow and Mr. Bashir Ahmad Sheikh, Jr. Research Fellow. Thank you for really propelling these past two years to help us meet timely project delivery. Your performance has been excellent and your professionalism to handle this assignment has given a confidence to this organization in handling such works again. We really appreciate your hard work and commitment.

I hope that this report will be used by all the stakeholders for whom it is intended.

Majid Farooq

CONTENTS

PROJECT TEAM

Project Director:
Dr. Neelu Gera, IFS PCCF/Director, DEE&RS

Principal Investigator:
Majid Farooq, Scientist

Technical Team:
Muzamil Ahmad Rather, SRF.

Bashir Ahmad Sheikh, JRF.

Sohail Ahmad Wagay,
Assistant Conservator of Forest (Wildlife Protection Department)

EXECUTIVE SUMMARY

"Maps are more than pieces of paper, they are stories, conversations, lives and songs lived out in a place and are inseparable from the political and cultural contexts in which they are used" (Warren, 2004)

In 2010, the Parties to the Convention on Biological Diversity (CBD), adopted the Strategic Plan for Biodiversity 2010-2020 and its 20 Biodiversity Targets. It has since been endorsed by multiple Multilateral Environmental Agreements as a global framework for biodiversity. In 2015, the members of the United Nations (UN) adopted the 2030 Agenda for Sustainable Development and its Sustainable Development Goals. These constitute two of the most important environment and sustainable development commitments ever made by governments in the international fora, and both recognize the important role of protected areas as a key strategy for biodiversity conservation and sustainable development in the targets they contain, for example, Biodiversity Target 11, SDG goals 14 and 15. The global protected areas estate, is therefore, an important contribution to achieving these commitments.

The Protected Area Network Atlas of J&K maps the extent and physiographic features that shall contribute to achieving the Biodiversity Targets and relevant targets of the Sustainable Development Goals by formulation of target-oriented conservation and management plans.

A total of 48 protected areas of the UT of Jammu & Kashmir have been mapped under this project, which include:

- National Parks = 4
- Wildlife Sanctuaries: 14
- Conservation Reserves: 16
- Wetlands: 14

The different thematic maps including statistics were generated for 48 wildlife protected areas of the UT of Jammu & Kashmir. The thematic maps generated for the protected areas include:

- Land Use Land Cover
- Vegetation
- Geomorphology
- Lithology
- Soil
- Elevation
- Slope
- Aspect
- Drainage
- Road Network

The project is going to lay foundation for utilization of near real time information for evolving effective wildlife conservation strategies. Once the basic geospatial database is created, the department shall have facilities for managing spatial databases relating to wildlife, initiating special studies on the habitat of individual species besides, developing Spatial Decision Support Systems for evolving judicious management action plans.

INTRODUCTION

Wilderness areas and the wildlife habitats in the world are shrinking in time and space due to unprecedented pressure of anthropocentric economic development. Wildlife and human beings co-existed in nature, until humans became dominant organisms. Modern civilization, by clearing the forests for settlements, agriculture and communication purposes, and by fast paced industrialisation and urbanization has done a lot of damage to the natural ecosystems. In recent years, much interest has been shown towards protection and conservation of wildlife at various levels. The realization that biodiversity holds the key for the well-being of humans, has attracted the attention of global and national organizations. While debate on conservation and sustainable use of this wealth in wilderness is on, planning activities are hampered due to non-availability of good quality data on wildlife, species habitats and biodiversity. The problem is more acute in the developing world, where wildlife and biodiversity conservation is often subordinated to more pressing demands like growing economy and agriculture production.

In 2010, the Parties to the Convention on Biological Diversity (CBD), adopted the Strategic Plan for Biodiversity 2010-2020 and its 20 Biodiversity Targets. It has since been endorsed by multiple Multilateral Environmental Agreements as a global framework for biodiversity. In 2015, the members of the United Nations (UN) adopted the 2030 Agenda for Sustainable Development and its Sustainable Development Goals. These constitute two of the most important environment and sustainable development commitments ever made by governments in the international forum, and both recognize the important role of protected areas as a key strategy for biodiversity conservation and sustainable development in the targets they contain, for example, Biodiversity Target 11, SDG goals 14 and 15. The global protected areas estate, is therefore, an important contribution to achieving these commitments.

1.1 Protected Area Network

Protected Area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (IUCN Definition 2008).

There are several kinds of protected areas, based on the level of protection depending on the enabling laws of each country or the regulations of the international organizations involved. The total number of protected area records in the January 2018 release of the World Database on Protected Area (WDPA) is 236,204, covering 245 countries and territories (figure 1), with more added regularly, representing between 10 to 15 percent of the world's land surface area.

Figure 1: Protected Areas of the world

Source: UNEP-WCMC and IUCN. 2018a. Protected Planet: The World Database on Protected Areas (WDPA).

Protected areas (National Parks, Wildlife Sanctuaries, Community Conserved Areas and so on) are the mainstay of biodiversity conservation. It has been estimated that the global network of protected areas stores at least 15% of terrestrial carbon.

India is one among the 17 mega diverse countries of the world, with 2.4% of the world's land area, 16.7% of the world's human population and 18% livestock population. It shares about 8% of the known global biodiversity. It faces enormous demands on the natural resources. India is home to world's largest wild tiger population and has got unique assemblage of globally important endangered species like Asiatic lion, Asian Elephant, One-horned Rhinoceros, Gangetic River Dolphin, Snow Leopard, Kashmir Stag, Dugong, Gharial, Great Indian Bustard and

Lion Tailed Macaque. (Source: National Data Repository, Government of India)

India's conservation planning is based on the philosophy of identifying and protecting representative wild habitats across all the ecosystems. The Indian Constitution entails the subject of forests and wildlife in the Concurrent list. The Federal Ministry acts as a guiding light dealing with the policies and planning on wildlife conservation, while State Forest Departments are vested with the responsibility of implementation of national policies and plans .

Department of Wildlife Protection Jammu & Kashmir is the nodal agency for enhance and conservation of biodiversity. It is responsible for the administration of the Protected areas in Jammu & Kashmir. The organizational setup of the department of Wildlife Protection, Jammu & Kashmir is given below in the figure2.

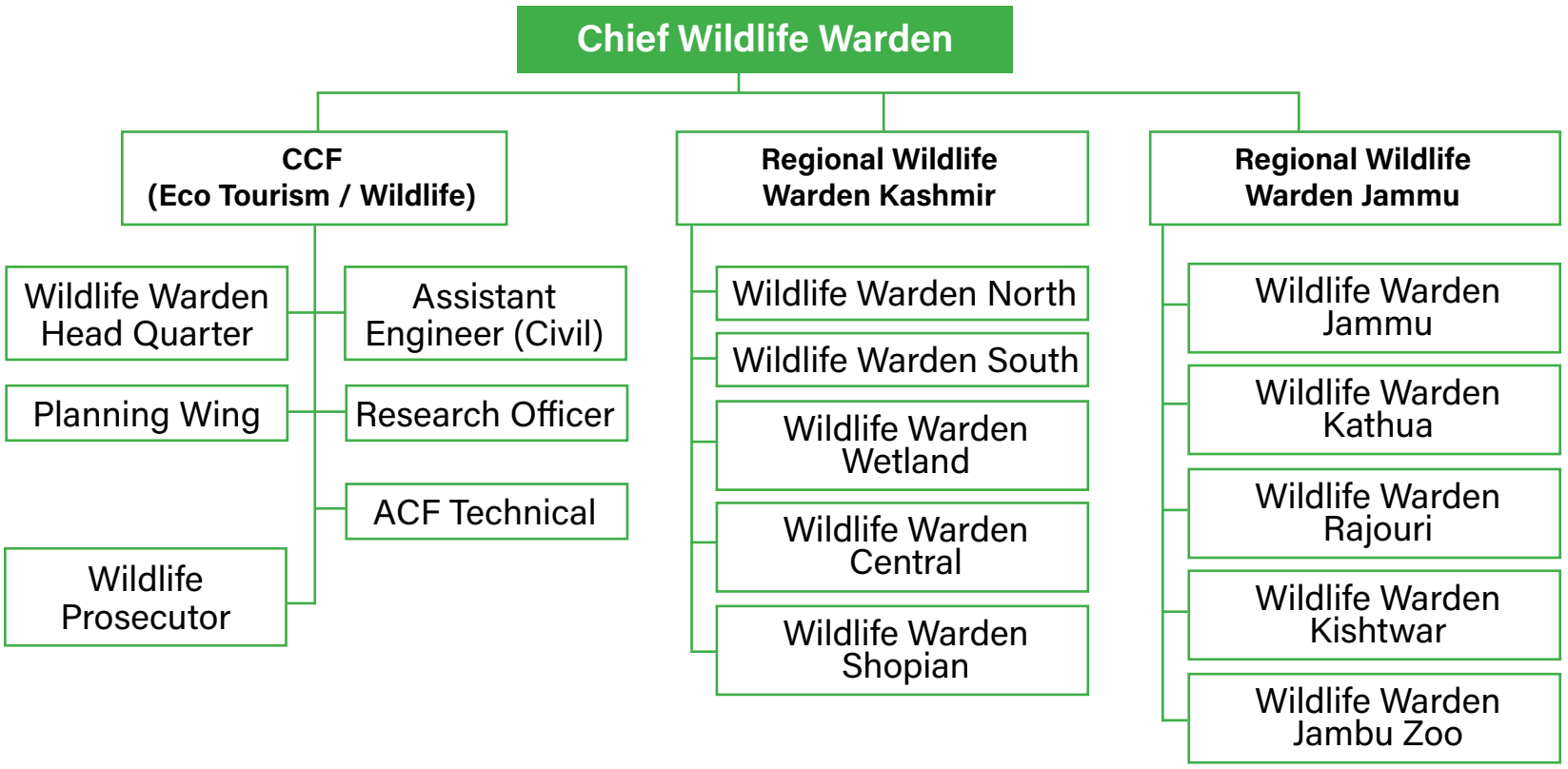


Figure 2: Organizational setup of the Wildlife Protection J & K

Source: Department of Wildlife Protection Government of Jammu & Kashmir.

1.2 Types of Protected Areas

Four categories of the Protected Areas are recognised (Source: National Wildlife Database, Wildlife Institute of India and National Data Repository, Government of India).

- National Parks
- Wildlife Sanctuaries
- Conservation Reserves
- Community Reservers

However in Jammu and Kashmir following three types of wildlife protected areas are recognised.

1.2.1 National Park

A National Park is an area having adequate ecological, faunal, floral, geomorphological, natural or zoological significance. The National Park is declared for the purpose of protecting, propagating or developing wildlife or its environment, like that of a Sanctuary. National Parks are notified and declared under section 35 of wildlife protection act.

1.2.2 Wildlife Sanctuary

Sanctuary is an area which is of adequate ecological, faunal, floral, geomorphological, natural or zoological significance. The Sanctuary is declared for the purpose of protecting, propagating or developing wildlife or its environment.

1.2.3 Conservation Reserves

Conservation Reserves can be declared by the State Governments in any area owned by the Government, particularly the areas adjacent to National Parks and Sanctuaries and those areas which link one Protected Area with another. Such declaration should be made after having consultations with the local communities. Conservation Reserves are declared for the purpose of protecting landscapes, seascapes, flora and fauna and their habitat.

1.3 Protected Areas of Jammu and Kashmir

Jammu and Kashmir often called the 'Paradise on Earth', is also known for its unique bio-diversity. Jammu and Kashmir has been blessed with rich flora and fauna which thrive in our varied natural habitats. Nearly 4440 species of plants, 571 species of animals, 73 species of mammals, 358 species of birds, 68 species of reptiles, 14 species of amphibians, 158 species of butterflies and 225 species of insects have been identified so far in Jammu and Kashmir. The biodiversity and gene pool resource of Jammu and Kashmir are priceless treasures that need to be conserved for the future with wise-use by the present generation. The ecosystem based wildlife conservation has proved to be the best means of conserving biodiversity and the environment. Our national parks, sanctuaries and conservation reserves are important repositories of biodiversity. The Government has notified 4907.41 sq km under Protected Area Network, which is about 11.60 percent of the total geographical area of the UT includes 4 National Parks, 14 Wildlife Sanctuaries, 16 Conservation Reserves and 14 Wetland Reserves (Table 1) . The rare and endangered species found in Jammu and Kashmir include Kashmir stag (Hangul), Musk Deer, Markhor, Ibex, Serow, BLack Bear, Brown Bear, Barking Deer, Common Leopard, Snow Leopard, Tahr, Goral and Western Tragopan etc.

Pressures on natural ecosystems over the years continue to affect their stability. Wide spread urbanization, industrialization and other

developmental activities with increasing pressures on forests, threaten our wildlife. Presently, some of the wildlife species are becoming threatened. Such a situation must alert us to enhance our efforts and to take steps for conserving precious species. This is an alarming situation and there is an immediate need that efforts must be carried out to restore, enhance and conserve our rich wildlife and biodiversity. The responsibility to ensure survival of all species points to the need for care for our natural resources and biodiversity.

Table 1: Protected areas of Jammu & Kashmir

S.No	Protected Area	Notified Area	GIS Area	Key Species
1.	Dachigam National Park	141.00	164.55	Hangul (*Cervus hanglu*)
2.	Kazinag National Park	89.00	90.86	Western Tragopan (*Tragopan melanocephalus)*
3.	Kishtwar High Altitude National Park	2191.50	2191.50	Ibex (*Capra sibirica*)
4.	Salim Ali City Forest National Park	8.69	8.56	Hangul (*Cervus hanglu*)
5.	Bani Wildlife Sanctuary	99.76	99.76	Himalayan tahr (*Hemitragus jemlahicus*)
6.	Gulmarg Wildlife Sanctuary	180.00	190.65	Kashmir Musk Deer (*Moschus cupreus*)
7.	Hirpora Wildlife Sanctuary	341.25	324.11	Markhor (*Capra falconeri*)
8.	Jasrota Wildlife Sanctuary	10.04	10.04	Sambar (Cervus unicolor)
9.	Lachipora Wildlife Sanctuary	80.00	27.77	Markhor (*Capra falconeri*)
10.	Limber Wildlife Sanctuary	12.00	18.54	Himalayan Brown Bear (*Ursus arctos*)
11.	Nandni Wildlife Sanctuary	33.34	19.70	Goral (*Nemorhaedus goral*)
12.	Overa Aru Wildlife Sanctuary	425.00	457.38	Kashmir Musk Deer (*Moschus cupreus*)
13.	Rajparian (Daksum) Wildlife Sanctuary	20.00	48.27	Kashmir Grey Langur (*Semnopithecus ajax*)
14.	Ramnagar Wildlife Sanctuary	31.50	12.02	Barking Deer (*Monchus montjiac*)
15.	Surinsar Mansar Wildlife Sanctuary	97.82	62.24	Barking Deer (*Monchus montjiac*)
16.	Tata Kutti Wildlife Sanctuary	66.27	116.73	Asiatic Black Bear (*Ursus thibetanus*)
17.	Thajwas (Baltal) Wildlife Sanctuary	203.00	219.19	Asiatic Ibex (*Capra sibirica*)
18.	Tral Wildlife Sanctuary	154.15	164.49	Hangul (*Cervus hanglu*)
19.	Achabal Conservation Reserve	20.00	11.92	Barking Deer (*Muntiacus muntjak*)
20.	Ajas Conservation Reserve	48.00	55.36	Kashmir Musk Deer (*Moschus cupreus*)
21.	Bahu Conservation Reserve	19.75	25.33	Jackal (*Canis aureus*)
22.	Brien Nishat Conservation Reserve	15.75	13.51	Himayan Serow (*Capricornis thar*)
23.	Gambir Mughlan Goral Conservation Reserve	21.30	21.30	Goral (*Nemorhaedus goral*)
24.	Jawahar Tunnel Conservation Reserve	19.57	19.50	Chakor (*Alectoris chukar*)
25.	Kheri Conservation Reserve	18.45	18.45	Asiatic Black Bear (*Ursus thibetanus*)
26.	Khimber Dara Sharazbal Conservation Reserve	34.00	31.72	Asiatic Black Bear (*Ursus thibetanus*)
27.	Khonmoh Conservation Reserve	67.00	44.05	Common leopard (*Panthera pardus*)
28.	Khrew Conservation Reserve	50.25	18.21	Asiatic Black Bear (*Ursus thibetanus*)
29.	Kulian Conservation Reserve	10.29	10.82	Asiatic Black Bear (*Ursus thibetanus*)
30.	Naganari Conservation Reserve	21.75	9.77	Markhor (*Capra falconeri*)
31.	Sheshara Conservation Reserve	1.43	2.81	Common leopard (*Panthera pardus*)
32.	Sudhmahadev Conservation Reserve	142.25	174.89	Common leopard (*Panthera pardus*)
33.	Thein Conservation Reserve	18.90	24.65	Barking Deer (*Muntiacus muntjak*)
34.	Wangath Conservation Reserve	12.00	86.53	Hangul (*Cervus hanglu*)
35.	Chatlam Wetland Reserve	8.52	0.55	Mallard (*Anas platyrhynchos*),
36.	Freshkhoori Wetland Reserve	3.41	0.14	Northern Pintail (*Anas acuta*)
37.	Gharana Wetland Reserve	0.75	0.20	Bar-headed goose (*Anser indicus*),
38.	Haigam Wetland Reserve	7.25	7.62	Mallard (*Anas platyrhynchos*)
39.	Hokersar Wetland Reserve	13.75	13.55	Greylag Goose (Ancer ancer)
40.	Kranchoo Wetland Reserve	1.28	0.22	Common swallow (*Hirundo rustica*)
41.	Kukarian Wetland Reserve	24.25	NA	Pond heron (*Ardeola*)
42.	Malgoam Wetland Reserve	4.50	2.04	Red crested pochard (*Anas rufina*)
43.	Manibugh Wetland Reserve	1.06	0.07	Common pochard (*Aythya ferina)*
44.	Mirgund Wetland Reserve	4.00	3.83	Gadwall (*Anas strepera*)
45.	Nanga Wetland Reserve	15.25	NA	Cattle egret (*Bubulcus ibis*)
46.	Pargwal Wetland Reserve	49.25	NA	Cormorant (*Phalacrocoracidae*)
47.	Sangral Asa Chak Wetland Reserve	7.00	NA	Grey partridge (*Perdix perdix*)
48.	Shallabugh Wetland Reserve	16.00	16.75	Northern Pintail (*Anas acuta*)

1.4 About Project

There is a need to adopt an integrated approach in the conservation strategies so that a balanced perspective is ensured to restore, enhance and conserve the biodiversity. For evolving such a planning mechanism, we need to have near real time accurate data/information of all the sectors on a common database so that the wild life conservationist analyses the various possibilities and options for arriving at a judicious management strategy. In this situation, GIS presents the best options to integrate and analyze the multi-temporal and multi-seasonal spatial data relating to wildlife protected area network in Jammu and Kashmir.

The Department of Wildlife Protection is involved in the conservation of protected areas and it needs to plan its activities on the basis of accurate and real-time information. The information can be generated using remote sensing technology and while utilizing the improved tools, DWLP will have the capacity to act as a Wildlife Protection Department's standard repository of spatial and non-spatial data in digital format on the protected areas of J&K. In specific areas, the GIS database generated shall help in development of Decision Support Systems to assist in formulation of conservation and management plans for management of national parks, sanctuaries and wetland reserves. The GIS database can also support development of, 'Census Mapping System' under which the census data of the wild animals would be linked to the spatial elements in the natural landscape using latest techniques. This would enable spatial analysis of the population data and environmental factors in a more scientific way while formulating the management plans.

The present Project was undertaken with the prime objectives to create the basic geospatial data for storage, analysis, retrieval and exchange of digital databases pertaining to Protected Areas of J&K for effective planning and management and summation in the form of Atlas. Besides the officials of the Wildlife Protection Department were also trained on various aspects of GPS applications in wildlife management under the project.

The project is going to lay foundation for utilization of near real time information for evolving effective wildlife conservation strategies. Once the basic geospatial database is created, the department can develop programmes and facilities for managing spatial databases relating to wildlife, initiating special studies on the habitat of individual species, besides developing Spatial Decision Support Systems for evolving judicious management action plans. The GIS database created under the project shall help in assessing various aspects such as:

- Wild animal population and its distribution.
- Habitat use and preferences
- Progress of conservation activities
- Status of biodiversity
- Monitoring and updating data on the man-animal conflict situation.
- Delineation of corridors of different species in the area.
- Monitoring the anthropogenic pressures.

GEOSPATIAL TECHNOLOGY

2 GEOSPATIAL TECHNOLOGY

Geospatial technologies encompass a number of sub-disciplines, including Remote Sensing, Geographic Information Systems (GIS), Global Positioning Systems (GPS), and spatial modelling. Each of the specific sub-disciplines within geospatial technologies plays a unique role, but they are interdependent and most effectively used in an integrated fashion.

2.1 Remote Sensing

Remote sensing is the science and art of obtaining information about an object, area, or phenomenon through the analysis of data acquired by a device that is not in contact with the object, area, or phenomenon under investigation (Lillesand, T., Kiefer, R.W. and Chipman, J., 2015). Remote Sensing is done by sensing and recording reflected or emitted energy and processing, analyzing and applying that information. The figure 3 given below illustrates the normal Remote Sensing process.

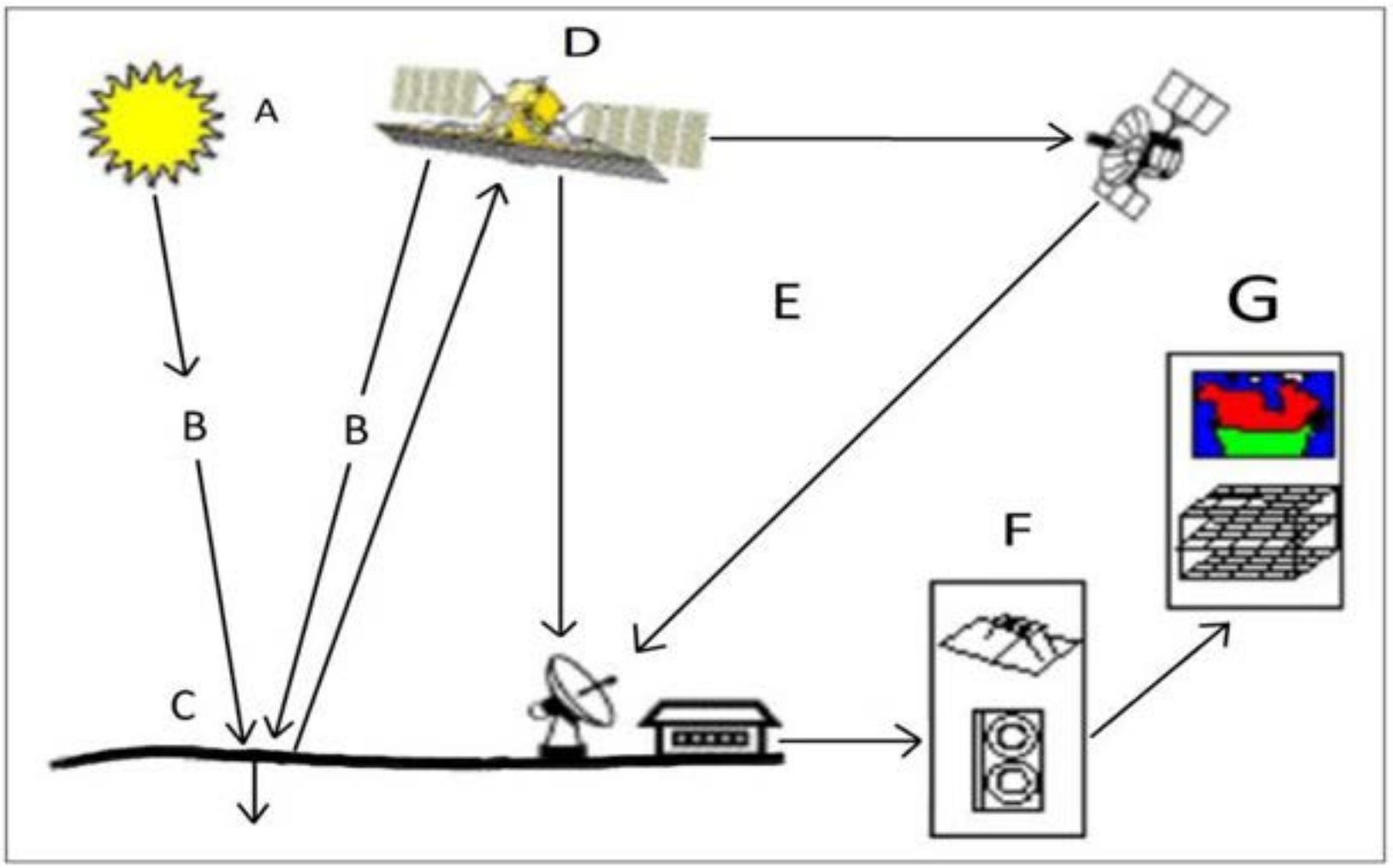


Figure 3: Remote Sensing Process

Source: Canada Center for Remote Sensing, 2007. Tutorial: Fundamentals of remote sensing

Energy Source or Illumination A: The first requirement for remote sensing is to have an energy source which illuminates or provides electromagnetic energy to the target of interest.

Radiation and the Atmosphere B: As the energy travels from its source to thetarget, it will come in contact with and interact with the atmosphere it passes through. This interaction may take place a second time as the energy travels from the target to the sensor.

Interaction with the Target C: Once the energy makes its way to the target through the atmosphere, it interacts with the target depending on the properties of both the target and the radiation.

Recording of Energy by the Sensor D: After the energy has been scattered by, or emitted from the target, sensor (remote - not in contact with the target) is required to collect and record the electromagnetic radiation.

Transmission, Reception, and Processing E: The energy recorded by the sensor has to be transmitted, often in electronic form, to a receiving and processing station where the data are processed into an image (hardcopy and/or digital).

Interpretation and Analysis F: The processed image is interpreted, visually and/or digitally or electronically, to extract information about the target which was illuminated.

Application G: The final element of the remote sensing process is achieved when we apply the information we have been able to extract from the imagery about the target in order to better understand it, reveal some new information, or assist in solving a particular problem.
emitted from the target, sensor (remote - not in contact with the target) is required to collect and record the electromagnetic radiation.

Transmission, Reception, and Processing E: The energy recorded by the sensor has to be transmitted, often in electronic form, to a receiving and processing station where the data are processed into an image (hardcopy and/or digital).

Interpretation and Analysis F: The processed image is interpreted, visually and/or digitally or electronically, to extract information about the target which was illuminated.

Application G: The final element of the remote sensing process is achieved when we apply the information we have been able to extract from the imagery about the target in order to better understand it, reveal some new information, or assist in solving a particular problem.

2.2 Global Positioning System (GPS)

The NAVSTAR (Navigation System with Time and Ranging) Global Positioning System (GPS) is an all-weather, space based navigation system under development by the U.S (Mishra and Enge 2006). Global Positioning System (GPS) technology has provided an essential tool for management of natural resources. GPS is a satellite and ground based radio navigation and location system that enables the user to determine very accurate locations on the surface of the Earth. The GPS receiver calculates a position (coordinate location) by trilateration (3-dimensional triangulation) of the signals from the satellites (figure 4). Although GPS is a complex and sophisticated technology, user interfaces have evolved to become very accessible to the non-technical user. Simple and inexpensive GPS units are available with accuracies of 10 to 20 meters, and more sophisticated precision systems can obtain centi meter level accuracies (Leica Geosystems, A.G., 1999). The GPS technology is very effectively used to delineate the boundaries of protected areas and to map the assets available within protected areas, for restoration, enhancement and conservation of our rich wildlife biodiversity.

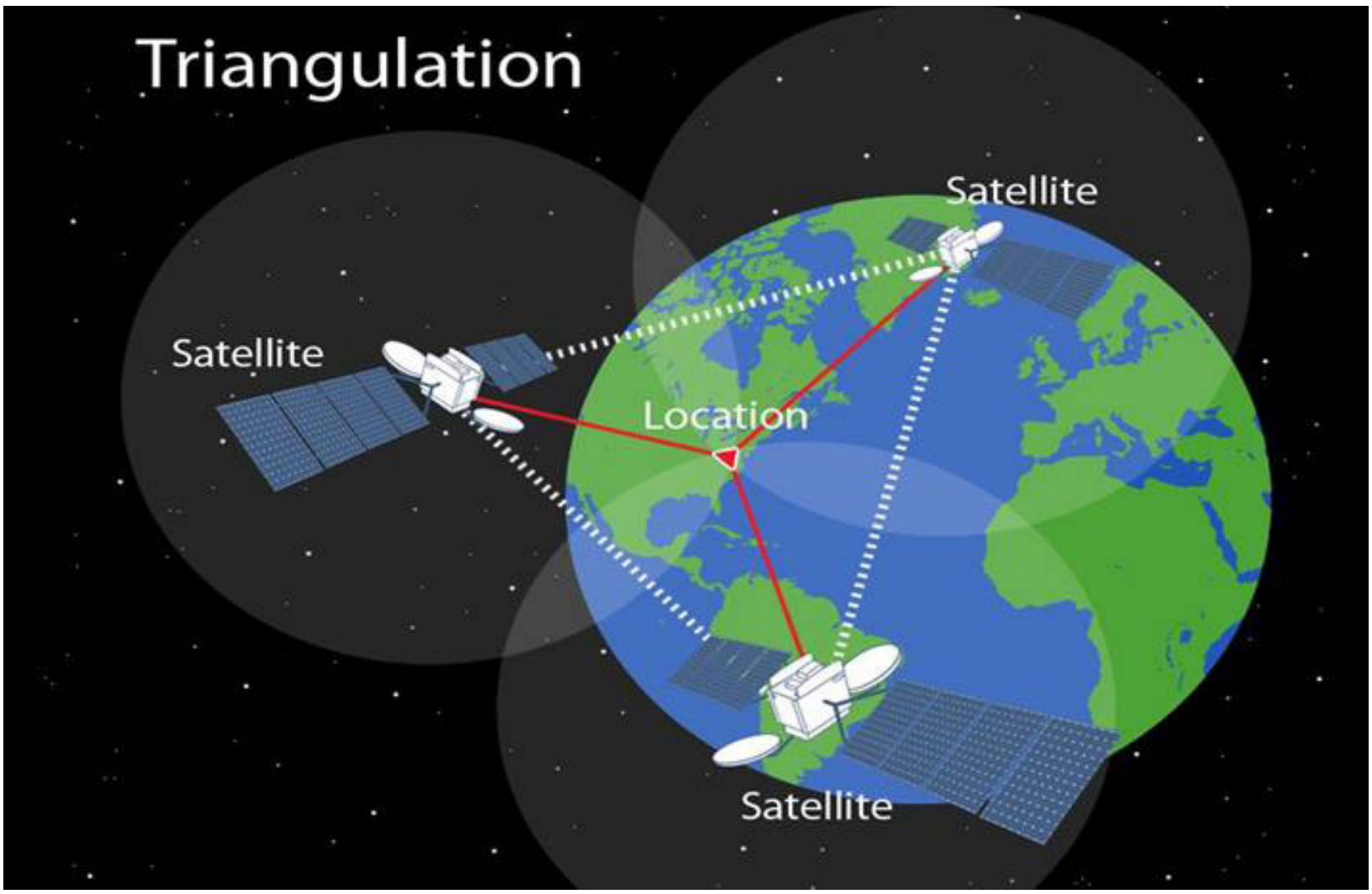


Figure 4: GPS Triangulation

Source: GPS Basics, A Tutorial of GPS from Leica Geosystems AG, Heerbrugg Switzerland 1999.

2.3 Geographic Information System (GIS)

Geographic Information Systems (GIS) ia defined as a powerful set of tools for collecting, storing, retrieving at will, transforming and displaying spatial data from the real world (Burrough, 1987). Most GIS packages represent geographic features as points, lines, and polygons. The features are illustrated by points or vertices connected by vectors (directional line segments). Each feature in the GIS spatial data base has associated with it attributes and geographic coordinates. Elements that really have no area, such as individual trees, deer stands, watching towers, and property corners, are represented as points whose geographic location is defined by a pair of X and Y coordinates. Linear features, such as roads, streams, and rivers are represented by series of points (each with their own coordinate location) connected by line segments. At each point that the line bends or changes direction, a point called a vertex, designates the location of the change in direction. Areas such as wildlife sanctuary, property boundaries, or crop fields are represented by closed polygons constructed of a series of vertices connected by line segments. GIS software is used to construct spatial databases containing features represented as point, lines, and polygons. The GIS software can be used to measure characteristics of individual features, such as the area of a particular protected area, or to produce summaries of all features in the database with a given characteristic. The use of Geographical Information Systems (GIS) has flooded almost every field in the engineering, natural and social sciences, offering accurate, efficient, reproducible methods for collecting, viewing and analyzing spatial data. The GIS has the ability to overlay or simultaneously display multiple layers of spatial information in a dynamic mapping

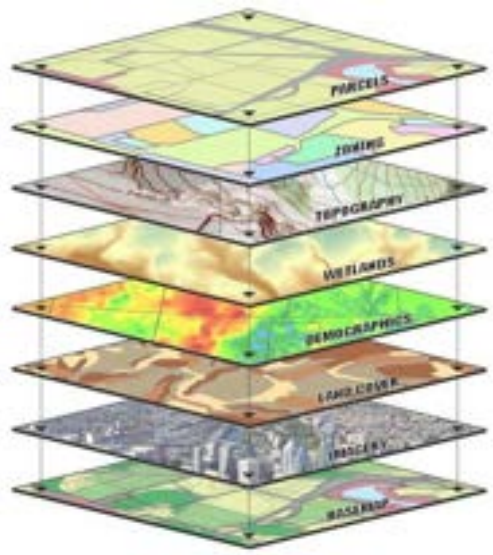


Figure 4: Visual example of overlaying spatial information

Source: Geospatial Historian, A Tutorial of Overlay and spatial analysis (worldpress.com).

environment (figure 5).The evolution of GIS, the Global Positioning System (GPS), and Remote Sensing (RS) technologies has enabled the collection and analysis of field data in ways that were not possible before the arrival of computers. Nowadays, with improved access to computers and modern technologies, GIS is becoming a good tool for resource management.

2.4 Applications of GIS Technology in forest and wildlife management

Forests are important renewable natural resources and have a significant role in preserving an environment suitable for human life. In addition to timber, forests provide such resources as grazing land for animals, wildlife habitat, recreation areas and a large number of ecosystem services. Human-caused disruptions, such as habitat loss, pollution, invasive species and climate change, are all threats to wildlife health and biodiversity. GIS technology is an effective tool for managing, analyzing, and visualizing wildlife data to target areas where interventional management practices are needed and to monitor their effectiveness. GIS also helps wildlife management professionals examine and envision the planning and management interventions such as

- Habitat requirements and ranges
- Population patches and linkages
- Disease levels within populations
- Progress of management activities
- Historical and present wildlife densities

Understanding the specific needs of wildlife populations is key to prevent local or global extinctions, rehabilitating populations, and restoring habitats. In wildlife management, professionals around the world have successfully implemented GIS to respond to invasive species, manage and facilitate disease prevention, minimize mortality, and determine wildlife movement and habitat ranges.

2.5 Methodology

The methodology essentially involves geo-processing of satellite data (Images and DEM), delineation of protected areas through on-screen digitization with the help of GPS collected ground control points and lines, generation of different thematic layers pertaining to Protected Areas and finally preparation of atlas.

Input Data Used

Merged (from Cartosat 1 PAN band 2.5m Resolution & IRS P6 LISS IV 5.8m Resolution) High Resolution Data (2.5m).
Survey of India Topographical Maps (1:50000 Scale)
Advanced Land Observing Satellite PALSAR (Phased Array type L-band Synthetic Aperture Radar) DEM (12.5 Resolution)
Ancillary Data (Already published maps and reports)

Approach

The approach basically defines procedure for executing the project and involves following steps.
Geo Processing of satellite data (Images & DEM).
Delineation of boundaries of Protected Areas.
Creation of different thematic layers (Land Use Land Cover, Lithology, Geomorphology, Slope, Aspect, Elevation etc).
Extraction of statistics.
Atlas and report.

Ground Truth Collection

In order to improve the accuracy of the thematic layers generated, the doubtful classes in the database were verified on the ground using GCPs (Ground Control points). It was ensured that ground truth collection was done for at least all doubtful locations.

Outcomes

The different thematic maps including statistics were generated for 48 wildlife protected areas of the UT of Jammu & Kashmir which include

- Land Use Land Cover
- Vegetation
- Geomorphology
- Lithology
- Soil
- Elevation
- Slope
- Aspect
- Drainage
- Road Network.

WILDLIFE PROTECTED AREA NETWORK

JAMMU & KASHMIR

WILDLIFE PROTECTED AREA NETWORK JAMMU & KASHMIR - UT

1.Dachigam National Park
2.Kazinag National Park
3.Kishtwar National Park
4.Salim Ali City Forest National Park
5.Bani Wildlife Sanctuary
6.Gulmarg Wildlife Sanctuary
7.Hirpora Wildlife Sanctuary
8.Jasrota Wildlife Sanctuary
9.Lachipora Wildlife Sanctuary
10.Limber Wildlife Sanctuary
11.Nandni Wildlife Sanctuary
12.Overa Aru Wildlife Sanctuary
13.Ramnagar Wildlife Sanctuary
14.Razparian Daksum Wildlife Sanctuary
15.Surinsar Mansar Wildlife Sanctuary
16.Tata Kuti Wildlife Sanctuary
17.Thajawas Baltal Wildlife Sanctury
18.Tral Wildlife Sanctuary
19.Achabal Conservation Reserve
20.Ajas Conservation Reserve
21.Bahu Conservation Reserve
22.Brain Nishat Conservation Reserve
23.Gambir Mughlian Goral Conservation Reserve
24.Jawahar Tunnel Chakore Reserve
25.Kheri Conservation Reserve
26.Khimber Dara Sharazbal Conservation Reserve
27.Khonmoh Conservation Reserve
28.Khrew Conservation Reserve
29.Kulian Conservation Reserve
30.Naganari Conservation Reserve
31.Sheshara Conservation Reserve
32.Sudh Mahadev Conservation Reserve
33.Thein Conservation Reserve
34.Wangath Conservation Reserve
35.Chatalum Wetland Reserve
36.Freshkhori Wetland Reserve
37.Gharana Wetland Reserve
38.Haigam Wetland Reserve
39.Hokersar Wetland Reserve
40.Kranchoo Wetland Reserve
41.Kukarian Wetland Reserve
42.Malgoam Wetland Reserve
43.Manibugh Wetland Reserve
44.Mirgund Wetland Reserve
45.Nanga Wetland Reserve
46.Pargwal Wetland Reserve
47.Sangral Asa Chak Wetland Reserve
48.Shalbug Wetland Reserve

Kupwara, Bandipora, Ganderbal, Baramulla, Srinagar, Budgam, Pulwama, Anantnag, Poonch, Shopain, Kulgam, Kishtawar, Rajouri, Ramban, Reasi, Doda, Udhampur, Jammu, Samba, Kathua

1:1,100,000
0 1 2 4 Km

Wildlife Protected Areas Jammu & Kashmir

Jammu & Kashmir

India

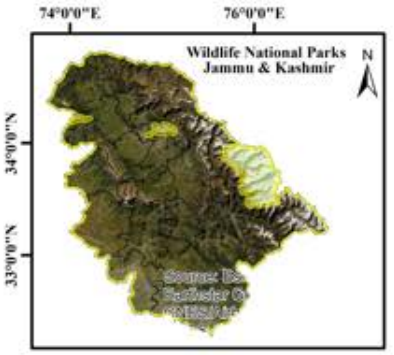
Executed by
Department of Ecology, Environment & Remote Sensing
J & K Government.
SDA Colony Bemina Srinagar Kashmir - 190018 (Summer)
Paryavaran Bhawan Transport Nagar Gladni Jammu - 180006 (Winter)

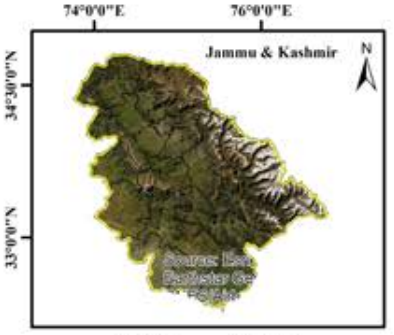
Funded by
Department of Wildlife Protection
J&K Government

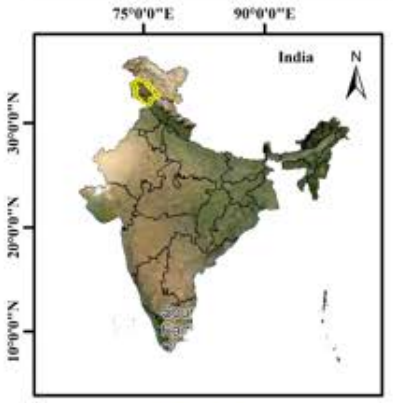
WILDLIFE PROTECTED AREA NETWORK J&K

NATIONAL PARKS

WILDLIFE PROTECTED AREA
NATIONAL PARKS
JAMMU & KASHMIR - UT







Executed by
Department of Ecology, Environment & Remote Sensing
J & K Government.
SDA Colony Bemina Srinagar Kashmir - 190018 (Summer)
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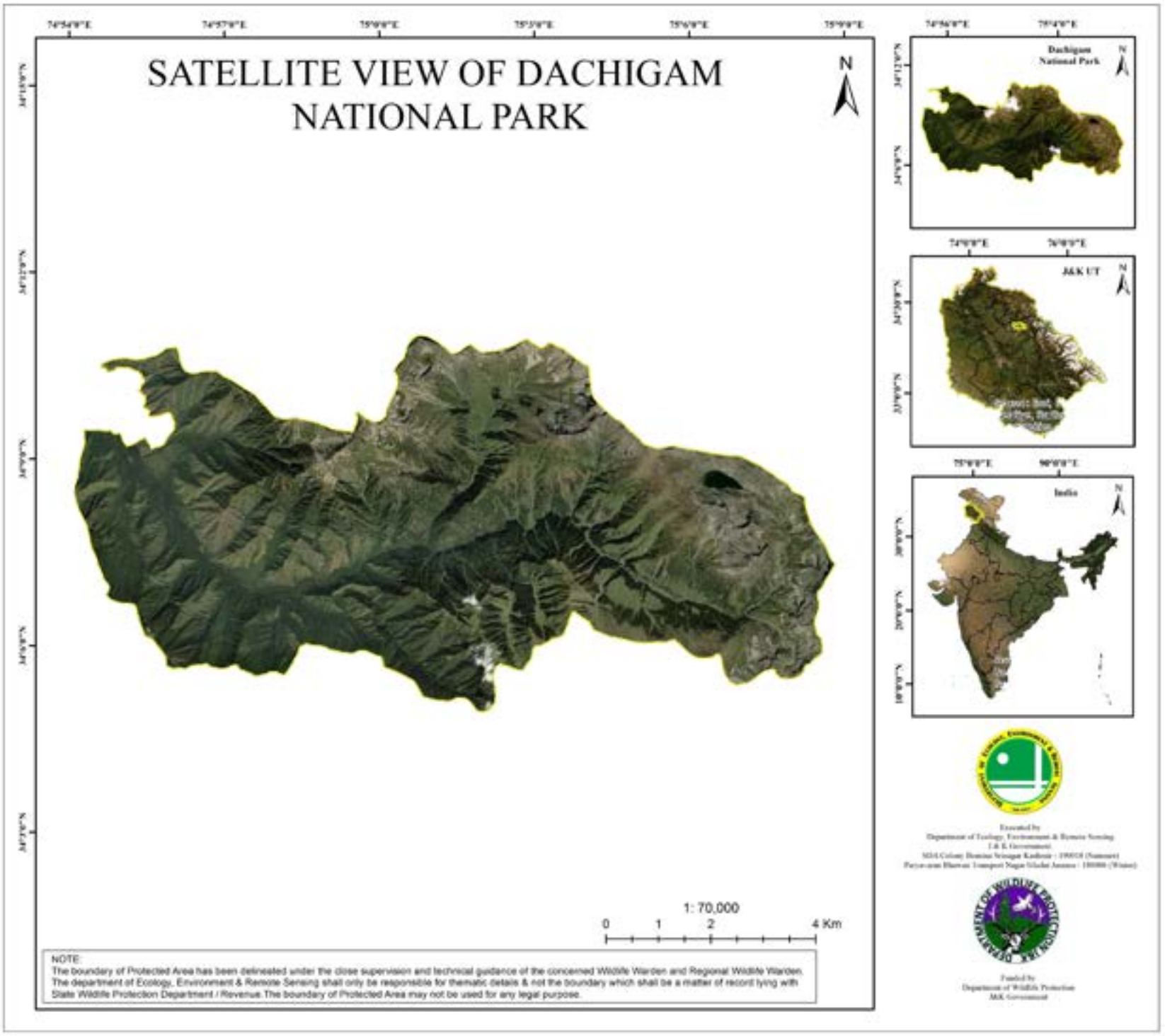
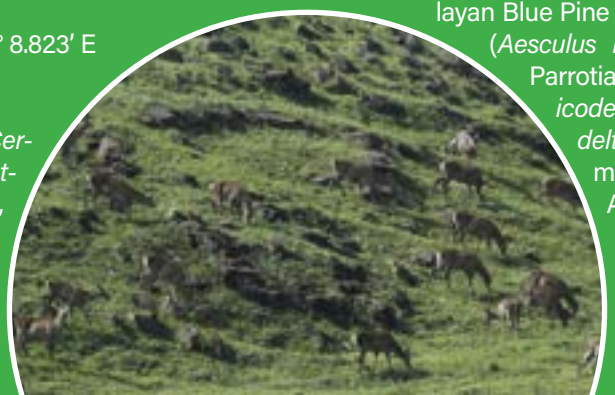


DACHIGAM NATIONAL PARK

Dachigam National Park is located in Srinagar. The park has been a protected area since early 20 century and is said to have been created to ensure clean and safe drinking water to Srinagar city. The Park is home to magnificent Hangul or Kashmir stag. The faunal, floral, ecological, and geomorphologic significance and its proximity to Srinagar city gives it a special attention. The park is rich in number of rare and variety of plants with great economic, genetic, and medicinal value. Dachigam National Park occupies almost half of the catchment zone of the famous Dal Lake in Srinagar city.

SRO/NOTIFICATION NO: SRO 134 dated 10.04.1990
NOTIFIED AREA (KM2): 141.00 **GIS AREA (KM2):** 164.55
ALTITUDE RANGE (m): 1400 – 4400
PERIMETER (Kms): 73.83
GEO - COORDINATES:
34° 4.929′ N - 34° 10.994′ N, 74° 54.093′ E - 75° 8.823′ E

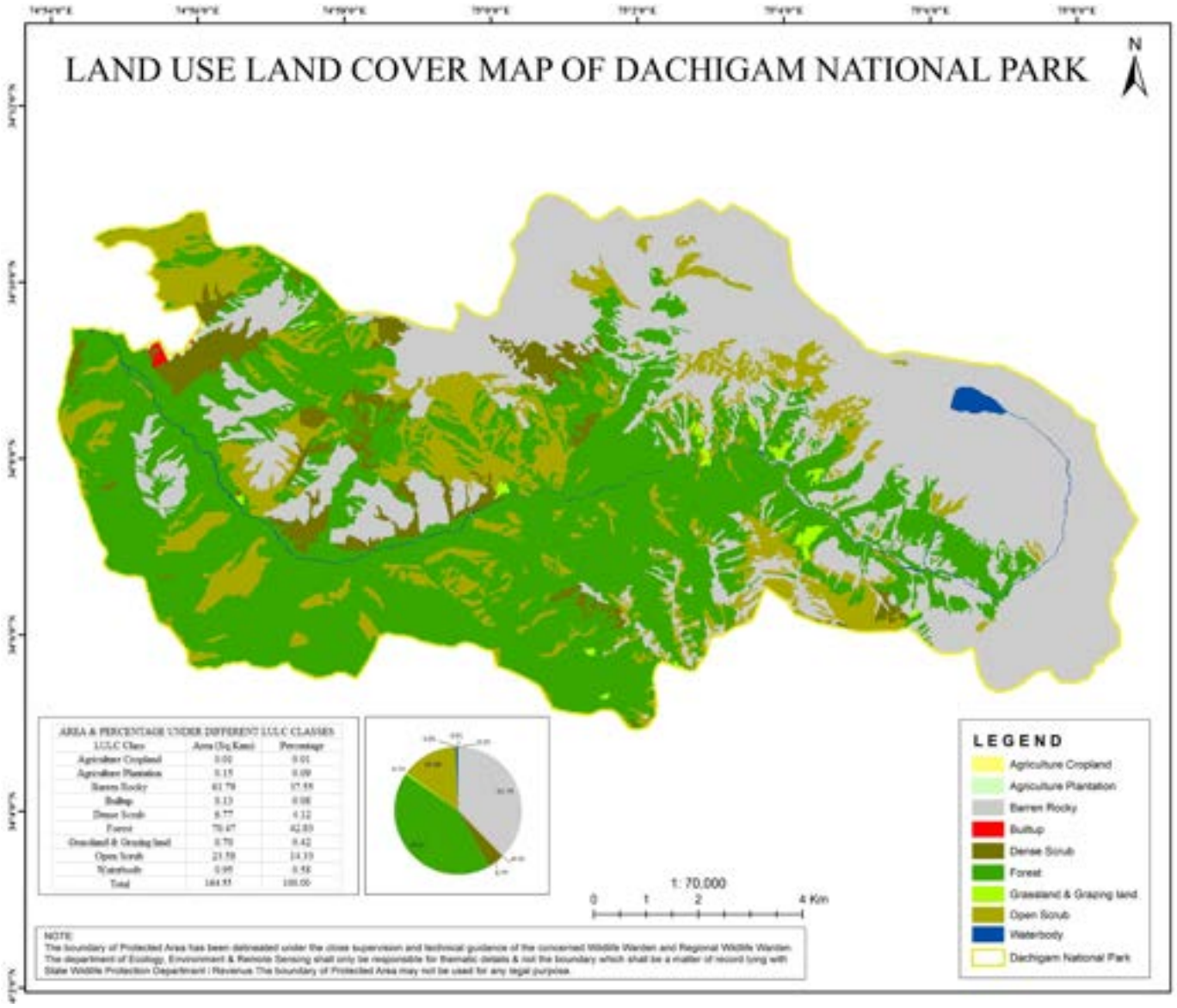
MAJOR FAUNA: Kashmir Stag/Hangul (*Cervus hanglu*), Asiatic Black Bear (*Ursus thibetanus*), Himalayan Serow (*Capricornis thar*), Common Leopard (*Panthera pardus*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*), Kashmir Grey Langur (*Semnopithecus Ajax*), Indian Jackal (*Canis aureus*).



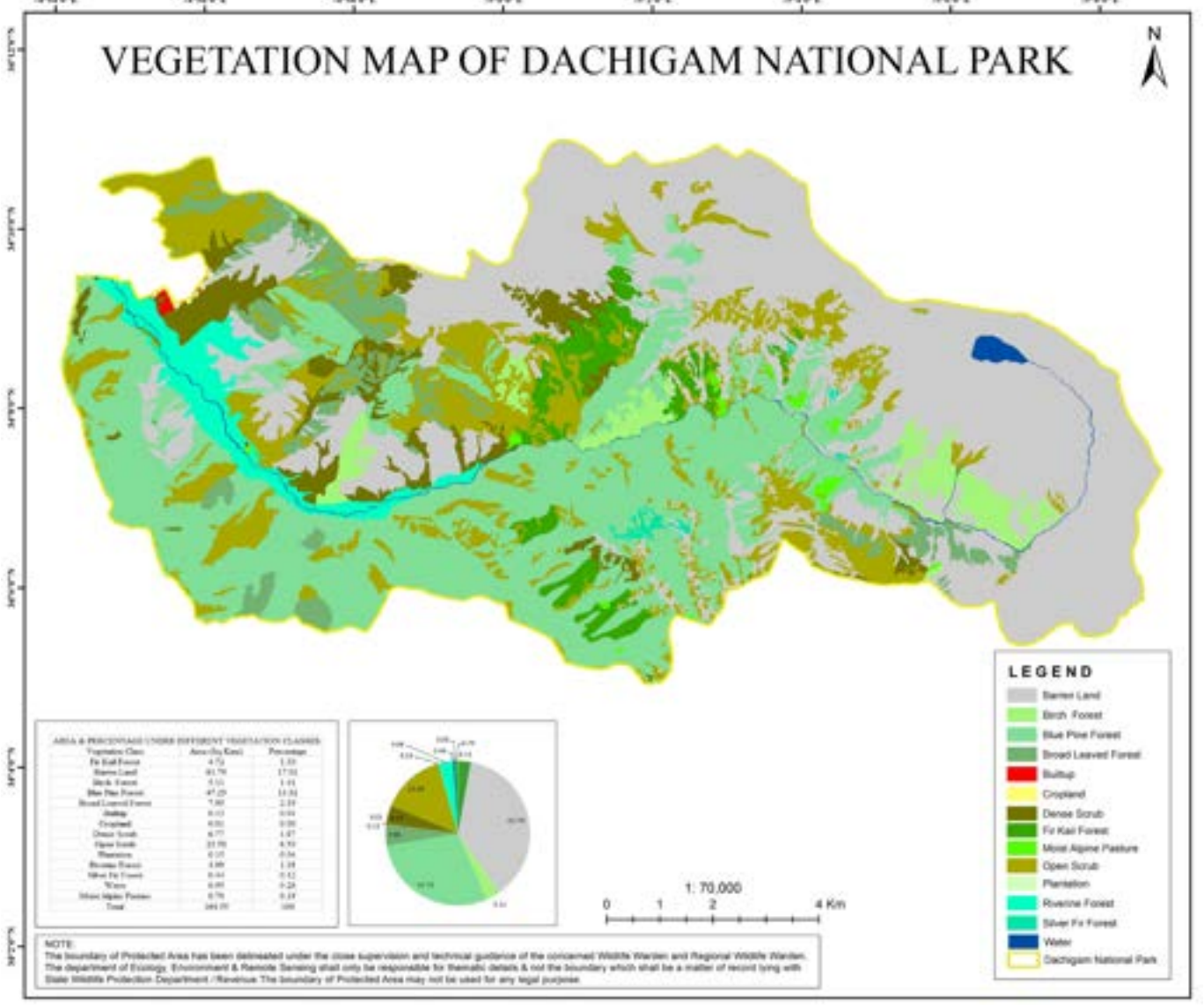
MAJOR AVI FAUNA: Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Himalayan Griffon Vulture (*Gyps himalayensis*), Black Eared kite (*Milvus migrans*), Kashmir Woodpecker (*Dryobates himalayensis*), Indian Myna (*Acridotheres tristis*), White Checked Bulbul (*Pycnonotus leucogenys*), house sparrow (*Passer domesticus*),Orange bullfinch (*pyrula aurantica*), Spectacled finch (*Callocanthis burtoni*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan elm (*Ulmus wallichiana*), Parrotia (*Parrotiopsis jacquemontiana*),Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lycium*), Himalayan rhubarb (*Rheum webbianum*), Indian Atees *(Aconitum heterophyllum)*.

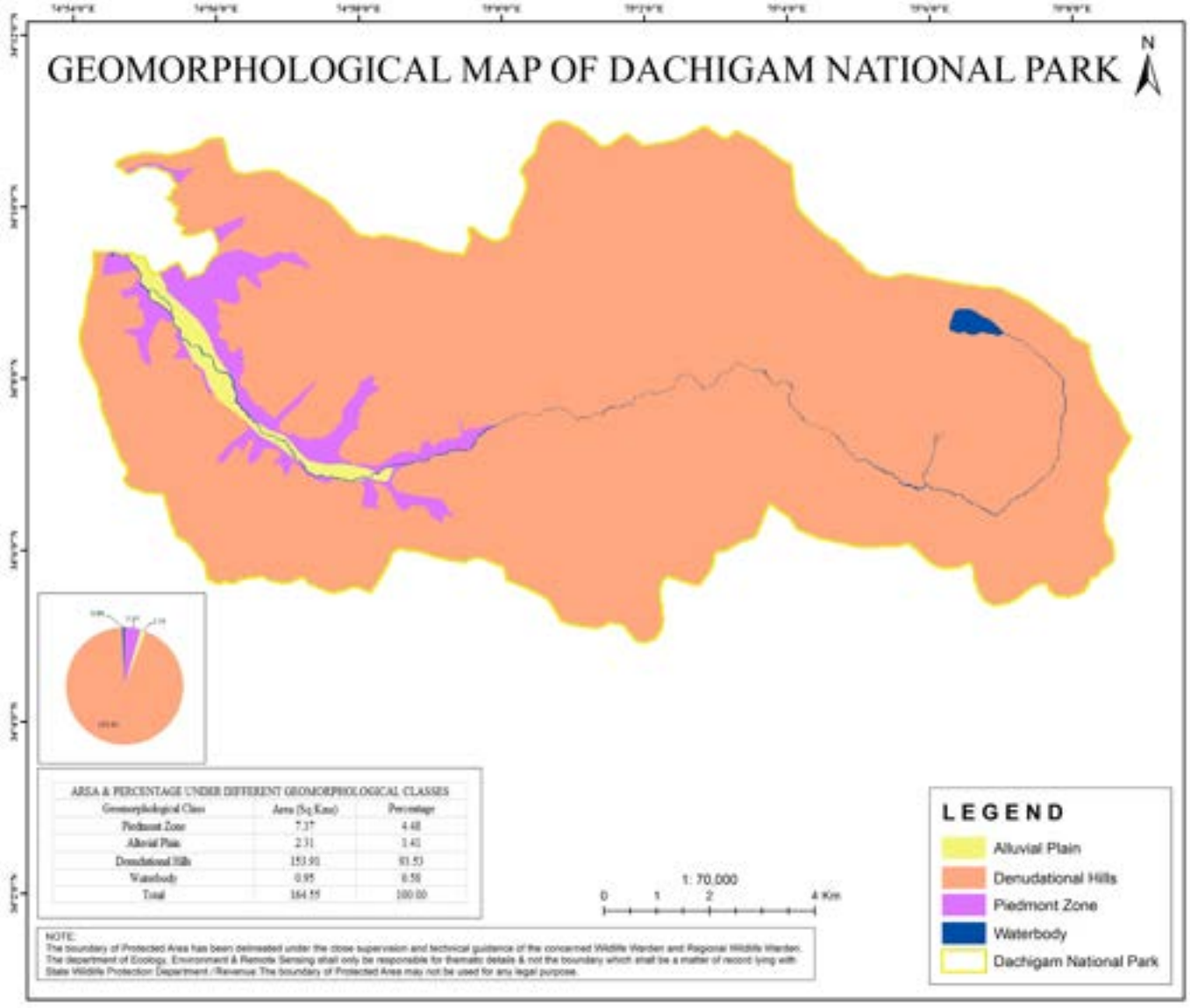
LAND USE LAND COVER MAP OF DACHIGAM NATIONAL PARK



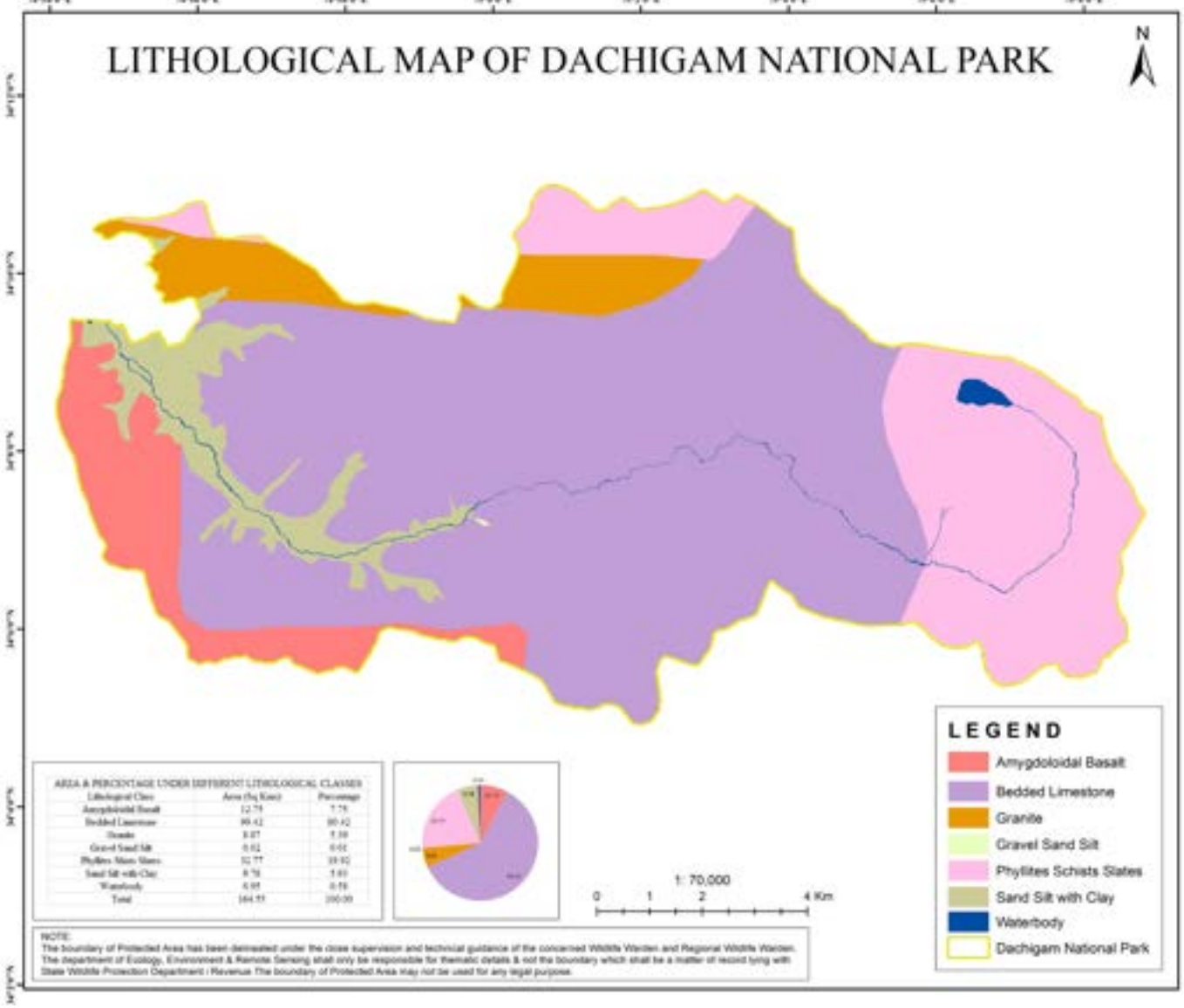
VEGETATION MAP OF DACHIGAM NATIONAL PARK



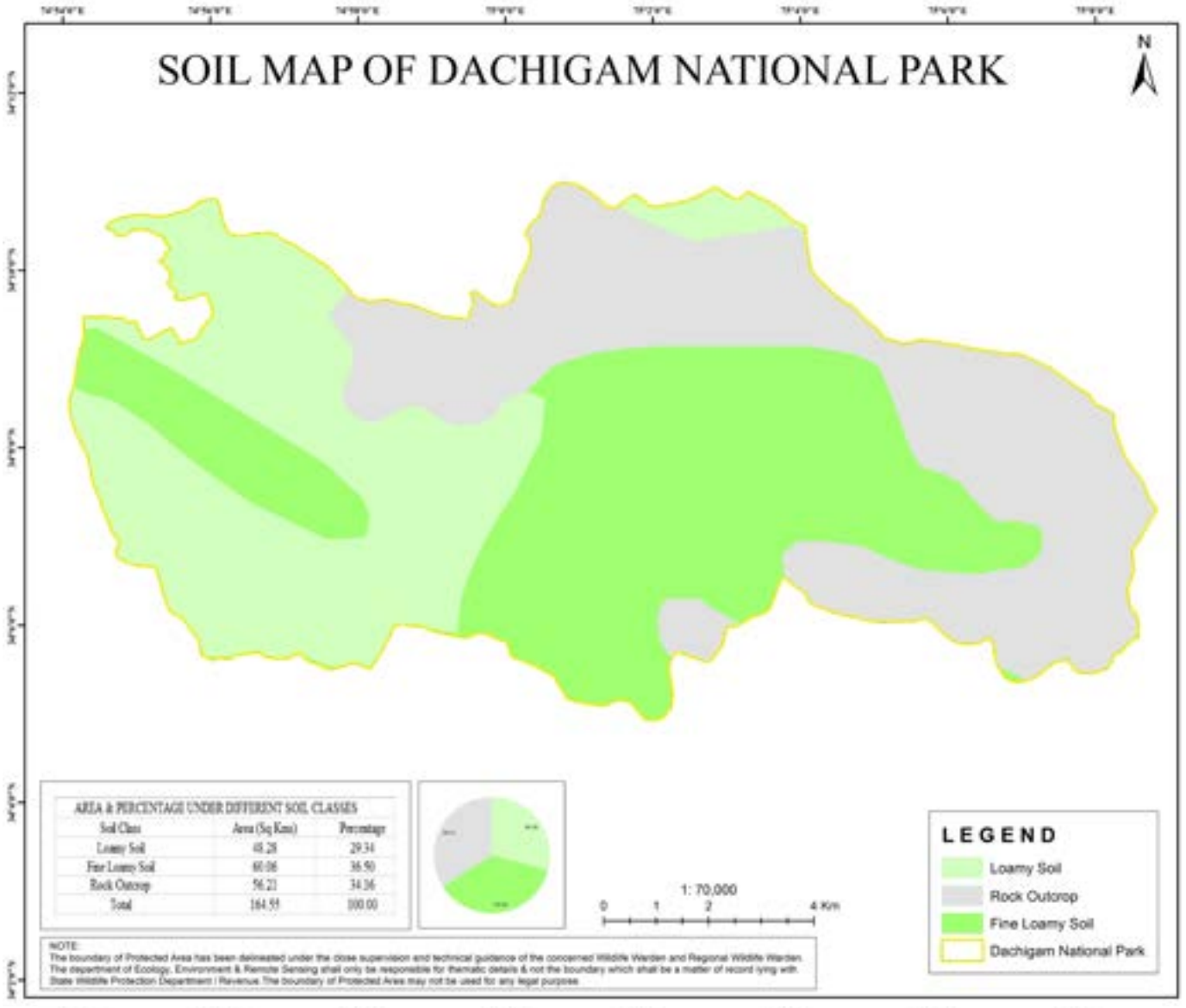
GEOMORPHOLOGICAL MAP OF DACHIGAM NATIONAL PARK



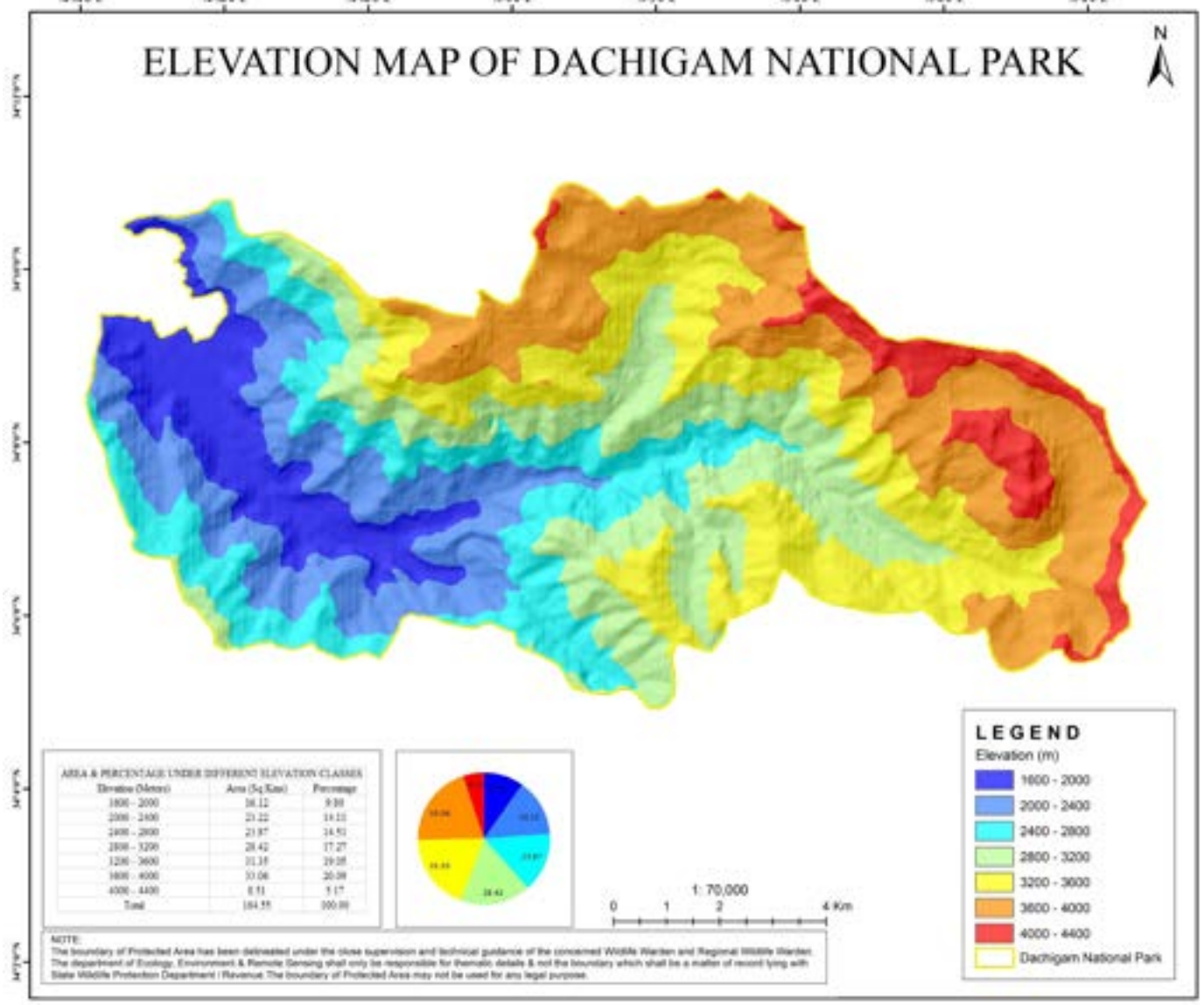
LITHOLOGICAL MAP OF DACHIGAM NATIONAL PARK



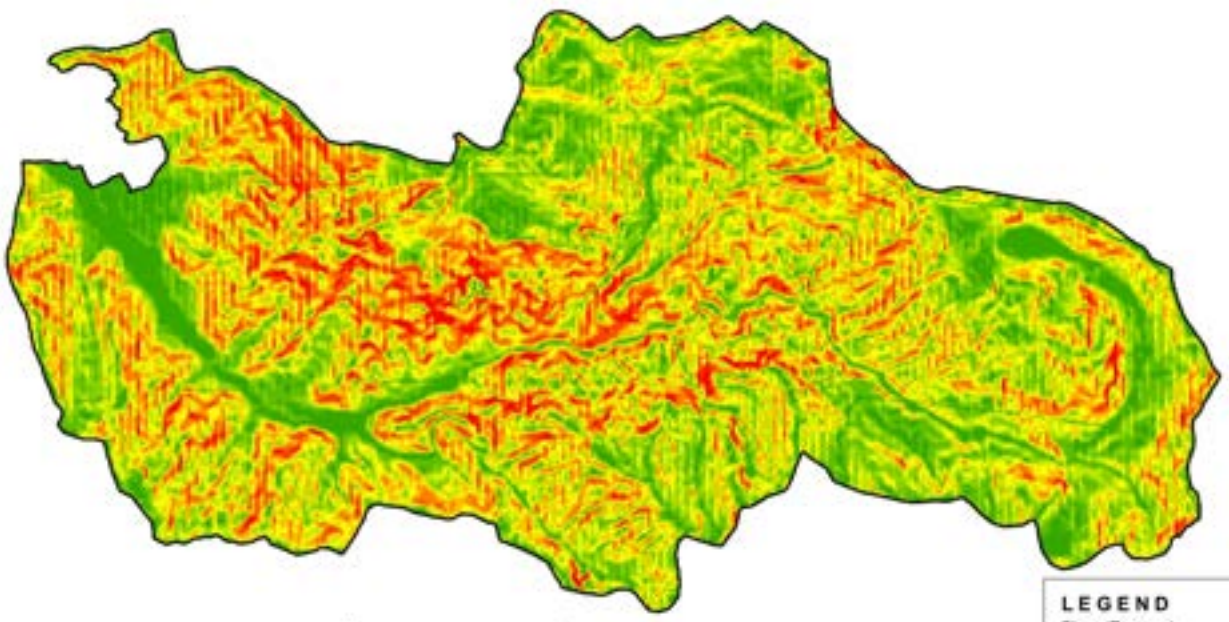
SOIL MAP OF DACHIGAM NATIONAL PARK



ELEVATION MAP OF DACHIGAM NATIONAL PARK



SLOPE MAP OF DACHIGAM NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

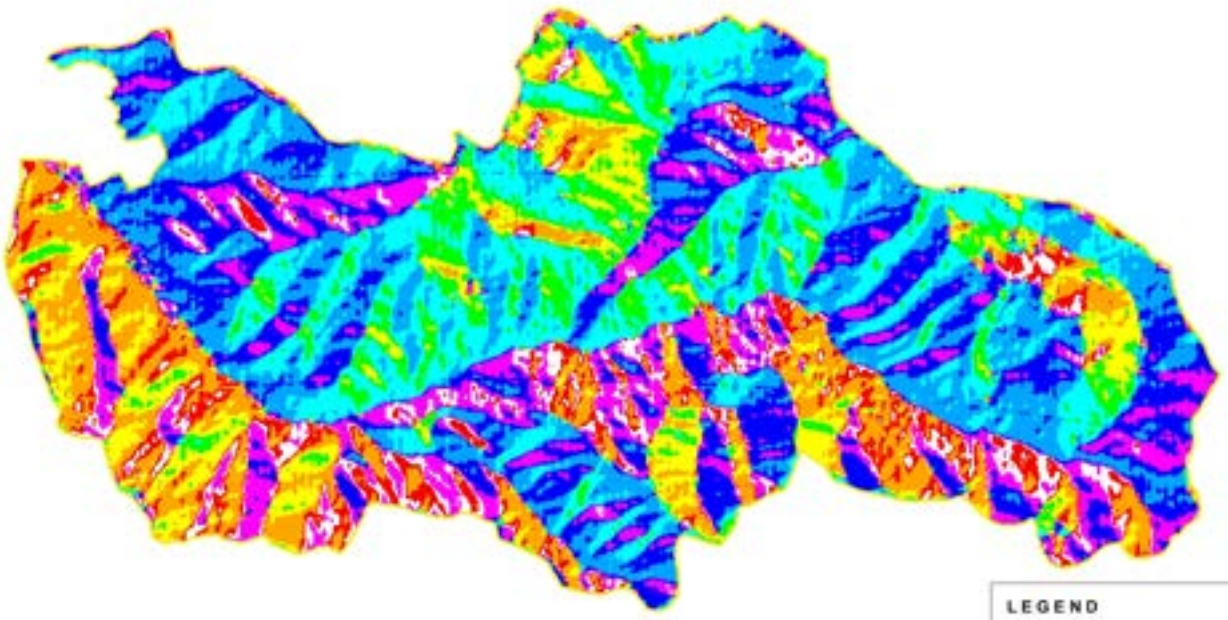
Slope (Degrees)	Area	Percentage
0-5	3.52	2.14
6-15	18.8	11.39
16-20	17.5	10.64
21-30	50.63	30.77
31-35	28.34	16.01
36-45	34.8	21.15
46-50	7.39	4.49
51-70	5.72	3.48
71-90	0.07	0.03
Total	164.55	100.00

1: 70,000
0 1 2 4 Km

LEGEND
Slope (Degrees)
- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Dachigam National Park

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

ASPECT MAP OF DACHIGAM NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq.Kms)	Percentage
Flat	0.37	0.22
North	17.53	10.65
Northeast	17.3	10.51
East	14.31	8.70
Southeast	15.65	9.51
South	26.99	16.40
Southwest	30.83	18.74
West	24.28	14.74
Northwest	17.32	10.53
Total	164.55	100.00

1: 70,000
0 1 2 4 Km

LEGEND
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Dachigam National Park

NOTE:
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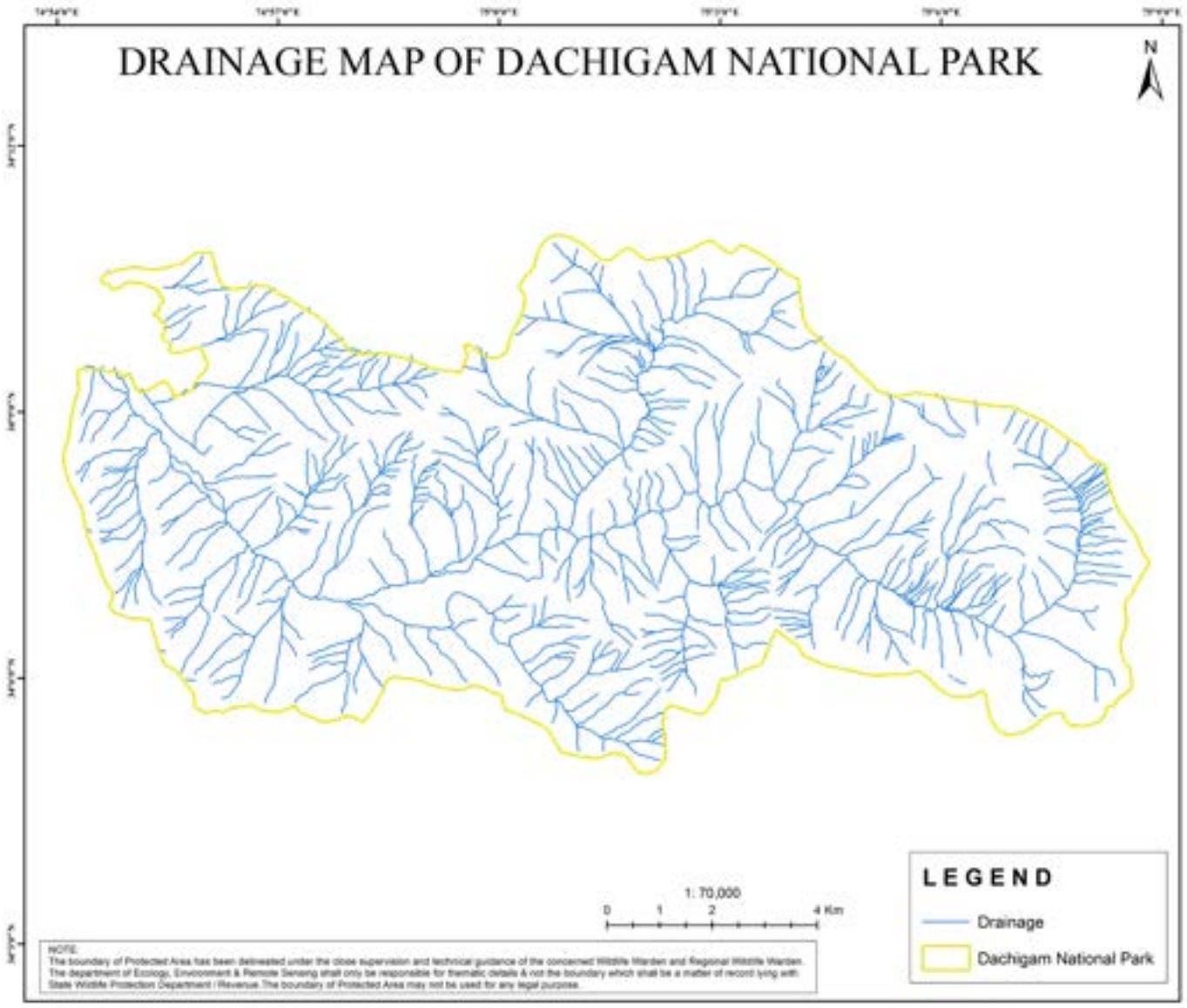
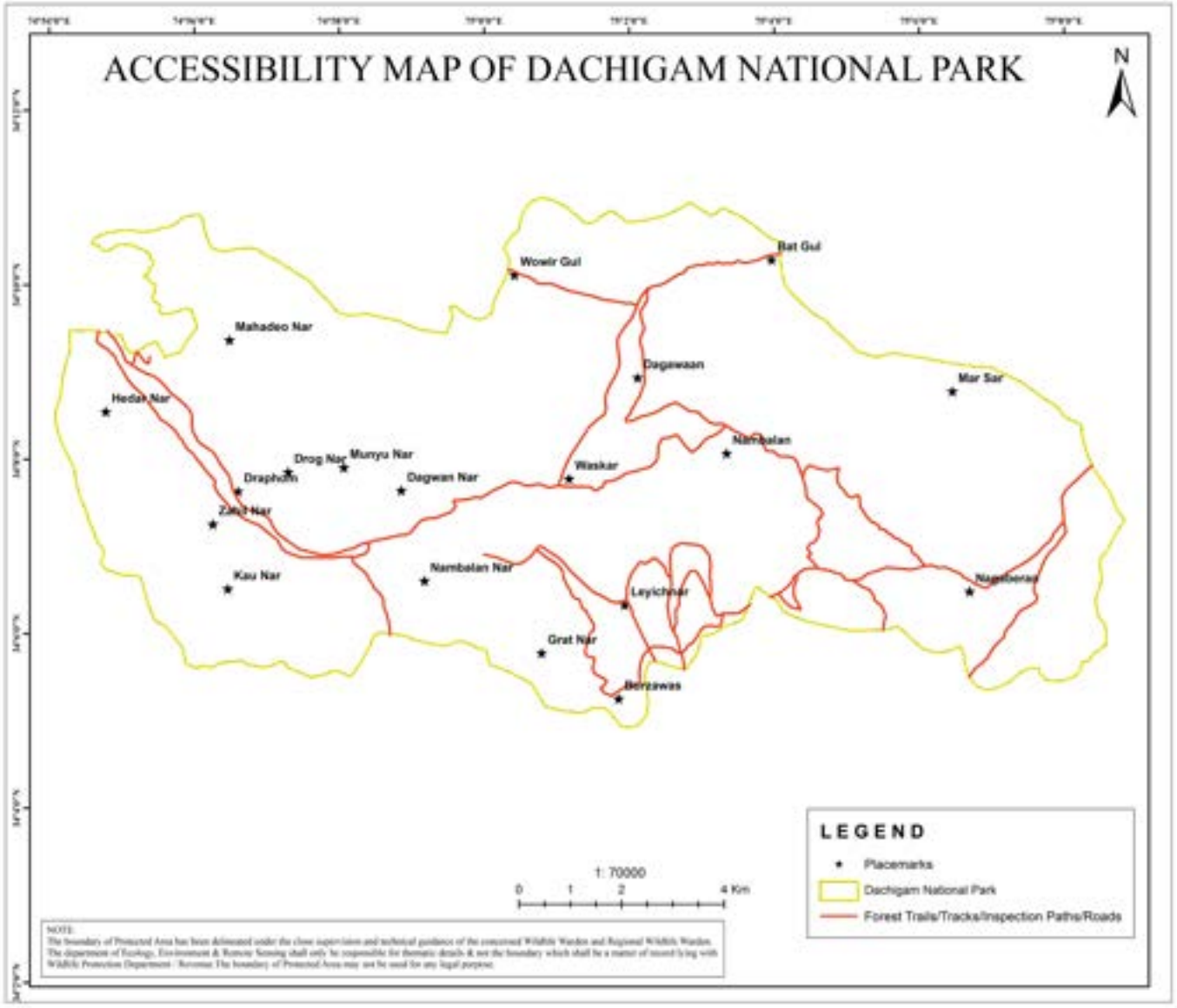
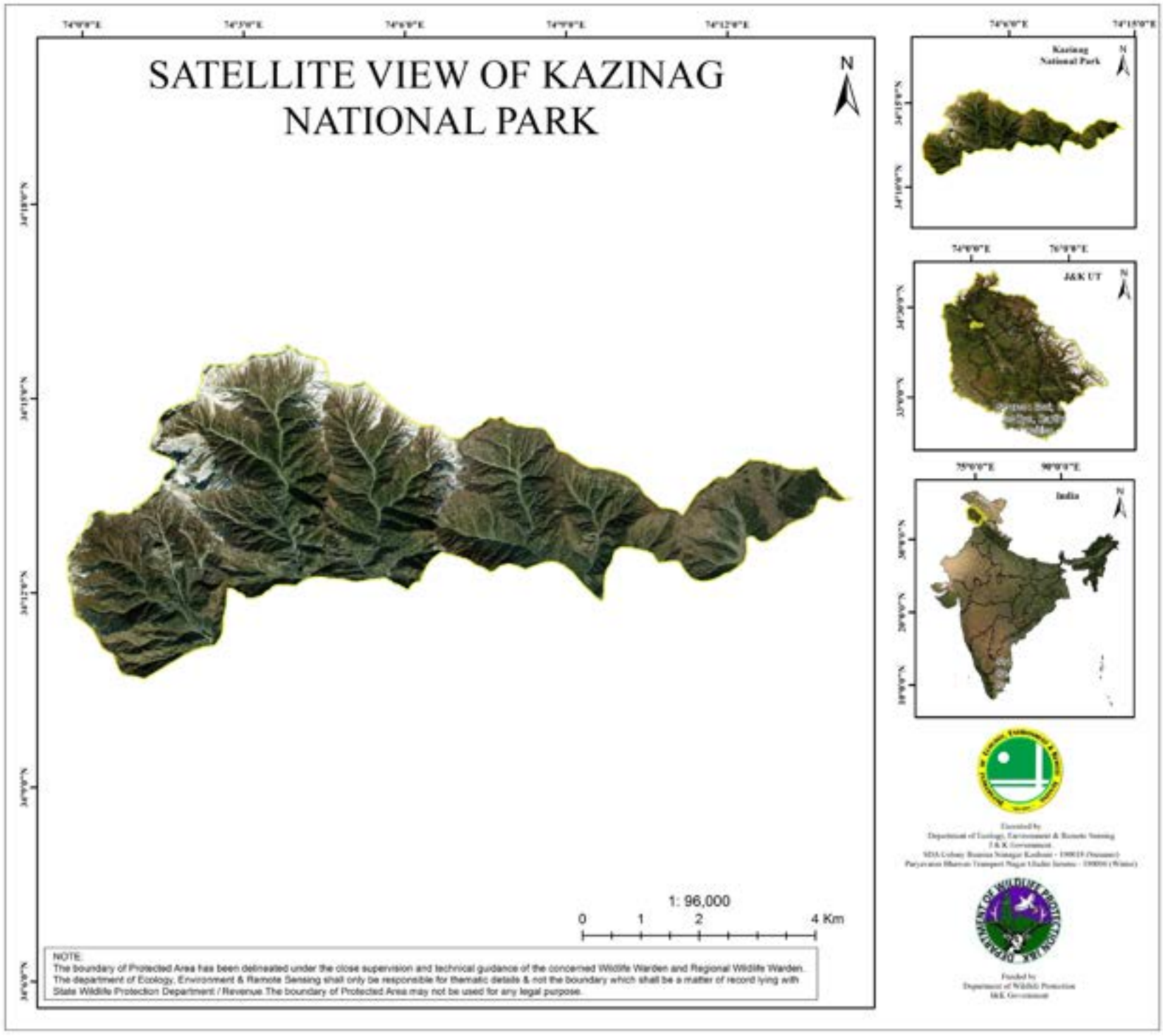

DRAINAGE MAP OF DACHIGAM NATIONAL PARK
N
1: 70,000
0 1 2 4 Km
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.
LEGEND
Drainage
Dachigam National Park


ACCESSIBILITY MAP OF DACHIGAM NATIONAL PARK
N
Bat Gul
Wowir Gul
Mahadeo Nar
Dagawaan
Mar Sar
Hedak Nar
Nambalan
Drog Nar
Muryu Nar
Waskar
Draphom
Dagwan Nar
Zaki Nar
Kau Nar
Nambalan Nar
Leyichnar
Nagabenas
Grat Nar
Berzawas
1: 70000
0 1 2 4 Km
NOTE:
LEGEND
Placemarks
Dachigam National Park
Forest Trails/Tracks/Inspection Paths/Roads

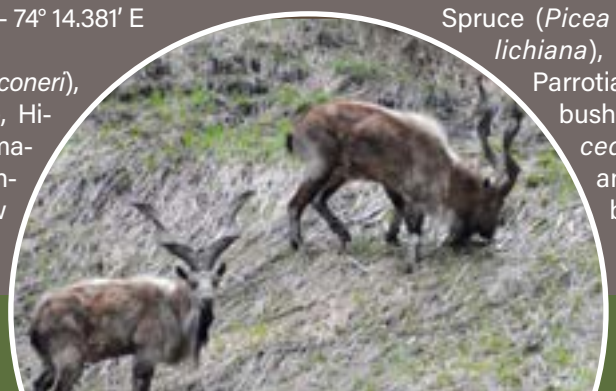


KAZINAG NATIONAL PARK

An area of dense forest, close to line of control. Kazinag National Park is a home to the near threatened Markhor, a majestic mammal with corkscrew horns. It is located about 70 kms away from the capital city Srinagar. The Park is home to about 20 species of mammals, 120 bird species & 17 species of butterflies. Also there are numerous species of medicinal plants.

SRO/NOTIFICATION NO: SRO 425 dated 18.12.2007
NOTIFIED AREA (KM2): 89.00 **GIS AREA (KM2):** 90.86
PERIMETER (KMS): 61.99 **ALTITUDE RANGE (M):** 2100 – 4305
GEO - COORDINATES:
34° 10.680′ N - 34° 15.878′ N, 73° 59.825′ E - 74° 14.381′ E

MAJOR FAUNA: Markhor (*Capra falconeri*), Kashmir Musk Deer (*Moschus Cupreus*), Himalayan Brown Bear (*Ursus arctos*), Himalayan Black Bear (*Ursus thibetanus*), Common Leopard (*Panthera pardus*), Yellow Throated Martin (*Martes flavigula*), Long Tailed Marmot (*Marmota caudata*), Small Kashmir Flying Squirrel (*Eoglaucomys fimbriatus*).



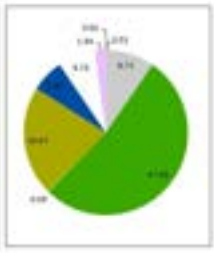
MAJOR AVI FAUNA: Eurasian Cuckoo (*Cuculus canorus*), Western Tragopan (*Tragopan melanocephalus*), Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Golden Eagle (*Aquila chrysaetos*), Sparow Hawk (*Accipiter nisus melaschistos*), Snow Pigeon (*Columba leuconota*), Lesser pied kingfisher (*Ceryle rudis*), Nutcracker (*Nucifraga Caryocatactes*).

MAJOR FLORA: Deodar (*Cedrus deodara*), Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Parrotia (*Parrotiopsis jacquemontiana*), Cranberry bush (*Viburnum grandiflorum*), Wax tree (*Rhus succedanea*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lycium*), Himalayan rhubarb (*Rheum webbianum*).

LAND USE LAND COVER MAP OF KAZINAG NATIONAL PARK

AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq.Kms)	Percentage
Agriculture Cropland	0.01	0.02
Agriculture Plantation	0.01	0.01
Barren Rocky	8.71	9.59
Forest	47.83	52.65
Grassland & Grazing land	0.09	0.10
Gullied Revenous	1.94	2.13
Open Scrub	19.67	21.65
Snow / Glacial	6.73	7.40
Waterbody	5.87	6.46
Total	90.86	100.00



LEGEND

- Agriculture Cropland
- Agriculture Plantation
- Barren Rocky
- Forest
- Grassland & Grazing land
- Gullied / Revenous
- Open Scrub
- Snow/Glacial
- Waterbody
- Kazinag National Park

1: 96,000

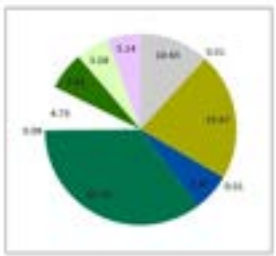
0 1 2 4 Km

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF KAZINAG NATIONAL PARK

AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq.Kms)	Percentage
Barren Land	10.65	11.72
Cropland	0.01	0.02
Deodar	5.81	6.40
Fir	5.09	5.60
Juniper	5.14	5.66
Moist Alpine Pasture	0.09	0.10
Open Scrub	19.67	21.65
Plantation	0.01	0.01
Snow	6.73	7.40
Temperate coniferous	31.79	34.99
Water	5.87	6.46
Total	90.86	100.00



LEGEND

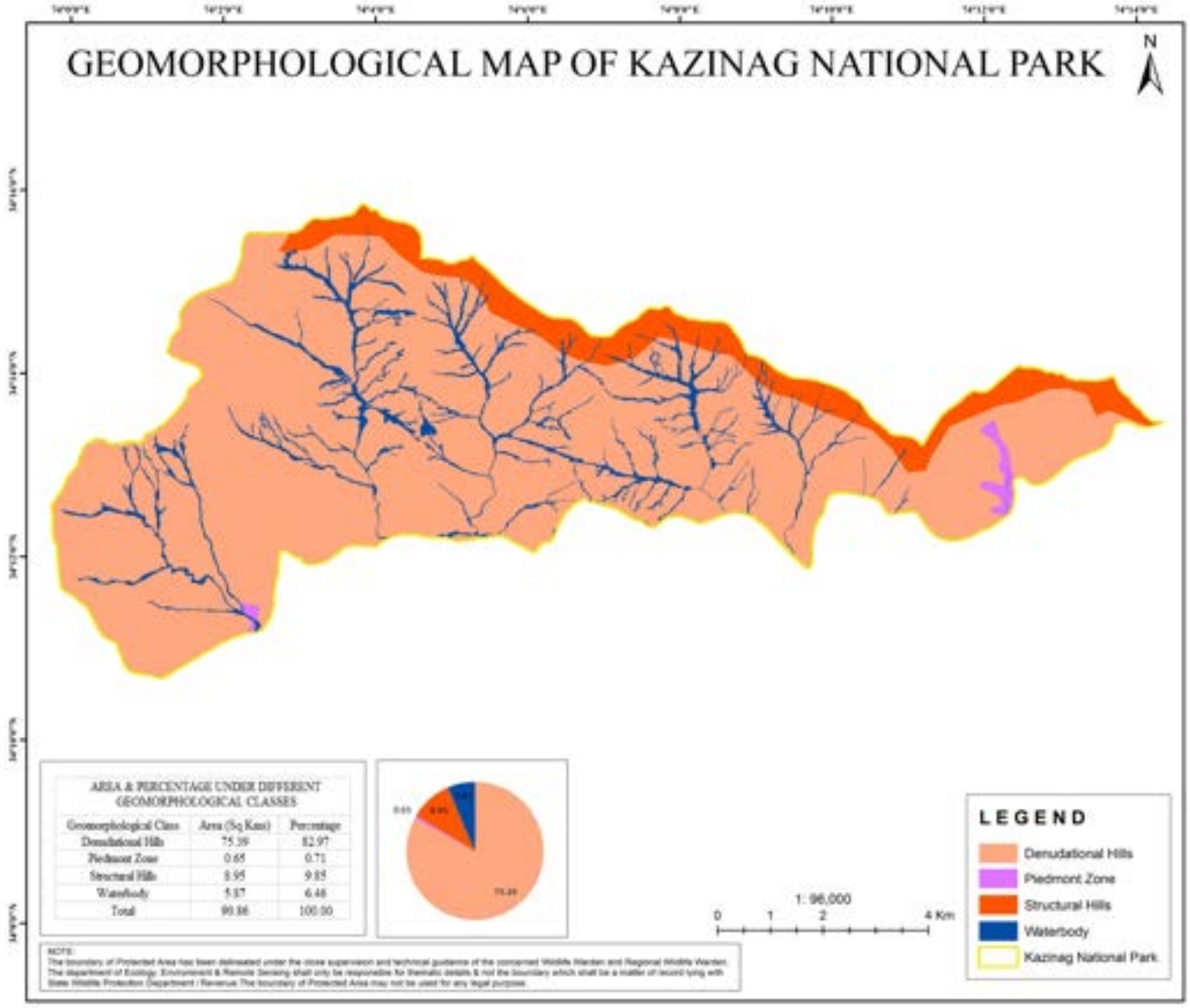
- Barren Land
- Cropland
- Deodar
- Fir
- Juniper
- Moist Alpine Pasture
- Open Scrub
- Plantation
- Snow
- Temperate Coniferous
- Water
- Kazinag National Park

1: 96,000

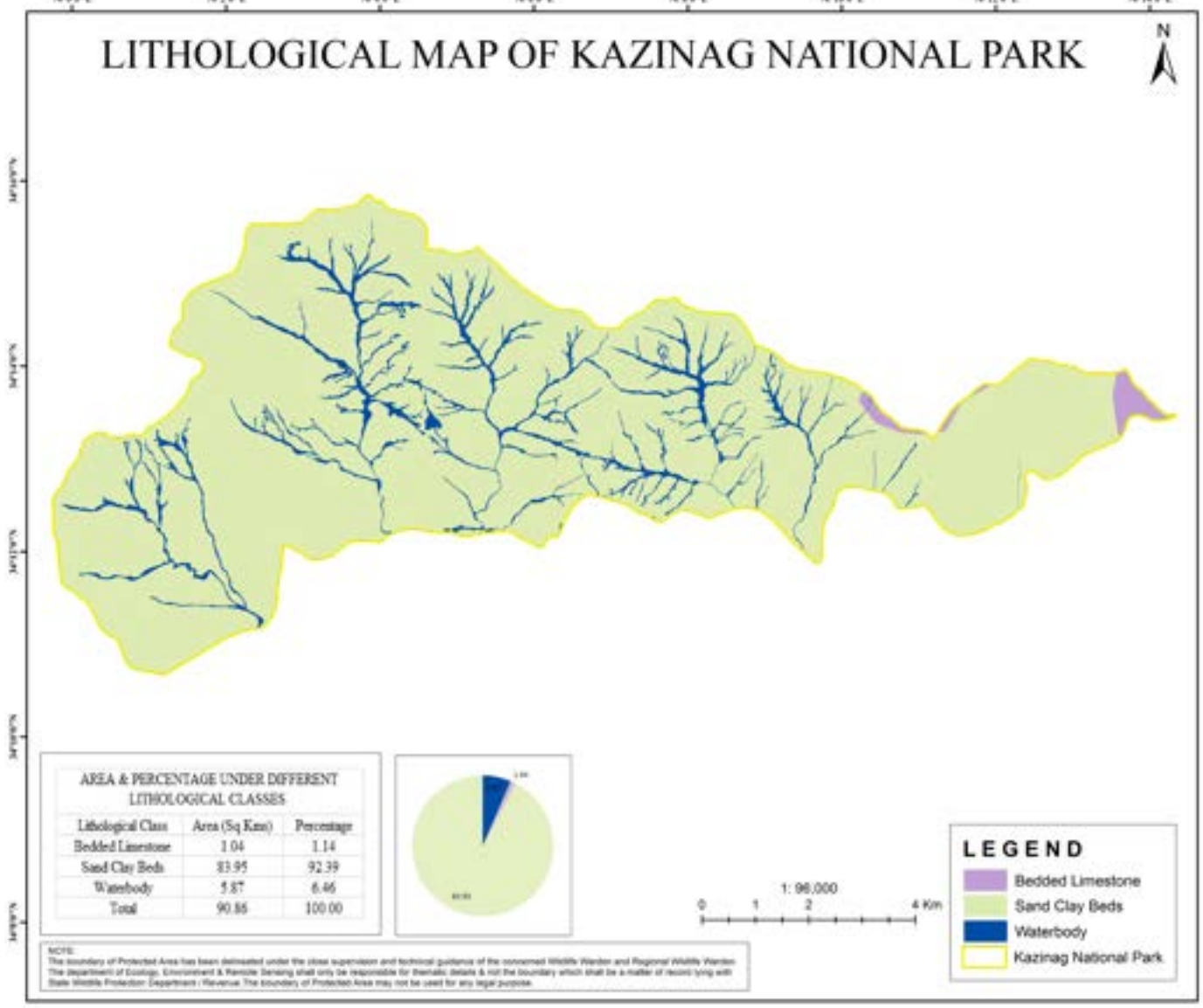
0 1 2 4 Km

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

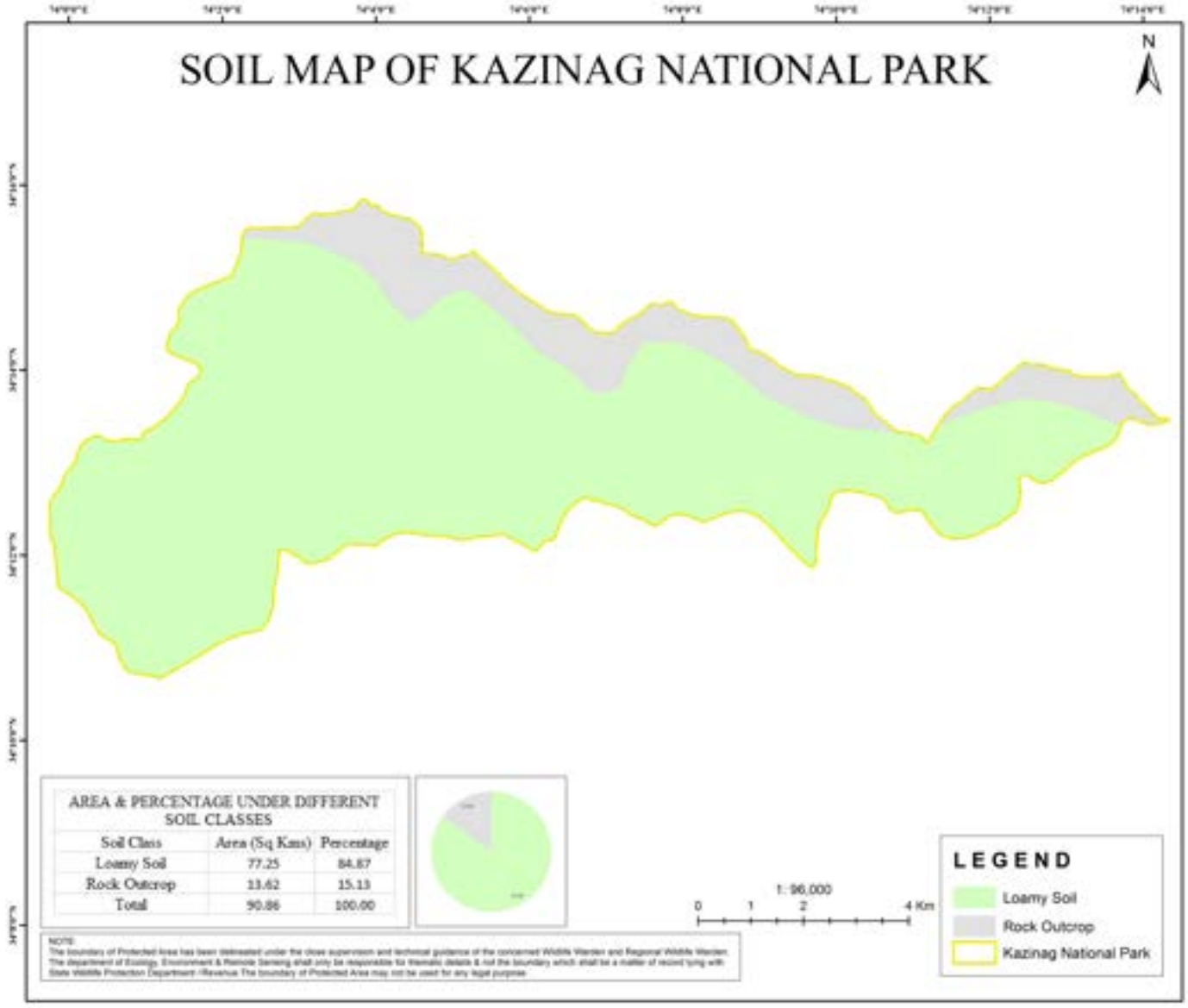
GEOMORPHOLOGICAL MAP OF KAZINAG NATIONAL PARK



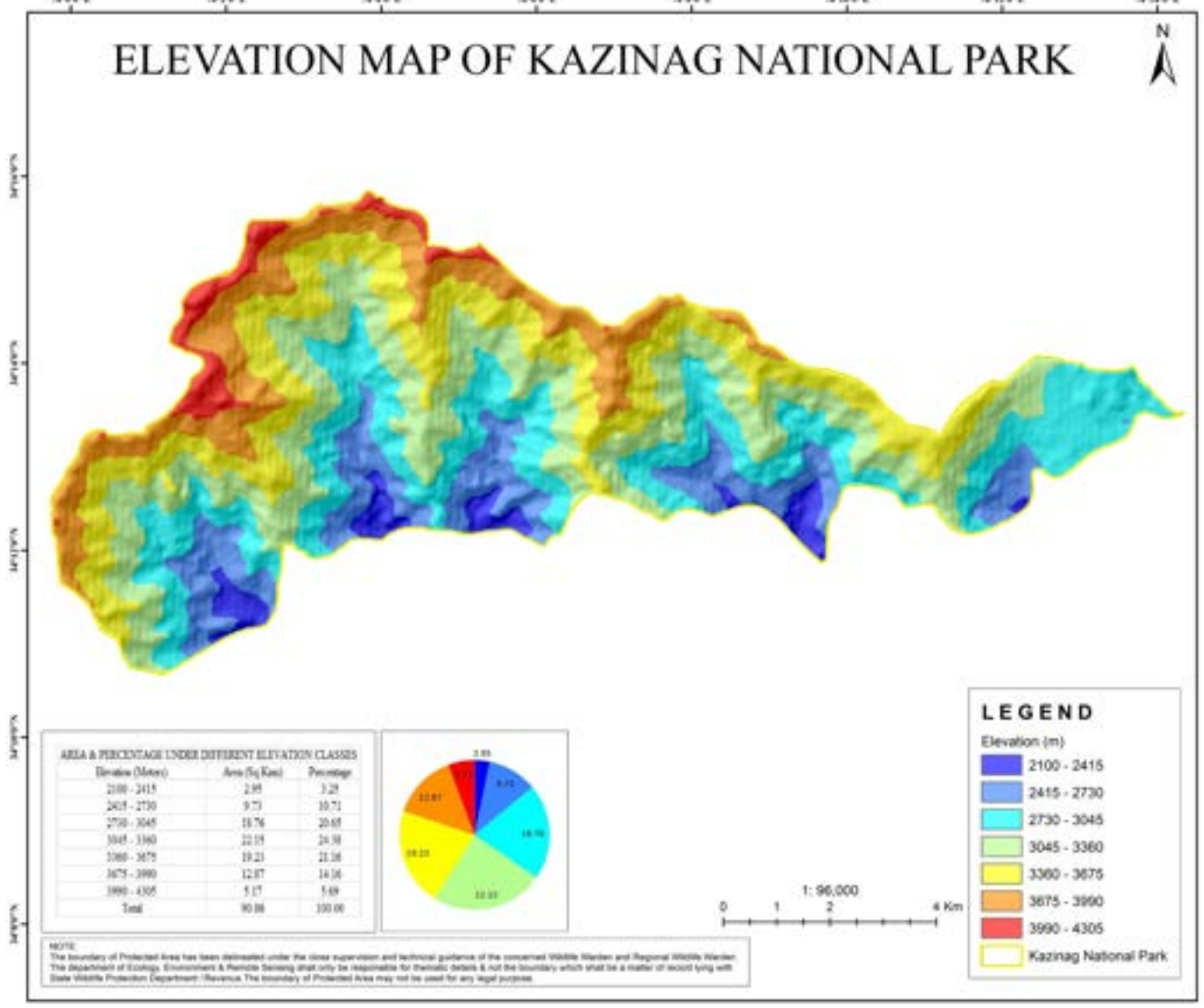
LITHOLOGICAL MAP OF KAZINAG NATIONAL PARK



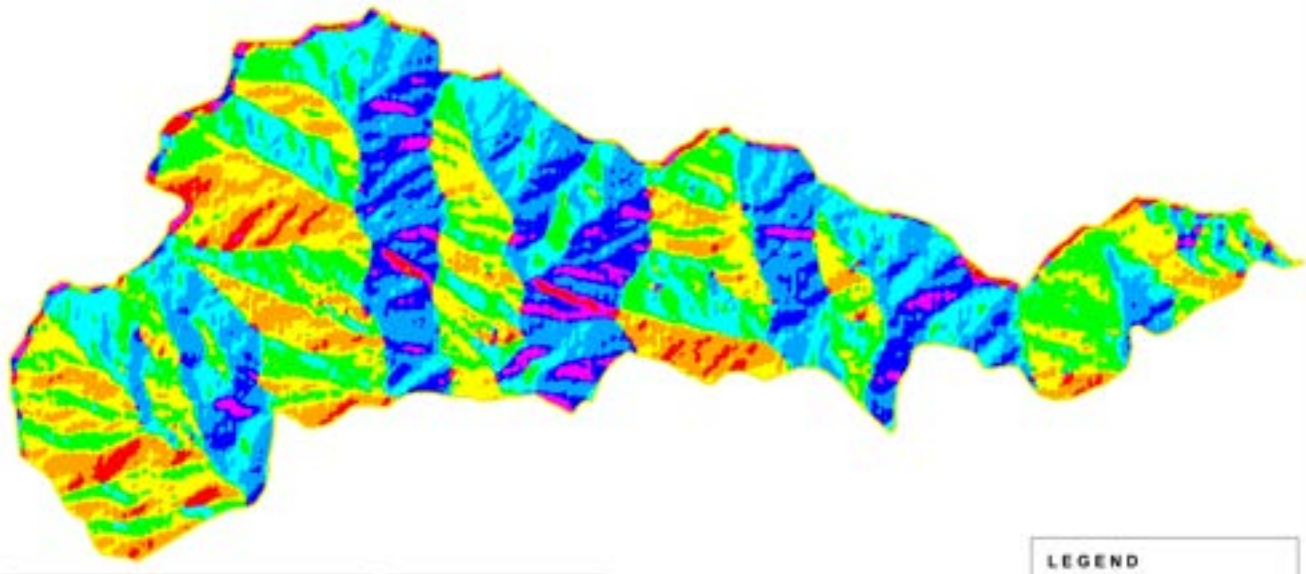
SOIL MAP OF KAZINAG NATIONAL PARK



ELEVATION MAP OF KAZINAG NATIONAL PARK



ASPECT MAP OF KAZINAG NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq.Kms)	Percentage
Flat	0.01	0.01
North	3.97	4.04
Northeast	9.96	10.96
East	14.21	15.64
Southeast	18.62	20.49
South	16.12	17.74
Southwest	16.03	17.64
West	8.62	9.49
Northwest	3.42	3.98
Total	90.86	100.00

LEGEND

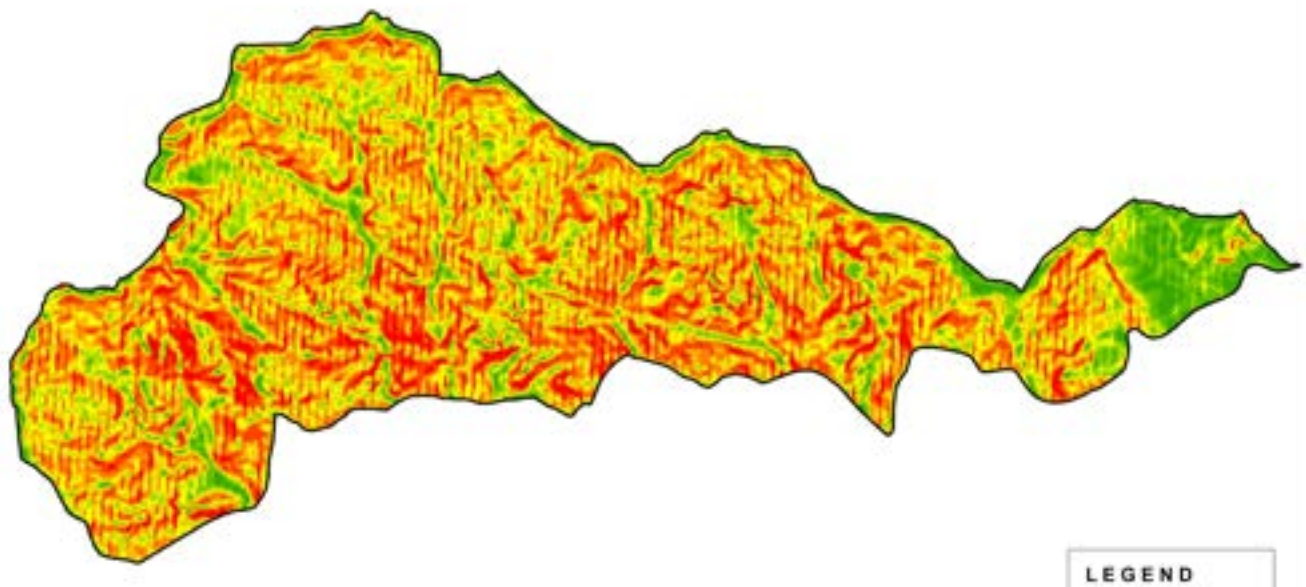
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Kazinag National Park

1: 96,000

0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

SLOPE MAP OF KAZINAG NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq.Kms)	Percentage
0-5	0.53	0.59
6-15	4.74	5.22
16-20	4.78	5.28
21-30	18.38	20.23
31-35	15.68	17.26
36-45	31.32	34.47
46-50	8.56	9.42
51-70	6.84	7.53
71-90	0.03	0.03
Total	90.86	100.00

LEGEND

Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Kazinag National Park

1: 96,000

0 1 2 4 Km

NOTE:
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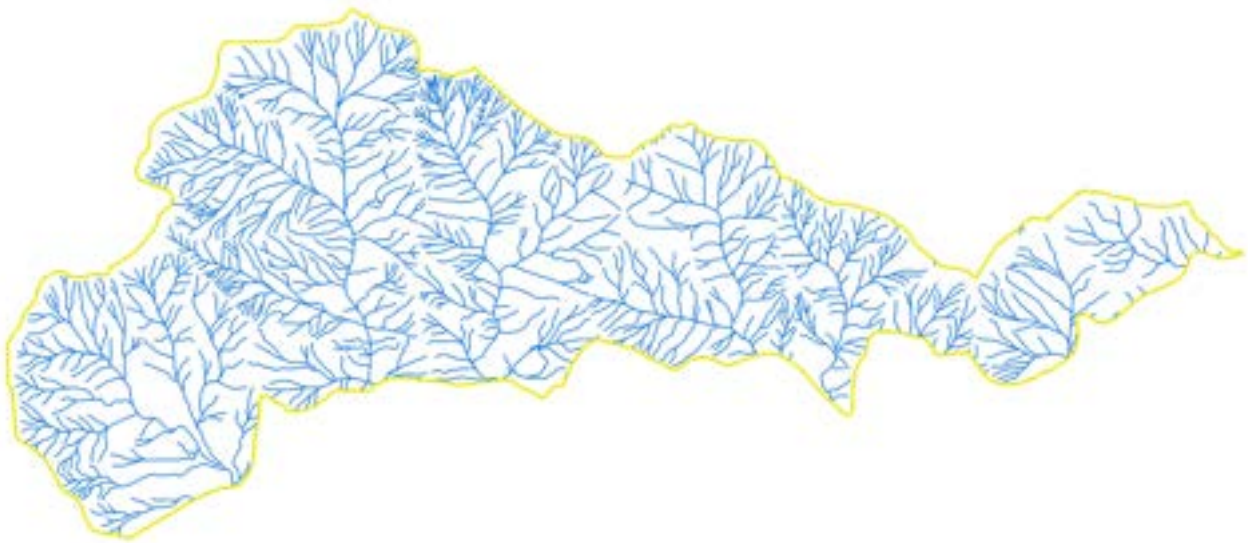
DRAINAGE MAP OF KAZINAG NATIONAL PARK



1: 96,000
0 1 2 4 Km

LEGEND
- Drainage
- Kazinag National Park

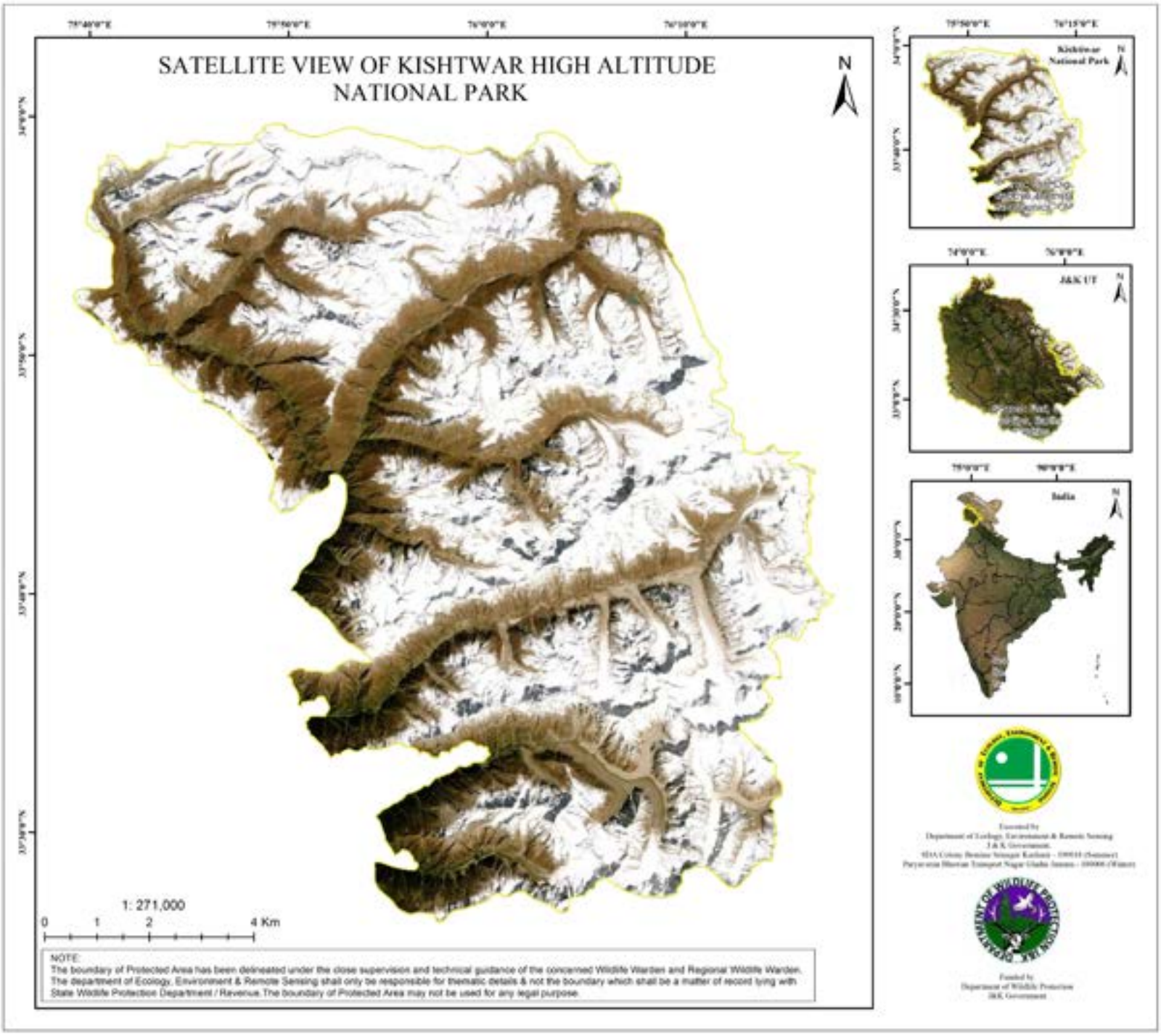
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ACCESSIBILITY MAP OF KAZINAG NATIONAL PARK

1: 96000
0 1 2 4 Km

LEGEND
- Placemarks
- Kazinag National Park
- Forest Trails/Tracks/Inspection Paths/Roads

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.



KISHTWAR HIGH ALTITUDE
NATIONAL PARK

Kishtwar High Altitude National Park is named after the famous old town of Jammu province namely "Kishtwar". The National Park is located on the northern side of Kishtwar town. The Protected area is mostly precipitous and rugged comprising of steep slopes, high ridges and narrow valleys. The National Park is situated at higher altitudes and this area traditionally receives high snowfall in winters and rainfall during summers.

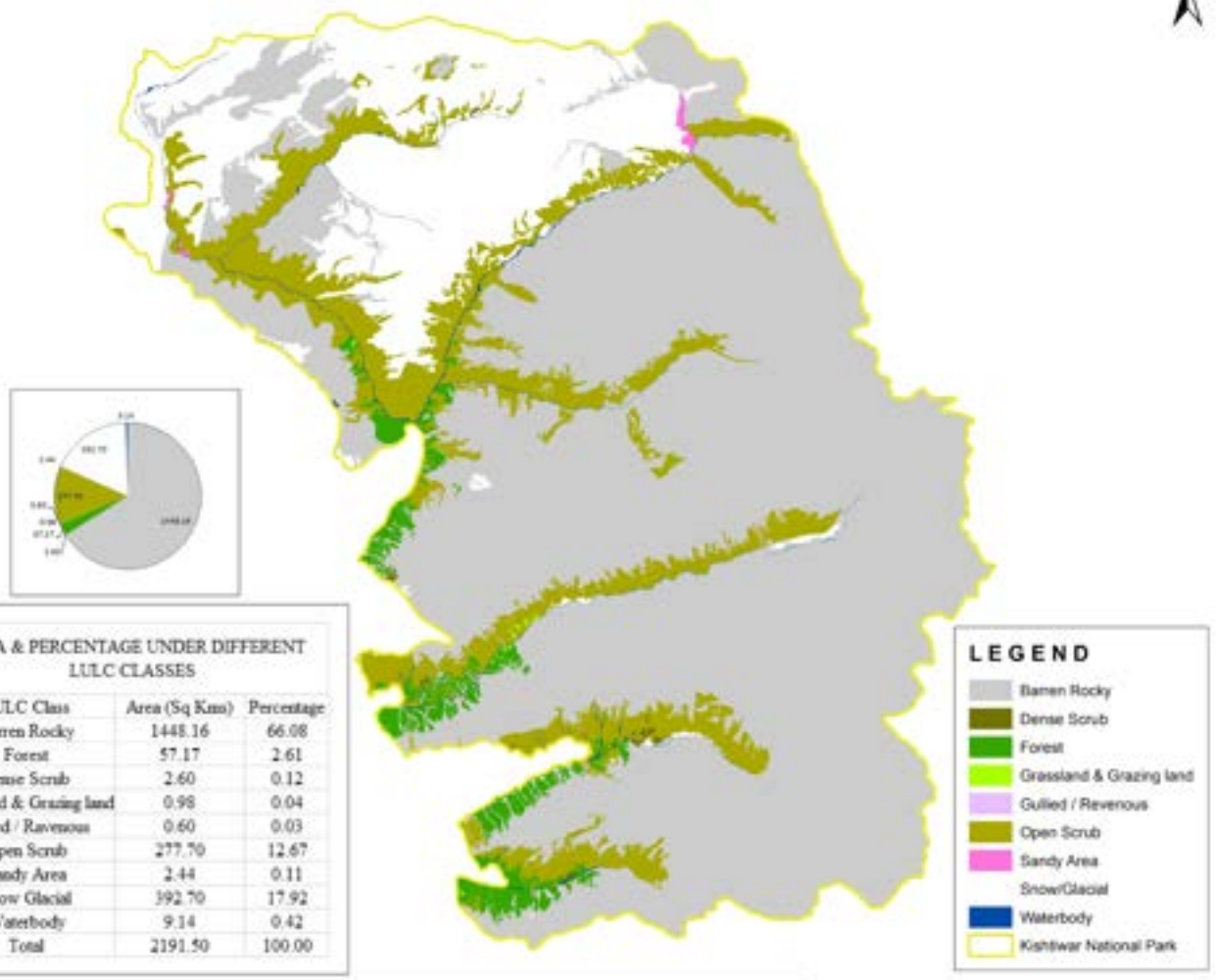
SRO/NOTIFICATION NO: SRO 212 dated 06.07.2015
NOTIFIED AREA (KM2): 2191.50 **GIS AREA (KM2):** 2191.50
PERIMETER (KMS): 287.63 **ALTITUDE RANGE (M):** 2148 – 6504
GEO - COORDINATES:
33° 26.102′ N - 33° 59.636′ N, 75° 39.032′ E - 76° 17.130′ E

MAJOR FAUNA: Himalayan Kashmir Musk Deer (*Moschus cupreus*), Kashmir Stag/Hangul (*Cervus hanglu*), Asiatic Ibex (*Capra sibirica*), Asiatic Black Bear (*Ursus thibetanus*), Himalayan Serow (*Capricornis thar*), Common Leopard (*Panthera pardus*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*), Kashmir Grey Langur (*Semnopithecus ajax*), Indian Jackal (*Canis aureus*), Wolf (*Canis lupus*).

MAJOR AVI FAUNA: Himalayan Griffon Vulture (*Gyps himalayensis*), Snow Cock (*Tetragallus himalayensis*), Western Tragopan (*Tragopan melanocephalus*), Monal Pheasant (*Lophophorus impejanus*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundoo*), White Checked Bulbul (*Pycnonotus leucogenys*) etc.

MAJOR FLORA: Deodar (*Cedrus deodara*), Spruce (*Picea smithiana*), Fir (*Abies pindrow*), Himalayan Blue Pine (*Pinus wallichiana*), Oriental plane tree (*Platanus orientalis*), Common Walnut (*Juglans regia*), Himalayan birch (*Betula utilis*), Himalayan juniper (*Juniperus recurva*).

LAND USE LAND COVER MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK

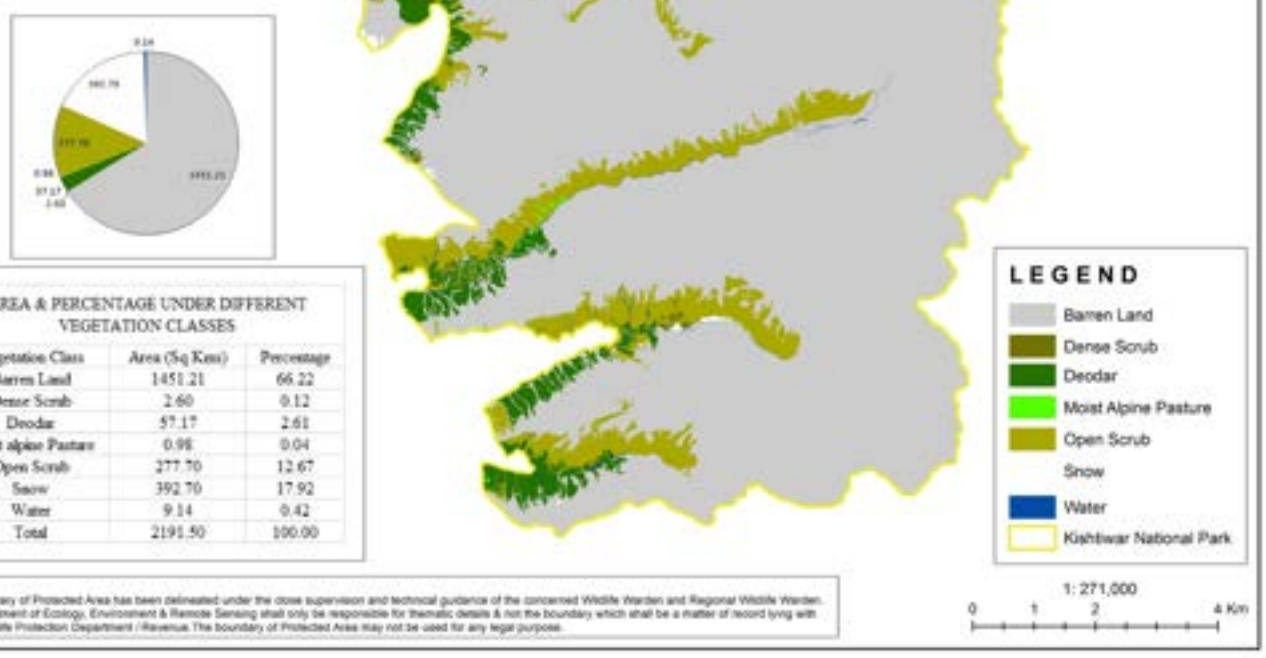


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Barren Rocky	1448.16	66.08
Forest	57.17	2.61
Dense Scrub	2.60	0.12
Grassland & Grazing land	0.98	0.04
Gullied / Ravenous	0.60	0.03
Open Scrub	277.70	12.67
Sandy Area	2.44	0.11
Snow Glacial	392.70	17.92
Waterbody	9.14	0.42
Total	2191.50	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK

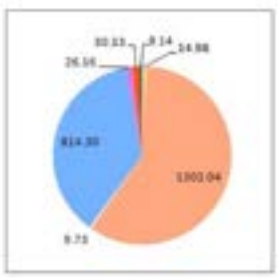


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	1451.21	66.22
Dense Scrub	2.60	0.12
Deodar	57.17	2.61
Moist alpine Pasture	0.98	0.04
Open Scrub	277.70	12.67
Snow	392.70	17.92
Water	9.14	0.42
Total	2191.50	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	1302.04	59.41
Eolian Plain	9.73	0.44
Glacial Plain	814.30	37.16
Piedmont Zone	26.16	1.19
Structural Hills	30.13	1.37
Waterbody	9.14	0.42
Total	2191.50	100.00

LEGEND
- Denudational Hills
- Glacial Plain
- Piedmont Zone
- Structural Hills
- Waterbody
- Kishtiwar National Park

NOTE:
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1: 271,000
0 1 2 4 Km

LITHOLOGICAL MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

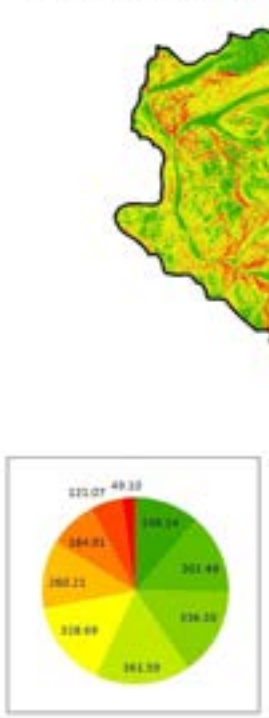
Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	6.28	0.29
Gravel Sand Silt	64.93	2.96
Sand Silt with Clay	4.16	0.19
Schists with Gneiss	2106.99	96.14
Waterbody	9.14	0.42
Total	2191.50	100.00

LEGEND
- Bedded Limestone
- Gravel Sand Silt
- Sand Silt with Clay
- Schists with Gneiss
- Waterbody
- Kishtiwar National Park

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

1: 271,000
0 1 2 4 Km

SLOPE MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area	Percentage
0-5	248.14	11.32
6-15	301.49	13.76
16-20	336.30	15.35
21-30	361.59	16.50
31-35	328.69	15.00
36-45	260.21	11.87
46-50	184.91	8.44
51-70	121.07	5.52
71-90	49.10	2.24
Total	2391.50	100.00

LEGEND

Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Kishtiwar National Park

1: 271,000

0 1 2 4 Km

NOTE:
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SOIL MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	185.42	8.46
Fine Loamy Soil	367.69	16.78
Glacial Area	978.22	44.64
Loamy Soil	291.45	13.30
Rock Outcrop	344.13	15.70
Sandy Soil	24.60	1.12
Total	2191.50	100.00

LEGEND

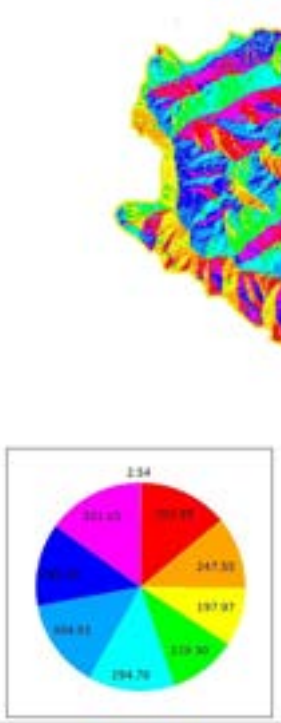
- Coarse Loamy Soil
- Fine Loamy Soil
- Glacial Area
- Loamy Soil
- Rock Outcrop
- Sandy Soil
- Kishtiwar National Park

1: 271,000

0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

ASPECT MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	2.54	0.12
North	302.99	13.83
Northeast	247.55	11.30
East	197.97	9.03
Southeast	229.30	10.46
South	294.70	13.45
Southwest	304.92	13.91
West	280.39	12.79
Northwest	331.13	15.11
Total	2191.50	100.00

LEGEND
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Kishtwar National Park

1: 271,000
0 1 2 4 Km

NOTE:
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SLOPE MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK

AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area	Percentage
0-5	248.14	11.32
6-15	301.49	13.76
16-20	336.30	15.35
21-30	361.59	16.50
31-35	328.69	15.00
36-45	260.21	11.87
46-50	184.91	8.44
51-70	121.07	5.52
71-90	49.10	2.24
Total	2191.50	100.00

LEGEND
Slope (Degrees)
- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Kishtwar National Park

1: 271,000
0 1 2 4 Km

NOTE:
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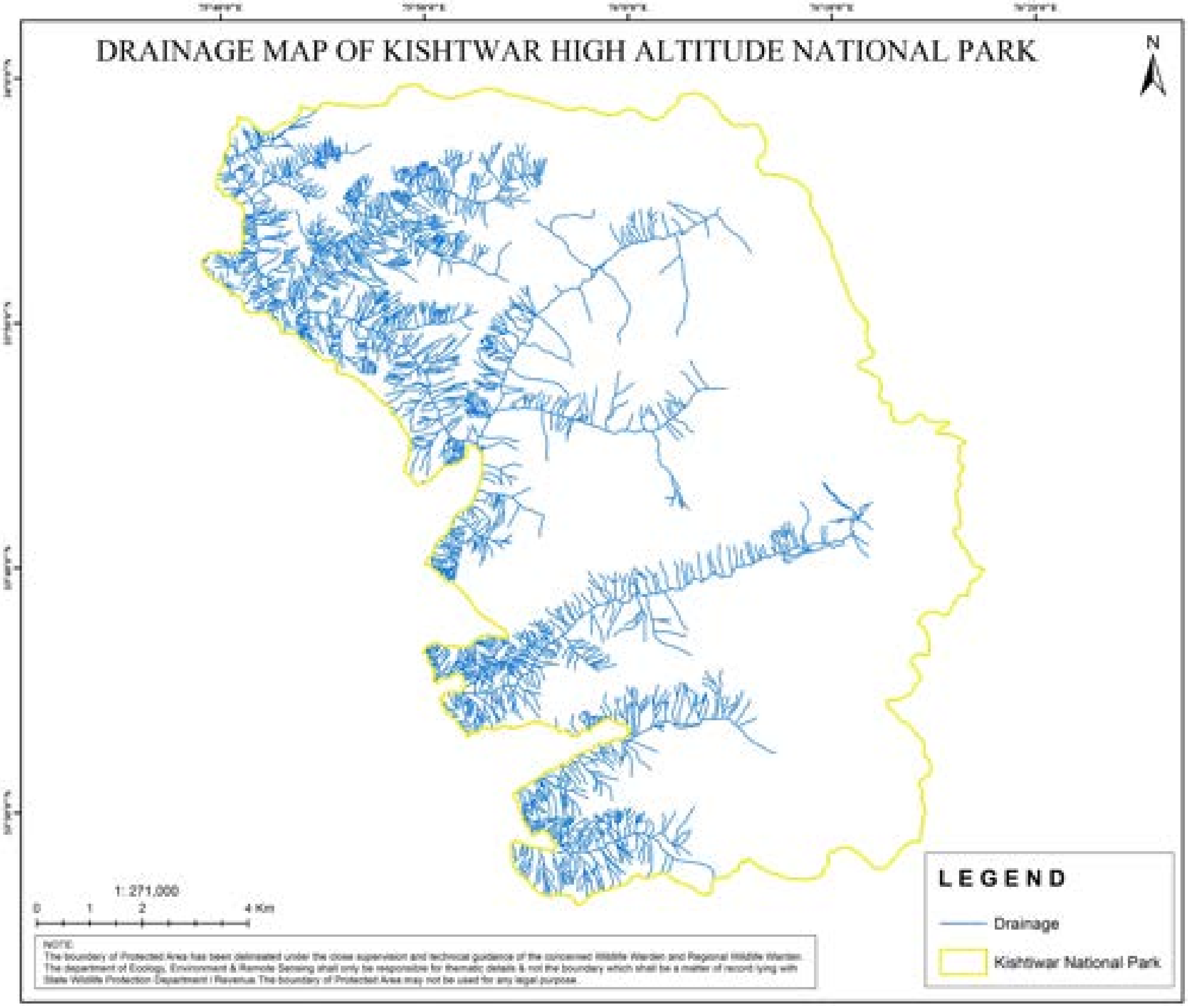
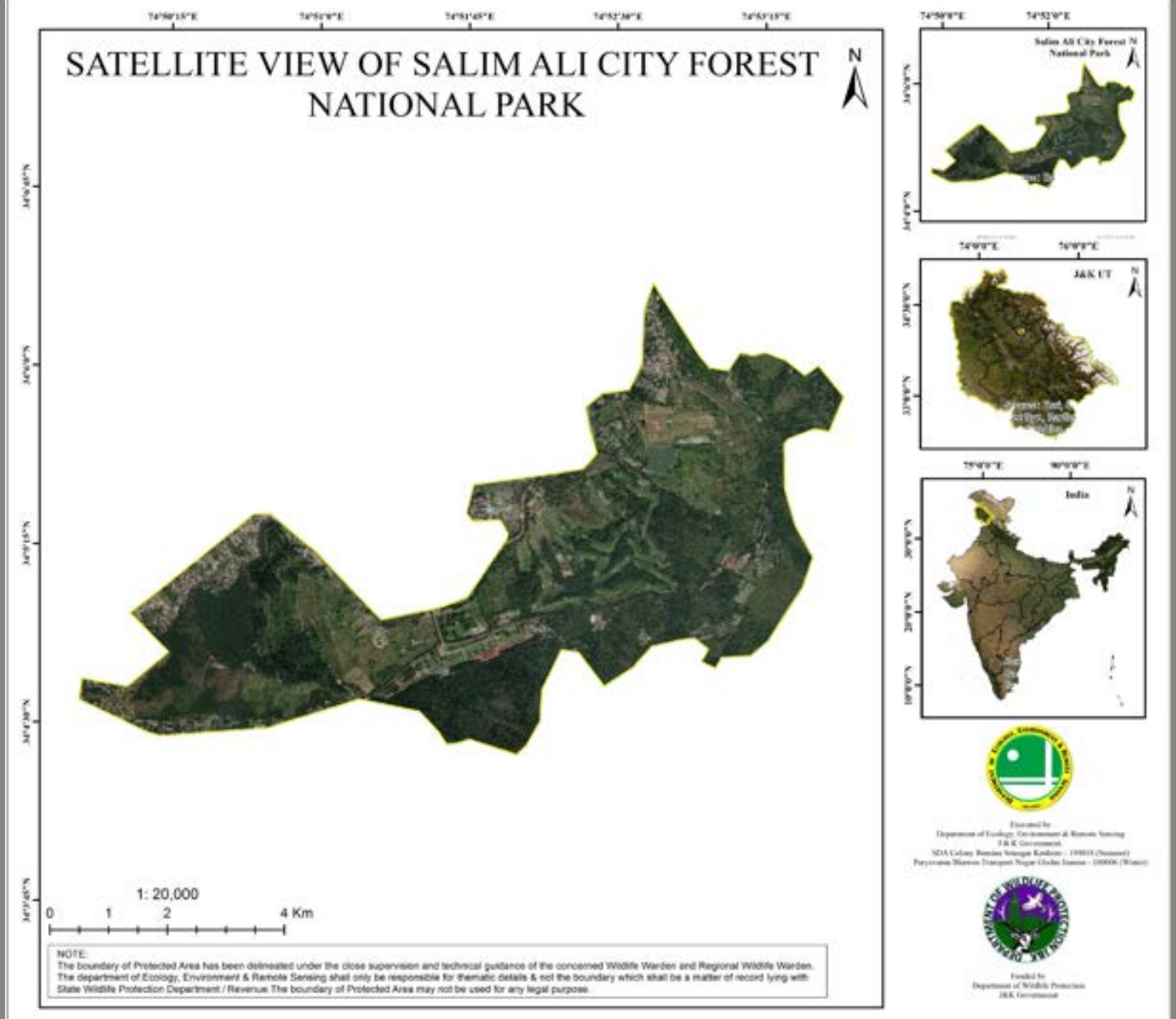


DRAINAGE MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK
N
1: 271,000
0 1 2 4 Km
LEGEND
Drainage
Kishtwar National Park

ACCESSIBILITY MAP OF KISHTWAR HIGH ALTITUDE NATIONAL PARK
75°40'0"E
75°50'0"E
76°0'0"E
76°10'0"E
76°20'0"E
34°0'0"N
33°50'0"N
33°40'0"N
33°30'0"N
N
Chuba Gali
Pathri
Jabbal
Bhotan Nala
Garhkohu
Chittapani
Mandik Sar
Raz Nar
Dech Nal
Arru
Nagbal
Bhog Mali
Wakbal
Kiar Nal
Kundgarh
Brahmsar
Kibar Nal
1: 271000
0 1 2 4 Km
LEGEND
Placemarks
Kishtwar National Park
Forest Trails/Tracks/Inspection Paths/Roads



SALIM ALI CITY FOREST
NATIONAL PARK

The Salim Ali (City Forest) National Park is located in the Srinagar district of UT of Jammu and Kashmir. It has been named after the renowned ornithologist and naturalist, Mr. Salim Moizuddin Abdul Ali. The wildlife of this National Park comprises of Hangul, Musk Deer, Himalayan Black Bear, Leopard and Himalayan serow. The National Park is a great place for bird watching. They include birds such as Paradise Flycatcher, Himalayan Monal, Ring dove, Himalayan snow cock and chakore.

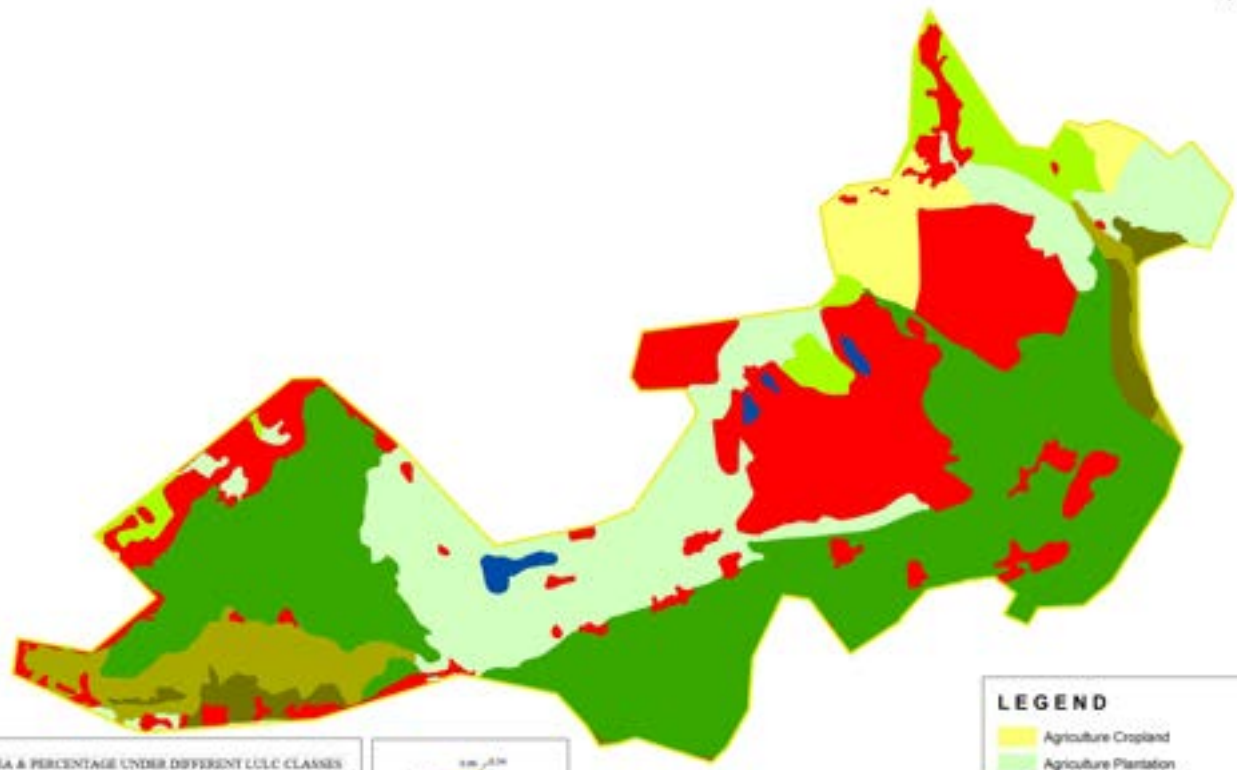
SRO/NOTIFICATION NO: SRO 472 dated 22.07.1986
NOTIFIED AREA (KM2): 8.69 **GIS AREA (KM2):** 8.56
PERIMETER (KMS): 19.73 **ALTITUDE RANGE (M):** 1542 - 1994
GEO - COORDINATES:
34° 4.361′ N - 34° 6.352′ N, 74° 49.774′ E - 74° 53.646′ E

MAJOR FAUNA: Common Leopard (*Panthera pardus*), Kashmir Grey Langur (*Semnopithecus Ajax*), Indian Jackal (*Canis aureus*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*),

MAJOR AVI FAUNA: Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Himalayan Griffon Vulture (*Gyps himalayensis*), Black Eared kite (*Milvus migrans*), Kashmir Woodpecker (*Dryobatus himalayensis*), Indian Myna (*Acridotheres tristis*), White Cheeked Bulbul (*Pycnonotus leucogenys*) , house sparrow (*Passer domesticus*) etc.

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan elm (*Ulmus wallichiana*), Parrotia (*Parrotiopsis jacquemontiana*),Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lycium*), Himalayan rhubarb (*Rheum webbianum*), Indian Atees *(Aconitum heterophyllum),* Wild apricot (*Prunus armeniaca*), Peach (*Prunus persica*), Himalayan sour cherry (*Prunus cerrasoides*).

LAND USE LAND COVER MAP OF SALIM ALI CITY FOREST NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.34	3.93
Agriculture Plantation	1.76	20.55
Builtup	2.07	24.18
Forest	3.22	37.57
Dense Scrub	0.24	2.83
Grassland & Grazing land	0.38	4.46
Open Scrub	0.49	5.72
Waterbody	0.06	0.74
Total	8.56	100.00

LEGEND

- Agriculture Cropland
- Agriculture Plantation
- Builtup
- Dense Scrub
- Forest
- Grassland & Grazing land
- Open Scrub
- Waterbody
- Salim Ali City Forest National Park

1: 20,000

0 1 2 4 Km

NOTE:
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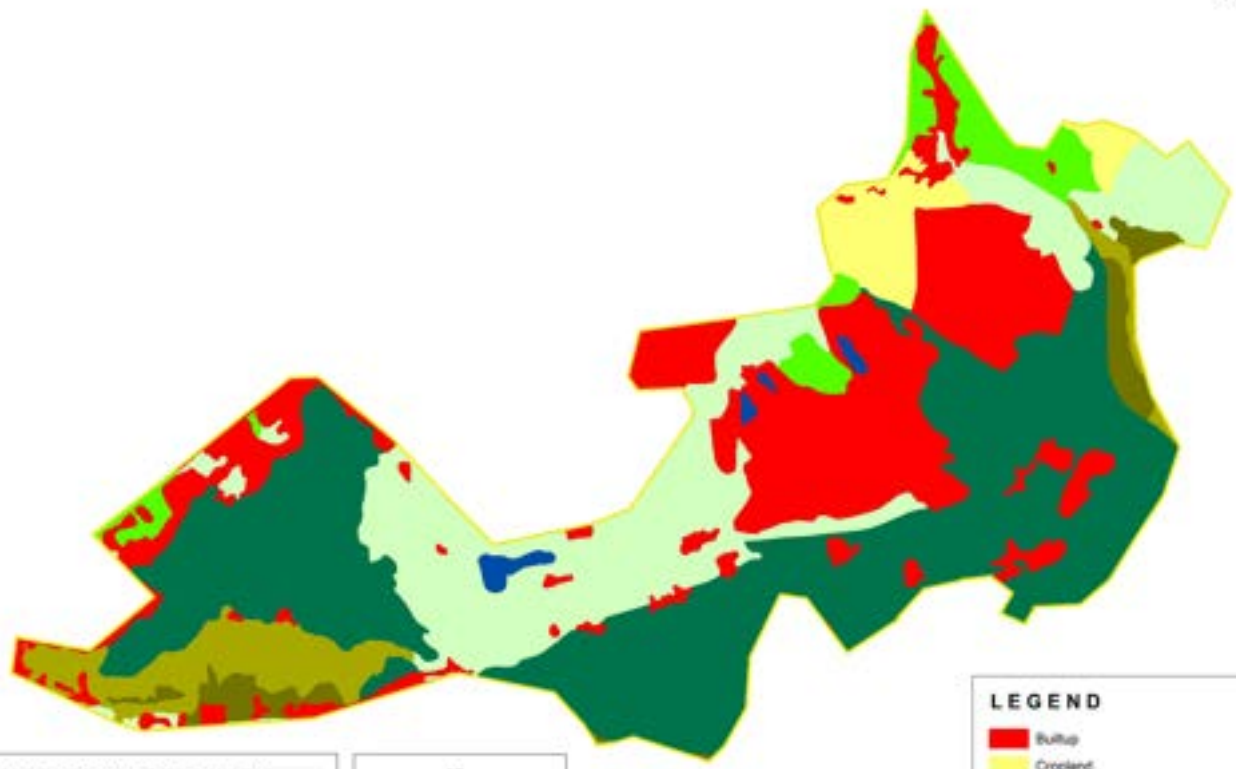
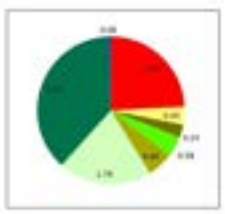
VEGETATION MAP OF SALIM ALI CITY FOREST NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Builtup	2.07	24.19
Cropland	0.34	3.93
Dense Scrub	0.24	2.83
Moist Alpine Pasture	0.38	4.46
Open Scrub	0.49	5.72
Plantation	1.76	20.56
Temperate Coniferous	3.22	37.57
Water	0.06	0.74
Total	8.56	100.00



LEGEND

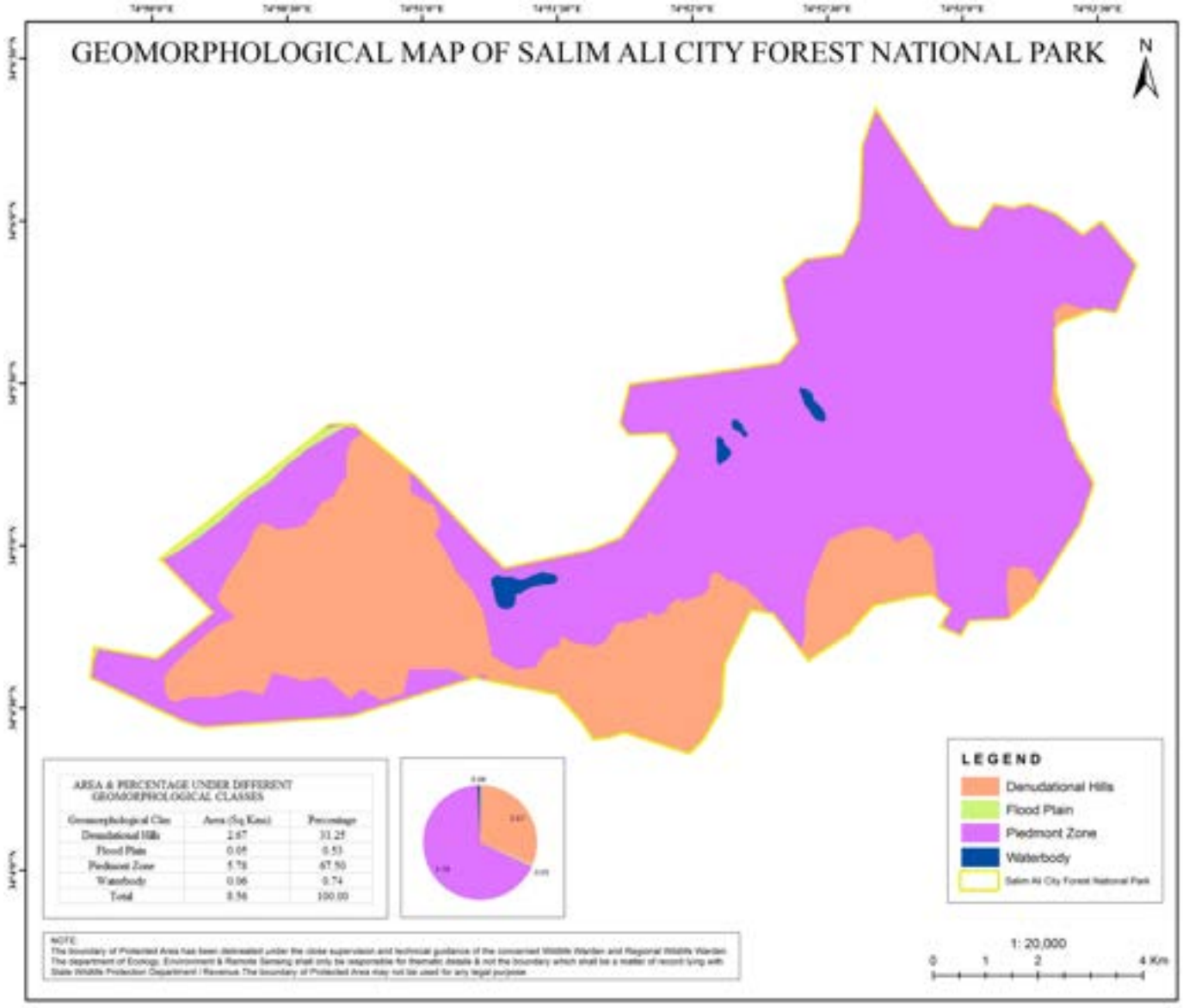
- Builtup
- Cropland
- Dense Scrub
- Moist Alpine Pasture
- Open Scrub
- Plantation
- Temperate Coniferous
- Water
- Salim Ali City Forest National Park

1: 20,000

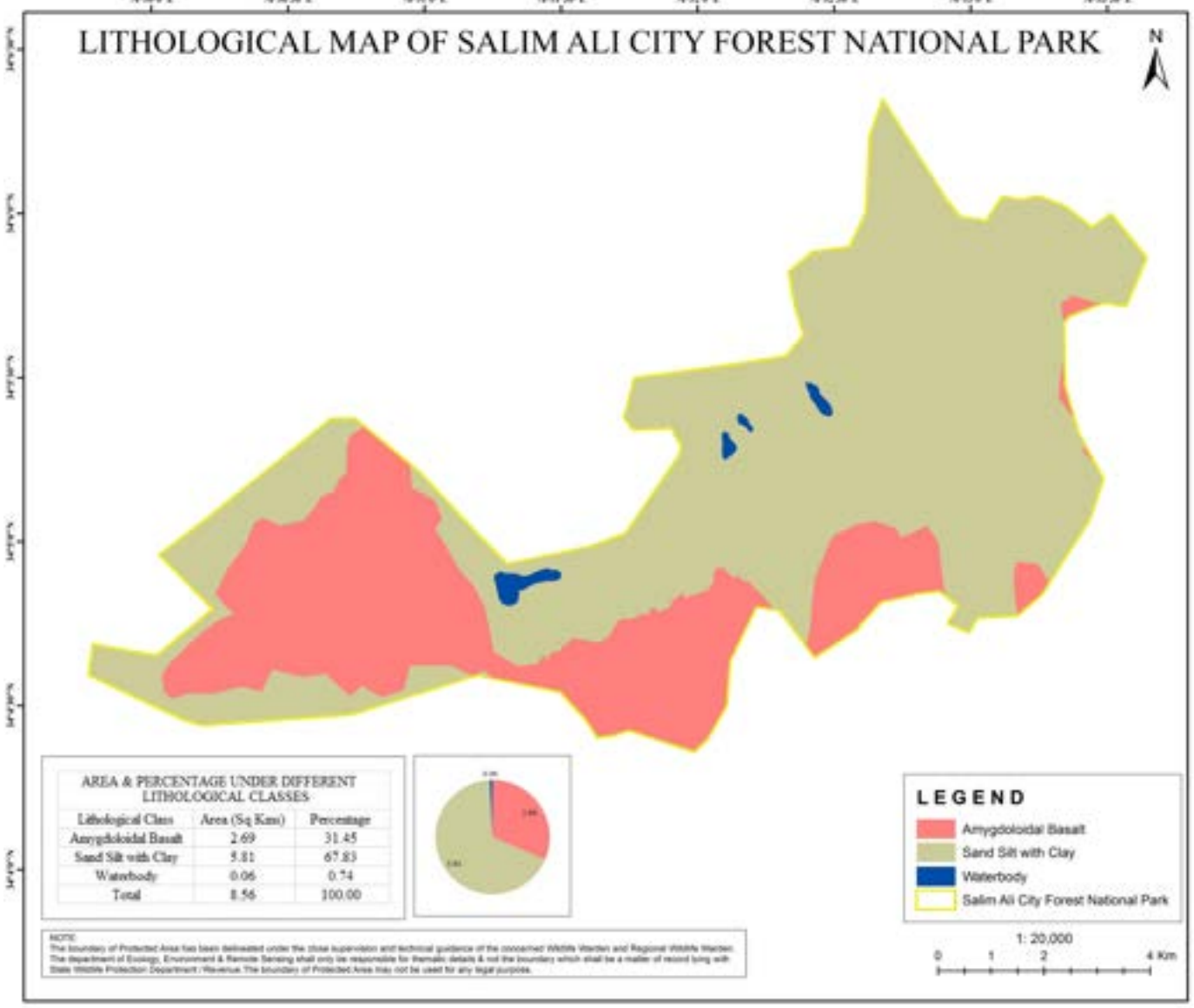
0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

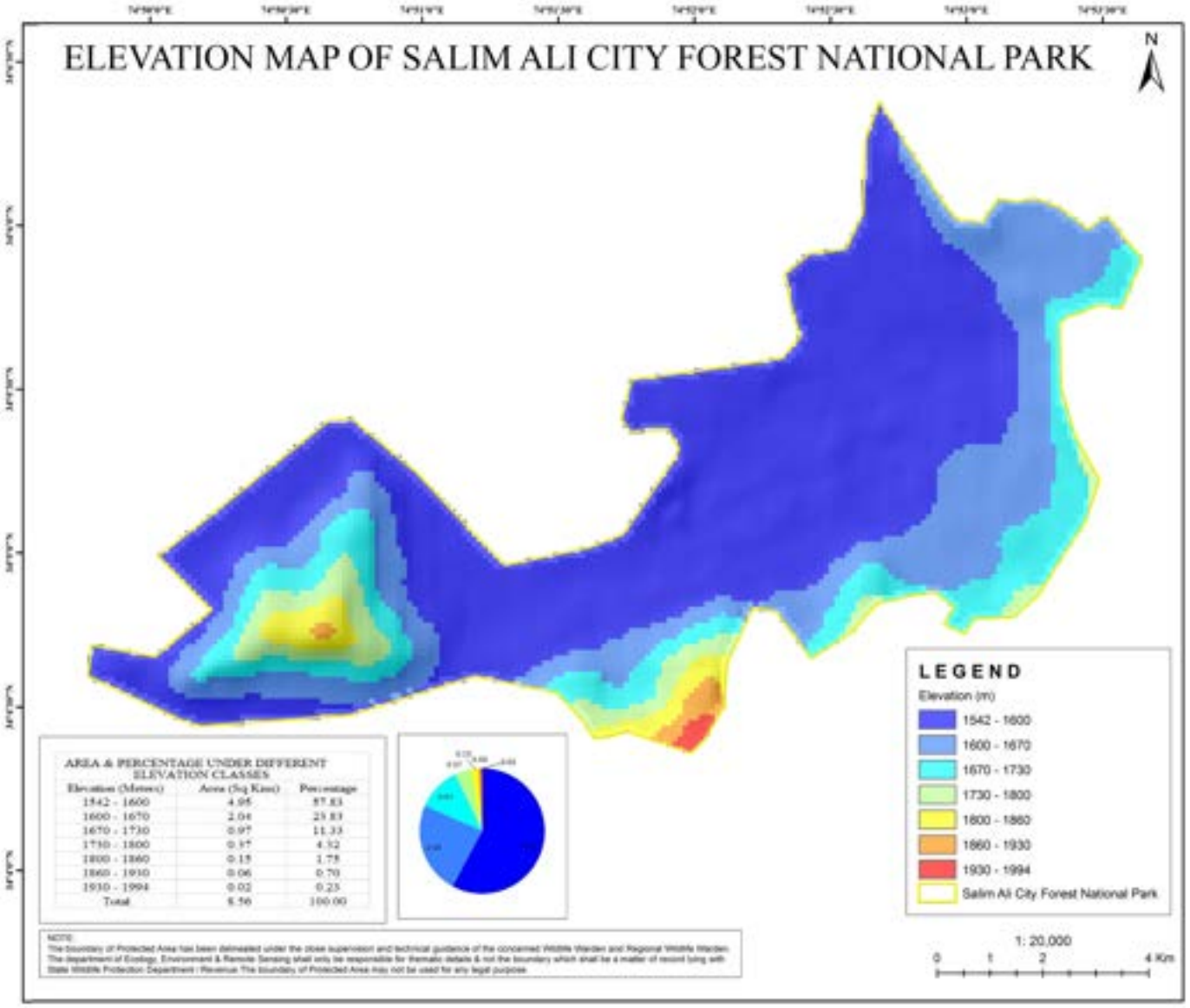
GEOMORPHOLOGICAL MAP OF SALIM ALI CITY FOREST NATIONAL PARK



LITHOLOGICAL MAP OF SALIM ALI CITY FOREST NATIONAL PARK



ELEVATION MAP OF SALIM ALI CITY FOREST NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1542 - 1600	4.95	87.83
1600 - 1670	2.04	25.83
1670 - 1730	0.97	11.33
1730 - 1800	0.37	4.32
1800 - 1860	0.15	1.75
1860 - 1930	0.06	0.70
1930 - 1994	0.02	0.23
Total	8.56	100.00

NOTE:
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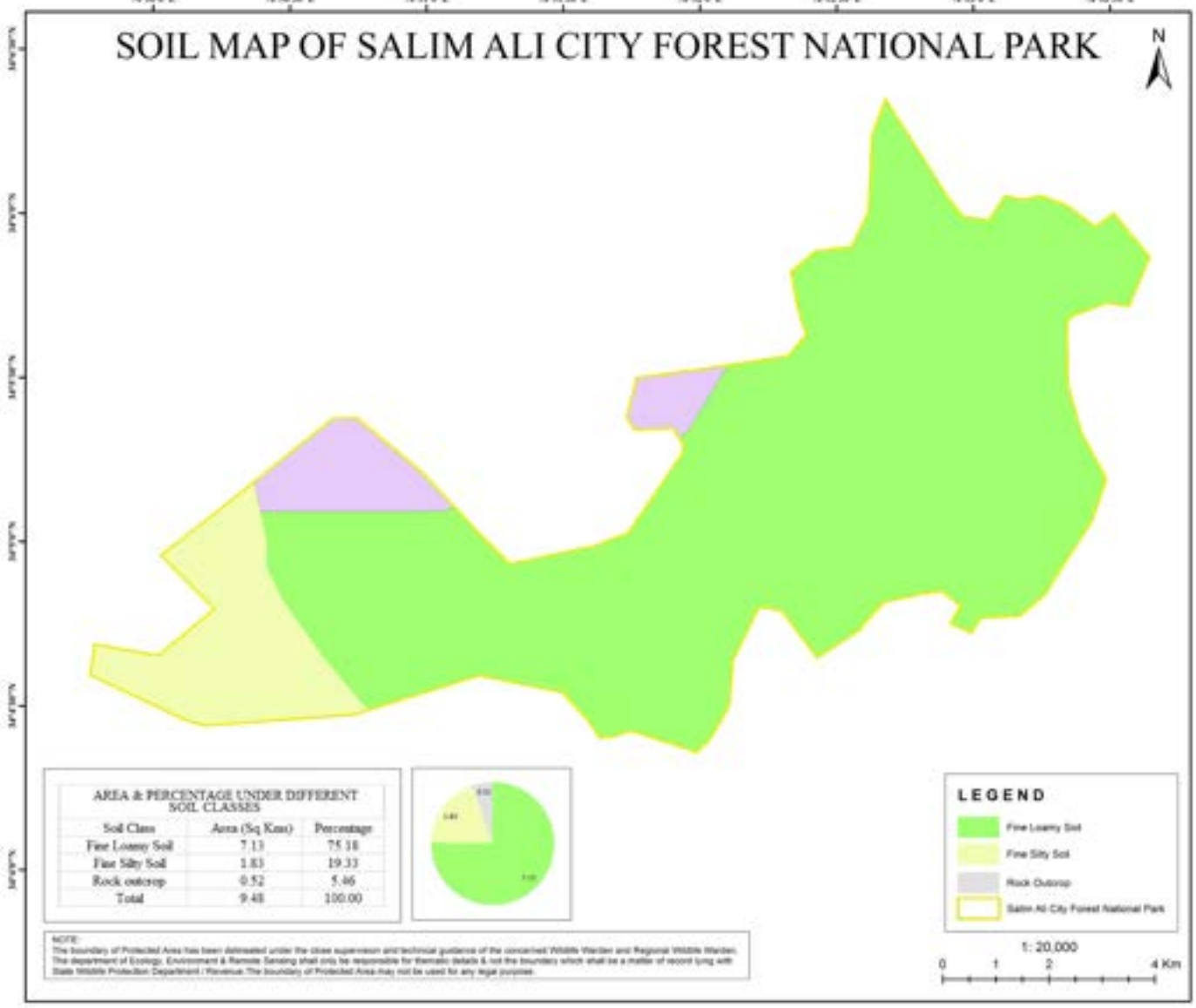
SOIL MAP OF SALIM ALI CITY FOREST NATIONAL PARK



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	7.13	75.18
Fine Silty Soil	1.83	19.33
Rock outcrop	0.52	5.46
Total	9.48	100.00

NOTE:
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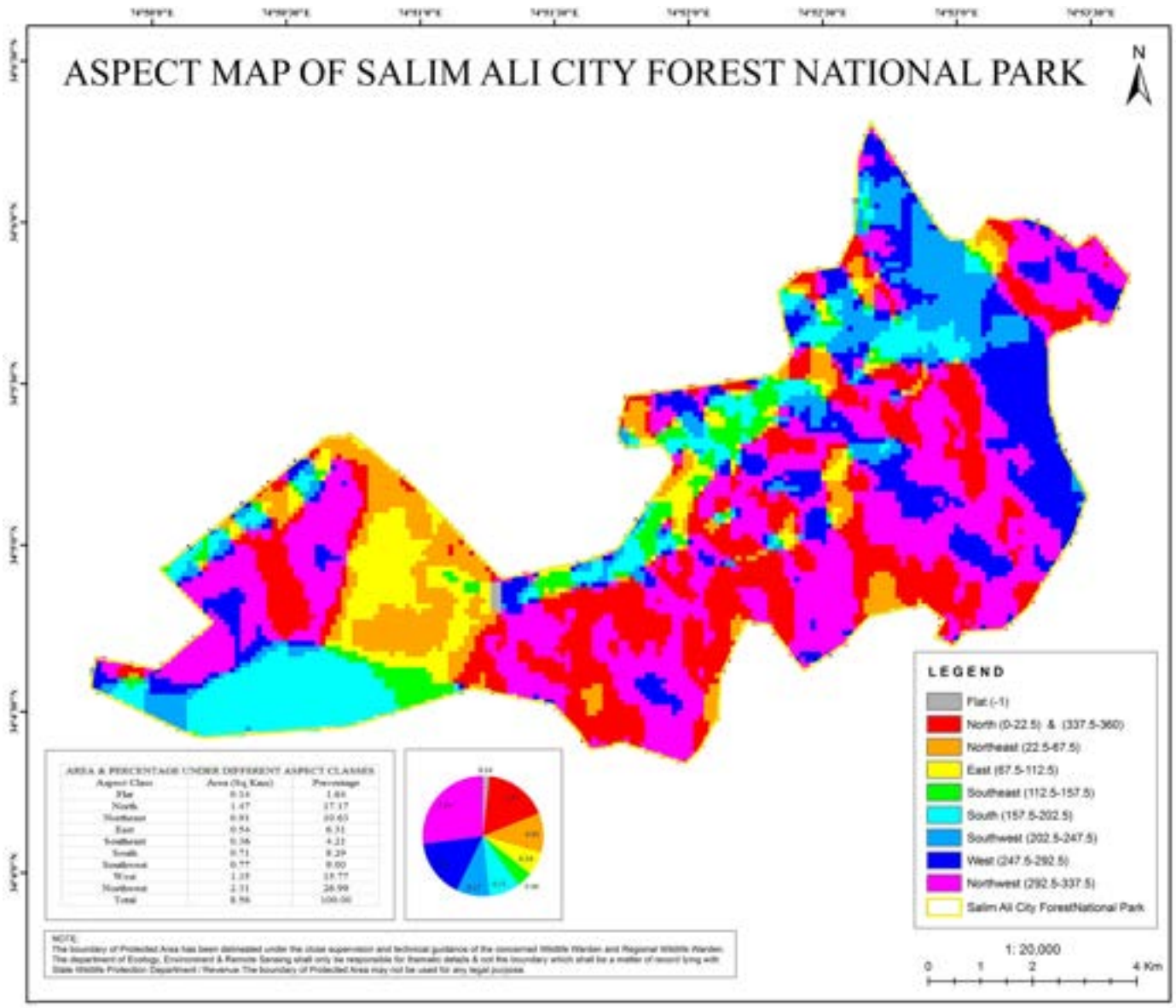
ASPECT MAP OF SALIM ALI CITY FOREST NATIONAL PARK
N
LEGEND
Flat (-1)
North (0-22.5) & (337.5-360)
Northeast (22.5-67.5)
East (67.5-112.5)
Southeast (112.5-157.5)
South (157.5-202.5)
Southwest (202.5-247.5)
West (247.5-292.5)
Northwest (292.5-337.5)
Salim Ali City ForestNational Park
1: 20,000
0 1 2 4 Km
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES
Aspect Class | Area (Sq Kms) | Percentage
Flat 0.16 1.66
North 1.47 17.17
Northeast 0.93 10.63
East 0.54 6.31
Southeast 0.36 4.23
South 0.71 8.29
Southwest 0.77 9.00
West 1.19 13.77
Northwest 2.31 26.99
Total 8.56 100.00
NOTE
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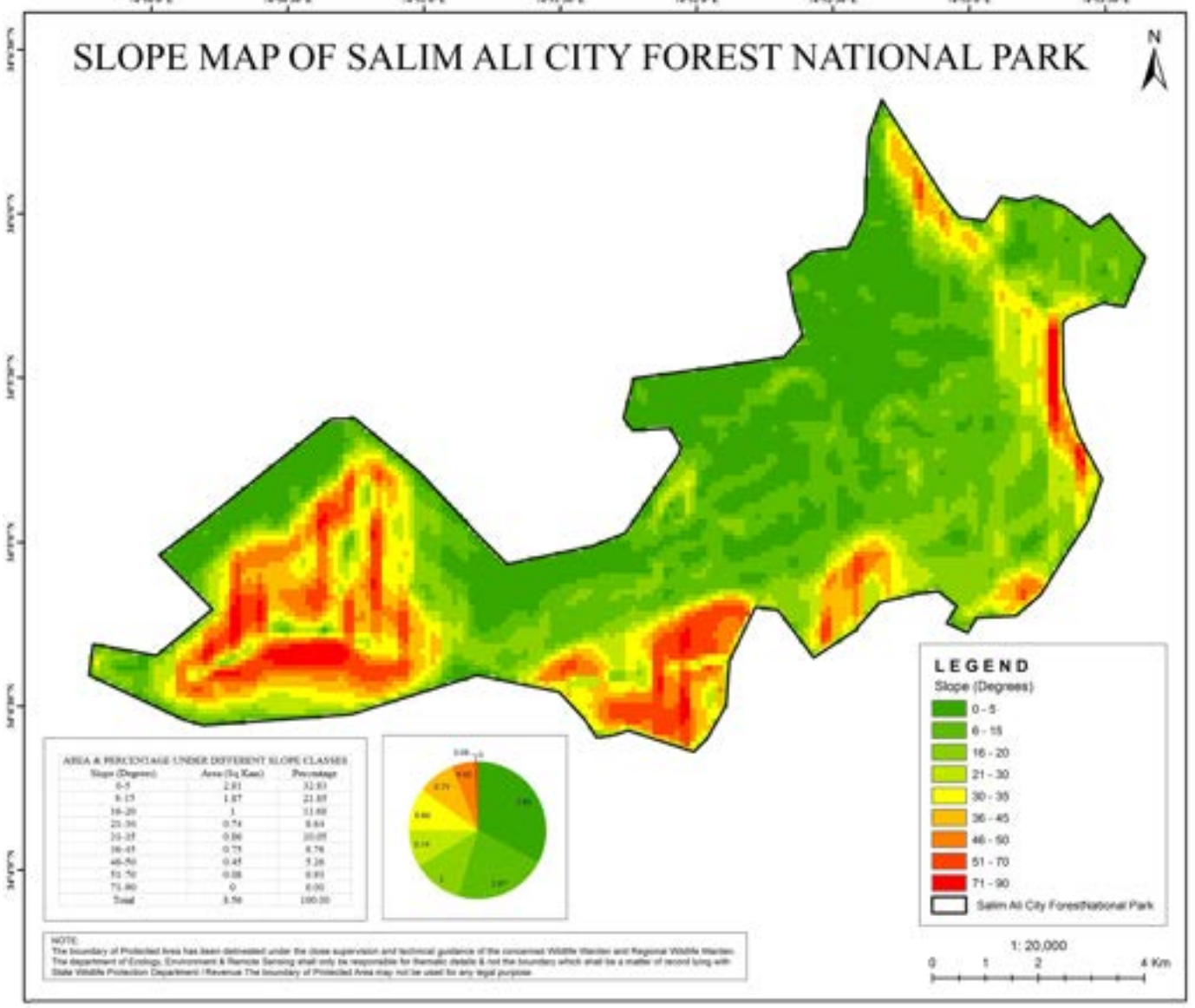
SLOPE MAP OF SALIM ALI CITY FOREST NATIONAL PARK
N
LEGEND
Slope (Degrees)
0 - 5
6 - 15
16 - 20
21 - 30
30 - 35
36 - 45
46 - 50
51 - 70
71 - 90
Salim Ali City ForestNational Park
1: 20,000
0 1 2 4 Km
AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES
Slope (Degrees) | Area (Sq Kms) | Percentage
0-5 2.81 32.83
6-15 1.87 21.85
16-20 1 11.68
21-30 0.74 8.64
30-35 0.86 10.05
36-45 0.75 8.76
46-50 0.45 5.26
51-70 0.08 0.93
71-90 0 0.00
Total 8.56 100.00
NOTE
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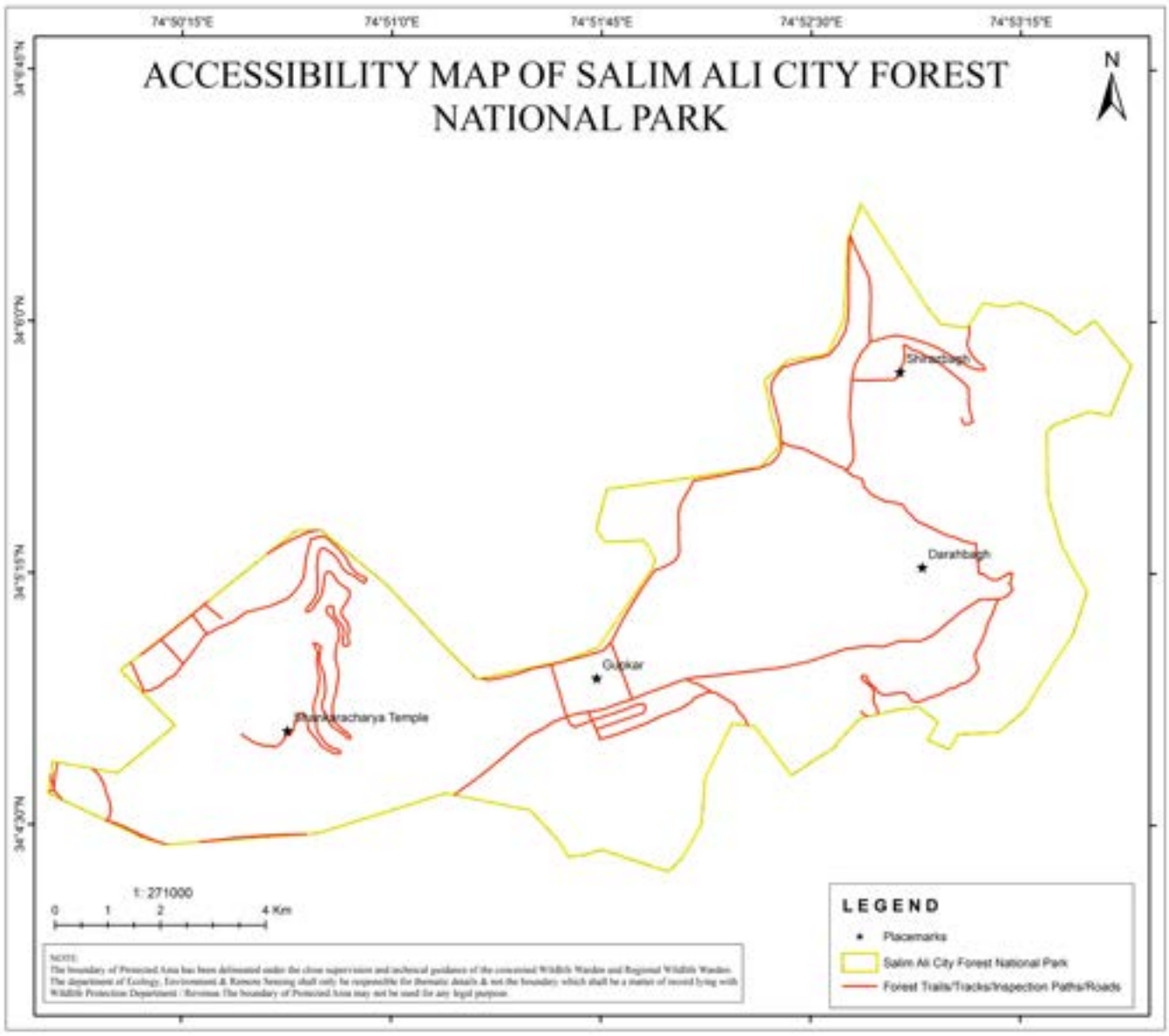
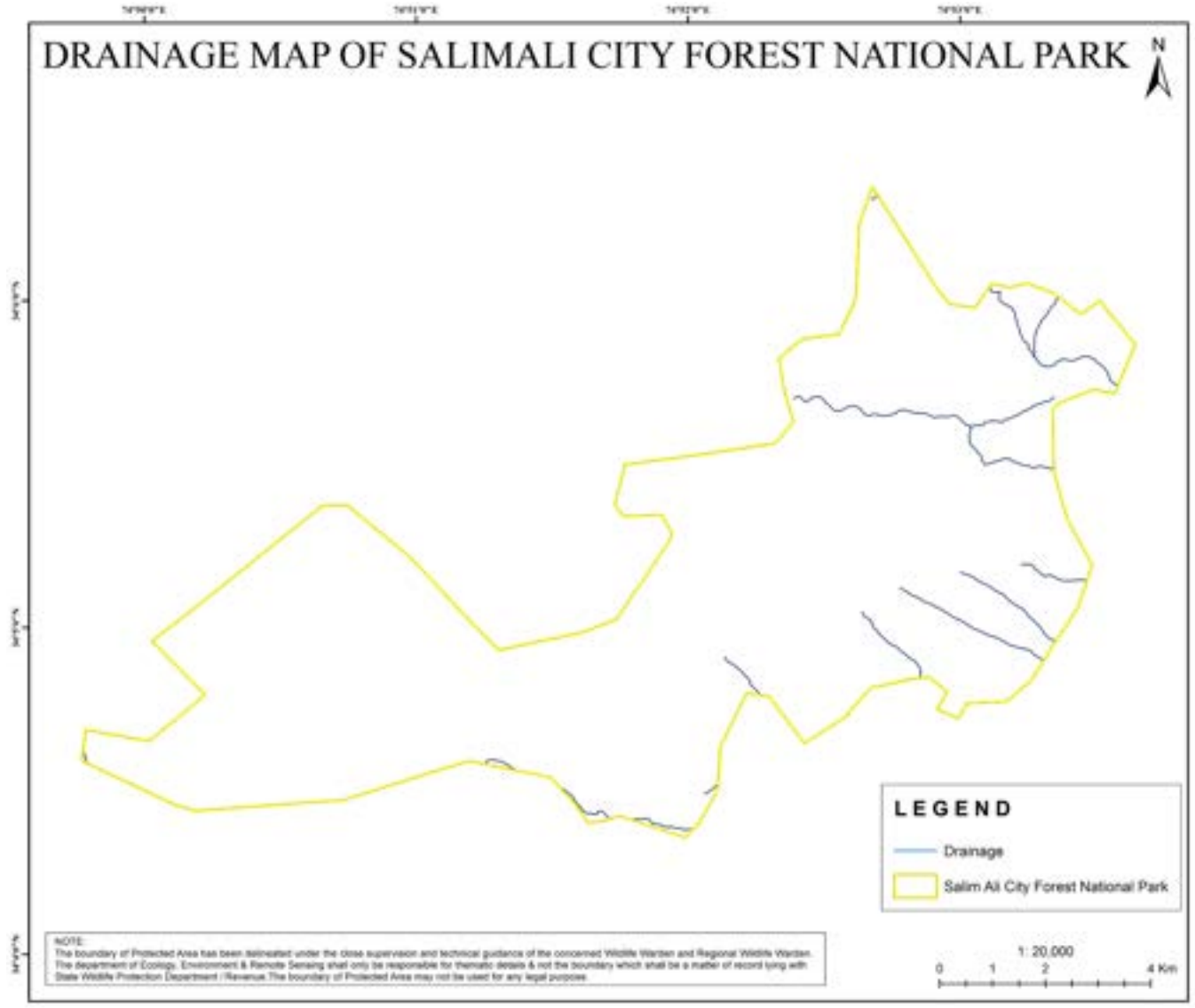

ACCESSIBILITY MAP OF SALIM ALI CITY FOREST NATIONAL PARK
N
74°50'15"E
74°51'0"E
74°51'45"E
74°52'30"E
74°53'15"E
34°6'45"N
34°6'0"N
34°5'15"N
34°4'30"N
Shirastbagh
Darahbagh
Gupkar
Shankaracharya Temple
1: 271000
0 1 2 4 Km
LEGEND
Placemarks
Salim Ali City Forest National Park
Forest Trails/Tracks/Inspection Paths/Roads
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF SALIMALI CITY FOREST NATIONAL PARK
N
LEGEND
Drainage
Salim Ali City Forest National Park
1: 20,000
0 1 2 4 Km
NOTE:
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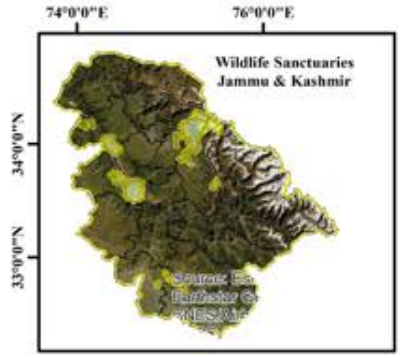
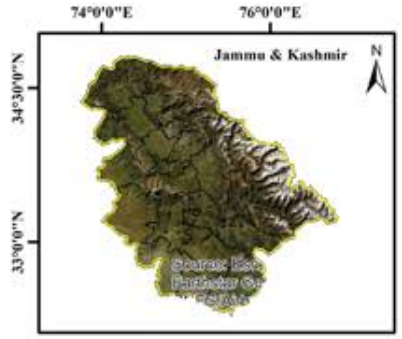
WILDLIFE PROTECTED AREA NETWORK J&K

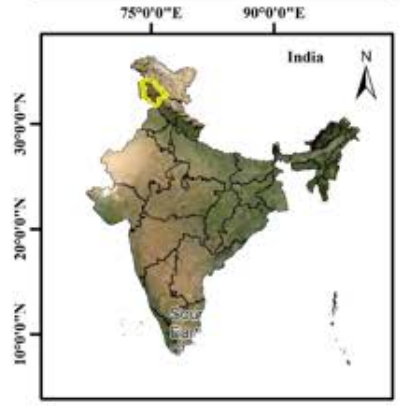
WILDLIFE SANCTUARIES

PROTECTED AREAS (WILDLIFE SANCTUARIES) JAMMU & KASHMIR - UT

1.Bani Wildlife Sanctuary
2.Gulmarg Wildlife Sanctuary
3.Hirpora Wildlife Sanctuary
4.Jasrota Wildlife Sanctuary
5.Lachipora Wildlife Sanctuary
6.Limber Wildlife Sanctuary
7.Nandni Wildlife Sanctuary
8.Overa Aru Wildlife Sanctuary
9.Ramnagar Wildlife Sanctuary
10.Razparian Daksum Wildlife Sanctuary
11.Surinsar Mansar Wildlife Sanctuary
12.Tata Kuti Wildlife Sanctuary
13.Thajawas Baltal Wildlife Sanctury
14.Tral Wildlife Sanctuary

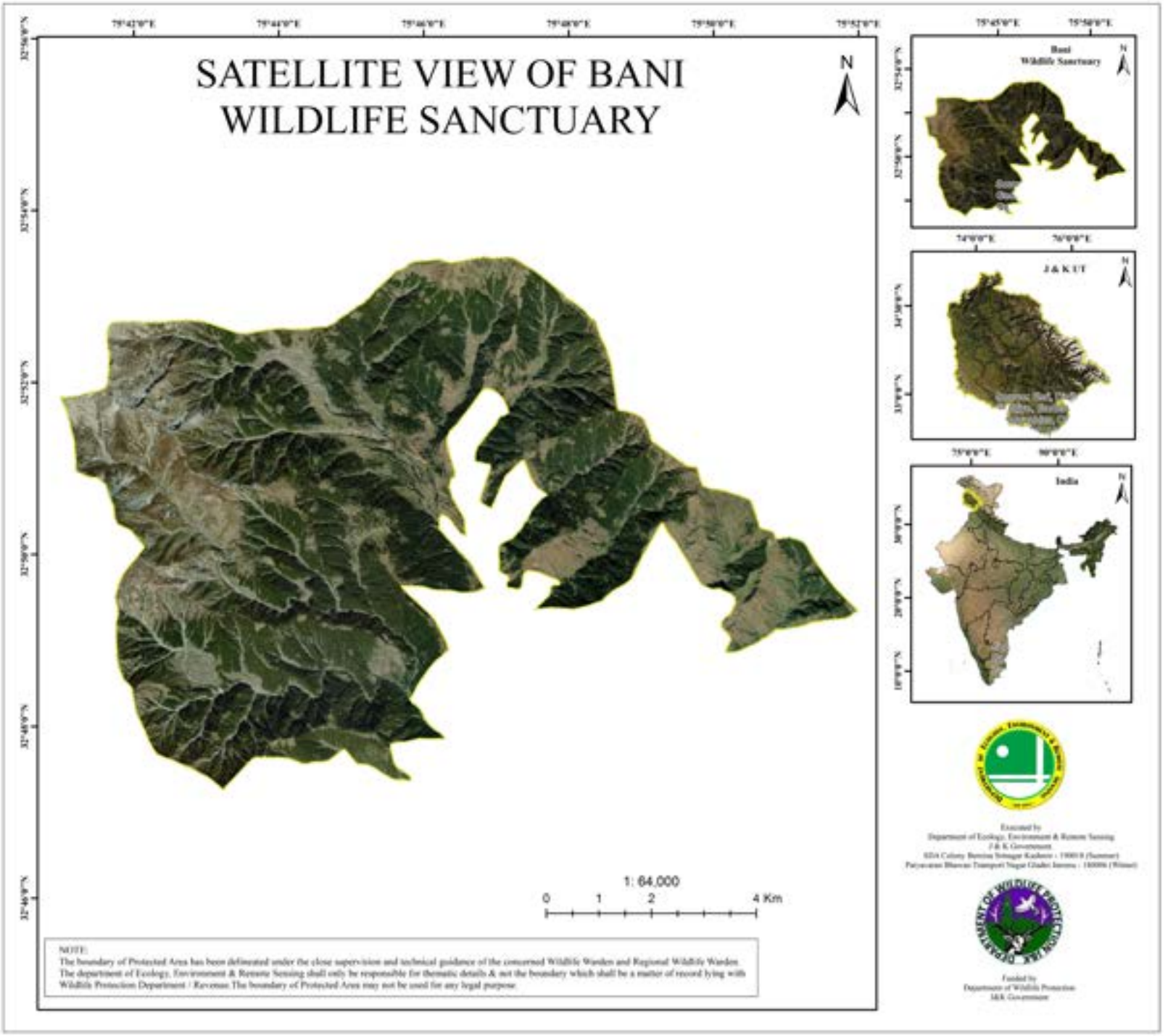






Executed by
Department of Ecology, Environment & Remote Sensing
J & K Government.
SDA Colony Bemina Srinagar Kashmir - 190018 (Summer)
Paryavaran Bhawan Transport Nagar Gladni Jammu - 180006 (Winter)

Funded by
Department of Wildlife Protection
J&K Government



BANI WILDLIFE SANCTUARY

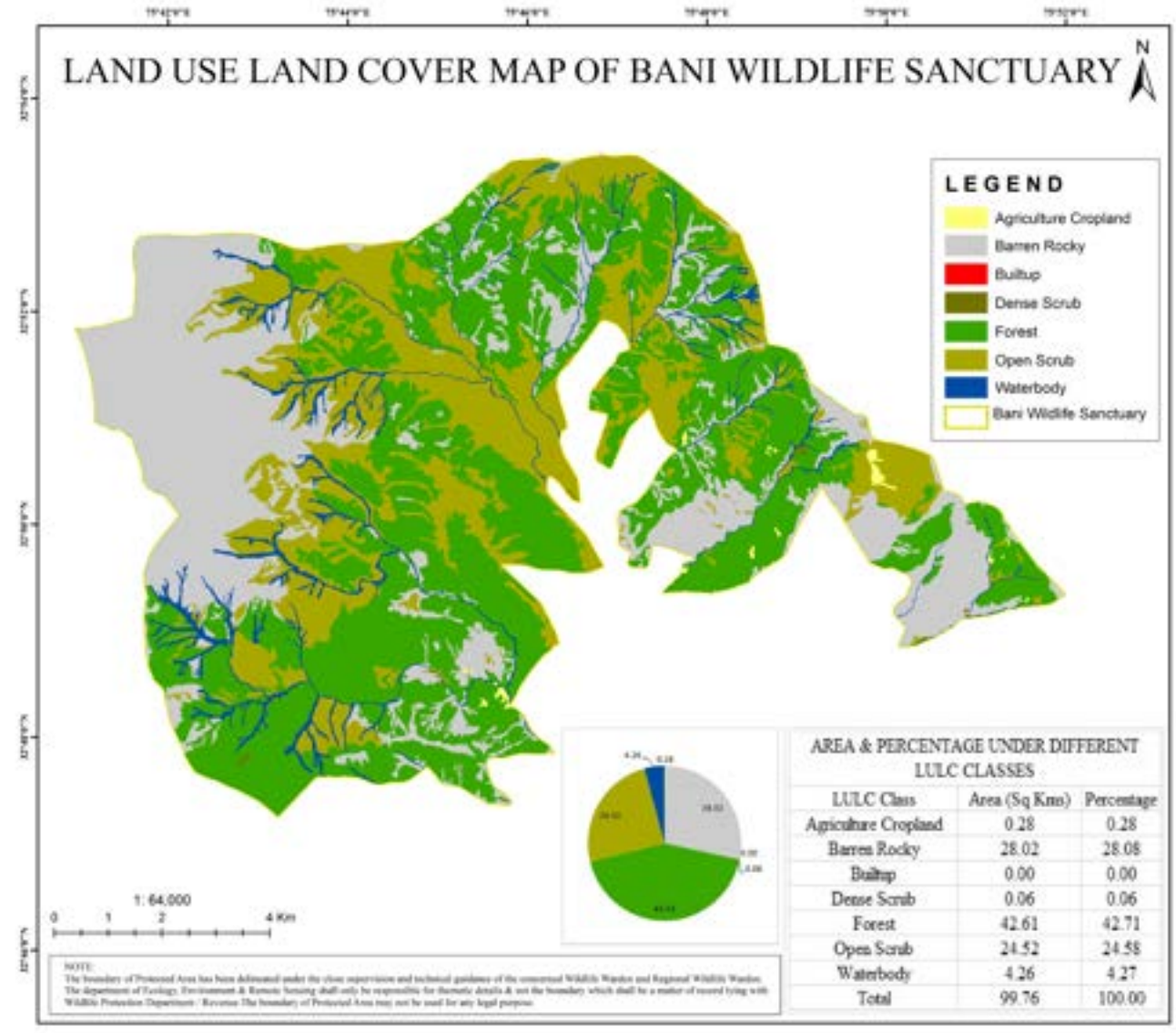
The Bani Wildlife Sanctuary is situated between the Chattergala ridge and Sunbain glaciers in north, J&K boundary with Himachal Pradesh in northeast, Kunsun Da Naal in Southwest, spur starting from Kaplash Kund towards South up to Nukunwal in west. The area has adequate flora and fauna, geomorphology and natural significance for the purpose of protecting, propagating and developing wildlife and Its environment.

SRO/NOTIFICATION NO: SRO 30 dated 10.12.2019
NOTIFIED AREA (KM2): 99.76 **GIS AREA** (KM2): 99.76
PERIMETER (KMS): 74.18
ALTITUDE RANGE (M): 1939 – 4293
GEO - COORDINATES:
32° 47.239′ N - 32° 53.412′ N, 75° 40.946′ E - 75° 51.932′ E

MAJOR FAUNA: Himalayan Tahr (*Hemitragus Jemlahicus*), Barking Deer (*Muntiacus muntjak*), Chital (*Axis axis*), Himalayan goral (*Nemorhaedus goral*), Grey Langur (*Semnopithecus entellus*), Indian Crested Porcupine (*Hystrix indica*), Common Leopard (*Panthera pardus*), Nilgai (*Boselaphus tragocamelus*), Indian Jackal (*Canis aureus*), jungle Cat (*Felis chaus*) .

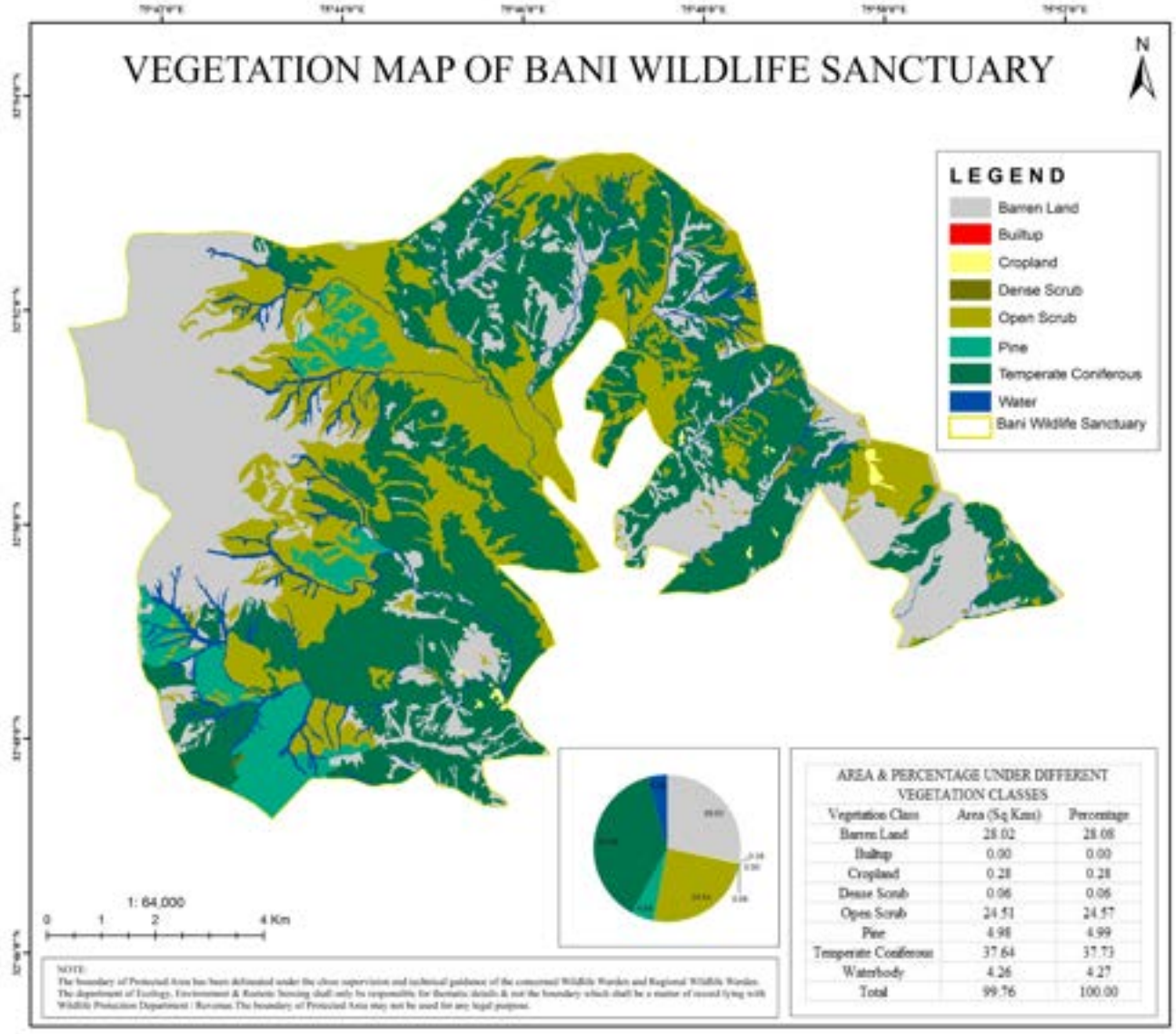
MAJOR AVI FAUNA: White-throated kingfisher (*Halcyon smyrnensis*), Alexandrine Parakeet (*Psittacula eupatria*), Black kite (*Milvus migrans*), Blue Rock Pigeon (*Columba livia*), Common Kingfisher (*Alcedo atthis*), Common Myna (*Acridotheres tristis*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundoo*), Griffon Vulture (*Gyps fulvus*) .

MAJOR FLORA: Chir pine (*Pinus roxburghii*), Cutch tree (*Senegalia catechu*), Fig (*Ficus carica*), Wood Apple (*Aegle marmelos*), Siris tree (*Albizia lebbeck*), Indian jujube (*Ziziphus jujuba*), Neem tree (*Azadirachta indica*), Indian thorny bamboo (*Bambusa bambos*), Carrisse (*Carissa spinarum*), Hopseed bush (*Dodonaea viscosa*) and Lantana (*Lantana camara*).



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.28	0.28
Barren Rocky	28.02	28.08
Builtup	0.00	0.00
Dense Scrub	0.06	0.06
Forest	42.61	42.71
Open Scrub	24.52	24.58
Waterbody	4.26	4.27
Total	99.76	100.00



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	28.02	28.08
Builtup	0.00	0.00
Cropland	0.28	0.28
Dense Scrub	0.06	0.06
Open Scrub	24.51	24.57
Pine	4.98	4.99
Temperate Coniferous	37.64	37.73
Waterbody	4.26	4.27
Total	99.76	100.00

GEOMORPHOLOGICAL MAP OF BANI WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	89.54	89.75
Piedmont Zone	5.96	5.97
Waterbody	4.26	4.27
Total	99.76	100.00

NOTE:
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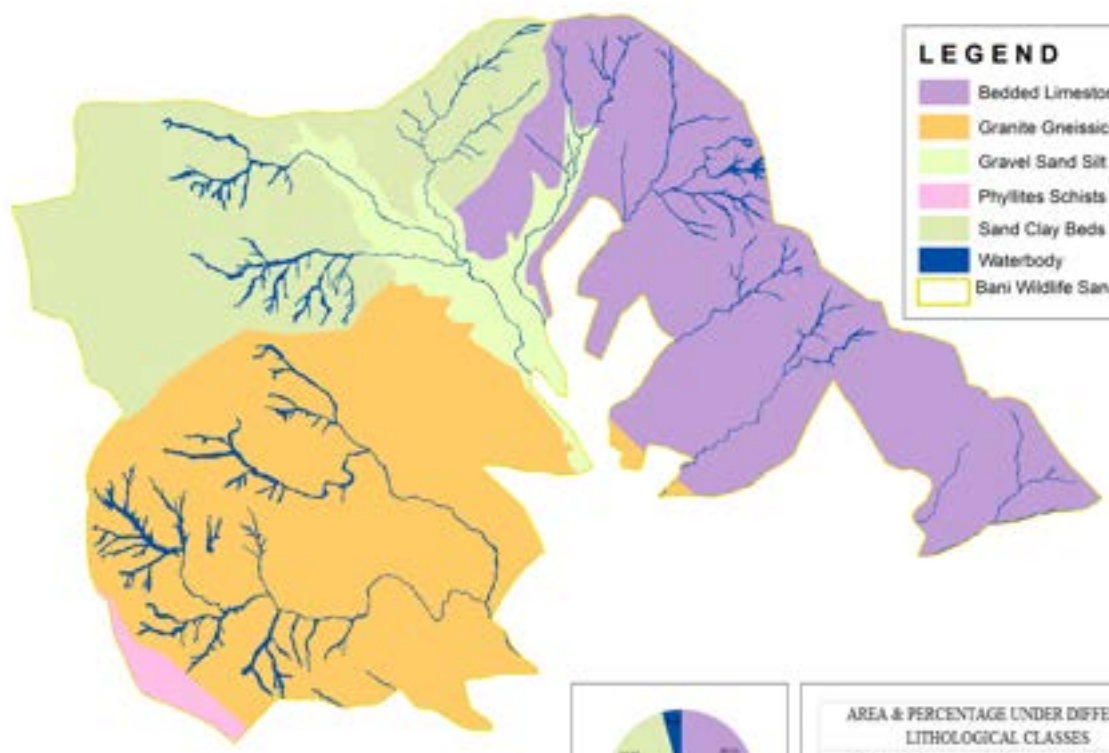
LITHOLOGICAL MAP OF BANI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	30.11	30.19
Granite Gneissic Complex	35.16	35.25
Gravel Sand Silt	5.97	5.98
Phyllites Schists Slates	1.19	1.19
Sand Clay Beds	23.07	23.12
Waterbody	4.26	4.27
Total	99.76	100.00

NOTE:
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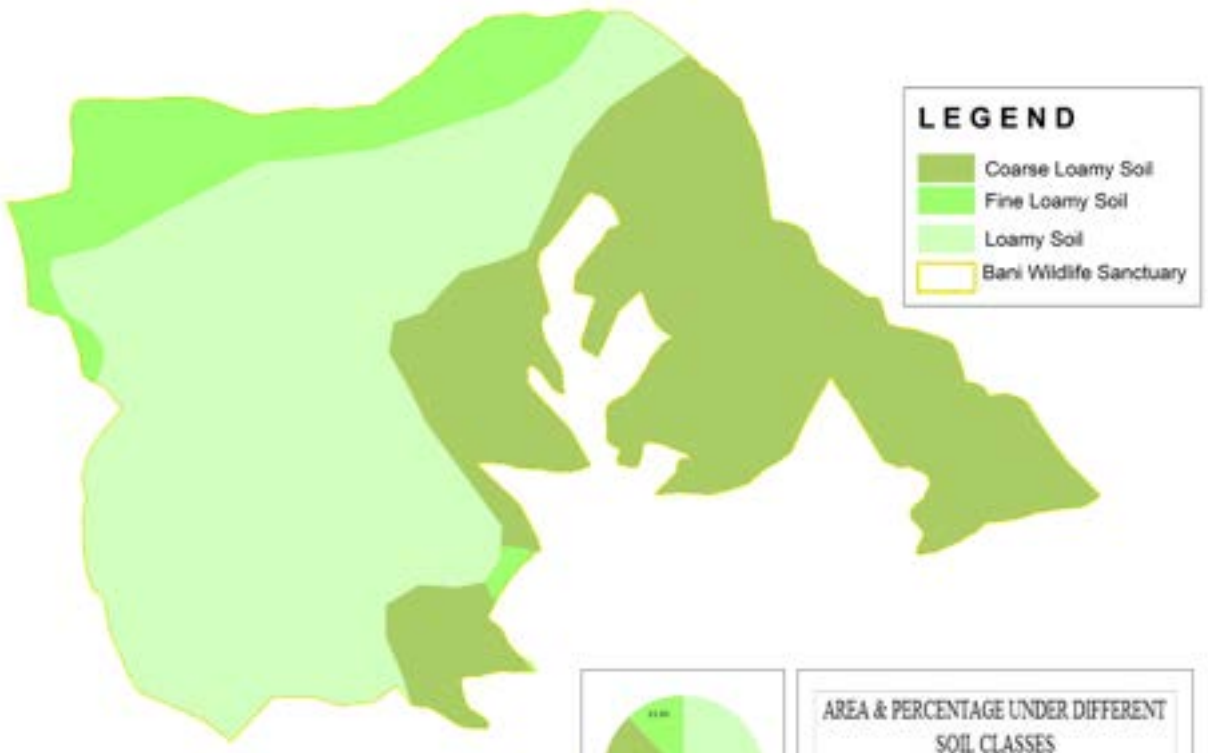
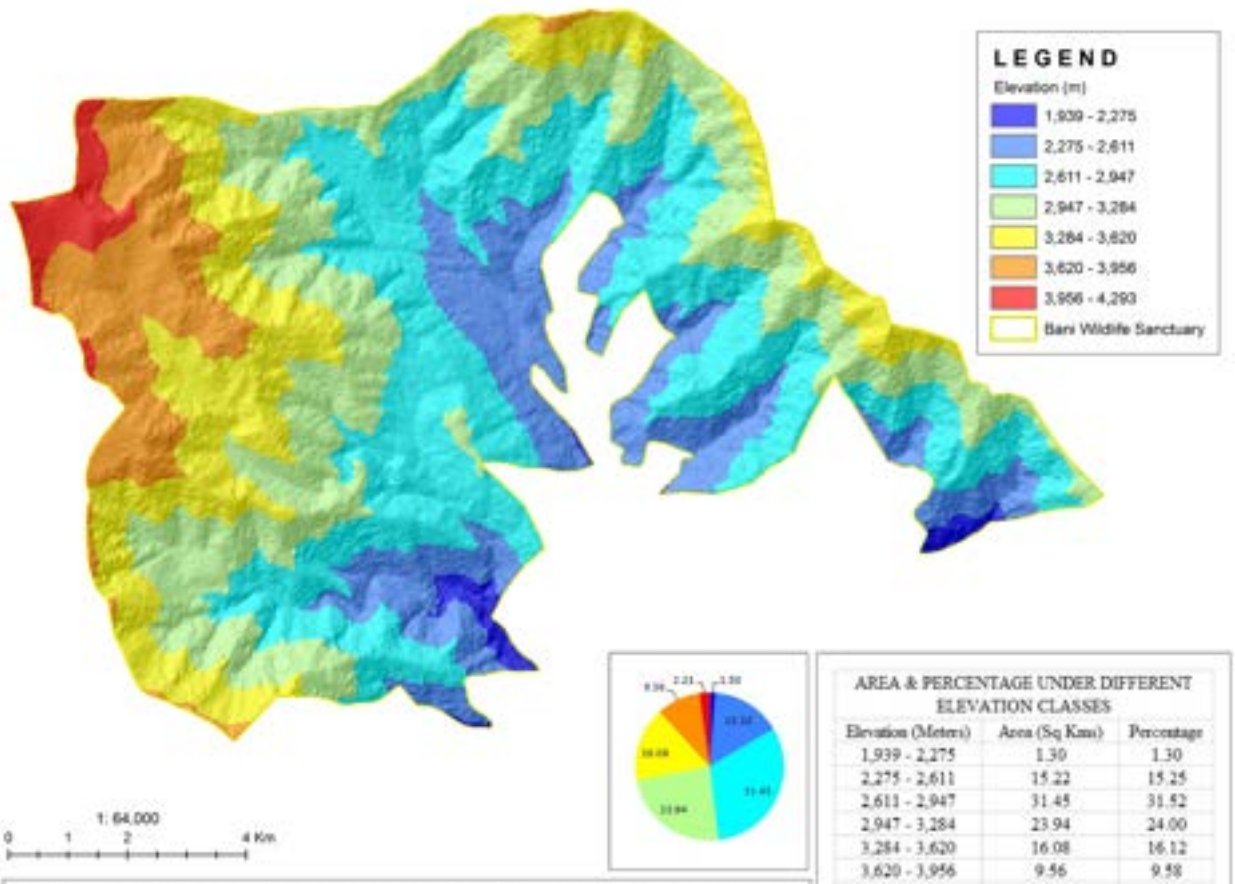
SOIL MAP OF BANI WILDLIFE SANCTUARY



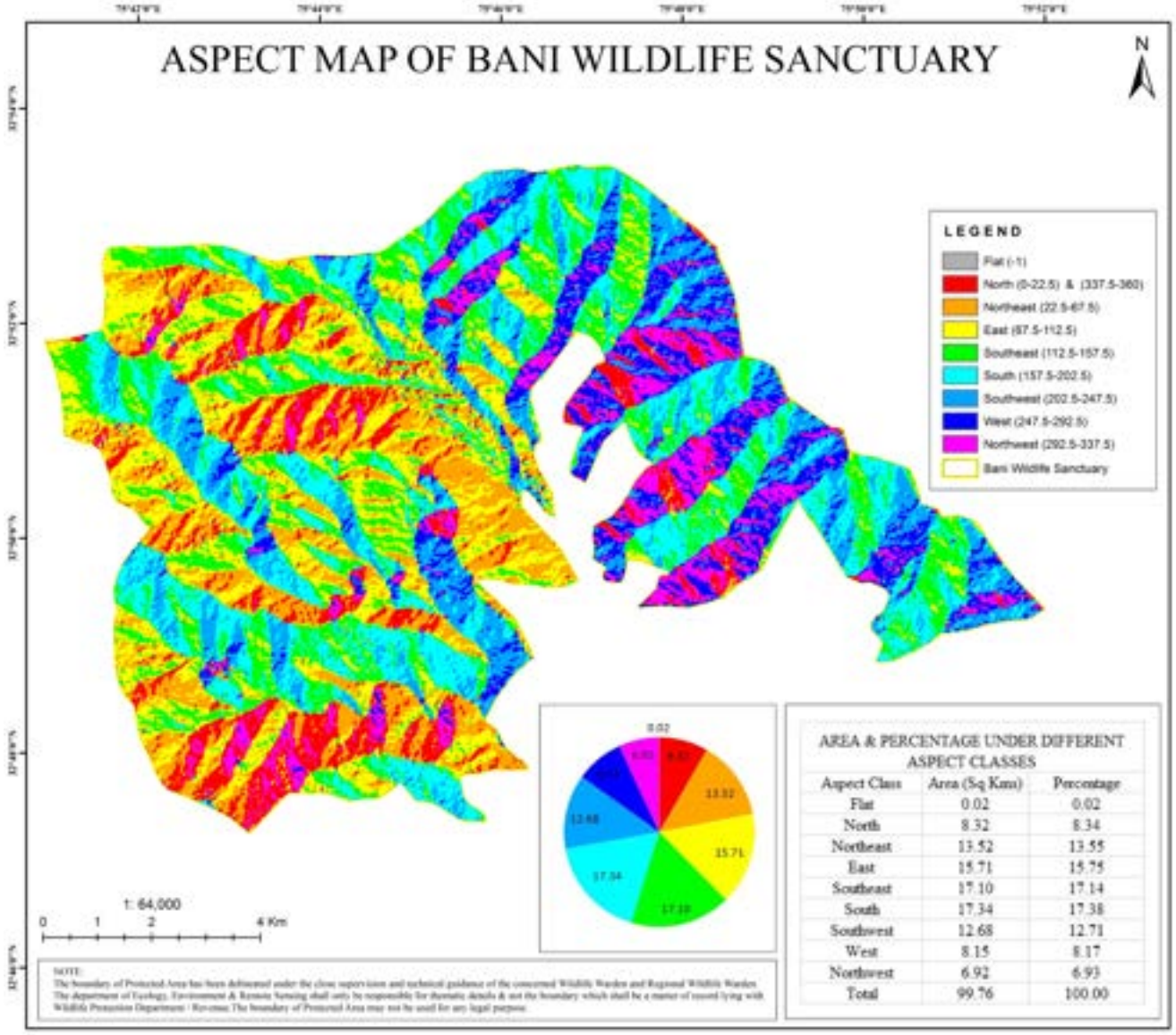
AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	37.09	37.18
Fine Loamy Soil	11.91	11.94
Loamy Soil	50.76	50.88
Total	99.76	100.00

ELEVATION MAP OF BANI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES		
Elevation (Meters)	Area (Sq Kms)	Percentage
1,939 - 2,275	1.30	1.30
2,275 - 2,611	15.22	15.25
2,611 - 2,947	31.45	31.52
2,947 - 3,284	23.94	24.00
3,284 - 3,620	16.08	16.12
3,620 - 3,956	9.56	9.58
3,956 - 4,293	2.21	2.22
Total	99.76	100.00

ASPECT MAP OF BANI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.02	0.02
North	8.32	8.34
Northeast	13.52	13.55
East	15.71	15.75
Southeast	17.10	17.14
South	17.34	17.38
Southwest	12.68	12.71
West	8.15	8.17
Northwest	6.92	6.93
Total	99.76	100.00

NOTE:
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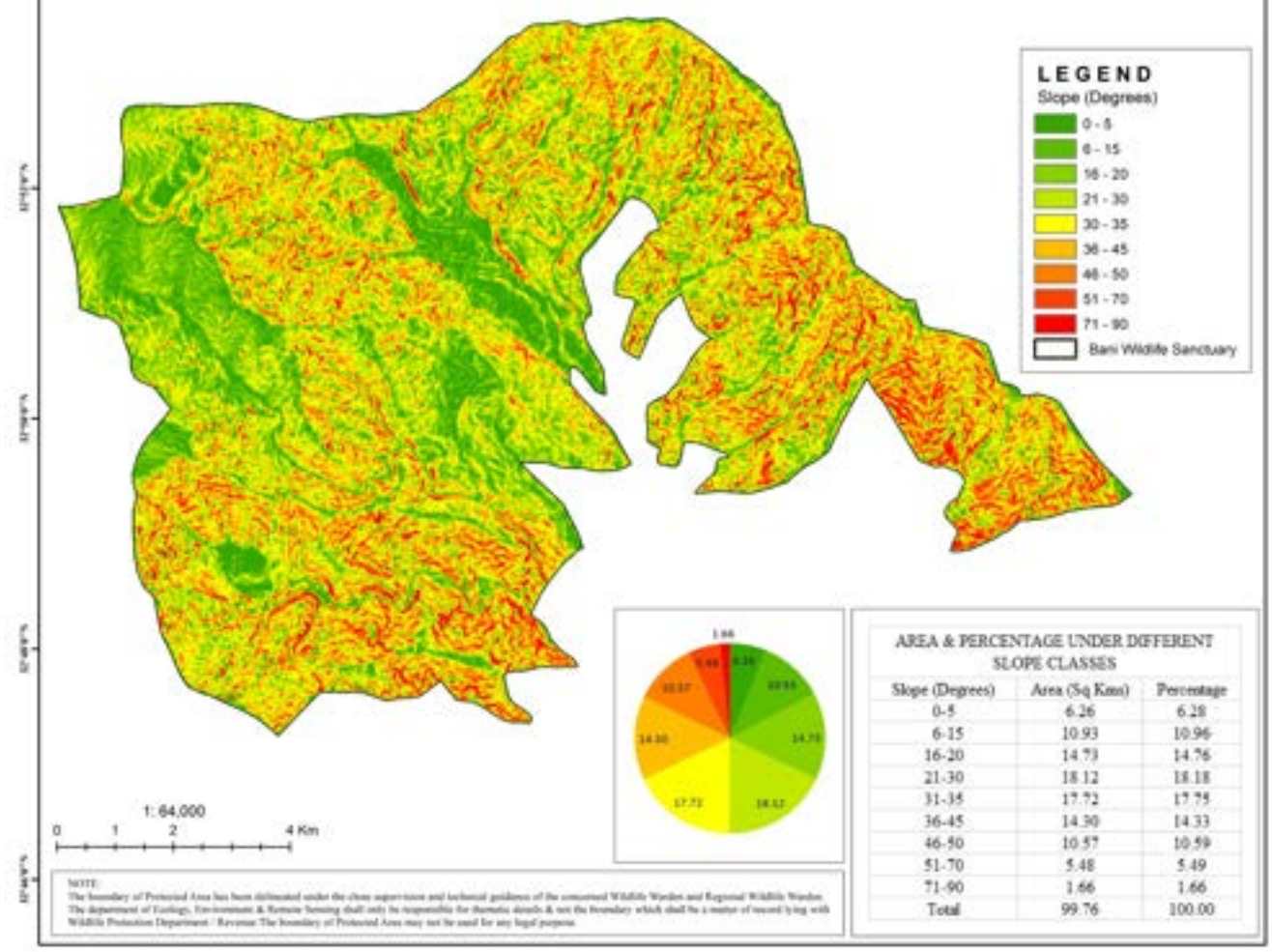
SLOPE MAP OF BANI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	6.26	6.28
6-15	10.93	10.96
16-20	14.73	14.76
21-30	18.12	18.18
31-35	17.72	17.75
36-45	14.30	14.33
46-50	10.57	10.59
51-70	5.48	5.49
71-90	1.66	1.66
Total	99.76	100.00

NOTE:
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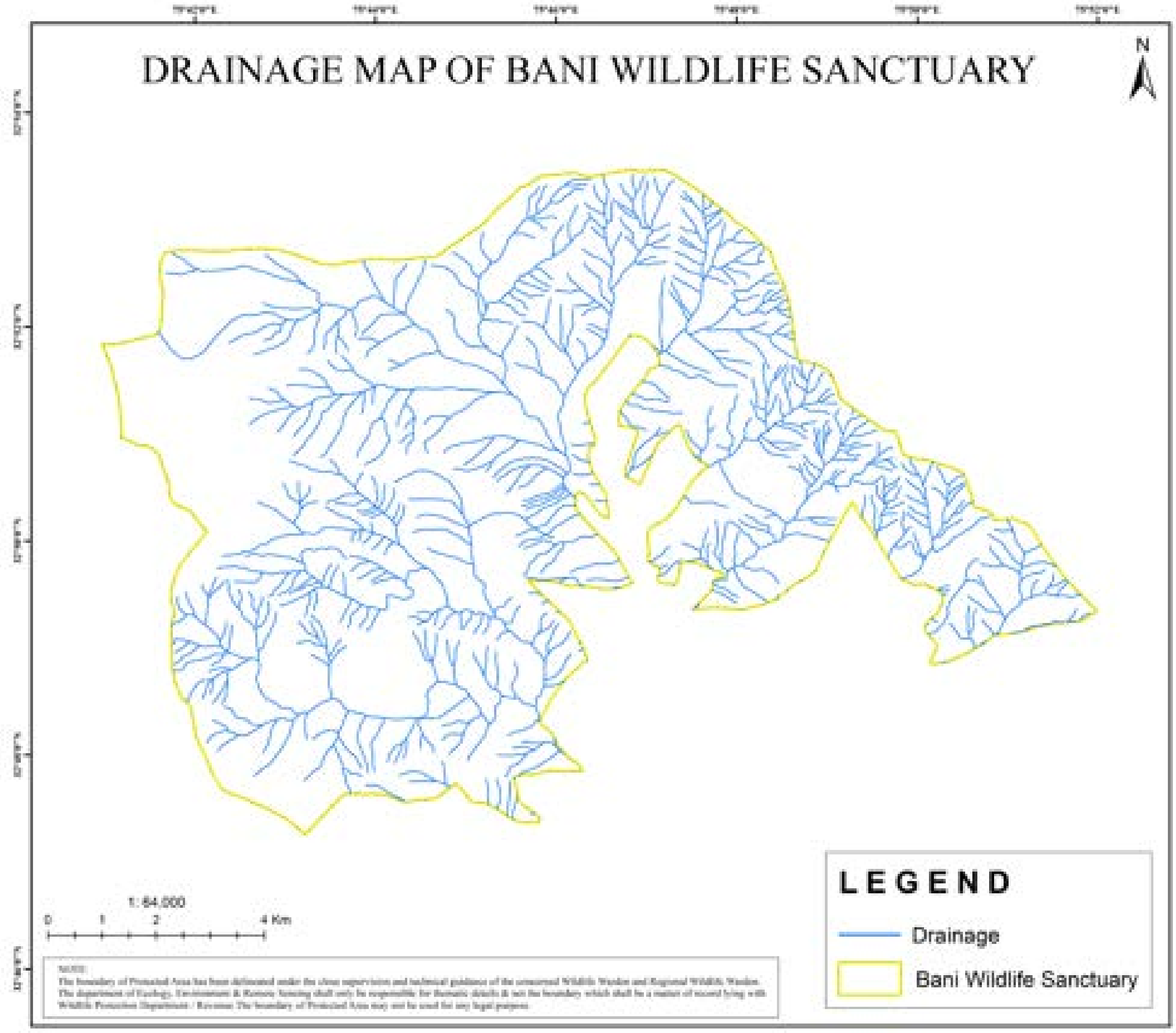
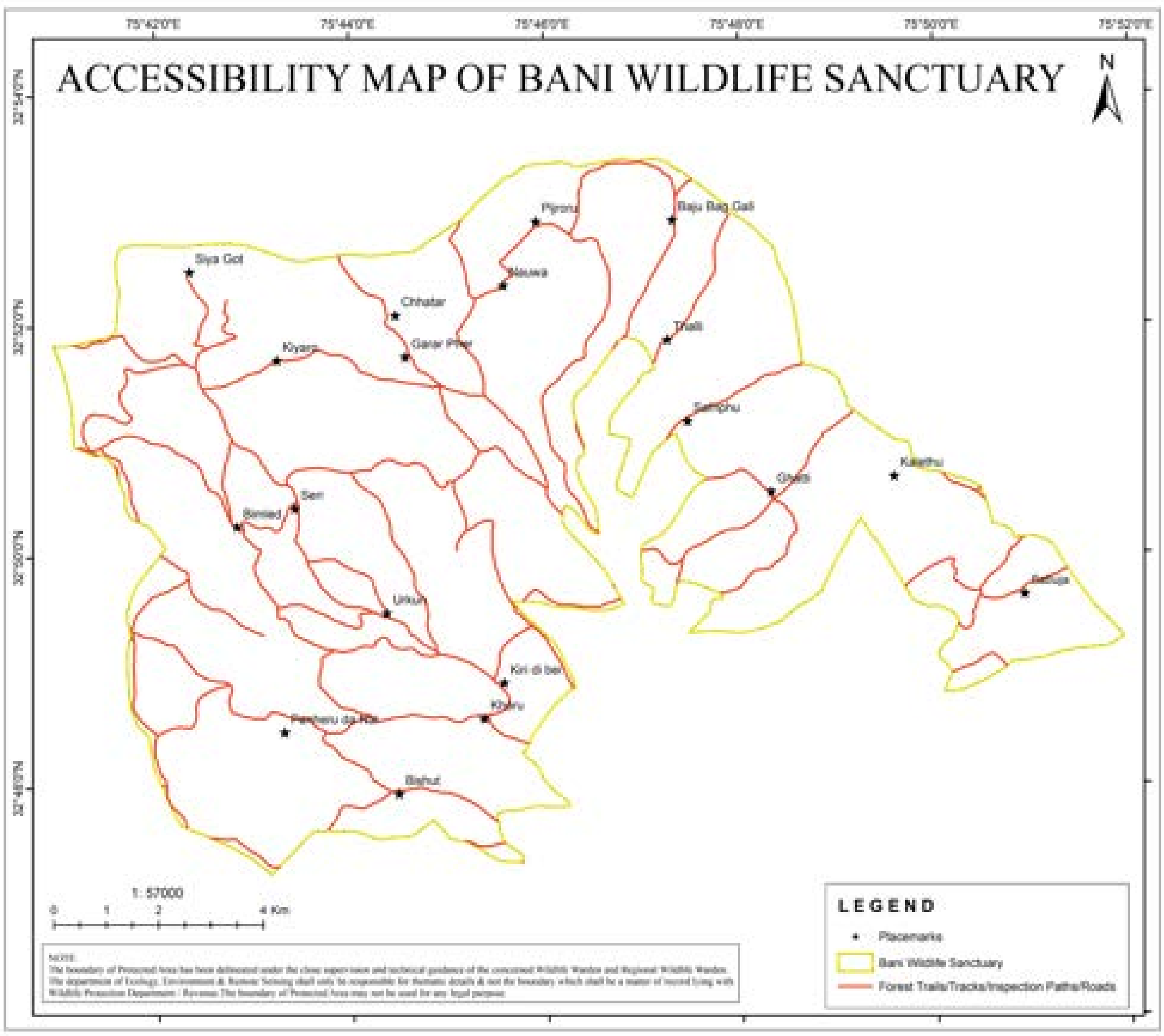
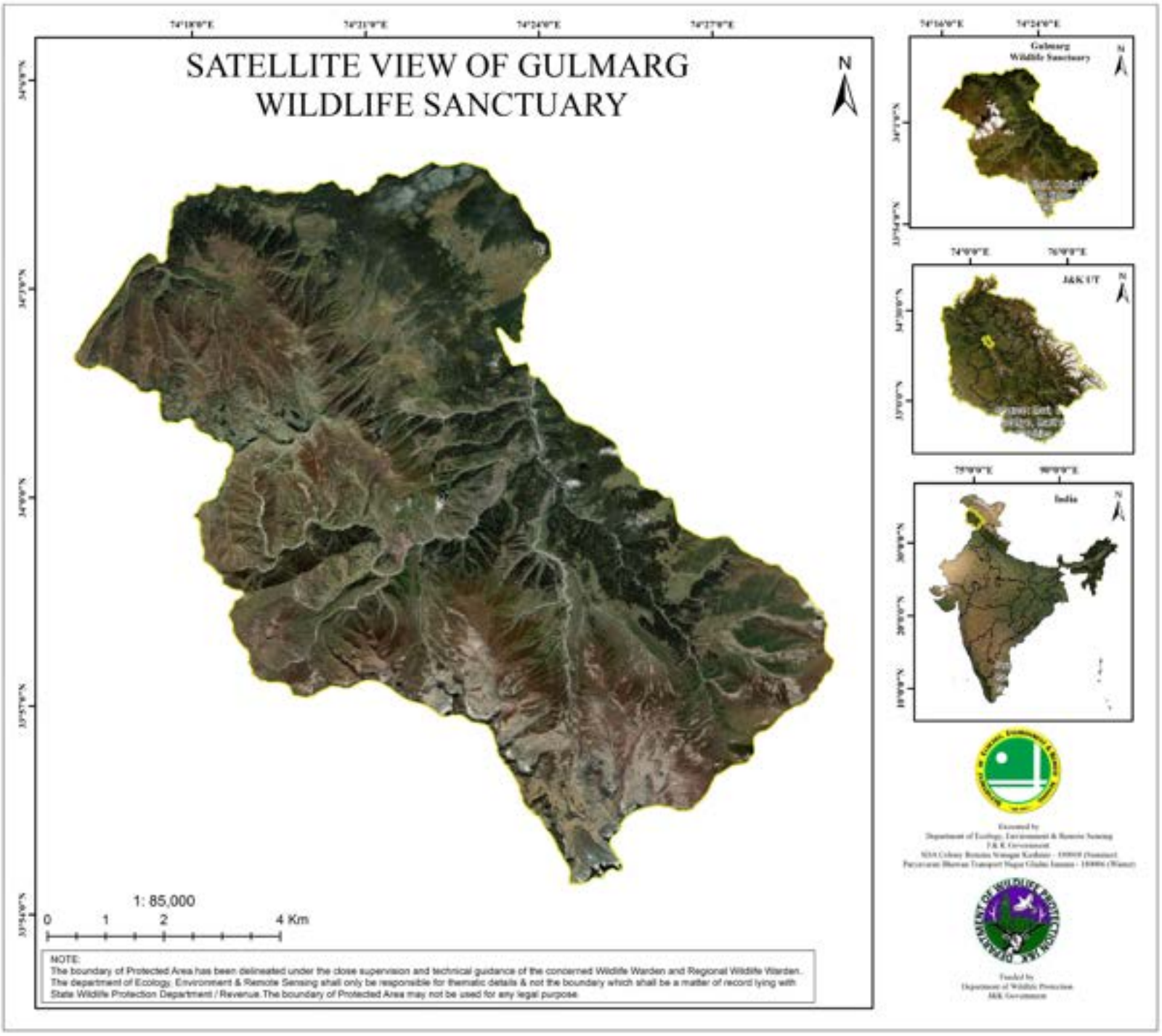

DRAINAGE MAP OF BANI WILDLIFE SANCTUARY
N
1: 64,000
0 1 2 4 Km
LEGEND
Drainage
Bani Wildlife Sanctuary


ACCESSIBILITY MAP OF BANI WILDLIFE SANCTUARY
N
75°42'0"E
75°44'0"E
75°46'0"E
75°48'0"E
75°50'0"E
75°52'0"E
32°54'0"N
32°52'0"N
32°50'0"N
32°48'0"N
Siya Got
Baju Bag Gali
Chhatar
Kiyara
Thalli
Ser
Kiri di beri
Kharu
Bishut
1: 57000
0 1 2 4 Km
LEGEND
Placemarks
Bani Wildlife Sanctuary
Forest Trails/Tracks/Inspection Paths/Roads



GULMARG WILDLIFE SANCTUARY

Gulmarg Wildlife Sanctuary is located approximately 48 km from Srinagar City. It is located in the stunning peaks of the Himalayan ranges, with lush green beautiful landscapes, flowering gardens, serene lakes. Catchments of this Protected area is source of drinking and irrigation water to dozens of villages, adjacent to the protected area. The area is blessed with innumerable medical plant species.

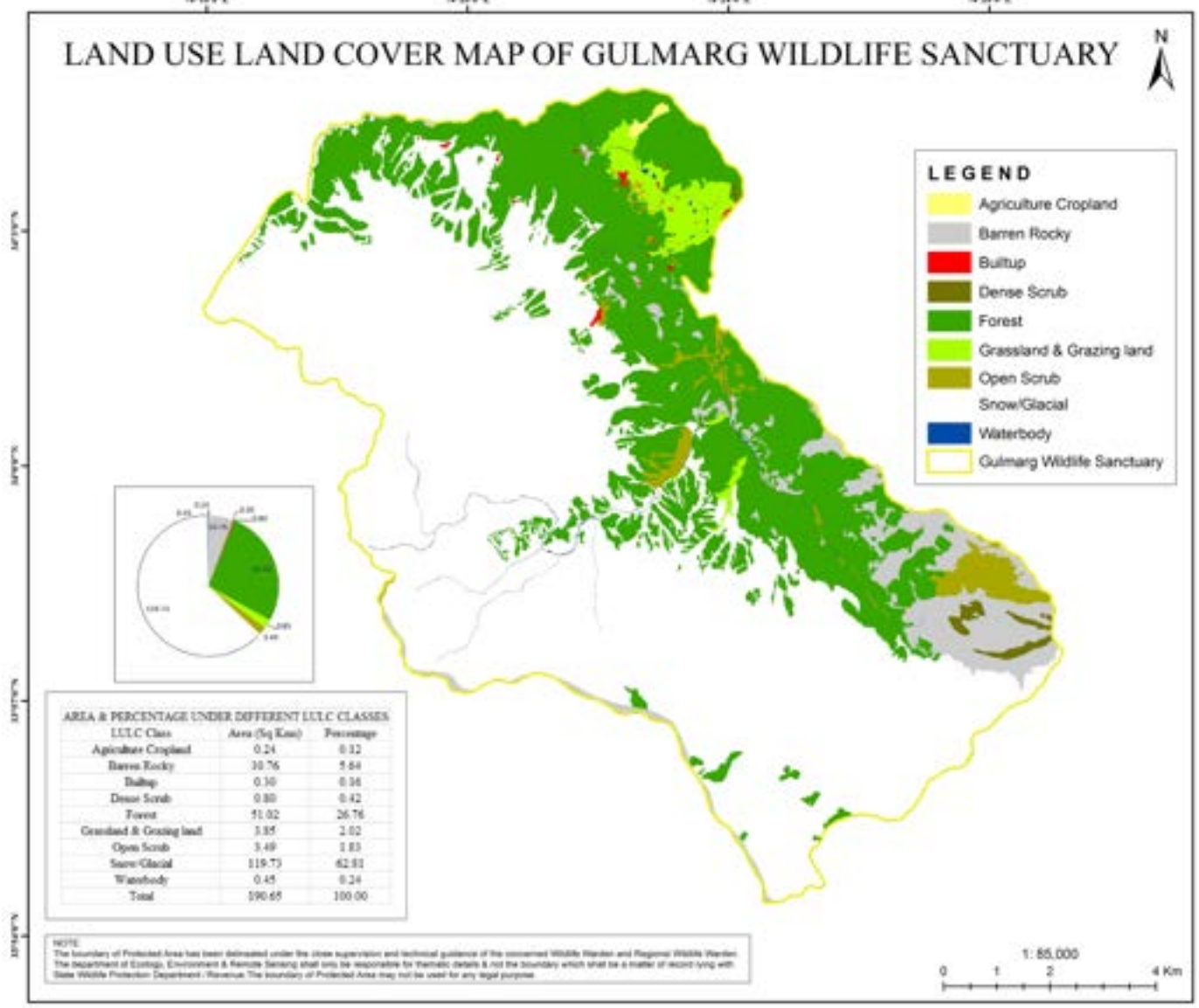
SRO/NOTIFICATION NO: SRO 149 dated 19.03.1987
NOTIFIED AREA (KM2): 180.00 **GIS AREA** (KM2): 190.65
PERIMETER (KMS): 71.71
ALTITUDE RANGE (M): 2000 – 4800
GEO - COORDINATES:
E 33° 54.490′ N - 34° 4.872′ N, 74° 15.989′ E - 74° 29.163′ E

MAJOR FAUNA: Kashmir Musk Deer (*Moschus cupreus*), Common leopard (*Panthera pardus*), Asiatic Black Bear (*Ursus thibetanus*), Himalayan Brown Bear (*Ursus arctos*), Leopard Cat (*Prionailurus bengalensis*), Rhesus Macaque (*Macaca mulatta*), Red Fox (*Vulpes vulpes*), Jungle Cat (*Felis chaus*), Small Indian Mangoose (*Herpestes javanicus*), Kashmir House rat (*Apodemus rusiges*), Short-Tailed Bandicoot (*Nesokia indica*), Small Kashmir Flying Squirrel (*Eoglaucomys fimbriatus*) Tibetan Wolf (*Canis lupus* filchneri) .

MAJOR AVI FAUNA: Grey Heron (*Ardea cinera*), Night Heron (*Nycticorax nycticorax*), Golden Eagle (*Aquila chrysaetos*), Bearded Vulture (Gypaetus barbatus), Snow Pigeon (*Columba leuconota*), Eurasian Cuckoo (*Cuculus canorus*), Kashmir Flycatcher (*Ficedula subrubra*) .

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan yew (*Taxus wallichiana*), Himalayan birch (*Betula utilis*), Nepal Dock (*Rumex nepalensis*), Dandelion (*Taraxacum officinale*), Kuth (*Sassurla lappa*).

LAND USE LAND COVER MAP OF GULMARG WILDLIFE SANCTUARY

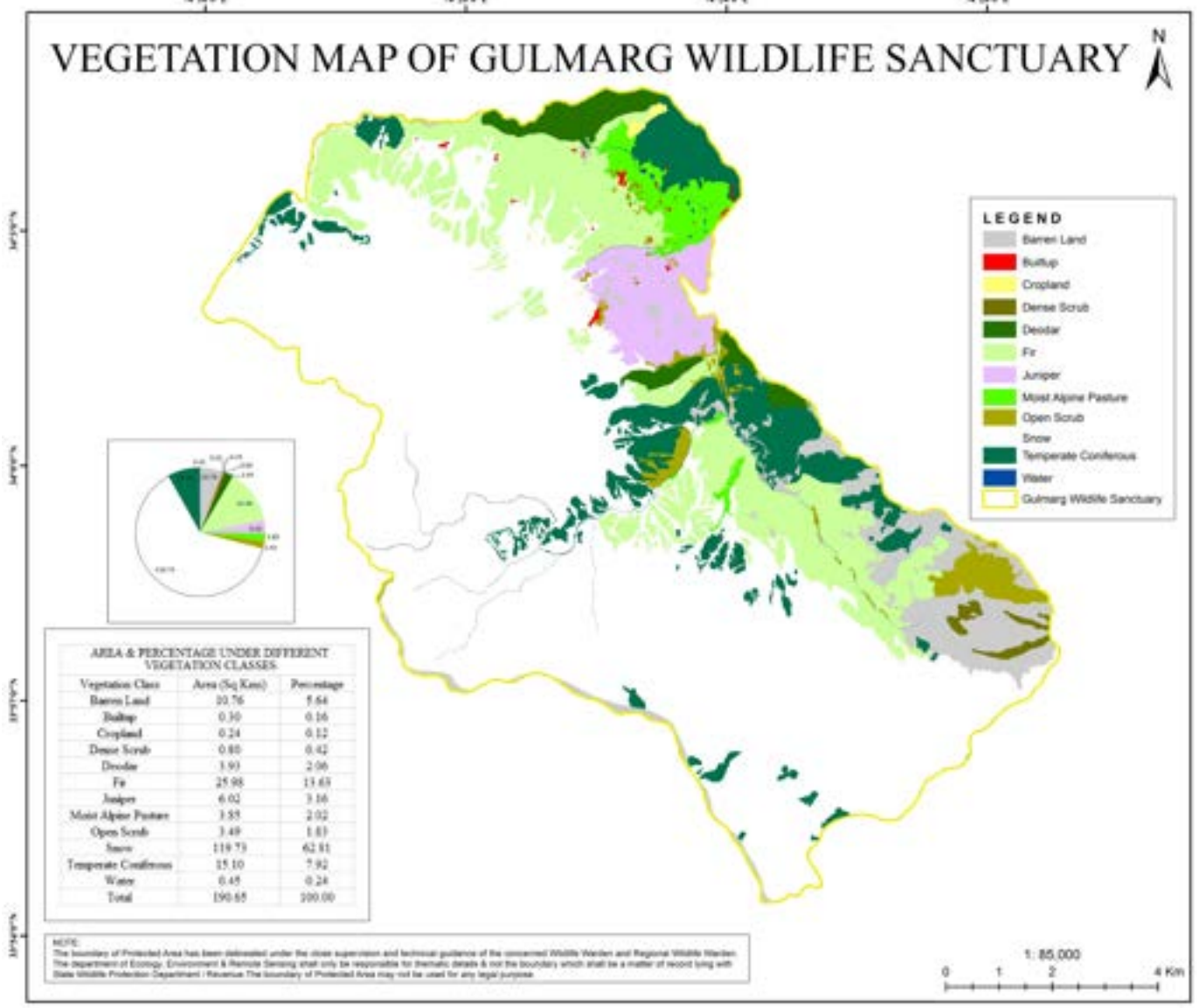


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.24	0.12
Barren Rocky	10.76	5.64
Builtup	0.30	0.16
Dense Scrub	0.80	0.42
Forest	51.02	26.76
Grassland & Grazing land	3.85	2.02
Open Scrub	3.49	1.83
Snow/Glacial	119.73	62.81
Waterbody	0.45	0.24
Total	190.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF GULMARG WILDLIFE SANCTUARY

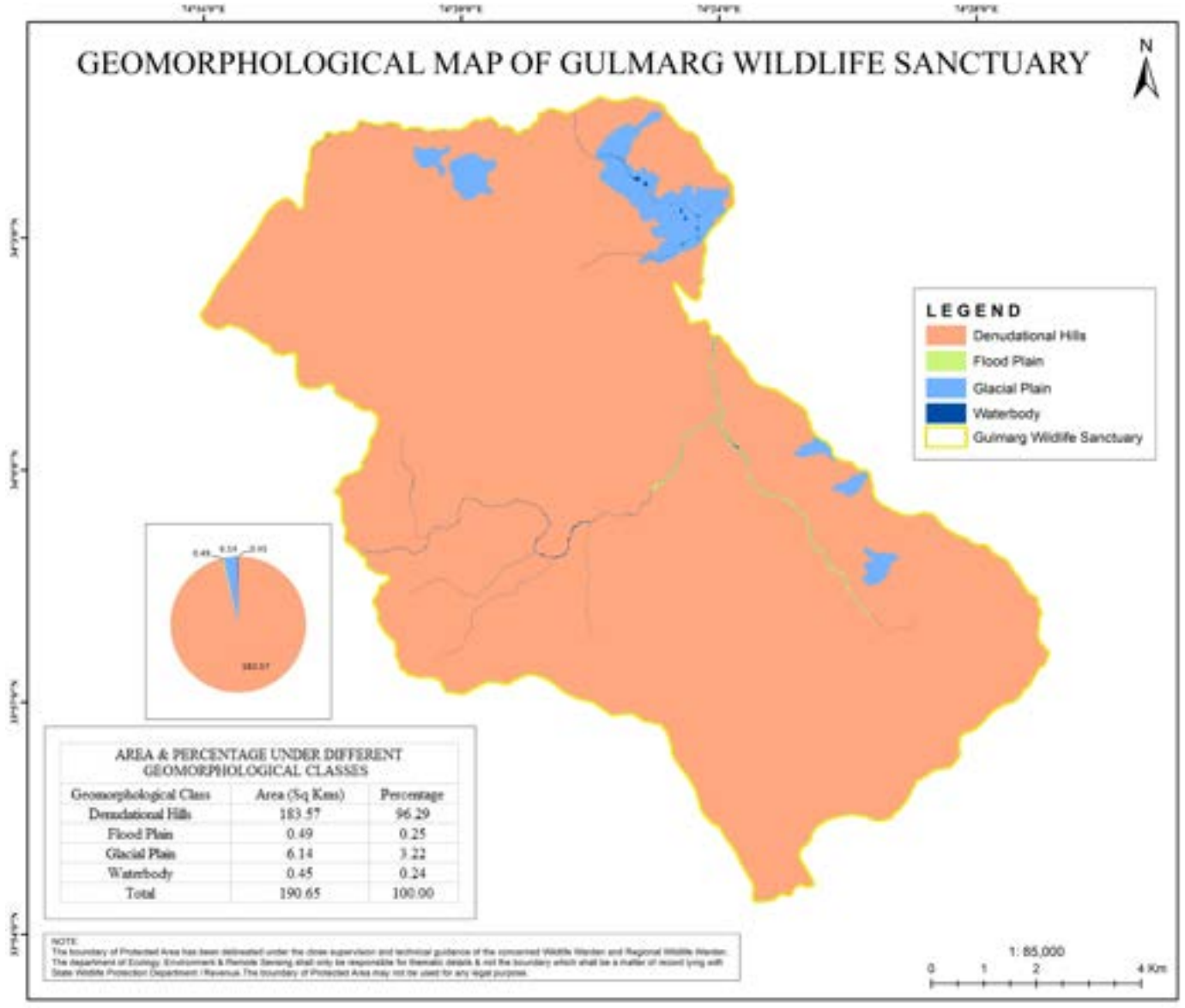


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	10.76	5.64
Builtup	0.30	0.16
Cropland	0.24	0.12
Dense Scrub	0.80	0.42
Deodar	3.93	2.06
Fir	25.98	13.63
Juniper	6.02	3.16
Moist Alpine Pasture	3.85	2.02
Open Scrub	3.49	1.83
Snow	119.73	62.81
Temperate Coniferous	15.10	7.92
Water	0.45	0.24
Total	190.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF GULMARG WILDLIFE SANCTUARY

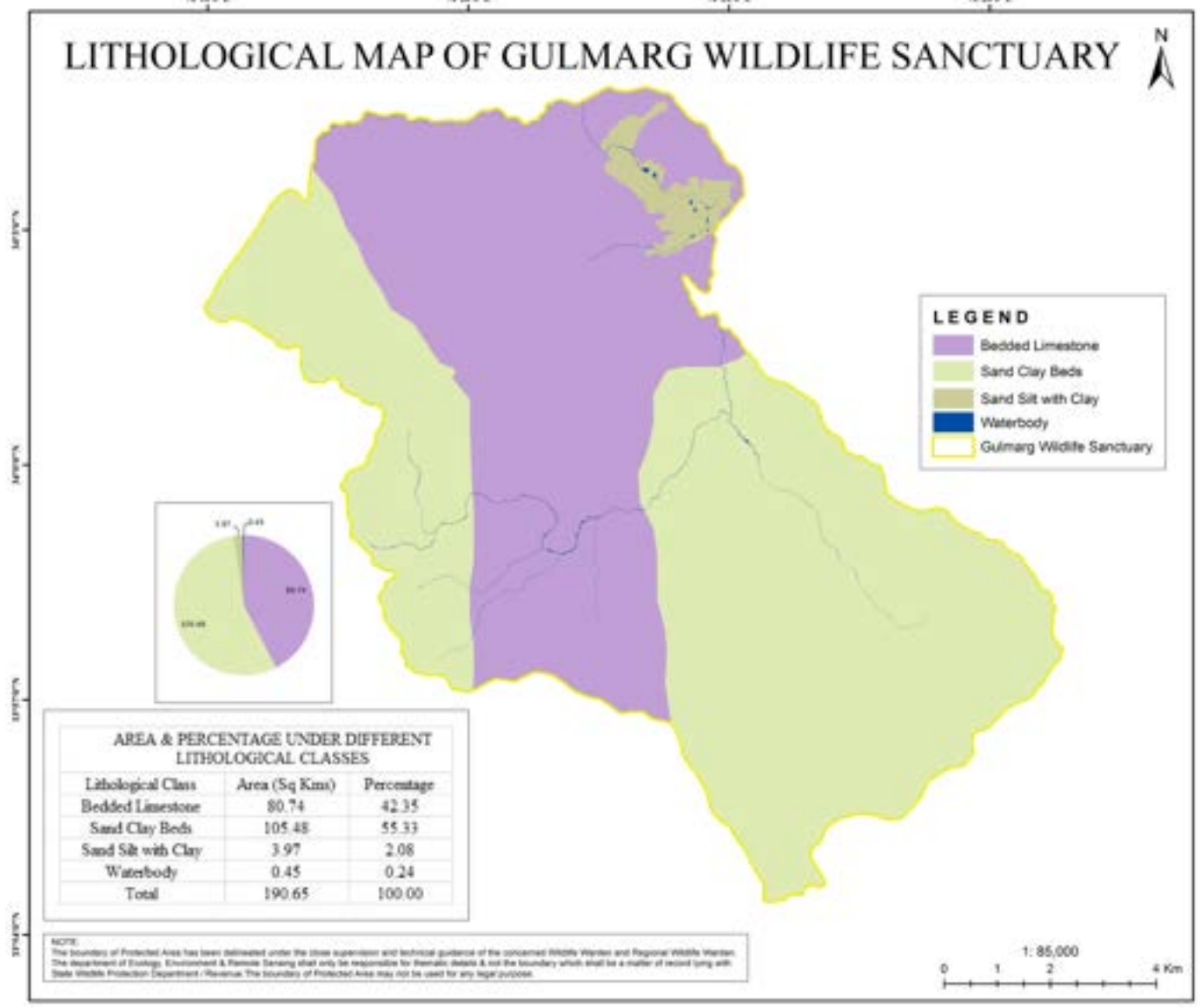


AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	183.57	96.29
Flood Plain	0.49	0.25
Glacial Plain	6.14	3.22
Waterbody	0.45	0.24
Total	190.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LITHOLOGICAL MAP OF GULMARG WILDLIFE SANCTUARY

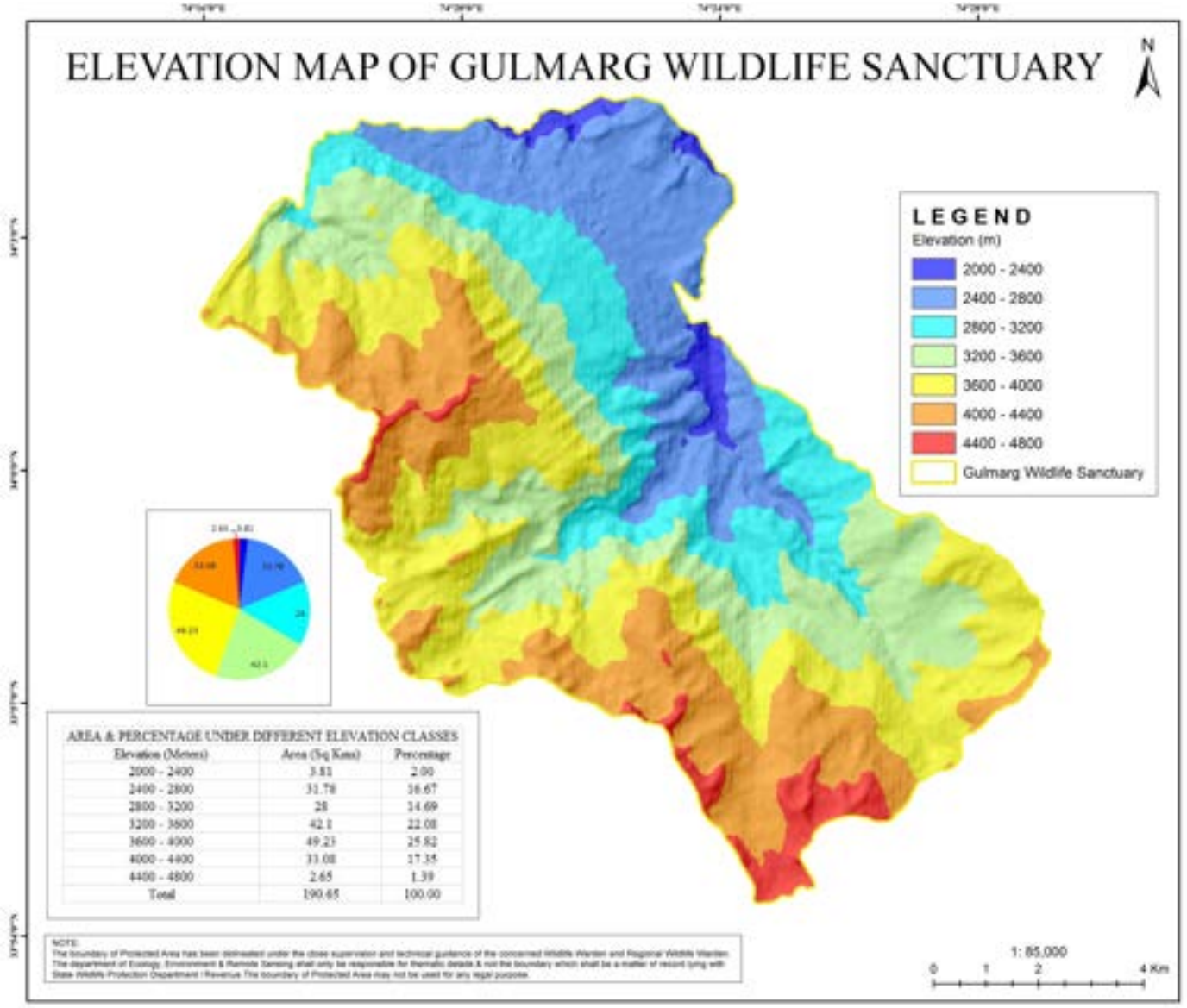


AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	80.74	42.35
Sand Clay Beds	105.48	55.33
Sand Silt with Clay	3.97	2.08
Waterbody	0.45	0.24
Total	190.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ELEVATION MAP OF GULMARG WILDLIFE SANCTUARY

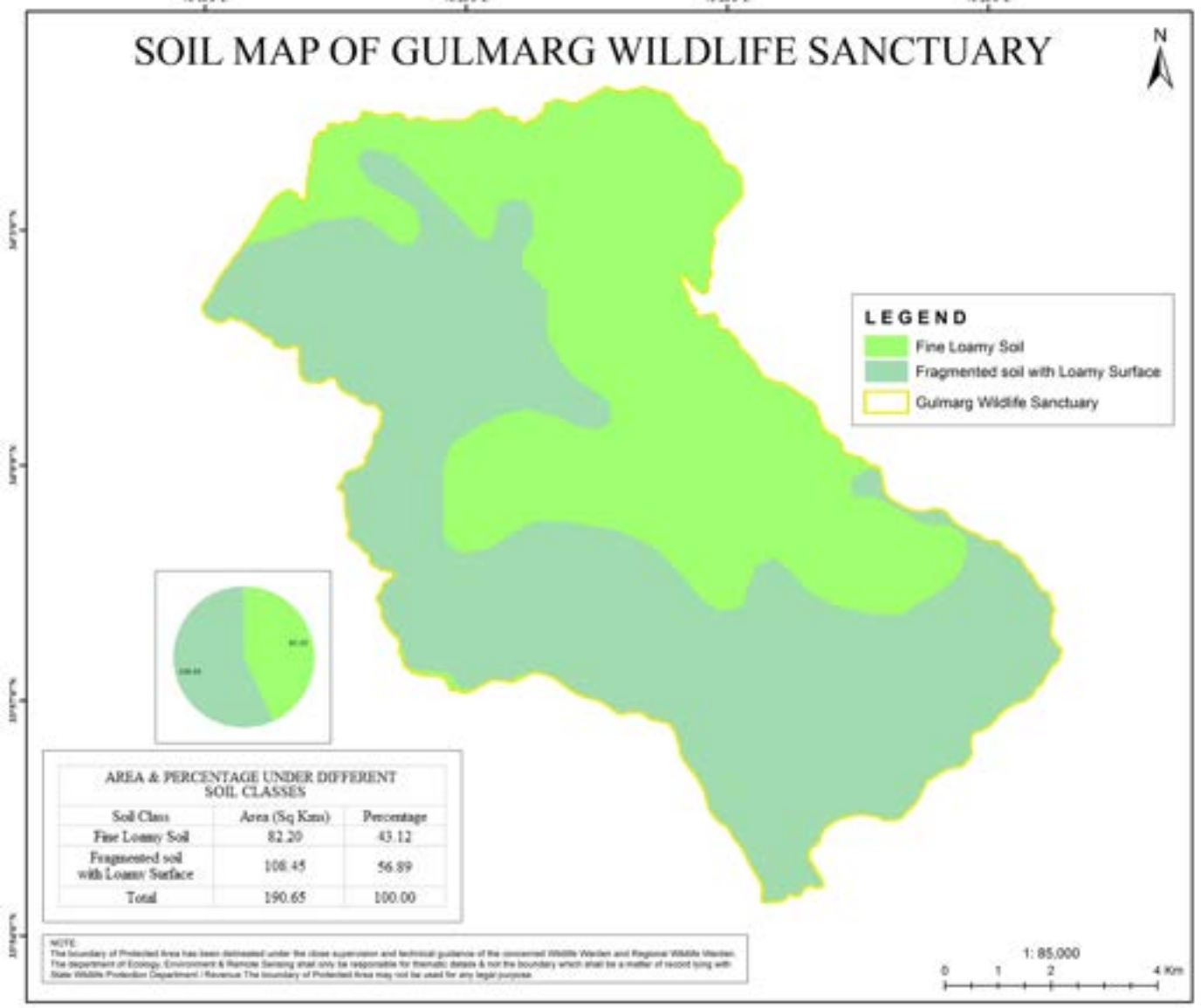


AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
2000 - 2400	3.81	2.00
2400 - 2800	31.78	16.67
2800 - 3200	28	14.69
3200 - 3600	42.1	22.08
3600 - 4000	49.23	25.82
4000 - 4400	33.08	17.35
4400 - 4800	2.65	1.39
Total	190.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF GULMARG WILDLIFE SANCTUARY

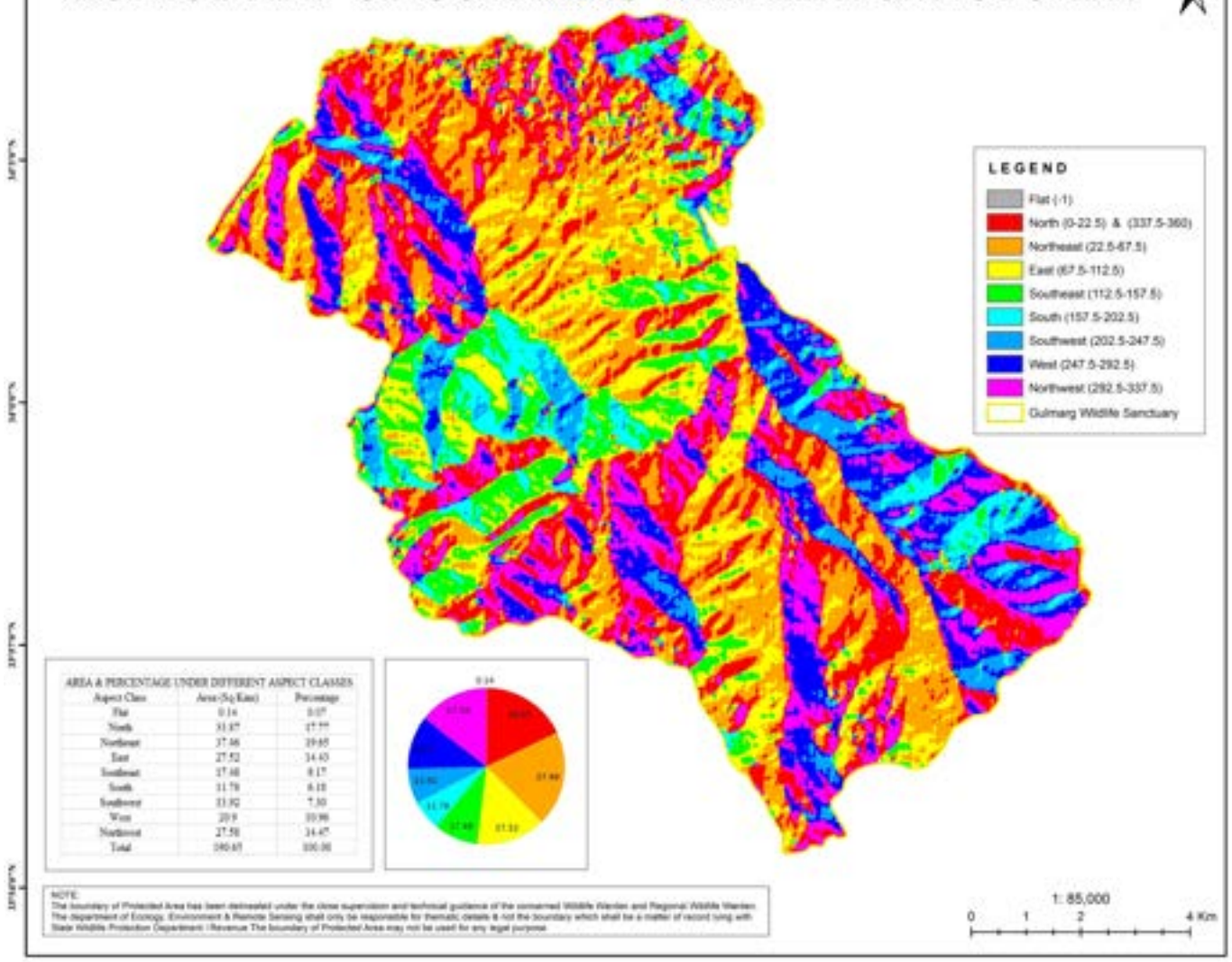


AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	82.20	43.12
Fragmented soil with Loamy Surface	108.45	56.89
Total	190.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ASPECT MAP OF GULMARG WILDLIFE SANCTUARY

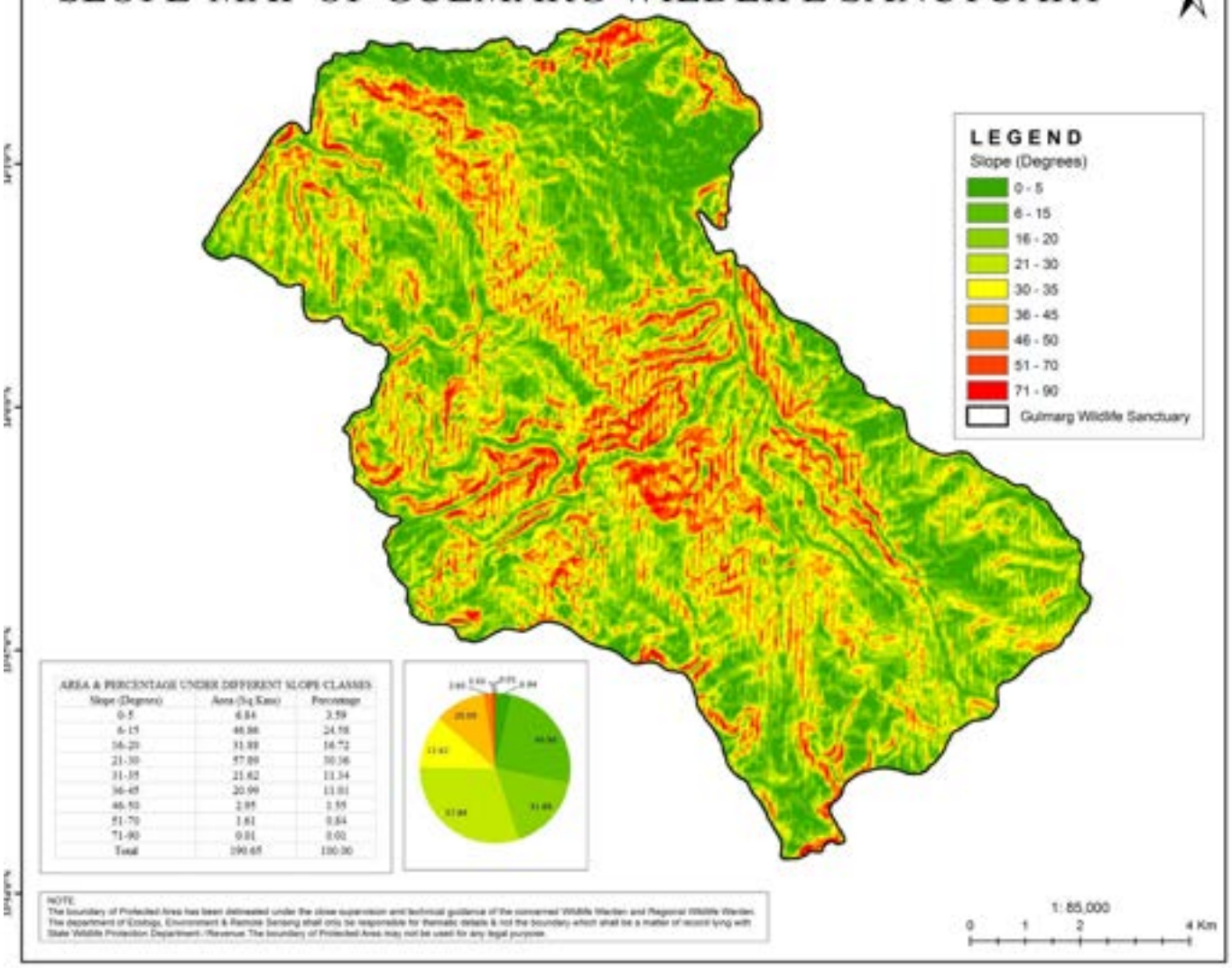


AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq.Kms)	Percentage
Flat	0.14	0.07
North	33.87	17.77
Northeast	37.46	19.65
East	27.52	14.43
Southeast	17.48	9.17
South	11.78	6.18
Southwest	13.92	7.30
West	20.9	10.96
Northwest	27.58	14.47
Total	190.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SLOPE MAP OF GULMARG WILDLIFE SANCTUARY

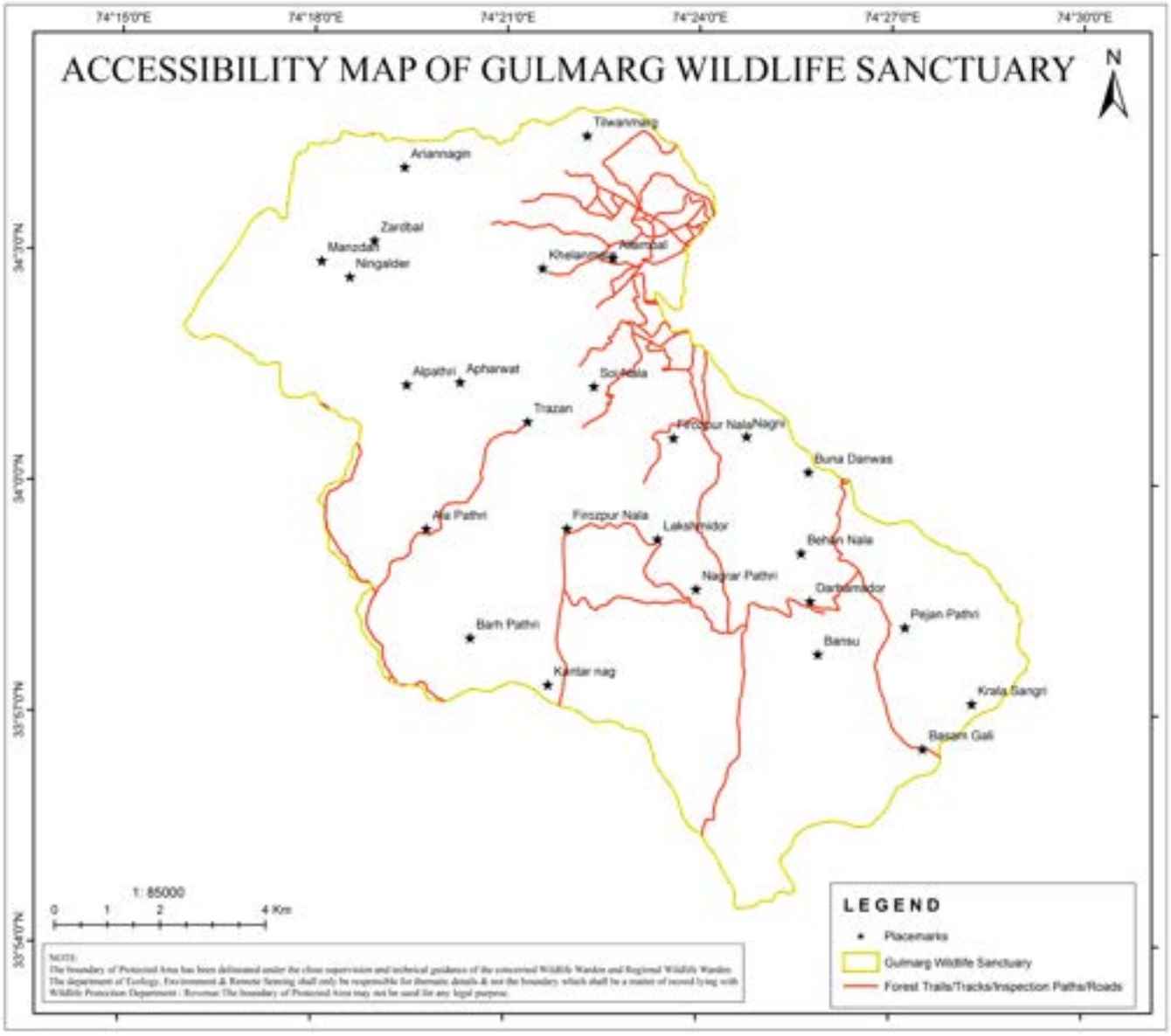


AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

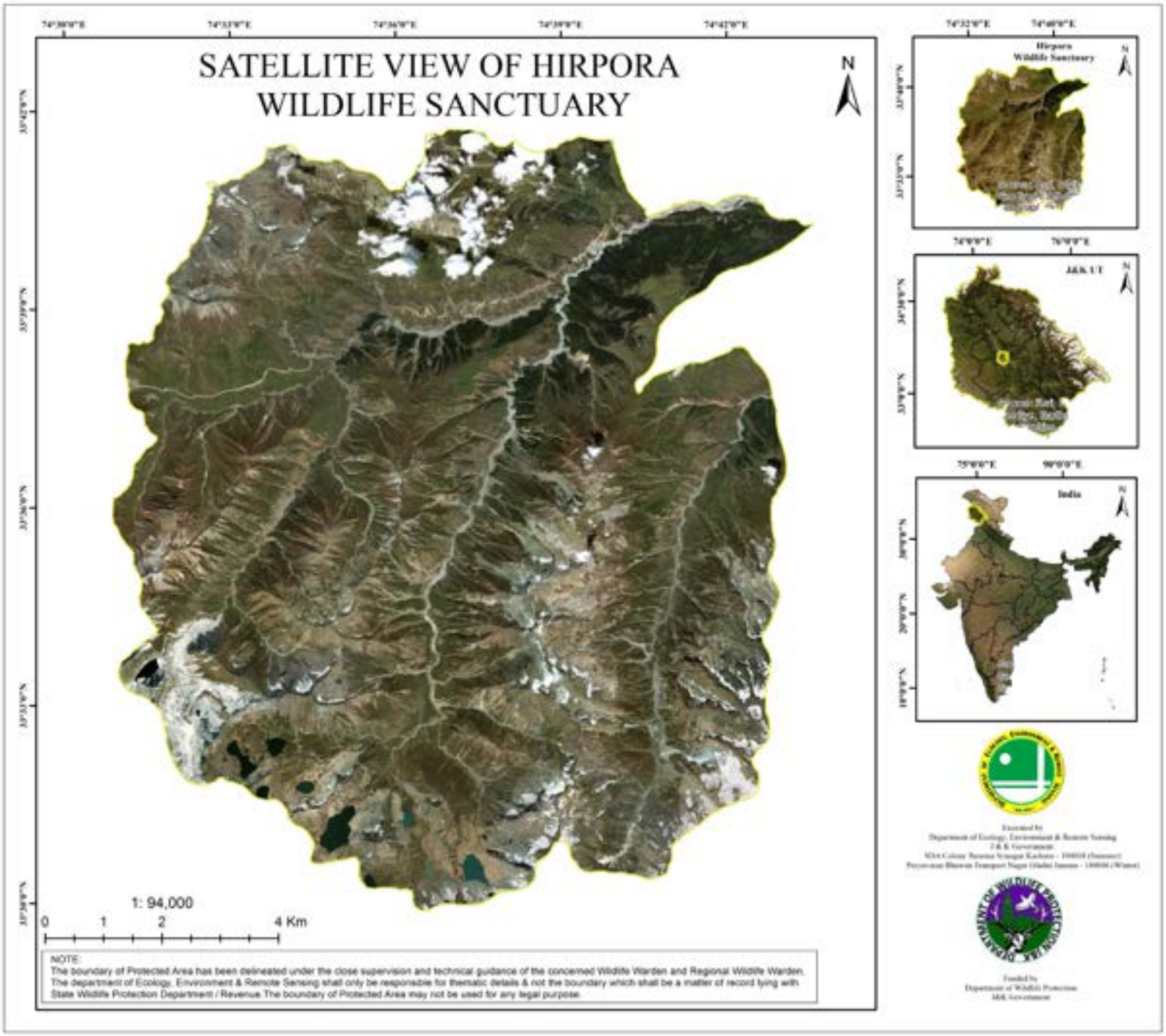
Slope (Degrees)	Area (Sq.Kms)	Percentage
0-5	6.84	3.59
6-15	46.86	24.58
16-20	31.88	16.72
21-30	57.09	30.36
31-35	21.62	11.34
36-45	20.99	11.01
46-50	2.95	1.55
51-70	1.61	0.84
71-90	0.01	0.02
Total	190.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ACCESSIBILITY MAP OF GULMARG WILDLIFE SANCTUARY



DRAINAGE MAP OF GULMARG WILDLIFE SANCTUARY



HIRPORA WILDLIFE SANCTUARY

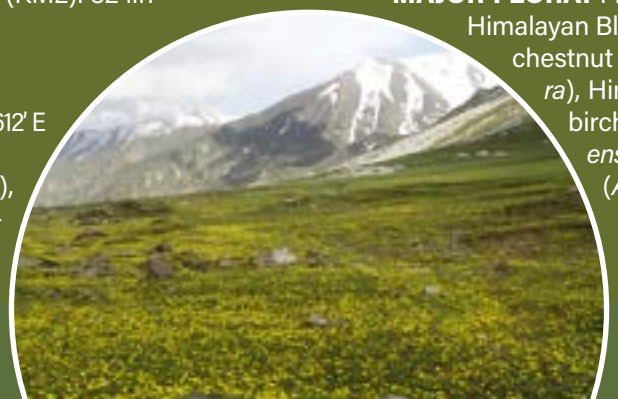
Hirpora Wildlife Sanctuary has been named after the Village Hirpora, a small hamlet that lies on the north eastern boundary of the protected area It is located about 70km South of Srinagar city, Shopian District of the Kashmir Valley. Hirpora Wildlife Sanctuary is famous for harboring the Markhoor. Around 20 species of mammals, including some rare ones are found within the limits of Hirpora Wildlife Sanctuary. The Hirpora forests are blessed with numerous plant species of great medicinal value.

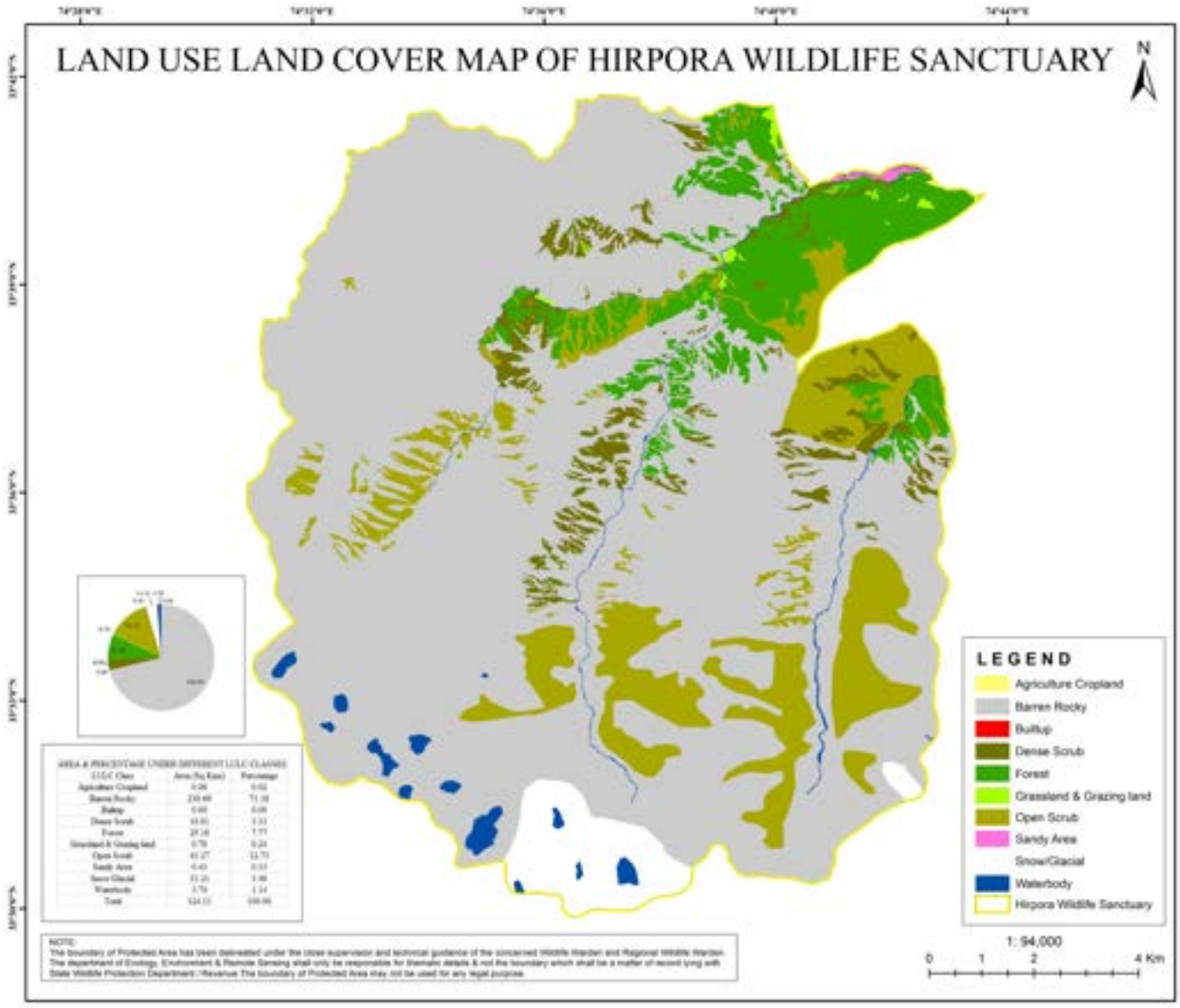
SRO/NOTIFICATION NO: SRO 153 dated 19.03.1987
NOTIFIED AREA (KM2): 341.25 **GIS AREA** (KM2): 324.11
PERIMETER (KMS): 88.20
ALTITUDE RANGE (M): 2300 - 4610
GEO - COORDINATES:
E 33° 29.912' N - 33° 41.770' N, 74° 30.909' E - 74° 43.612' E

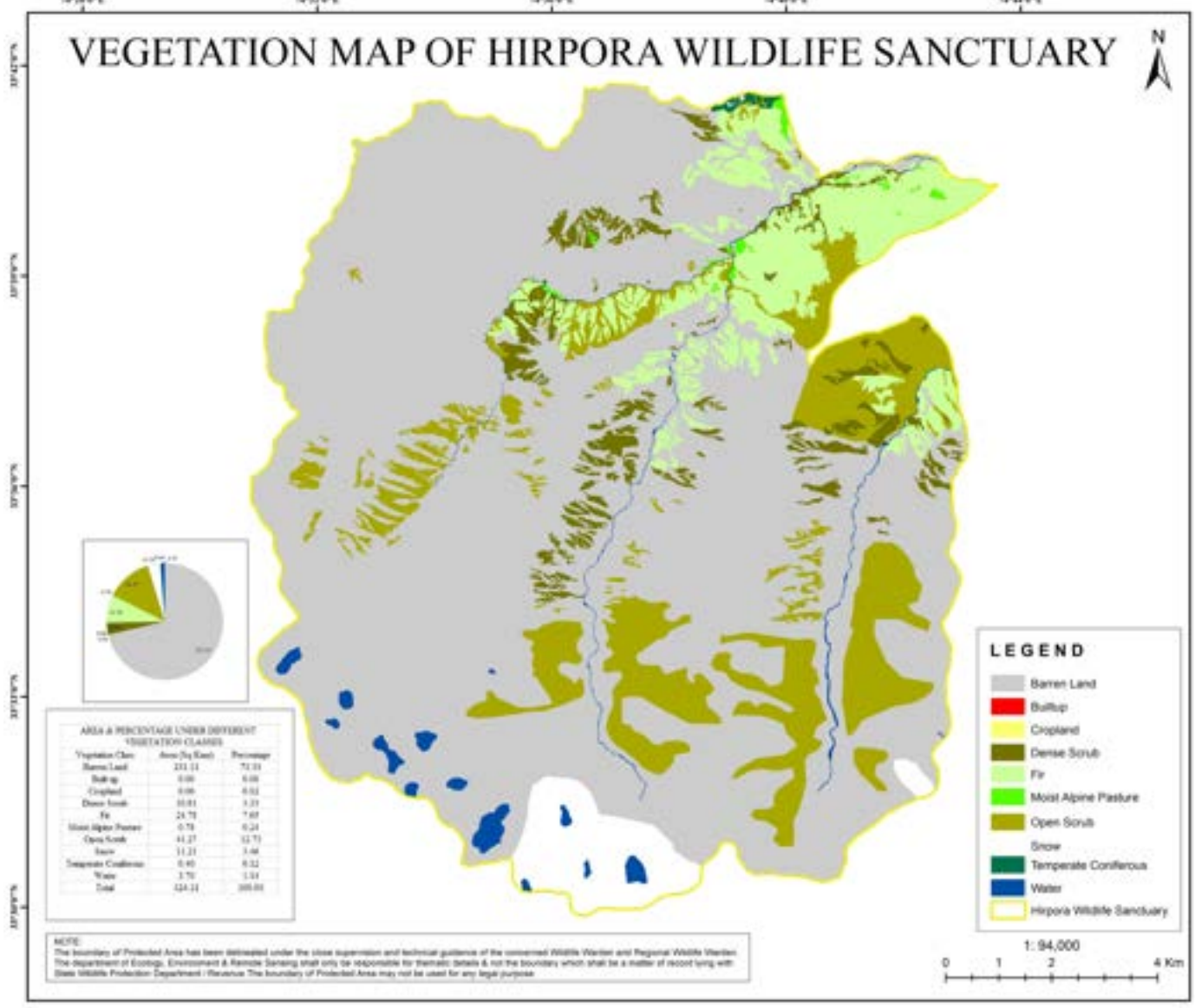
MAJOR FAUNA: Markhor (*Capra falconeri*), Himalayan Brown Bear (*Ursus arctos*), Kashmir Musk Deer (*Moschus cupreus*), Common leopard (*Panthera pardus*), Asiatic Black Bear (*Ursus thibetanus*), Rhesus Macaque (*Macaca mulatta*), Jungle Cat (*Felis chaus*), Red Fox (*Vulpes vulpes*) and Tibetan Wolf (*canis lupus* filchneri).

MAJOR AVI FAUNA: Black eared kite (*Milvus migrans*), Blue Rock Pigeon (*Columba livia*), Kashmir roller (*Coracias garrulus semenovi*), Eurasian Cuckoo (*Cuculus canorus*), Kashmir Flycatcher (*Ficedula subrubra*), Indian myna (*Acridotheres tristis*).

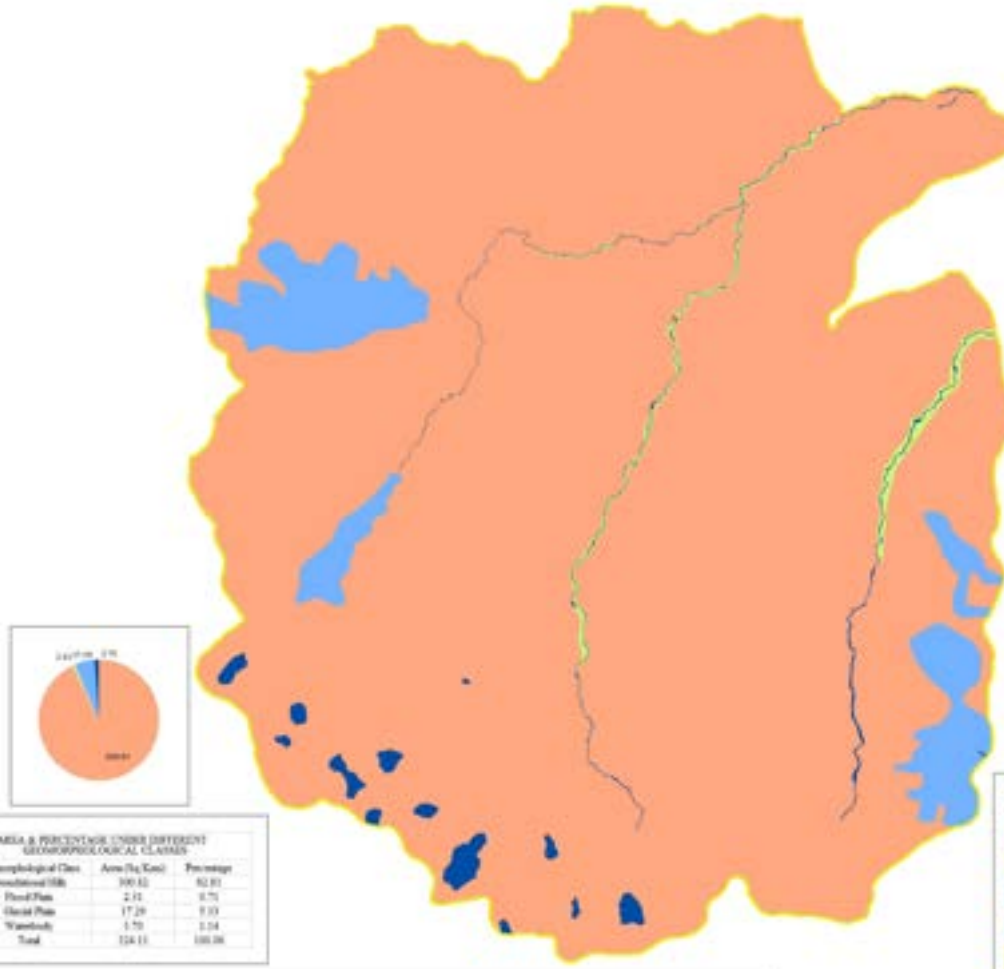
MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Black mulberry (*Morus nigra*), Himalayan elm (*Ulmus wallichiana*), Himalayan birch (*Betula utilis*), Nepal Dock (*Rumex nepalensis*), Dandelion (*Taraxacum officinale*), Kuth (*Aucklandia costus*).




LAND USE LAND COVER MAP OF HIRPORA WILDLIFE SANCTUARY
N
LEGEND
Agriculture Cropland
Barren Rocky
Builtup
Dense Scrub
Forest
Grassland & Grazing land
Open Scrub
Sandy Area
Snow/Glacial
Waterbody
Hirpora Wildlife Sanctuary
1: 94,000
0 1 2 4 Km


VEGETATION MAP OF HIRPORA WILDLIFE SANCTUARY
N
LEGEND
Barren Land
Builtup
Cropland
Dense Scrub
Fir
Moist Alpine Pasture
Open Scrub
Snow
Temperate Coniferous
Water
Hirpora Wildlife Sanctuary
1: 94,000
0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF HIRPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

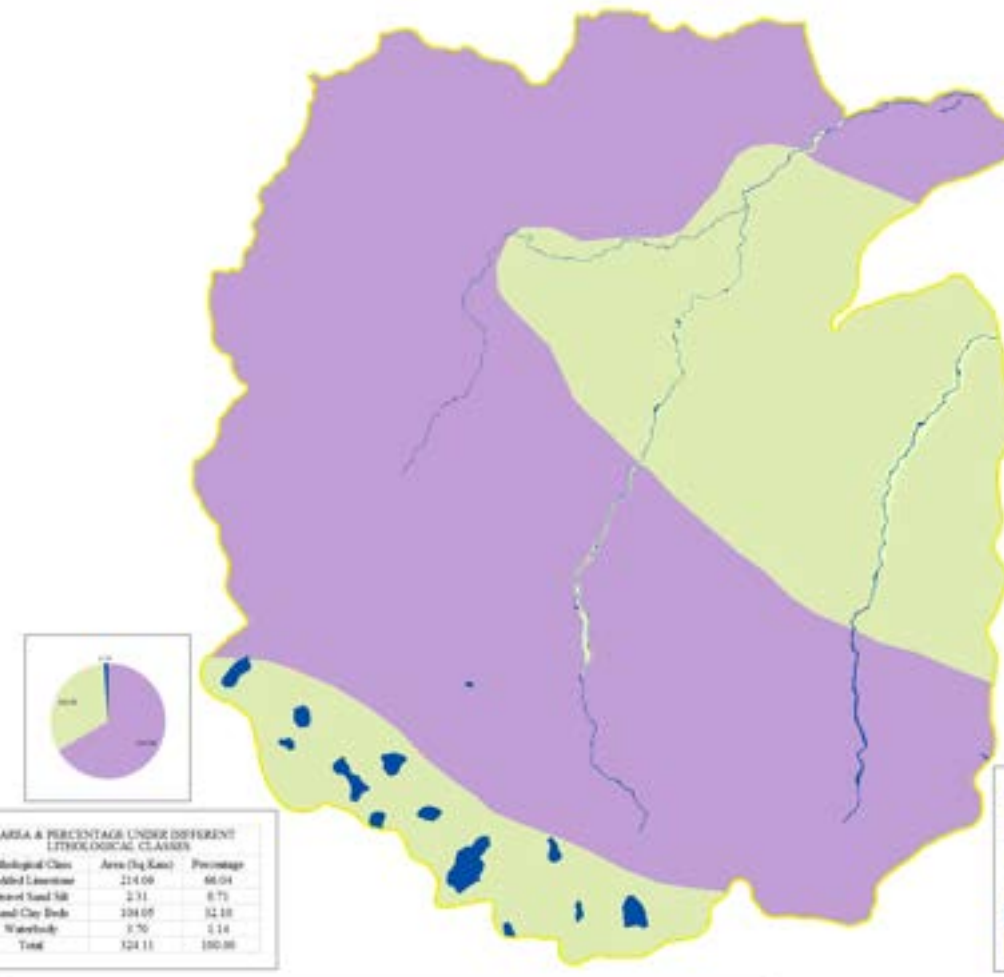
Geomorphological Class	Area (Sq.Kms)	Percentage
Denudational Hills	100.81	82.81
Flood Plain	2.11	0.71
Glacial Plain	17.29	9.93
Waterbody	1.70	1.14
Total	124.11	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Denudational Hills
- Flood Plain
- Glacial Plain
- Waterbody
- Hirpora Wildlife Sanctuary

1: 94,000
0 1 2 4 Km

LITHOLOGICAL MAP OF HIRPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

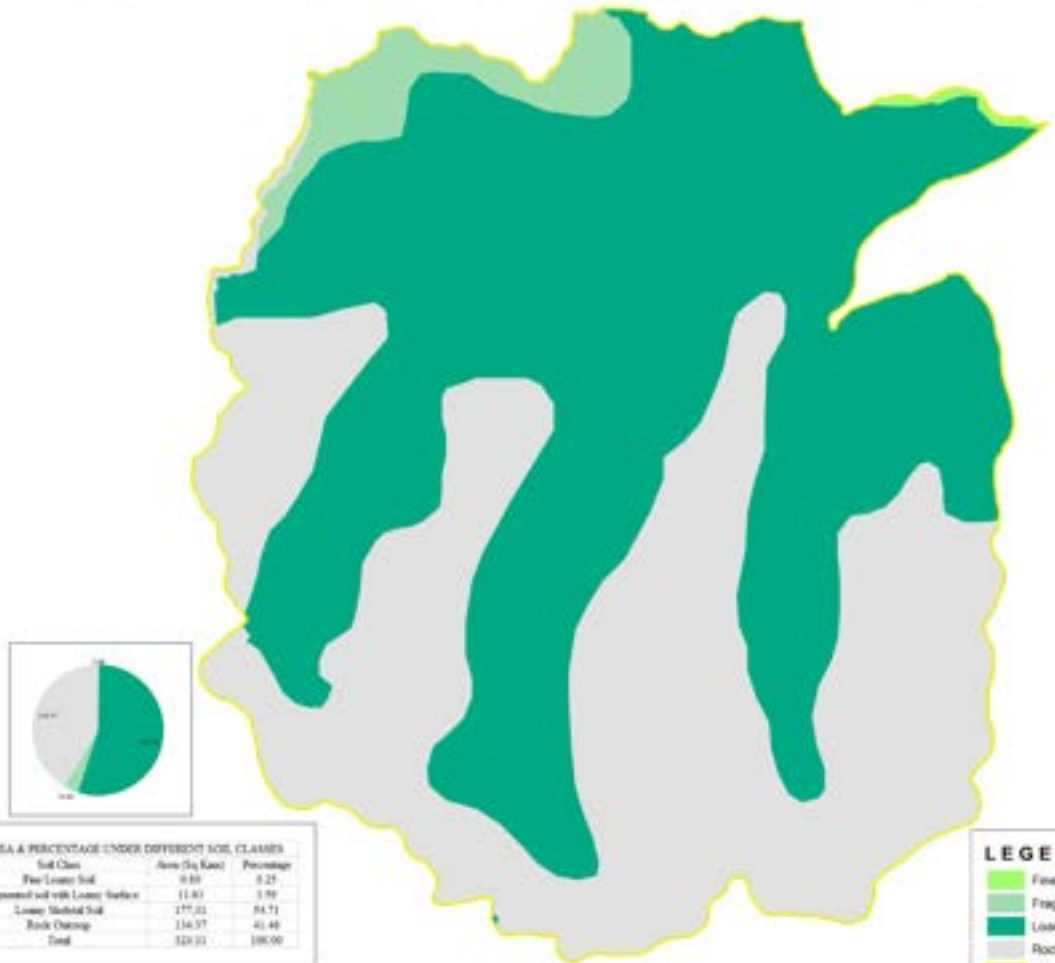
Lithological Class	Area (Sq.Kms)	Percentage
Bedded Limestone	214.09	66.04
Gravel Sand Silt	2.31	0.71
Sand Clay Beds	104.05	32.10
Waterbody	3.70	1.14
Total	324.11	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Bedded Limestone
- Gravel Sand Silt
- Sand Clay Beds
- Waterbody
- Hirpora Wildlife Sanctuary

1: 94,000
0 1 2 4 Km

SOIL MAP OF HIRPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq.Kms)	Percentage
Fine Loamy Soil	0.89	0.25
Fragmented soil with Loamy Surface	11.83	3.59
Loamy Skeletal Soil	177.31	54.71
Rock Outcrop	134.37	41.46
Total	324.31	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

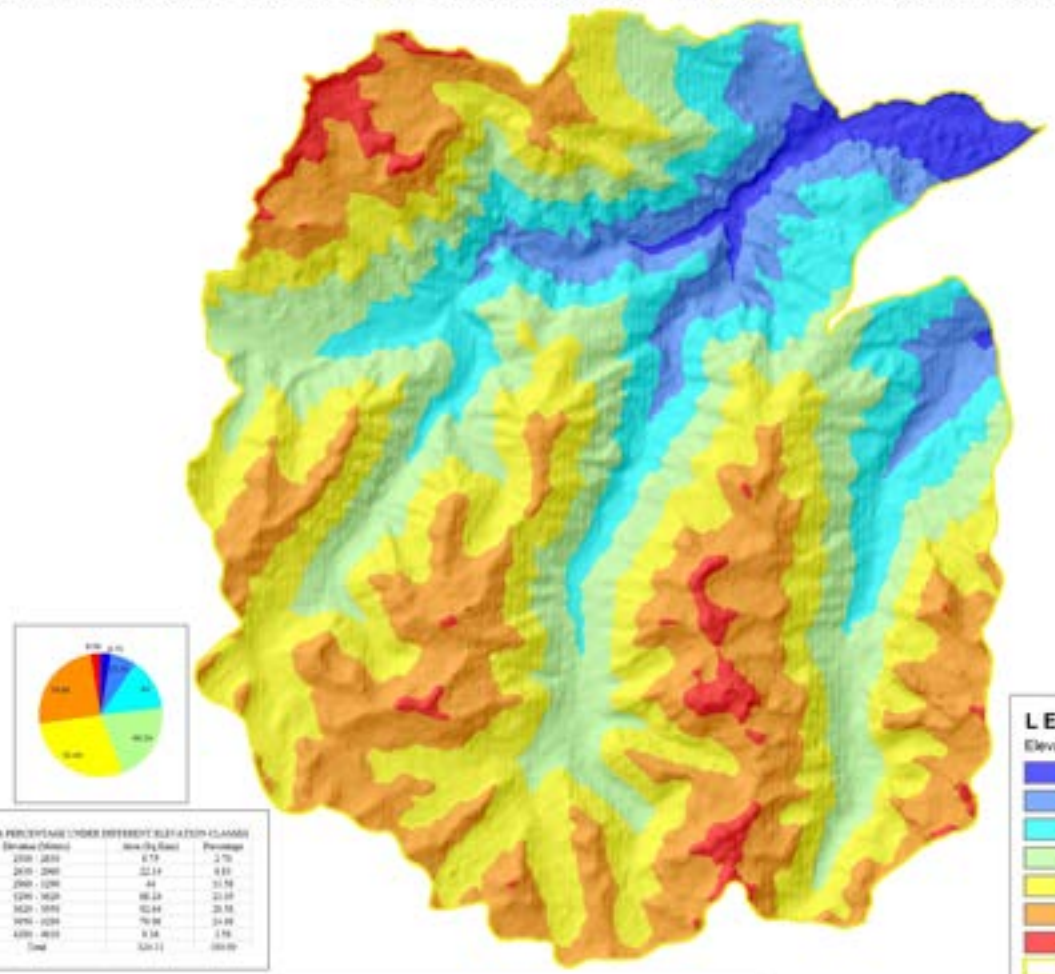
LEGEND

- Fine Loamy Soil
- Fragmented soil with Loamy Surface
- Loamy Skeletal Soil
- Rock Outcrop
- Hirpora Wildlife Sanctuary

1: 94,000

0 1 2 4 Km

ELEVATION MAP OF HIRPORA WILDLIFE SANCTUARY



NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND

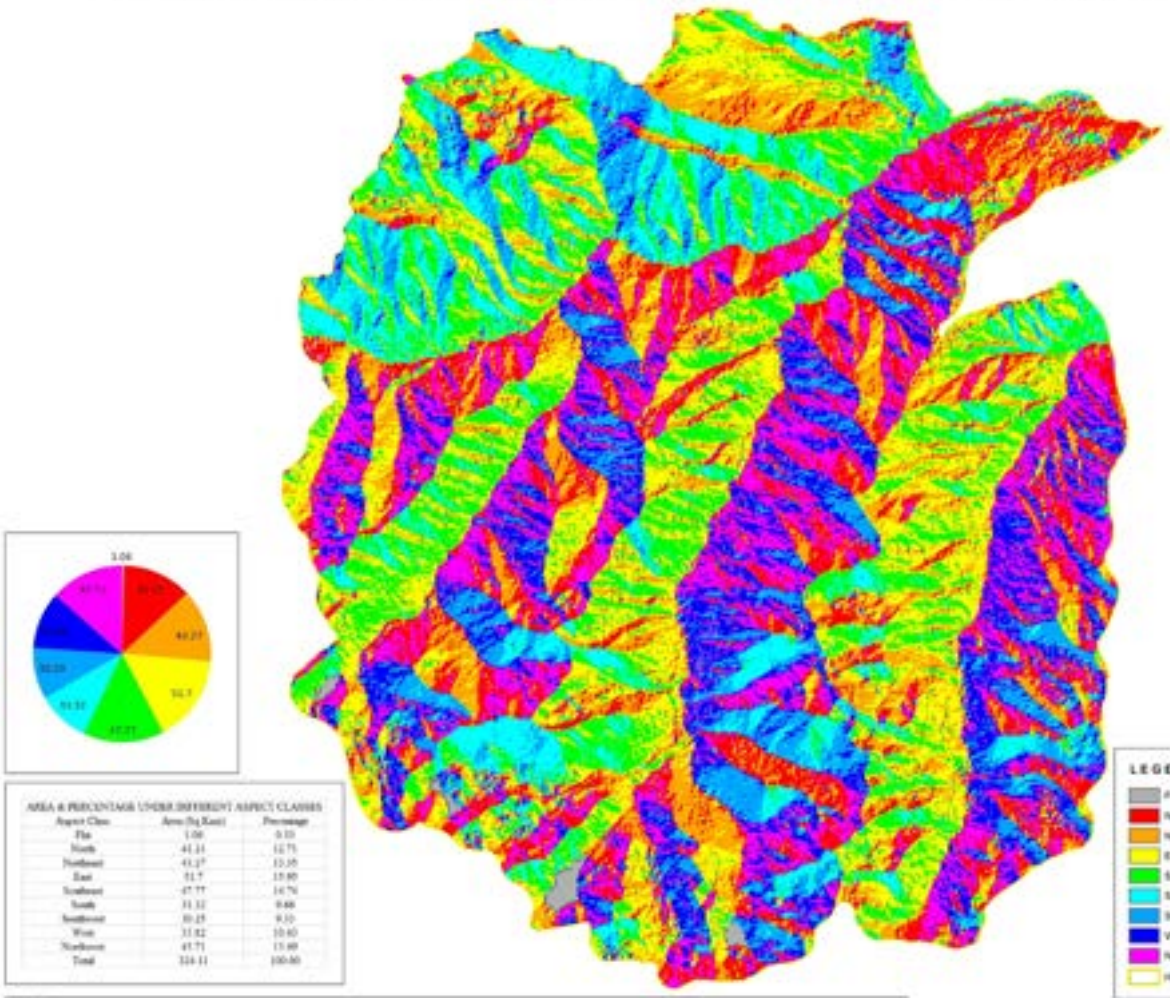
Elevation (m)

- 2300 - 2630
- 2630 - 2960
- 2960 - 3290
- 3290 - 3620
- 3620 - 3950
- 3950 - 4280
- 4280 - 4610
- Hirpora Wildlife Sanctuary

1: 94,000

0 1 2 4 Km

ASPECT MAP OF HIRPORA WILDLIFE SANCTUARY

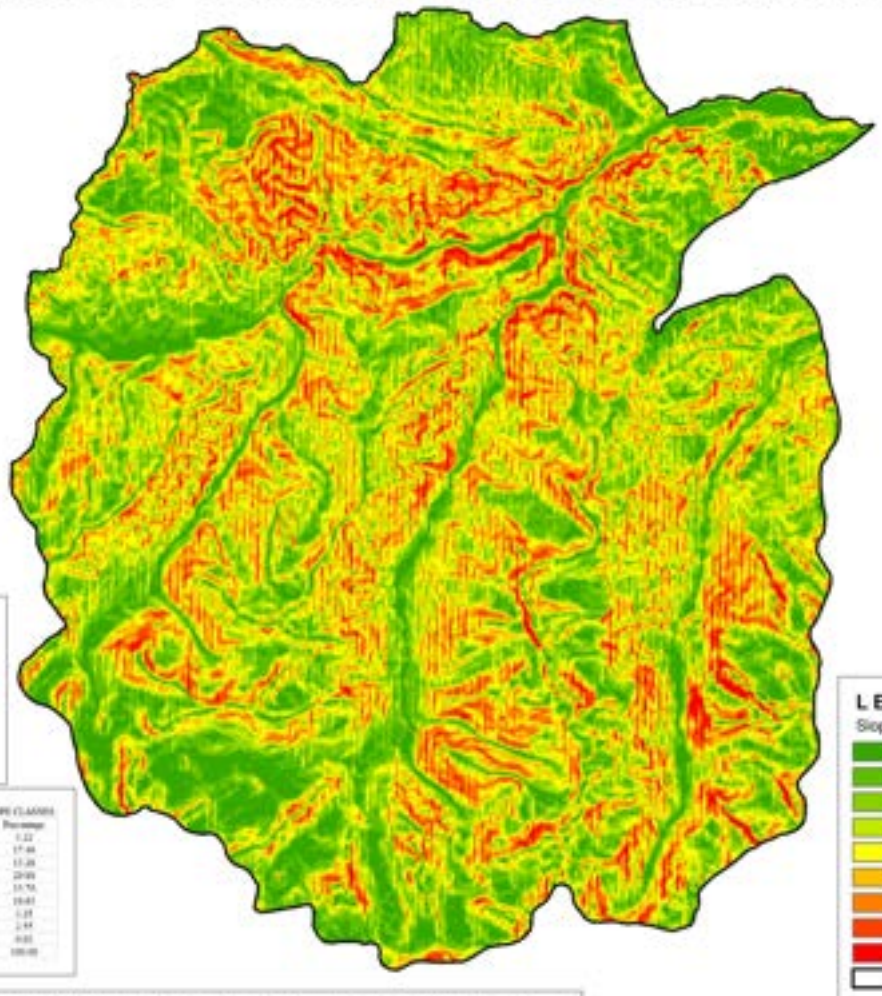


AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

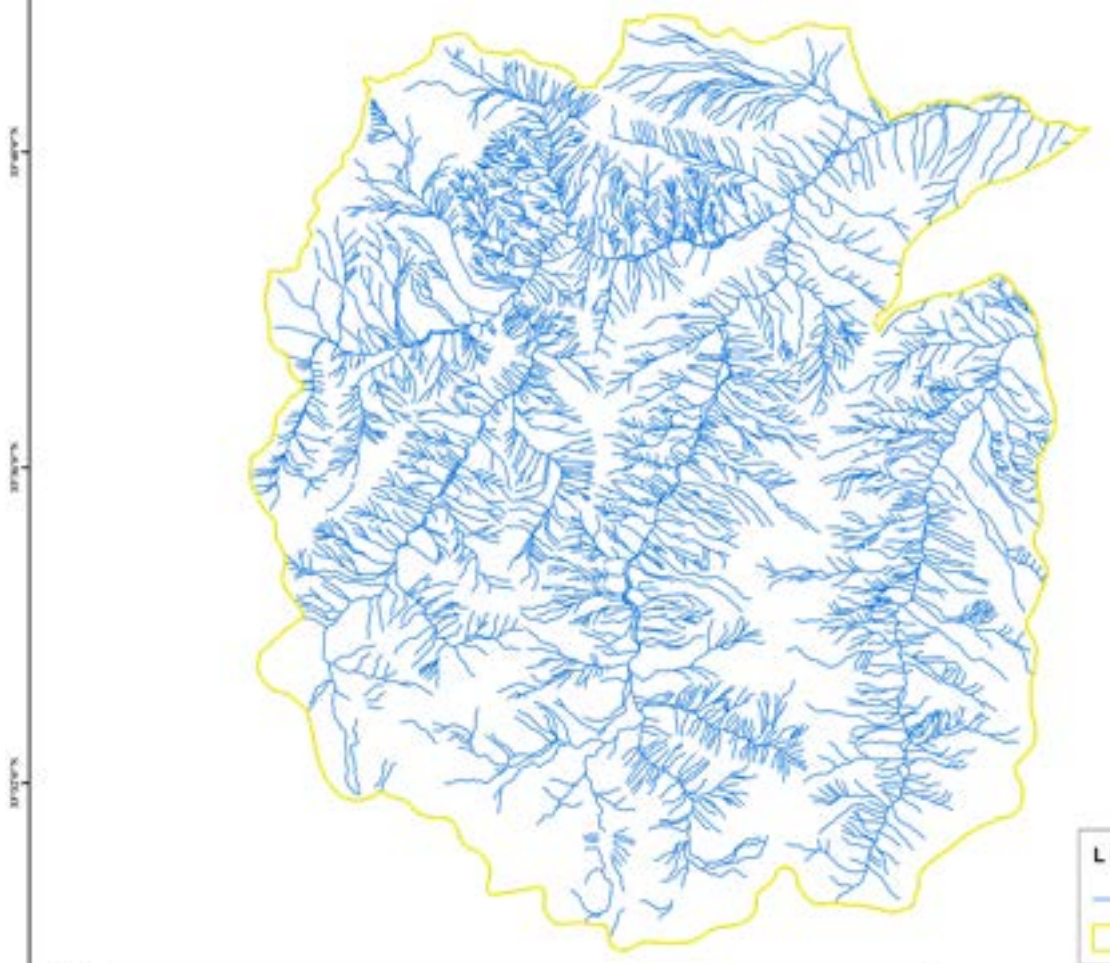
Aspect Class	Area (Sq.Kms)	Percentage
Flat	1.06	0.33
North	41.11	12.71
Northeast	43.17	13.35
East	51.7	15.95
Southeast	47.77	14.76
South	31.12	9.68
Southwest	31.15	9.31
West	33.52	10.43
Northwest	43.71	13.49
Total	324.11	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

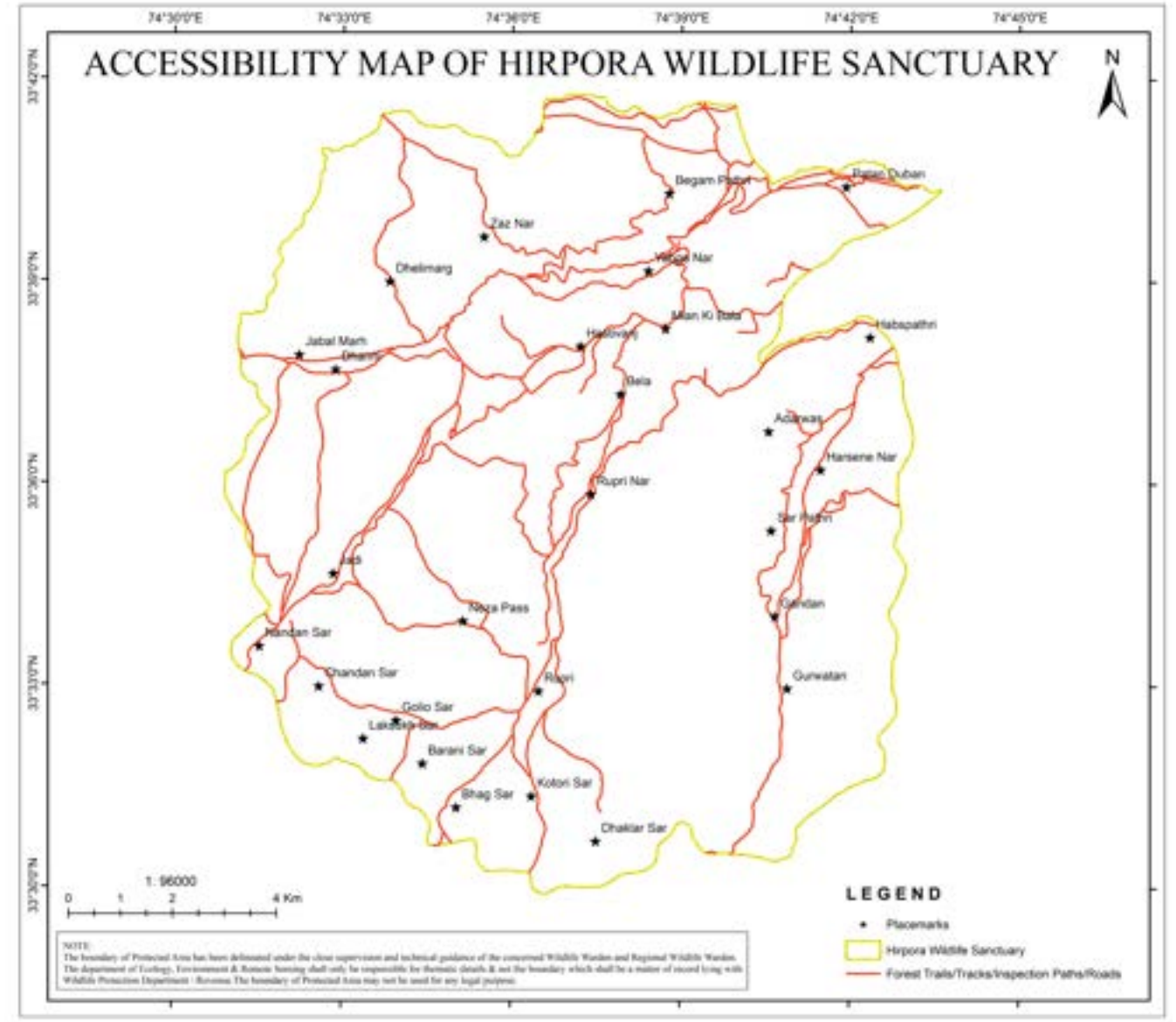
SLOPE MAP OF HIRPORA WILDLIFE SANCTUARY

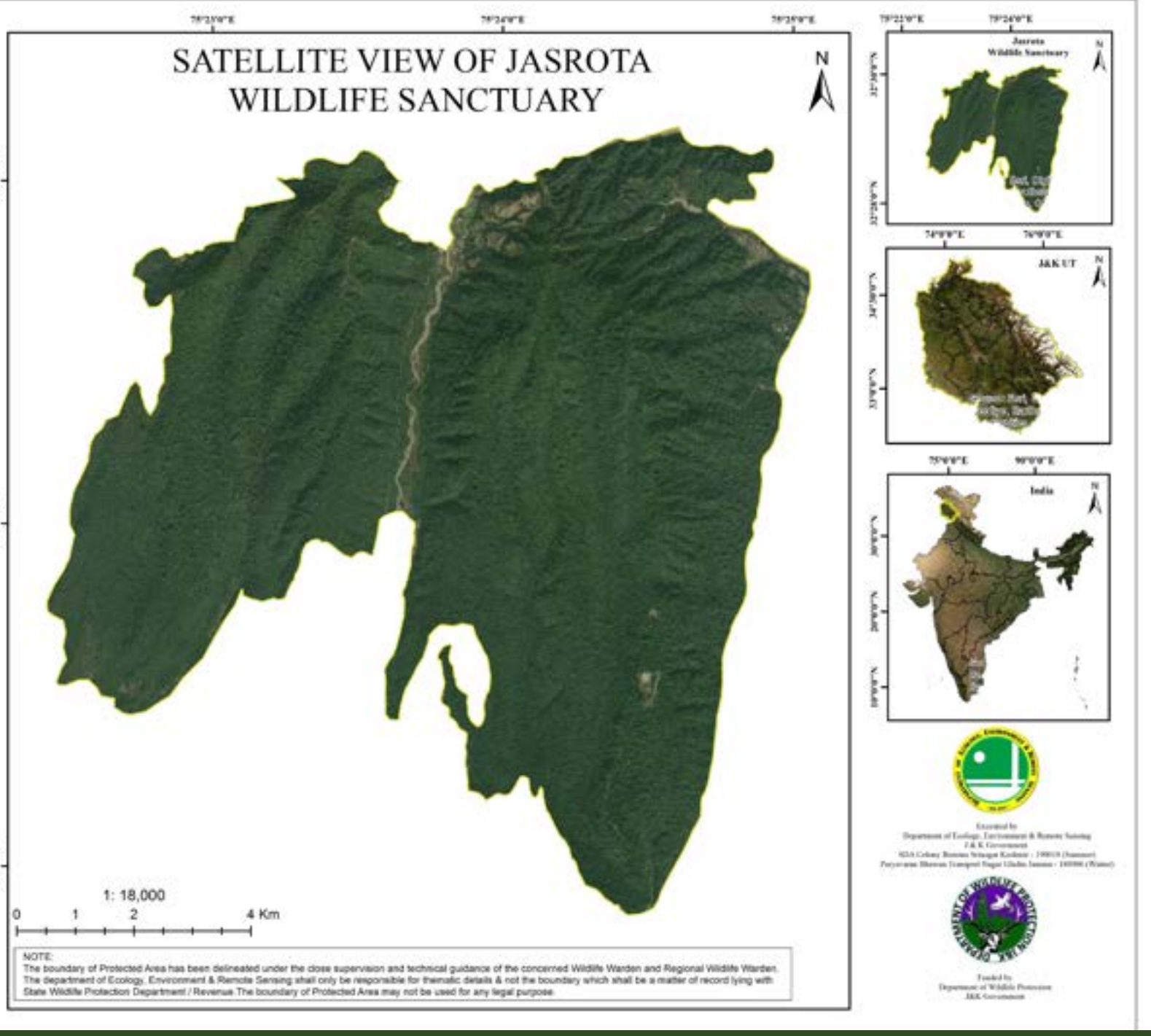


DRAINAGE MAP OF HIRPORA WILDLIFE SANCTUARY



ACCESSIBILITY MAP OF HIRPORA WILDLIFE SANCTUARY





JASROTA WILDLIFE SANCTUARY

Jasrota Wildlife Sanctuary is located at a distance of 75 kms from Jammu towards East, off the National High Way 1A. It supports a simple diversity of flora and fauna. There is a mixed species of birds as well as animal life. It was declared as Wildlife Sanctuary in 1987 and is under the administrative and technical control of Wildlife Protection Department, Jammu & Kashmir.

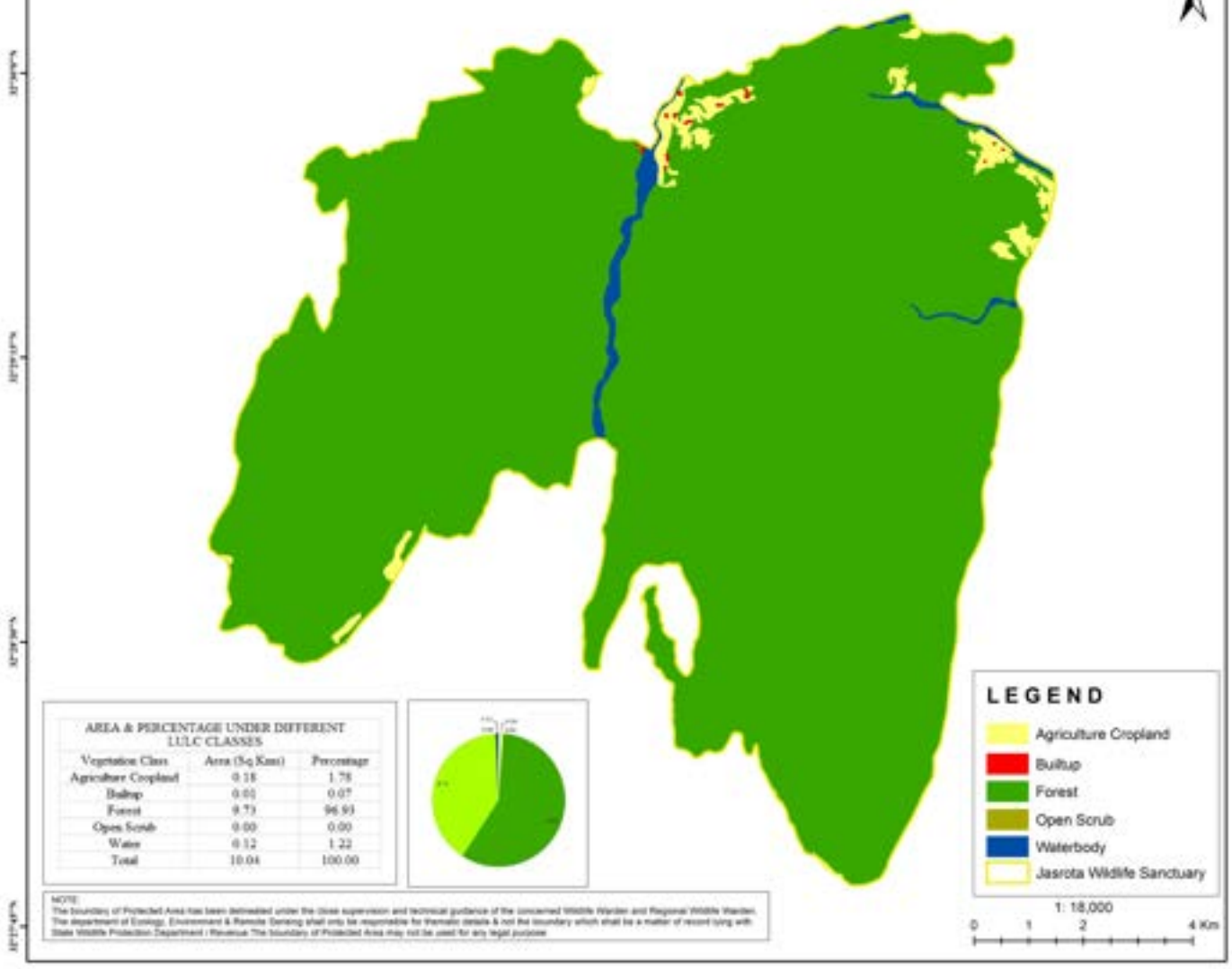
SRO/NOTIFICATION NO: SRO 151 dated 19.03.1987
NOTIFIED AREA (KM2): 10.04 **GIS AREA** (KM2): 10.04
PERIMETER (KMS): 21.58
ALTITUDE RANGE (M): 349 – 620
GEO - COORDINATES:
32° 27.850′ N - 32° 30.151′ N, 75° 22.421′ E - 75° 25.053′ E

MAJOR FAUNA: Barking Deer (*Muntiacus muntjak*), Chital (*Axis axis*), Indian crested Porcupine (*Hystrix indica*), Himalayan goral (*Nemorhaedus goral*), Grey Langur (*Semnopithecus entellus*), Indian Crested Porcupine (*Hystrix indica*), Common Leopard (*Panthera pardus*), Nilgai (*Boselaphus tragocamelus*), Indian Jackal (*Canis aureus*), jungle Cat (*Felis chaus*).

MAJOR AVI FAUNA: Common peafowl (*Pavo cristatus*), Red jungle fowl (*Gallus gallus*), Alexandrine Parakeet (*Psittacula eupatria*), Black kite (*Milvus migrans*), Blue Rock Pigeon (*Columba livia*), Common Kingfisher (*Alcedo atthis*), Common Myna (*Acridotheres tristis*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundo*), Griffon Vulture (*Gyps fulvus*).

MAJOR FLORA: Cutch tree (*Senegalia catechu*), Fig (*Ficus carica*), Wood Apple (*Aegle marmelos*), Chir pine (*Pinus roxburghii*), Siris tree (*Albizia lebbeck*), Indian jujube (*Ziziphus jujuba*), Neem tree (*Azadirachta indica*), Indian thorny bamboo (*Bambusa bambos*), Carrisse (*Carissa spinarum*), Hopseed bush (*Dodonaea viscosa*).

LAND USE LAND COVER MAP OF JASROTA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.18	1.78
Builtup	0.01	0.07
Forest	9.73	96.93
Open Scrub	0.00	0.00
Water	0.12	1.22
Total	10.04	100.00

NOTE:
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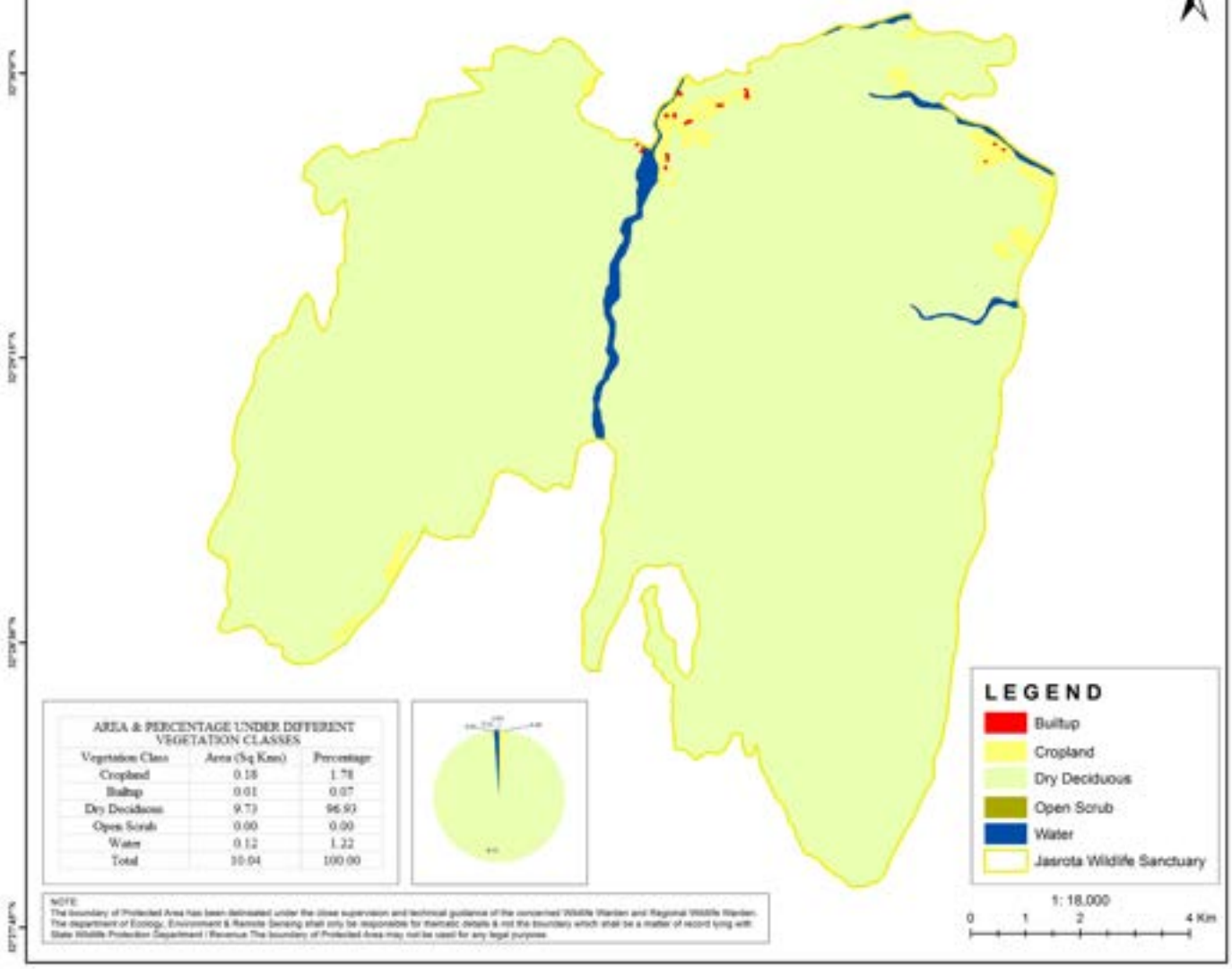
VEGETATION MAP OF JASROTA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Cropland	0.18	1.78
Builtup	0.01	0.07
Dry Deciduous	9.73	96.93
Open Scrub	0.00	0.00
Water	0.12	1.22
Total	10.04	100.00

NOTE:
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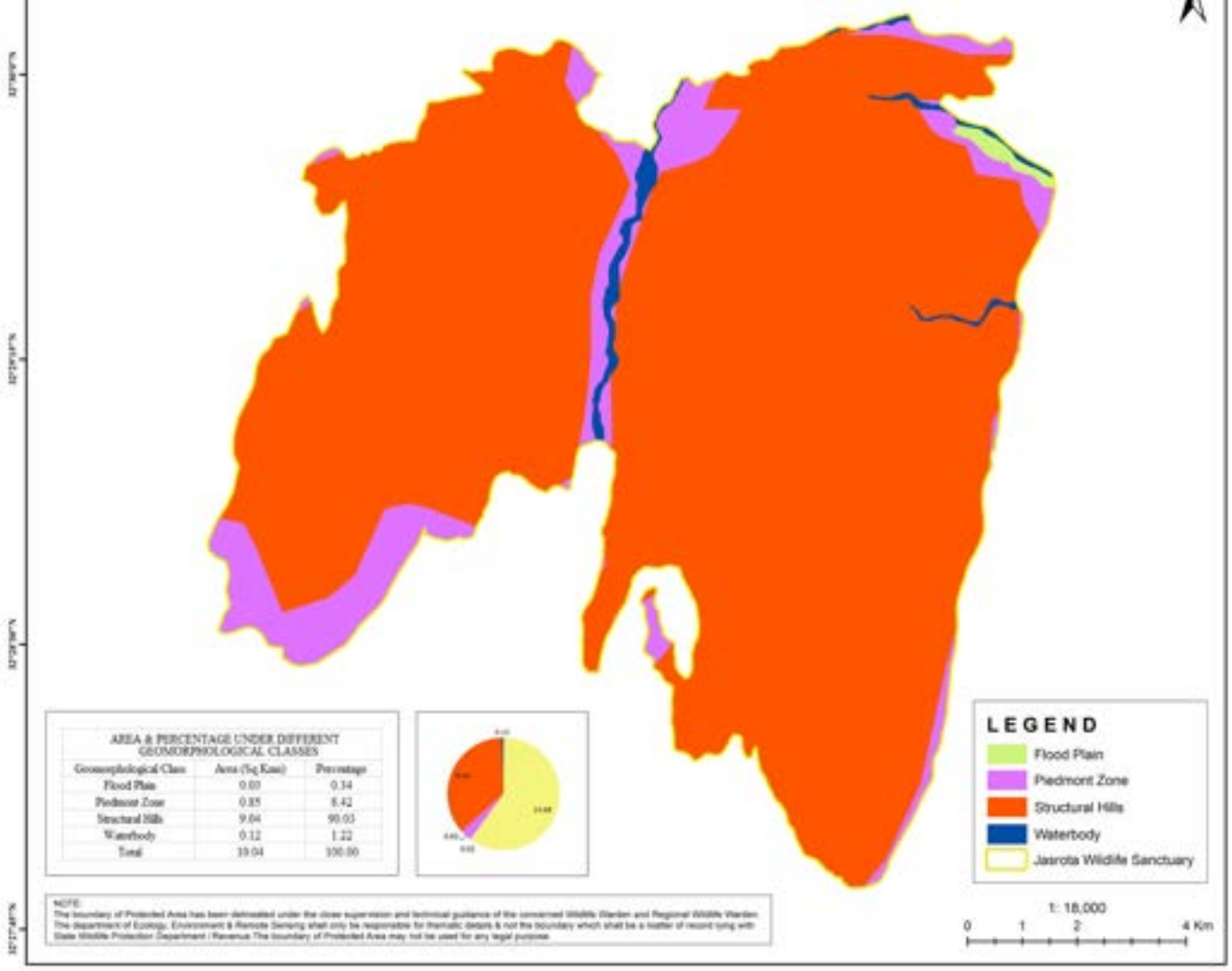
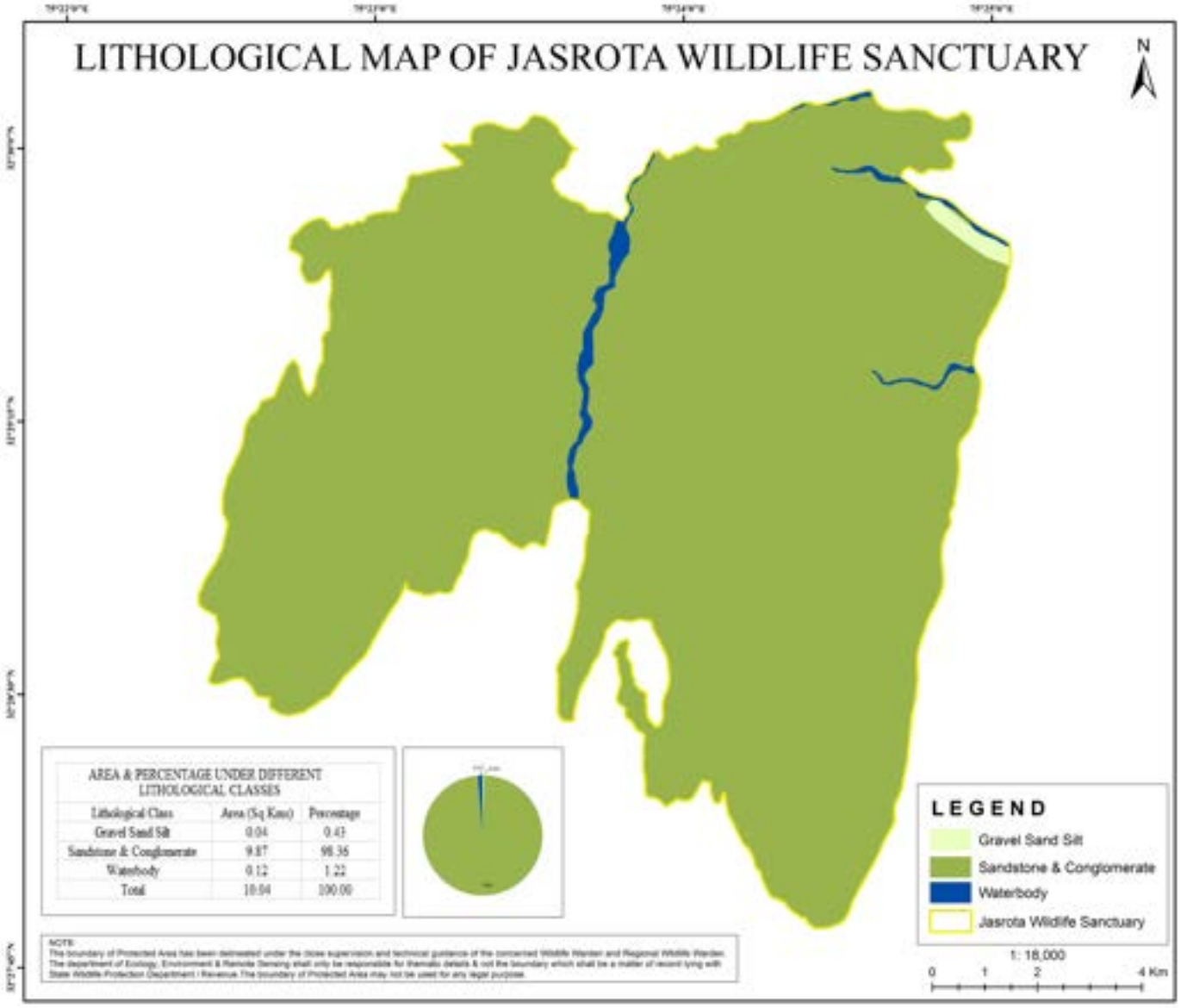
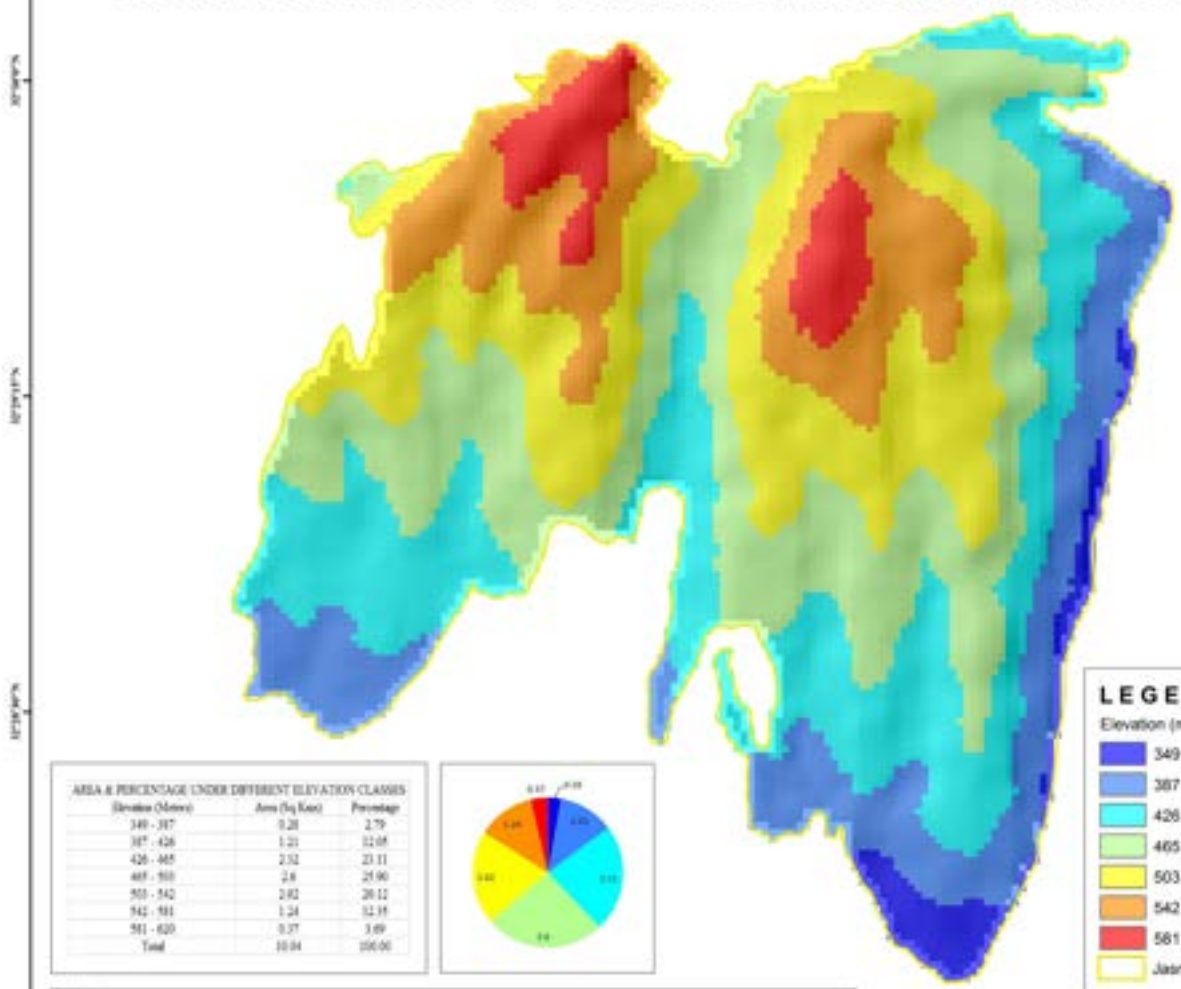
GEOMORPHOLOGICAL MAP OF JASROTA WILDLIFE SANCTUARY



LITHOLOGICAL MAP OF JASROTA WILDLIFE SANCTUARY



ELEVATION MAP OF JASROTA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

(Elevation (Metres)	Area (Sq Kms)	Percentage
349 - 387	0.28	2.79
387 - 426	1.21	12.05
426 - 465	2.32	23.11
465 - 503	2.6	25.90
503 - 542	2.02	20.12
542 - 581	1.24	12.35
581 - 620	0.37	3.69
Total	10.04	100.00

NOTE:
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LEGEND

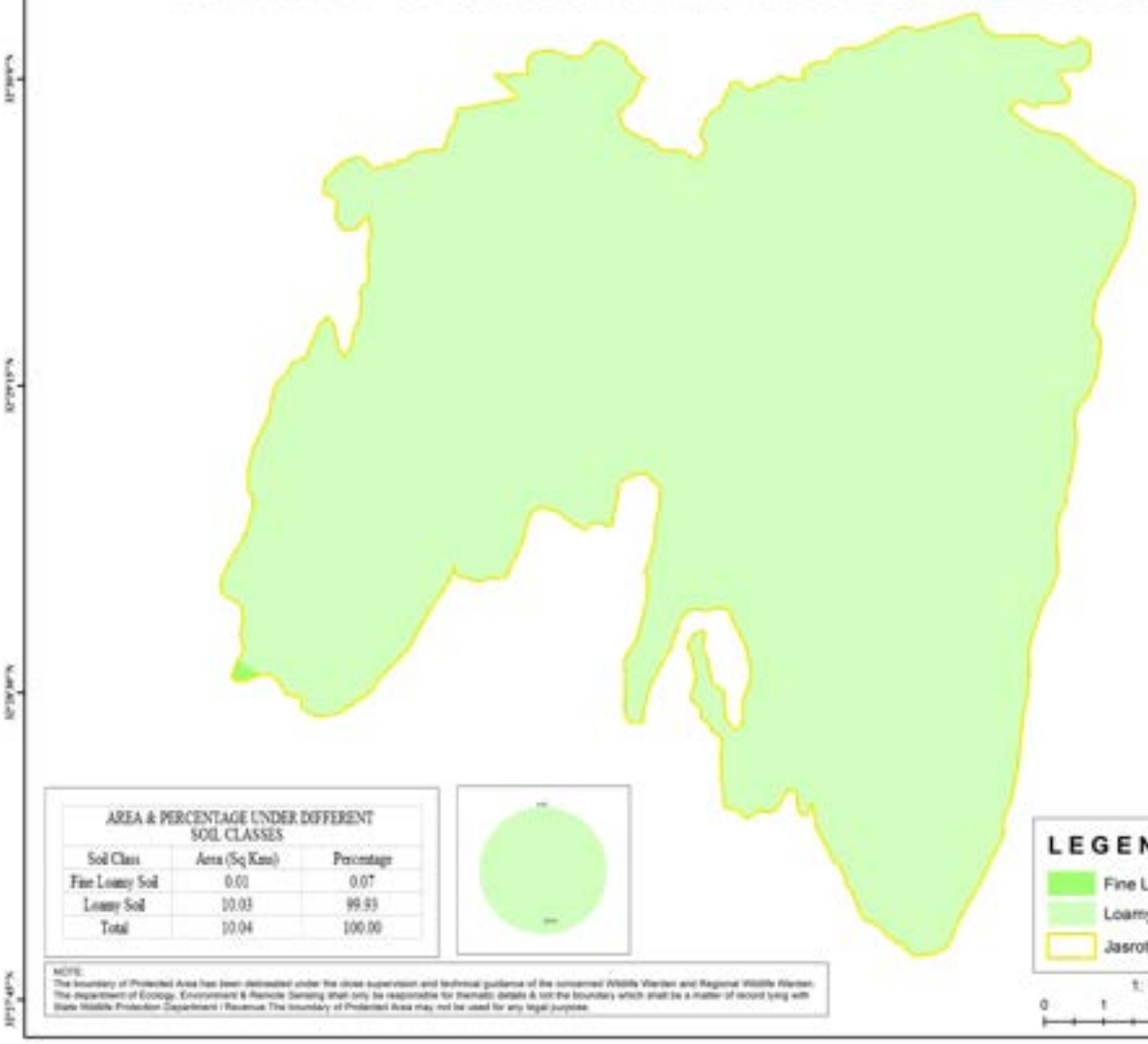
Elevation (m)

- 349 - 387
- 387 - 426
- 426 - 465
- 465 - 503
- 503 - 542
- 542 - 581
- 581 - 620
- Jasrota Wildlife Sanctuary

1: 18,000

0 1 2 4 Km

SOIL MAP OF JASROTA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	0.01	0.07
Loamy Soil	10.03	99.93
Total	10.04	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

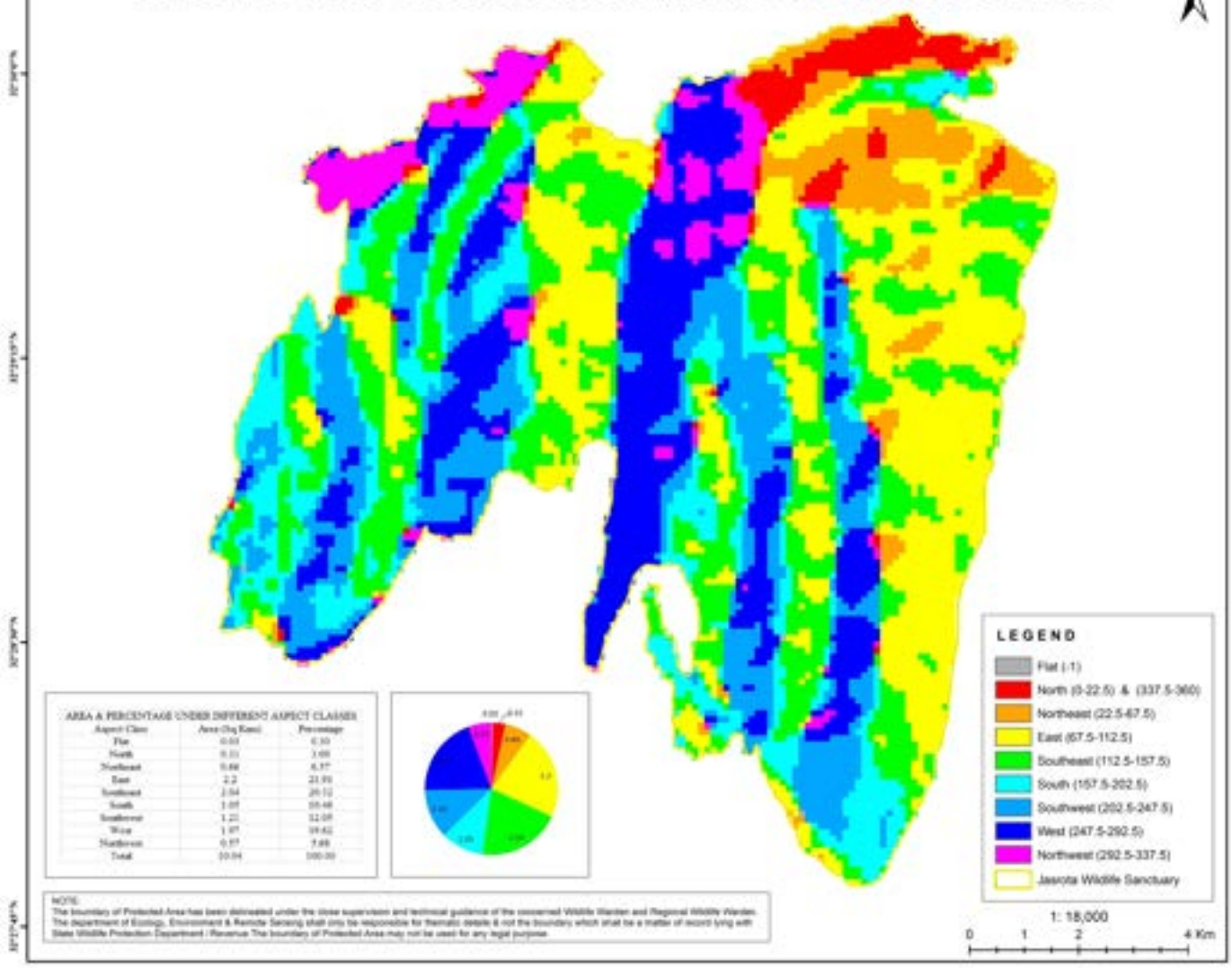
LEGEND

- Fine Loamy Soil
- Loamy Soil
- Jasrota Wildlife Sanctuary

1: 18,000

0 1 2 4 Km

ASPECT MAP OF JASROTA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq.Kms)	Percentage
Flat	0.03	0.30
North	0.31	3.09
Northeast	0.68	6.77
East	2.2	21.91
Southeast	2.04	20.32
South	1.05	10.46
Southwest	1.21	12.05
West	1.97	19.62
Northwest	0.57	5.68
Total	10.04	100.00

NOTE
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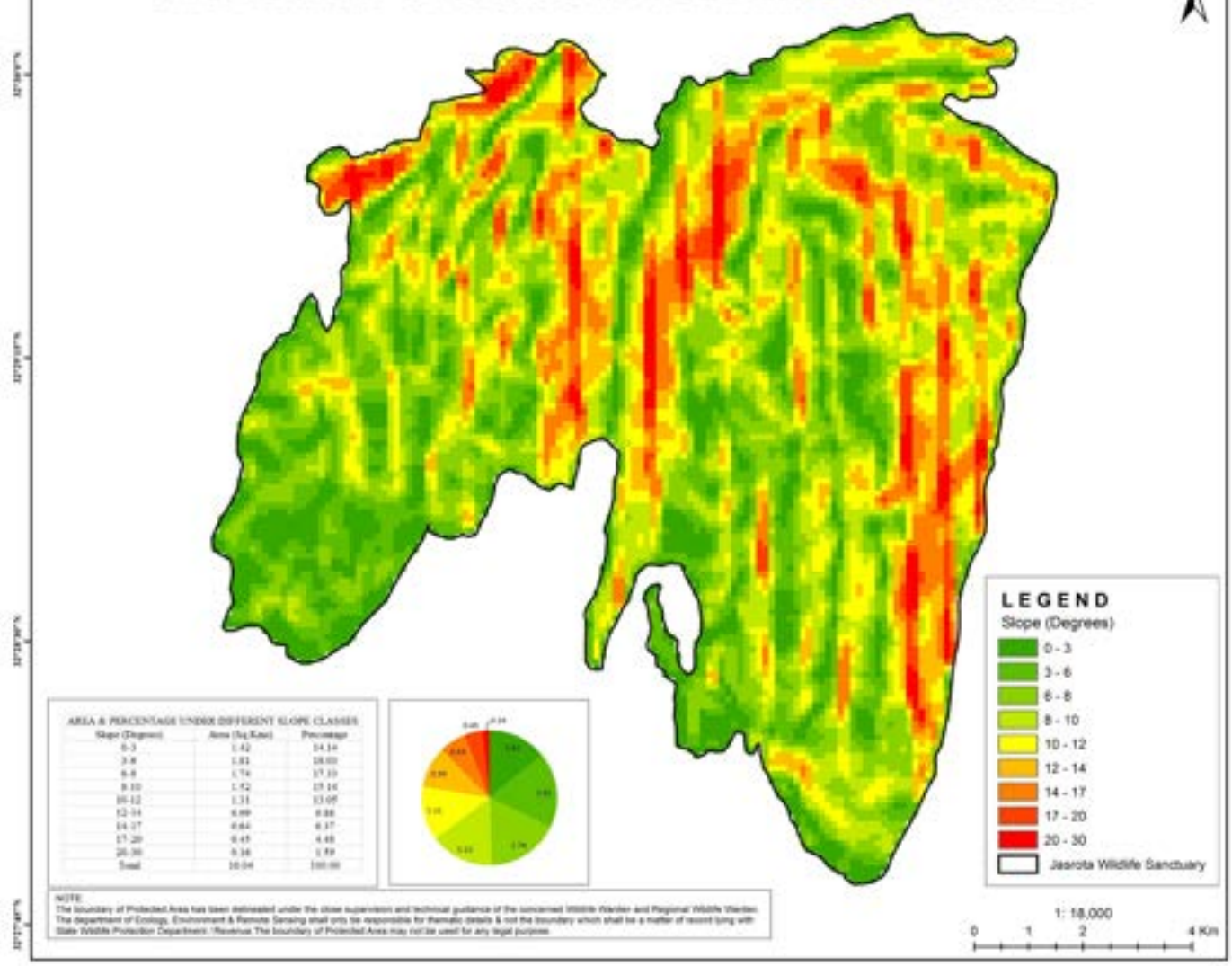
SLOPE MAP OF JASROTA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq.Kms)	Percentage
0-3	1.42	14.14
3-6	1.81	18.03
6-8	1.74	17.33
8-10	1.52	15.14
10-12	1.31	13.05
12-14	0.89	8.88
14-17	0.64	6.37
17-20	0.45	4.48
20-30	0.36	3.59
Total	10.04	100.00

NOTE
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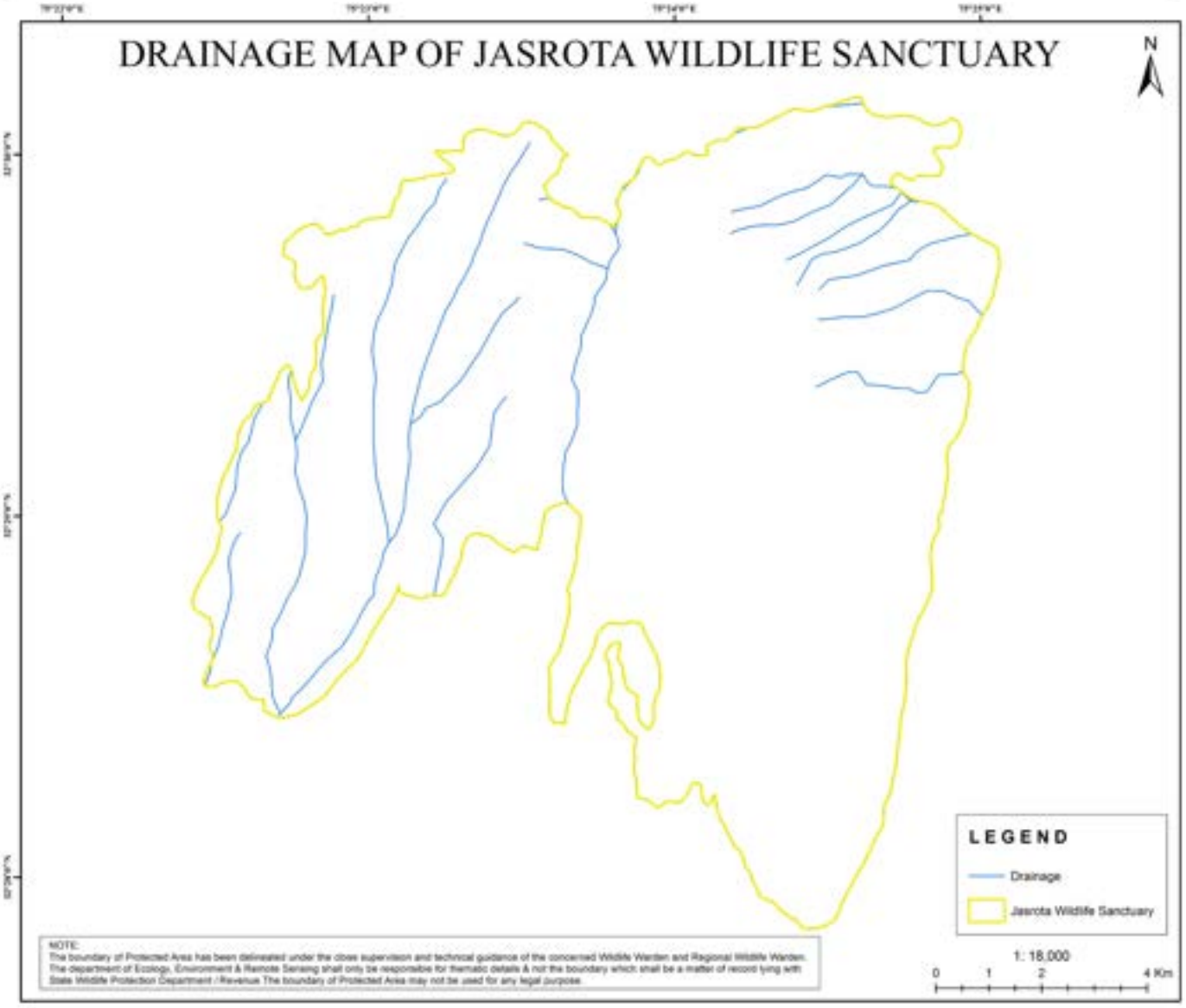
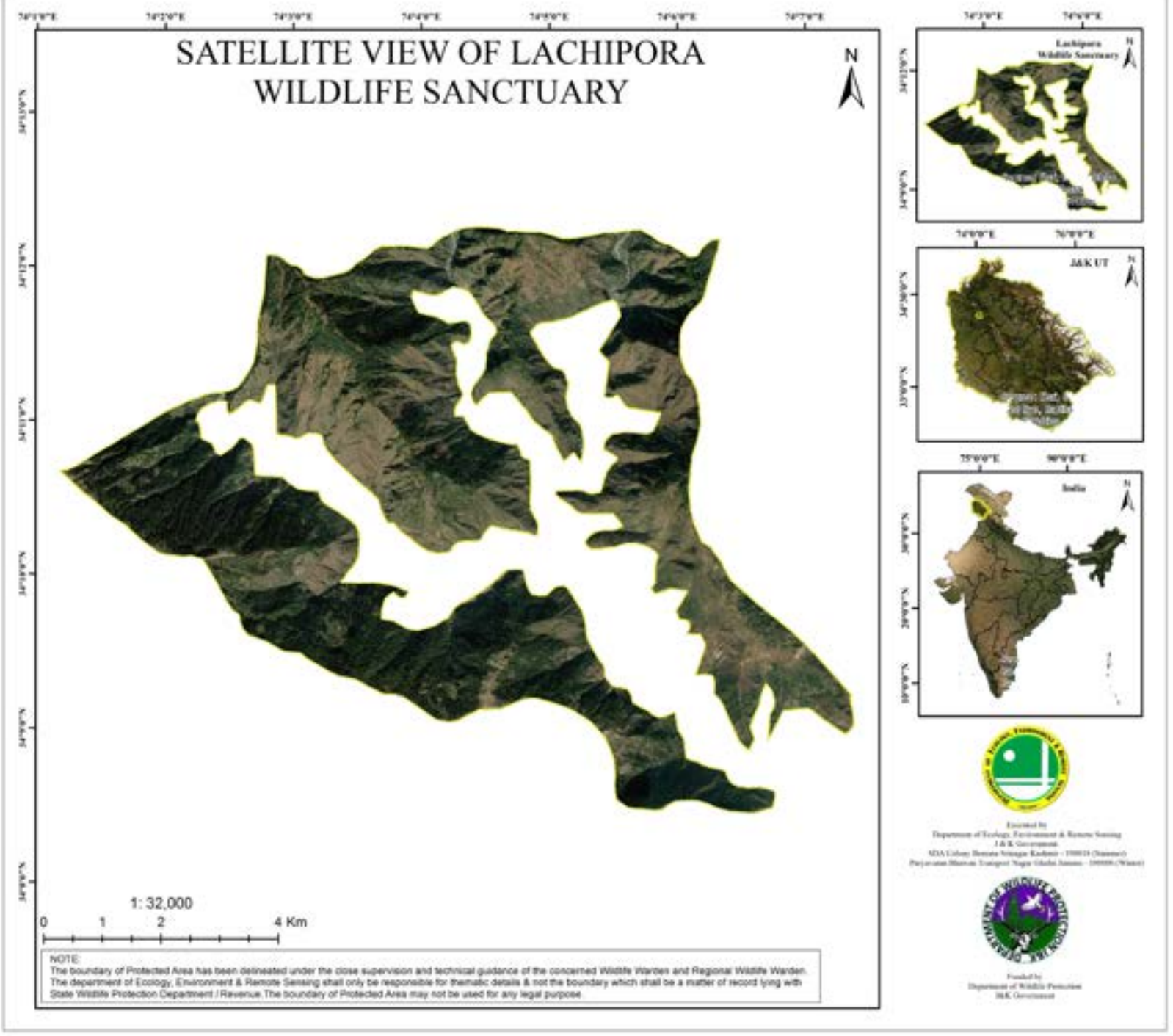
ACCESSIBILITY MAP OF JASROTA WILDLIFE SANCTUARY

DRAINAGE MAP OF JASROTA WILDLIFE SANCTUARY





LACHIPORA WILDLIFE SANCTUARY

Lachipora Wildlife Sanctuary has been named after the Village Lachipora near to the protected area. This sanctuary had been developed in order to safeguard Markhor, which is a specie of wild goat found in parts of Kashmir. Lachipora Wildlife Sanctuary supports rich vegetation which consists of coniferous forests, Broad leaved forests and meadows of Alpine pastures. Lachipora Wildlife Sanctuary is home to several species of birds especially the Western Tragopan, which has been categorized as a 'Vulnerable Species' by the International Union for Conservation of Nature and Natural Resources (IUCN).

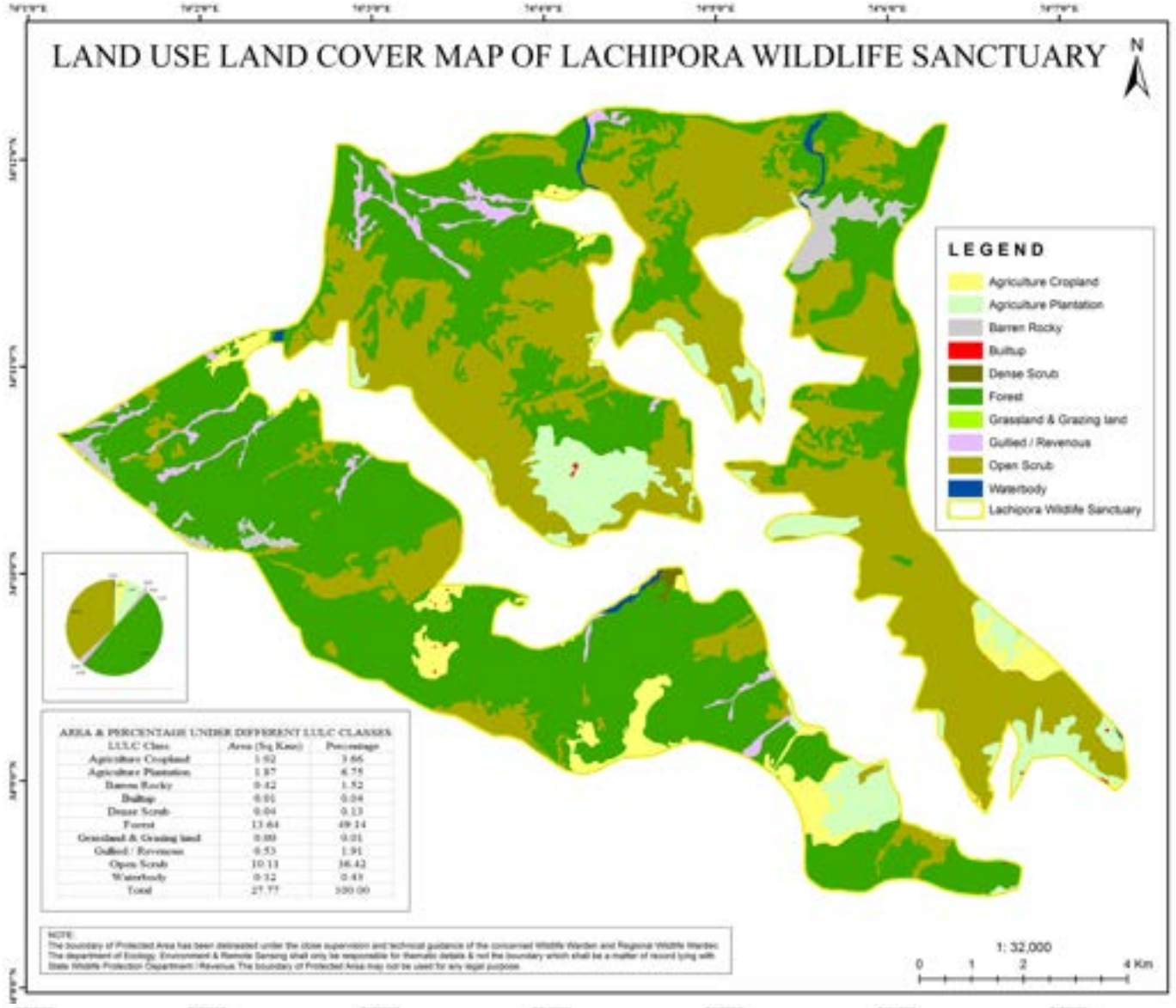
SRO/NOTIFICATION NO: SRO 150 dated 19.03.1987
NOTIFIED AREA (KM2): 80.00 **GIS AREA** (KM2): 27.77
PERIMETER (KMS): 70.09
ALTITUDE RANGE (M): 1300 - 3300
GEO - COORDINATES:
34° 8.486' N - 34° 12.260' N, 74° 1.227' E - 74° 7.427' E

MAJOR FAUNA: Markhor (*Capra falconeri*), Common Leopard (*Panthera pardus*), Yellow Throated Martin (*Martes flavigula*), Long Tailed Marmot (*Marmota caudata*), Kashmir Musk Deer (*Moschus cuprecus*), Himalayan Brown Bear (*Ursus arctos*), Himalayan Black Bear (*Ursus thibetanus*), Small Kashmir Flying Squirrel (*Eoglaucomys fimbriatus*) .

MAJOR AVI FAUNA: The yellow-billed blue magpie (*Urocissa flavirostris*), Cuckoo (*Cuculus canorus*), Western Tragopan (*Tragopan melanocephalus*), Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Golden Eagle (*Aquila chrysaetos*), Sparow Hawk (*Accipiter nisus melaschistos*), Snow Pigeon (*Columba leuconota*), Lesser pied kingfisher (*Ceryle rudis*), Nutcracker (*Nucifraga Caryocatactes*).

MAJOR FLORA: Deodar (*Cedrus deodara*), Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Parrotia (*Parrotiopsis jacquemontiana*),Cranberry bush (*Viburnum grandiflorum*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lycium*), Himalayan rhubarb (*Rheum webbianum*).

LAND USE LAND COVER MAP OF LACHIPORA WILDLIFE SANCTUARY

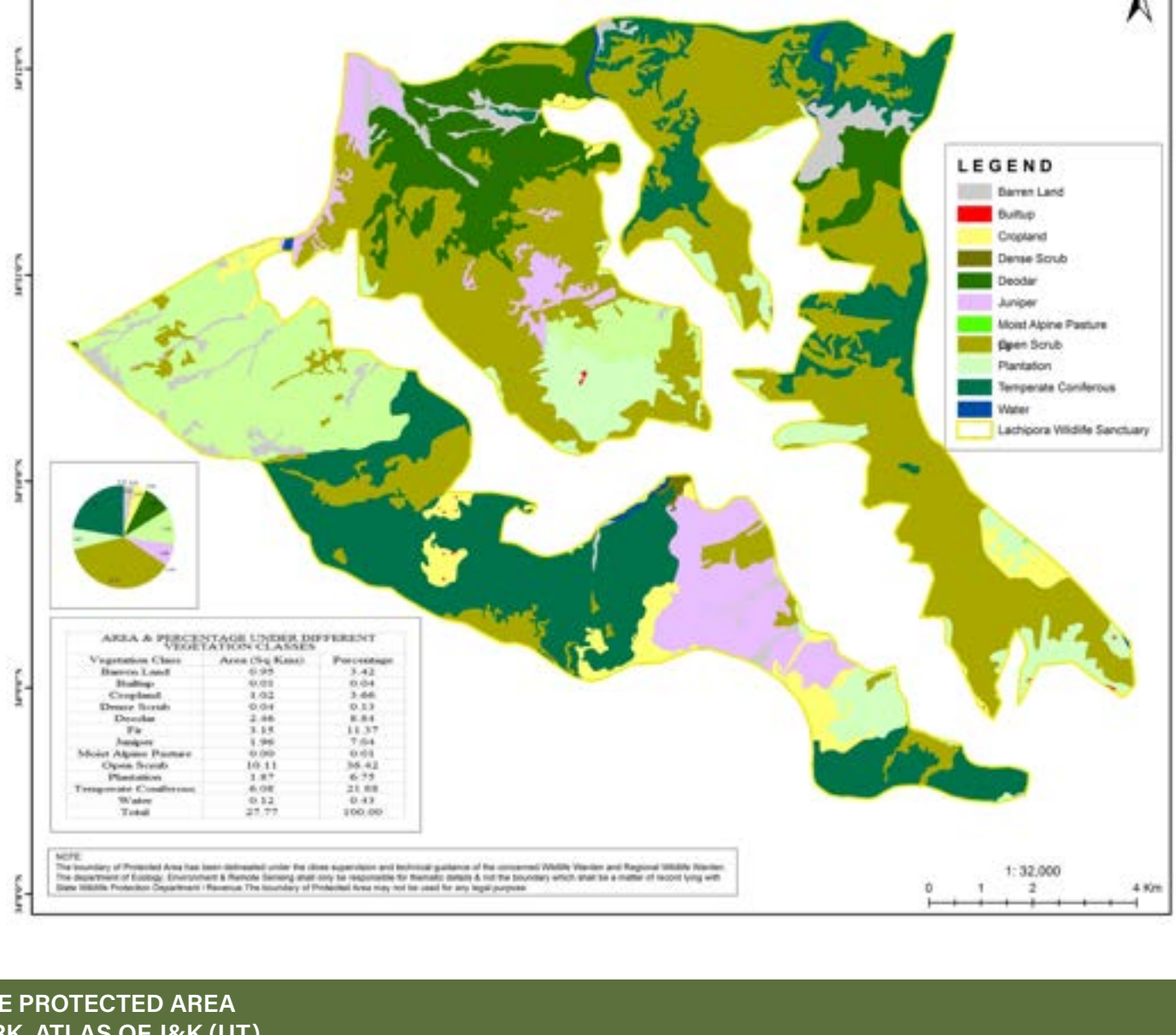


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	1.02	3.66
Agriculture Plantation	1.87	6.75
Barren Rocky	0.42	1.52
Builtup	0.01	0.04
Dense Scrub	0.04	0.13
Forest	13.64	49.14
Grassland & Grazing land	0.00	0.01
Gullied / Ravenous	0.53	1.91
Open Scrub	10.11	36.42
Waterbody	0.12	0.43
Total	27.77	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF LACHIPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	0.95	3.42
Builtup	0.01	0.04
Cropland	1.02	3.66
Dense Scrub	0.04	0.13
Deodar	2.46	8.84
Fir	3.15	11.37
Juniper	1.96	7.04
Moist Alpine Pasture	0.00	0.01
Open Scrub	10.11	36.42
Plantation	1.87	6.75
Temperate Coniferous	6.08	21.88
Water	0.12	0.43
Total	27.77	100.00

NOTE:
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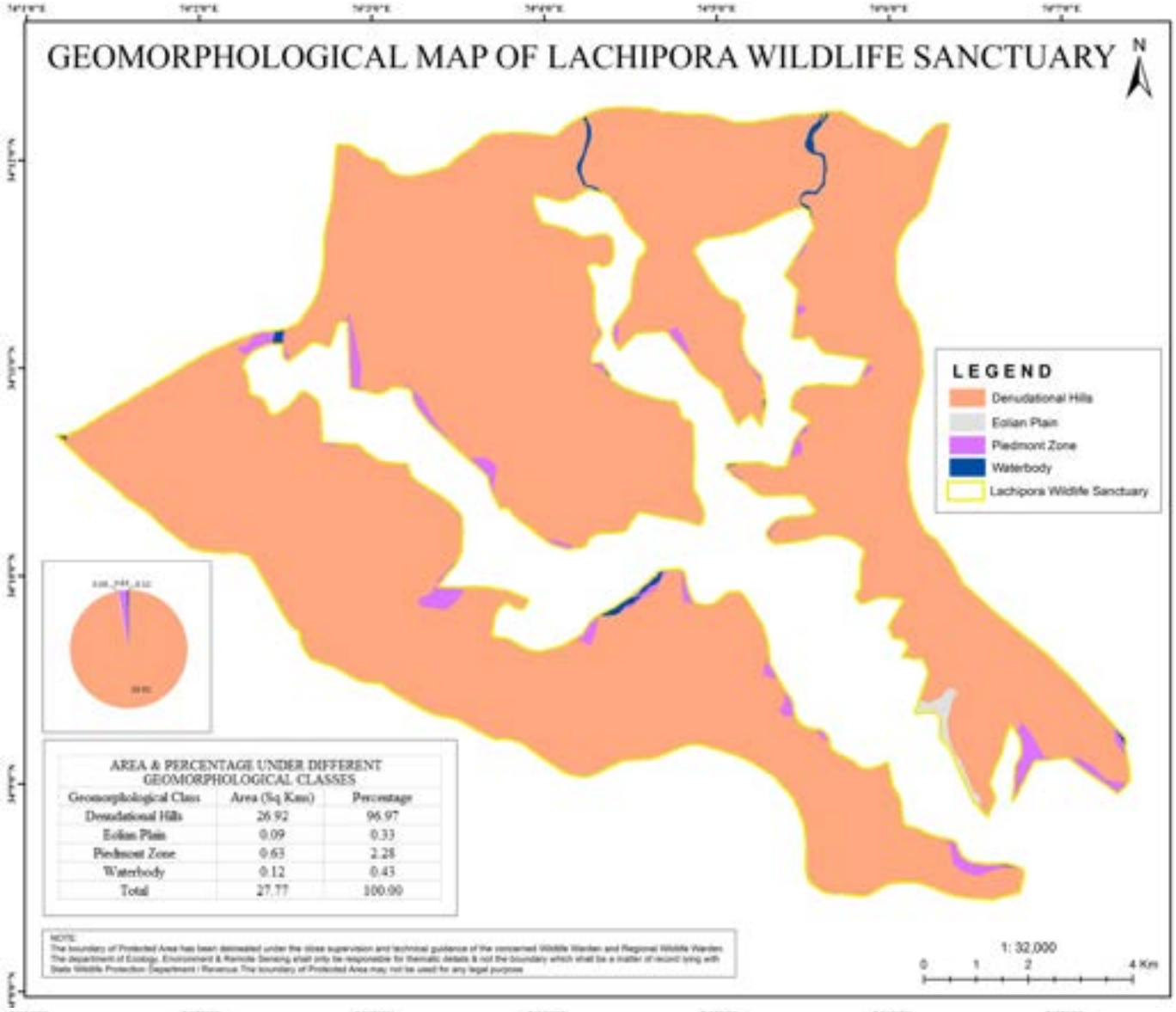
GEOMORPHOLOGICAL MAP OF LACHIPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	26.92	96.97
Eolian Plain	0.09	0.33
Piedmont Zone	0.63	2.28
Waterbody	0.12	0.43
Total	27.77	100.00

NOTE:
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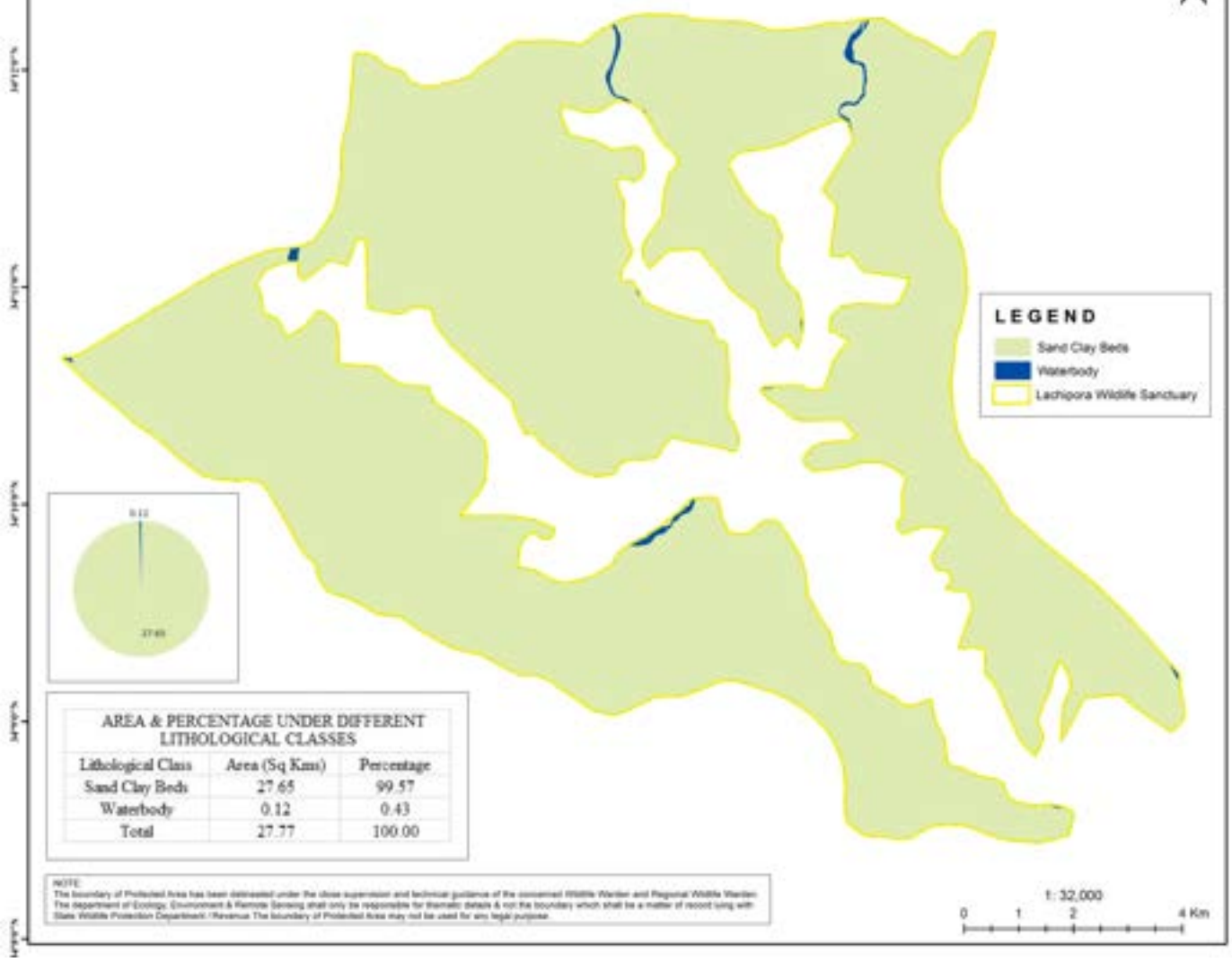
LITHOLOGICAL MAP OF LACHIPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Clay Beds	27.65	99.57
Waterbody	0.12	0.43
Total	27.77	100.00

NOTE:
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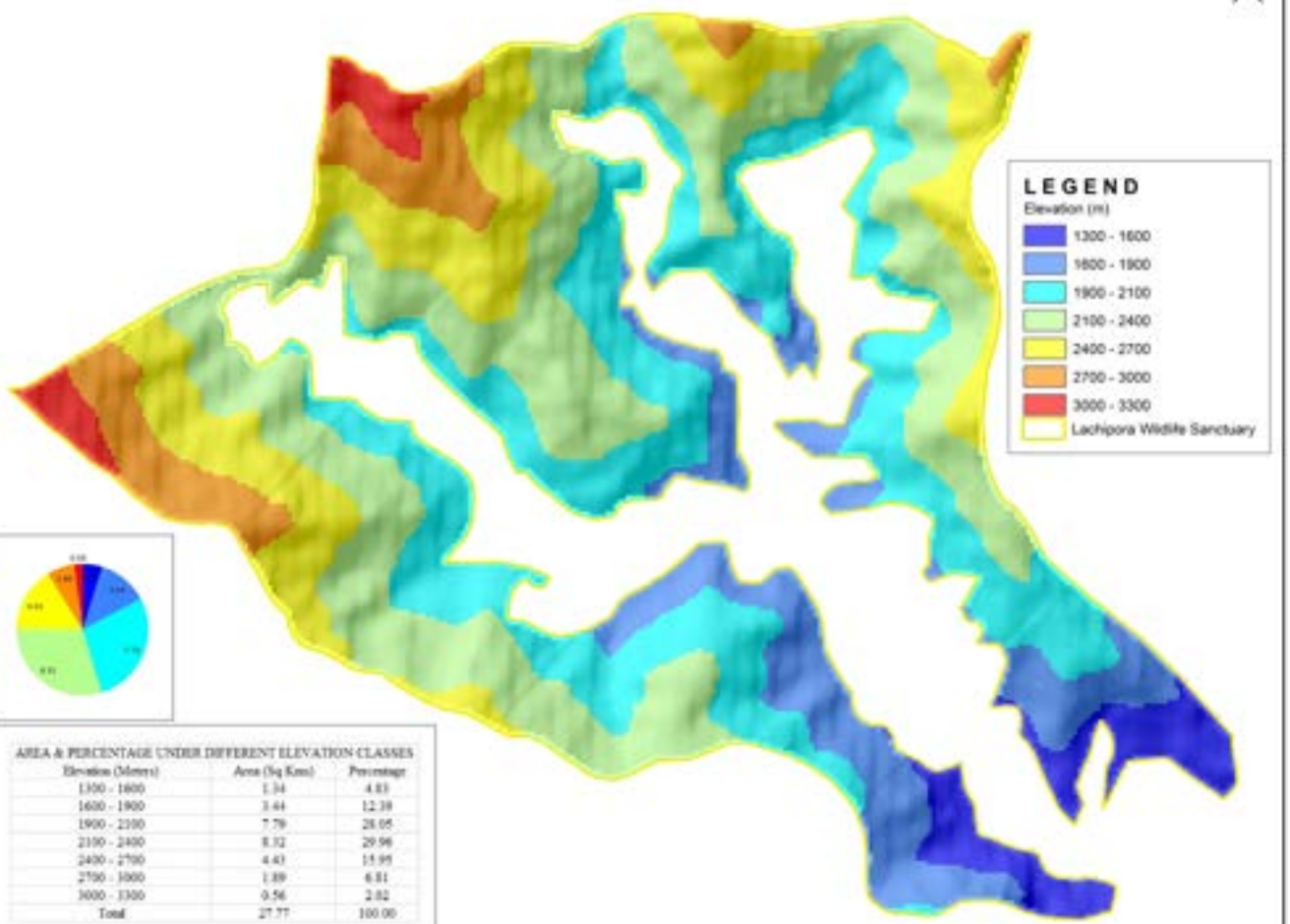
ELEVATION MAP OF LACHIPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1300 - 1600	1.34	4.83
1600 - 1900	3.44	12.38
1900 - 2100	7.79	28.05
2100 - 2400	8.32	29.96
2400 - 2700	4.43	15.95
2700 - 3000	1.89	6.81
3000 - 3300	0.56	2.02
Total	27.77	100.00

NOTE:
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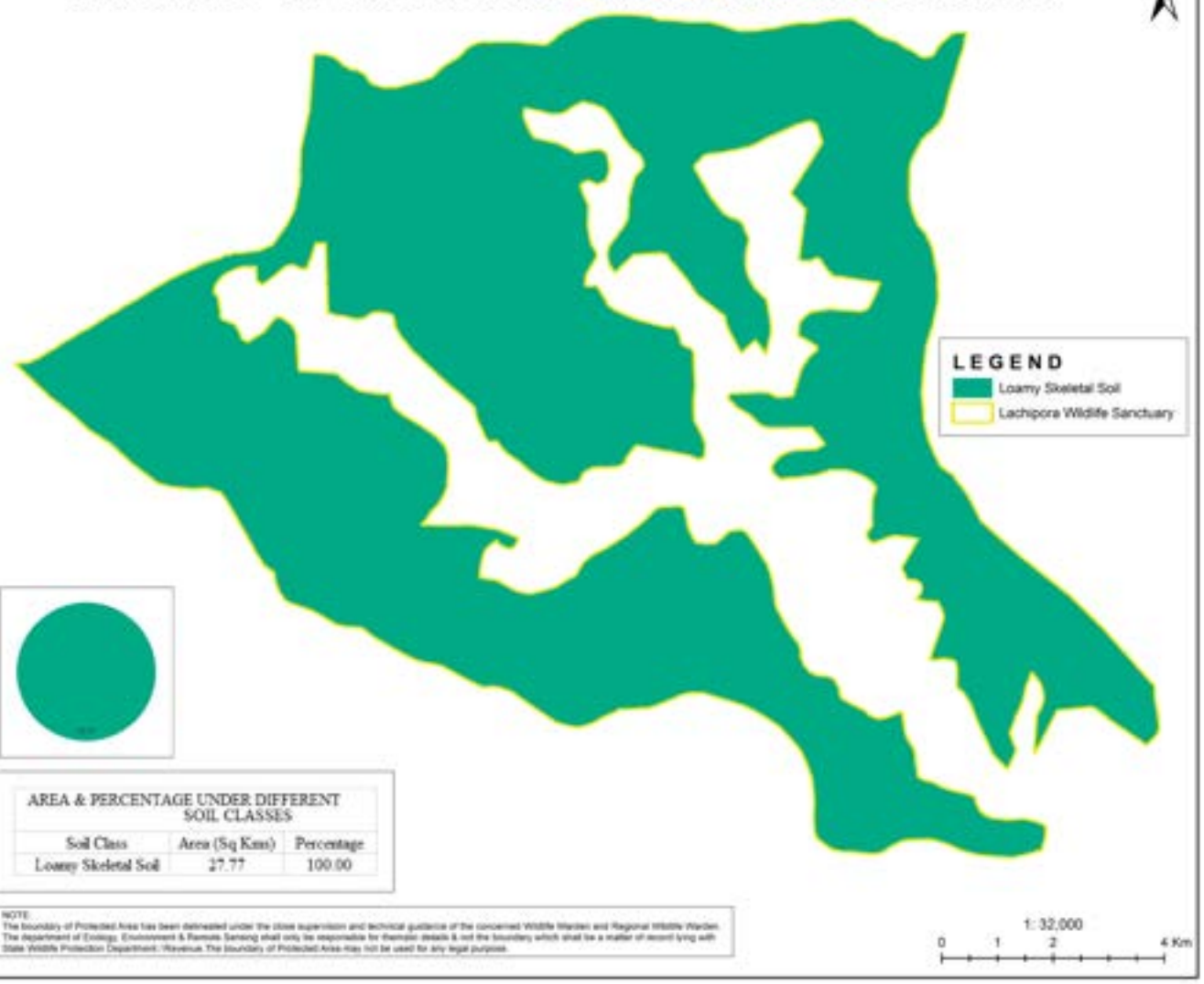
1: 32,000
0 1 2 4 Km

SOIL MAP OF LACHIPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Loamy Skeletal Soil	27.77	100.00

NOTE:
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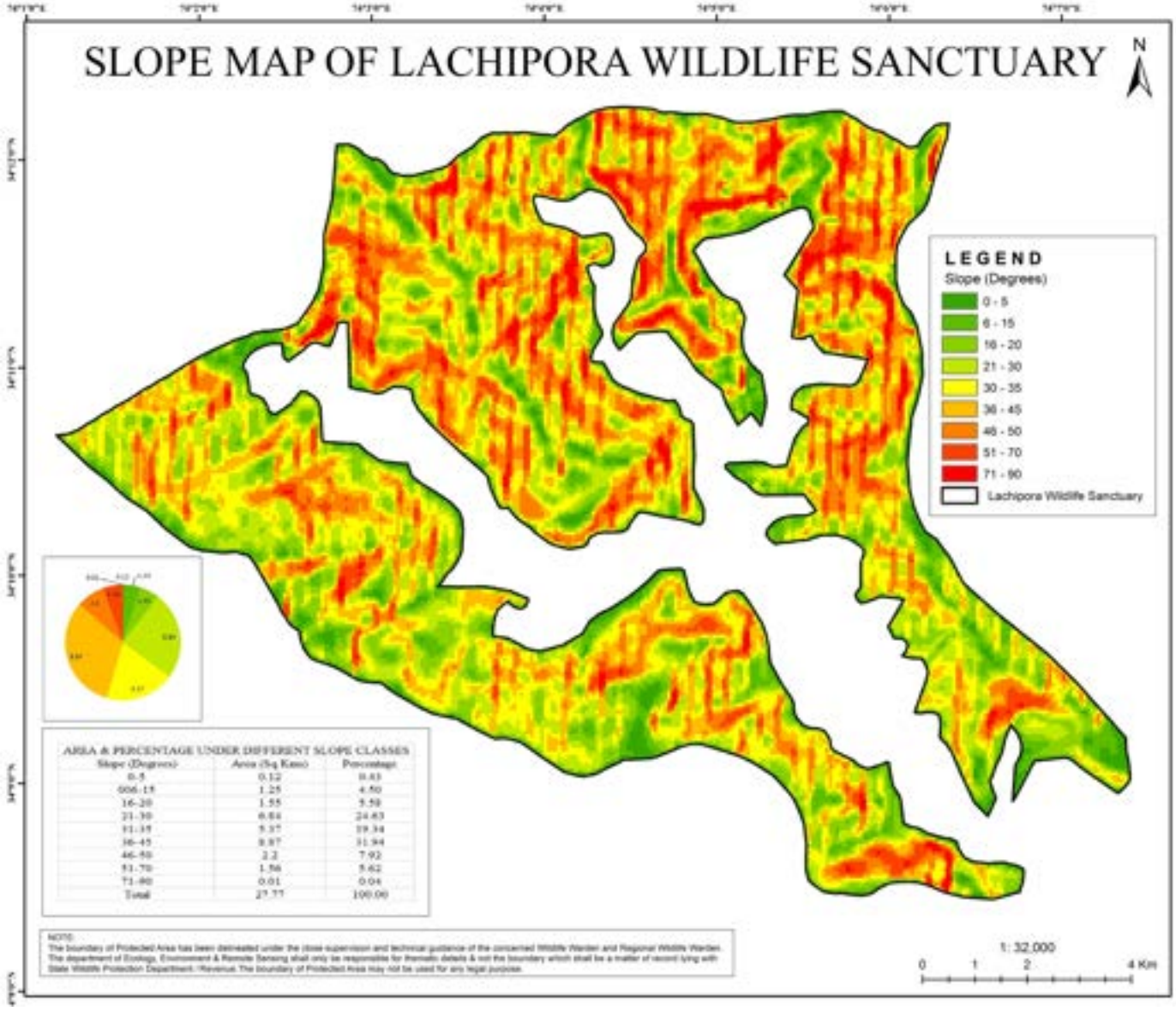
1: 32,000
0 1 2 4 Km

SLOPE MAP OF LACHIPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	0.12	0.43
006-15	1.25	4.50
16-20	1.55	5.58
21-30	6.84	24.63
31-35	5.37	19.34
36-45	8.87	31.94
46-50	2.2	7.92
51-70	1.56	5.62
71-90	0.01	0.04
Total	27.77	100.00

NOTE:
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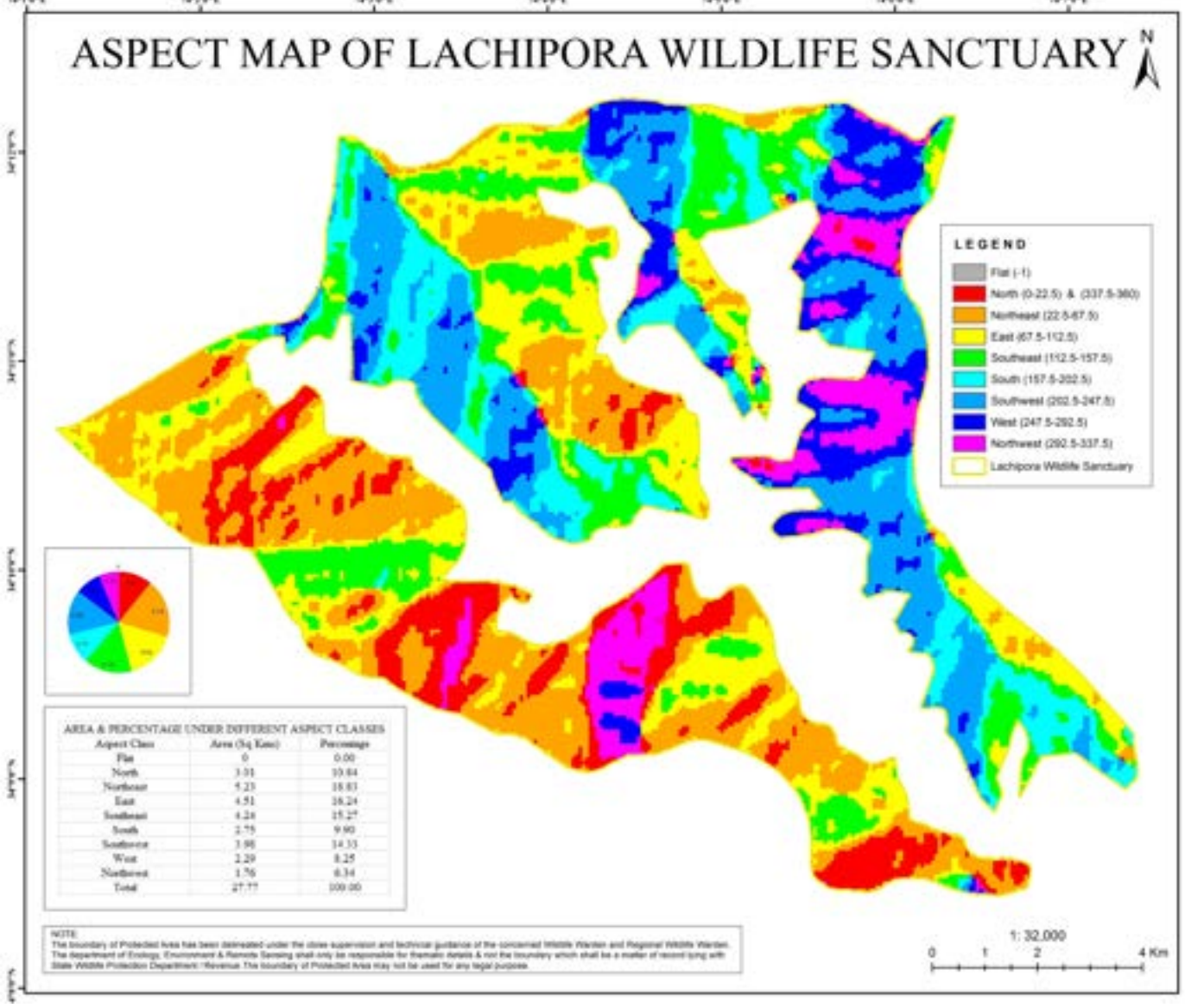
ASPECT MAP OF LACHIPORA WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0	0.00
North	3.01	10.84
Northeast	5.23	18.83
East	4.51	16.24
Southeast	4.24	15.27
South	2.75	9.90
Southwest	3.95	14.33
West	2.29	8.25
Northwest	1.76	6.34
Total	27.77	100.00

NOTE:
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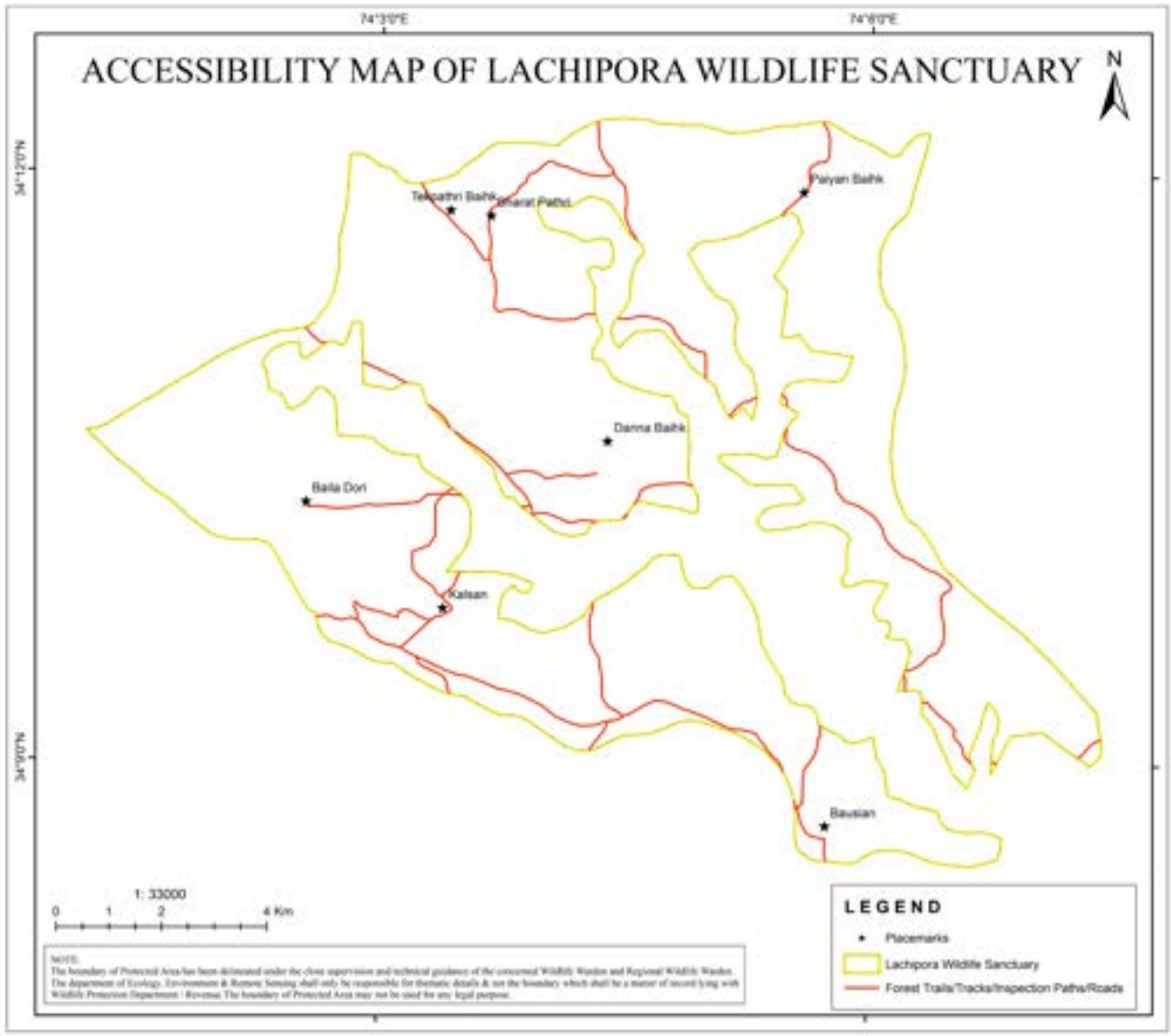
ACCESSIBILITY MAP OF LACHIPORA WILDLIFE SANCTUARY
N
74°3'0"E
74°6'0"E
34°12'0"N
34°9'0"N
Tekpathri Baihk
Bharat Pathri
Paiyan Baihk
Danna Baihk
Baila Dori
Kalsan
Bausian
1: 33000
0 1 2 4 Km
NOTE:
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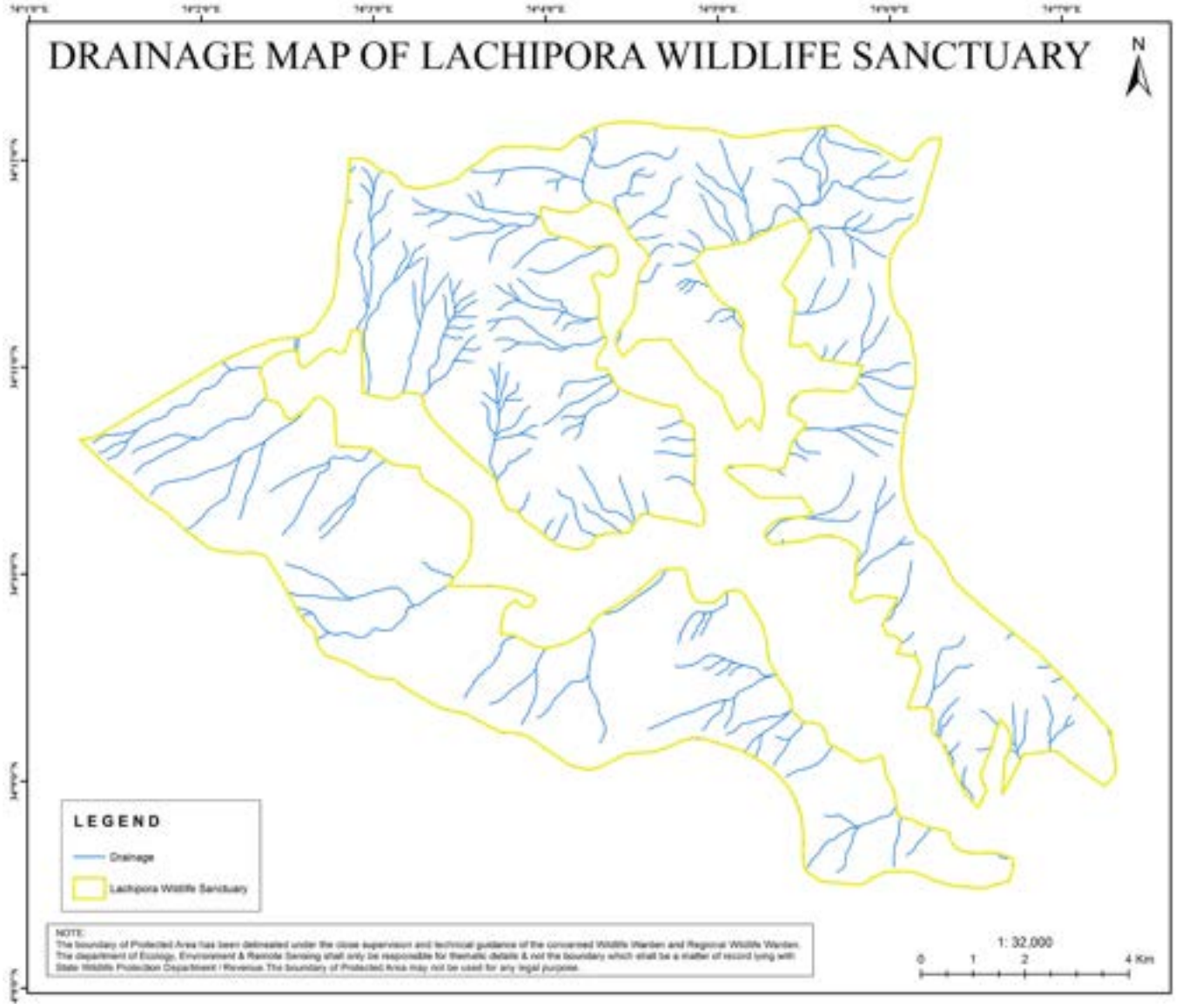
LEGEND
Placemarks
Lachipora Wildlife Sanctuary
Forest Trails/Tracks/Inspection Paths/Roads


DRAINAGE MAP OF LACHIPORA WILDLIFE SANCTUARY
N
LEGEND
Drainage
Lachipora Wildlife Sanctuary
NOTE:
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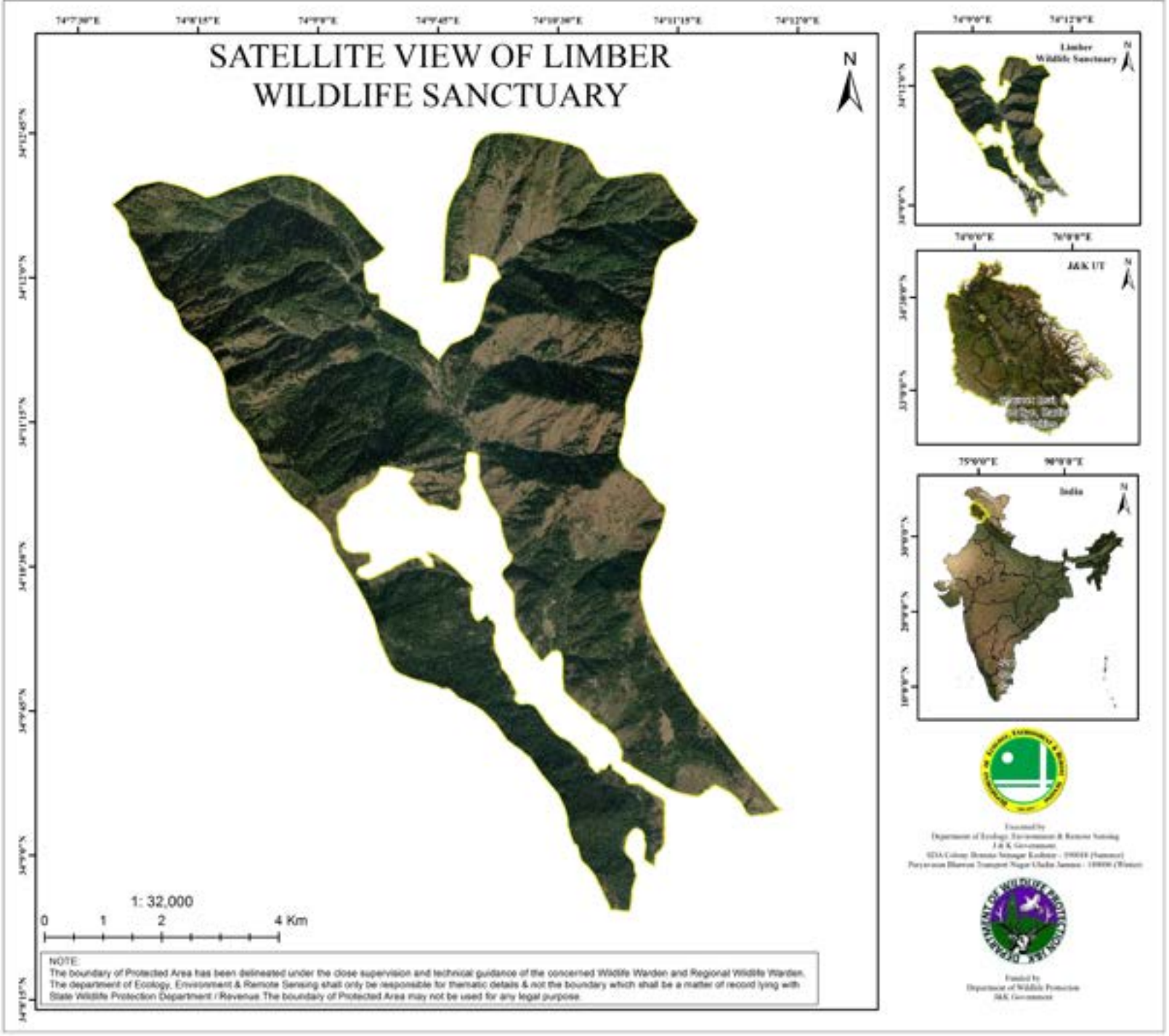
1: 32,000
0 1 2 4 Km



LIMBER WILDLIFE SANCTUARY

Limber Wildlife Sanctuary was notified in 1987. The wildlife sanctuary is abode of species like Markhor and Musk Deer. It is bounded in the north by Bhurji forest in Langet Forest Division, to the south by the River Jhelum, east by Katha Forest and west by Islamabad nala. Along the west, it is connected with Lachipora wildlife Sanctuary and along the east with Naganari Conservation Reserve. Limber wildlife sanctuary is fed by two main nallahs, Mithwani and gamalitter which drain into the Limber nallah, which drains into River Jhelum. The area consists of steep to moderate slopes broken by rocky cliffs at many places

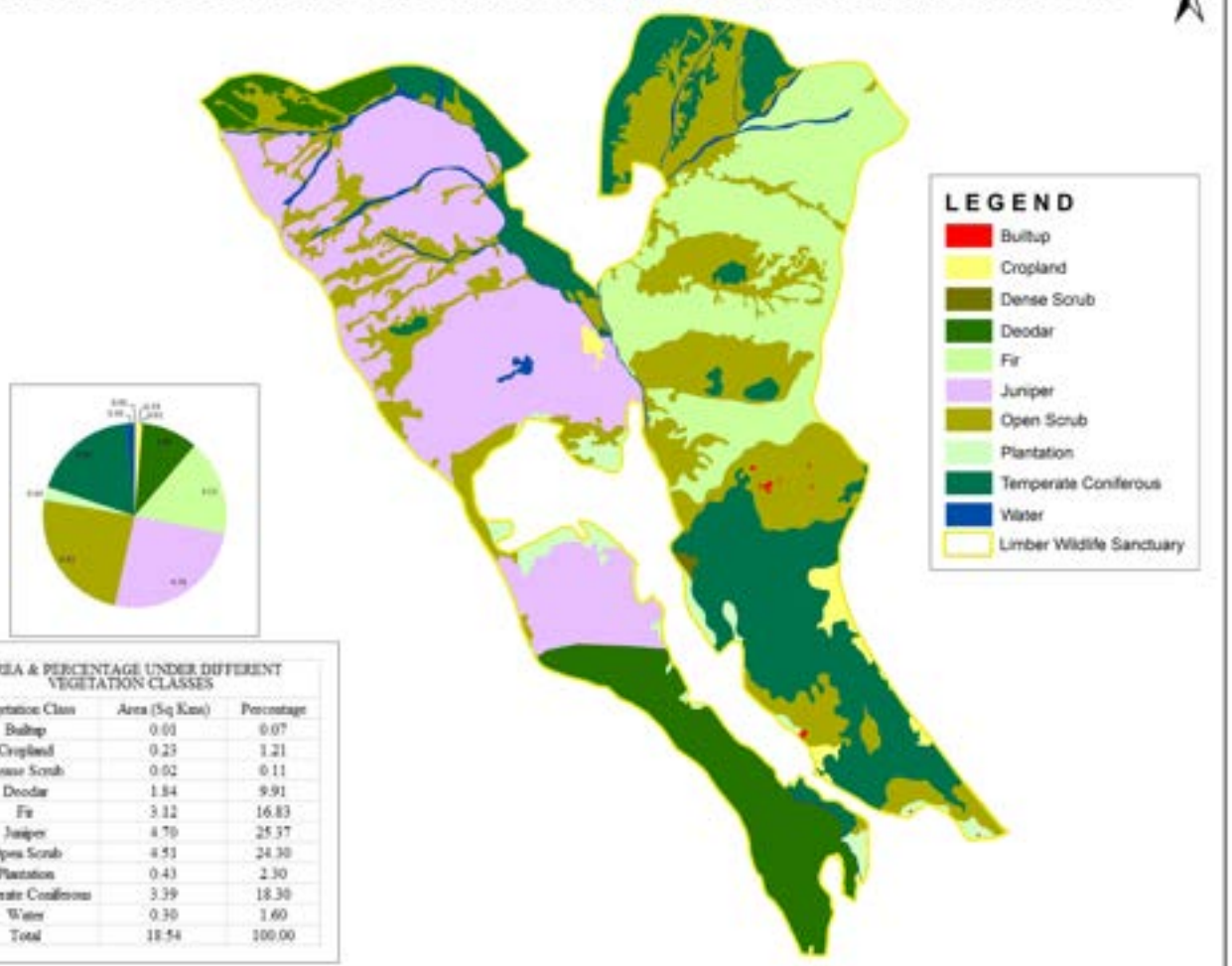
SRO/NOTIFICATION NO: SRO 150 dated 19.03.1987
NOTIFIED AREA (KM2): 12.00 **GIS AREA** (KM2): 18.54
PERIMETER (KMS): 41.48
ALTITUDE RANGE (M): 1400 – 3500
GEO - COORDINATES:
34° 12.385′ N - 34° 12.775′ N, 74° 10.905′ E - 74° 11.938′ E

MAJOR FAUNA: Markhor (*Capra falconeri*), Common Leopard (*Panthera pardus*), Yellow Throated Martin (*Martes flavigula*), Long Tailed Marmot (*Marmota caudata*), Himalayan Musk Deer (*Moschus cupreus*), Himalayan Brown Bear (*Ursus arctos*), Himalayan Black Bear (*Ursus thibetanus*), Small Kashmir Flying Squirrel (*Eoglaucomys fimbriatus*).

MAJOR AVI FAUNA: The yellow-billed blue magpie (*Urocissa flavirostris*), Cuckoo (*Cuculus canorus*), Western Tragopan (*Tragopan melanocephalus*), Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Golden Eagle (*Aquila chrysaetos*), Sparow Hawk (*Accipiter nisus melaschistos*), Snow Pigeon (*Columba leuconota*), Lesser pied kingfisher (*Ceryle rudis*) .

MAJOR FLORA: Deodar (*Cedrus deodara*), Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Parrotia (*Parrotiopsis jacquemontiana*), Cranberry bush (*Viburnum grandiflorum*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea* Wall).

VEGETATION MAP OF LIMBER WILDLIFE SANCTUARY

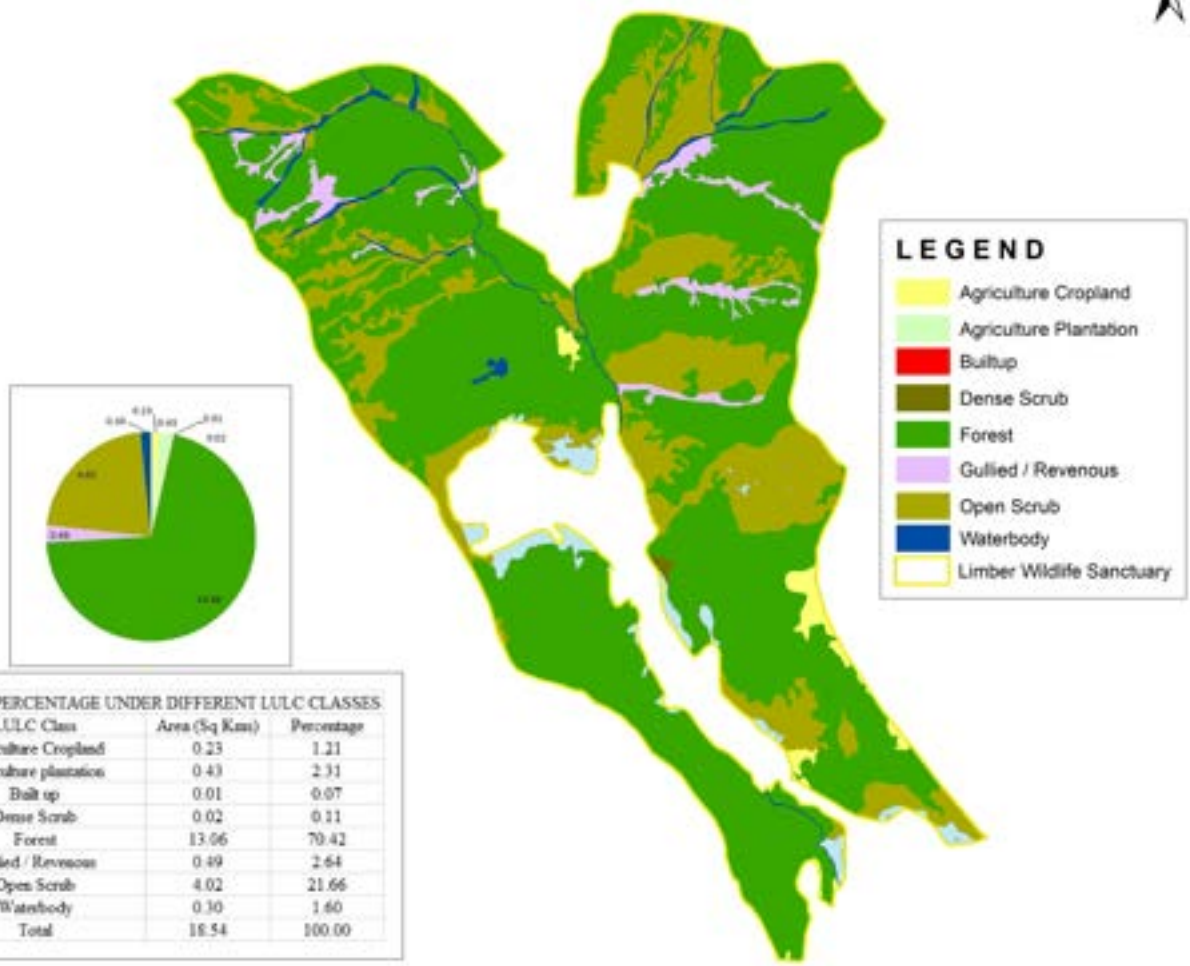


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Builtup	0.01	0.07
Cropland	0.23	1.21
Dense Scrub	0.02	0.11
Deodar	1.84	9.91
Fir	3.12	16.83
Juniper	4.70	25.37
Open Scrub	4.51	24.30
Plantation	0.43	2.30
Temperate Coniferous	3.39	18.30
Water	0.30	1.60
Total	18.54	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LAND USE LAND COVER MAP OF LIMBER WILDLIFE SANCTUARY

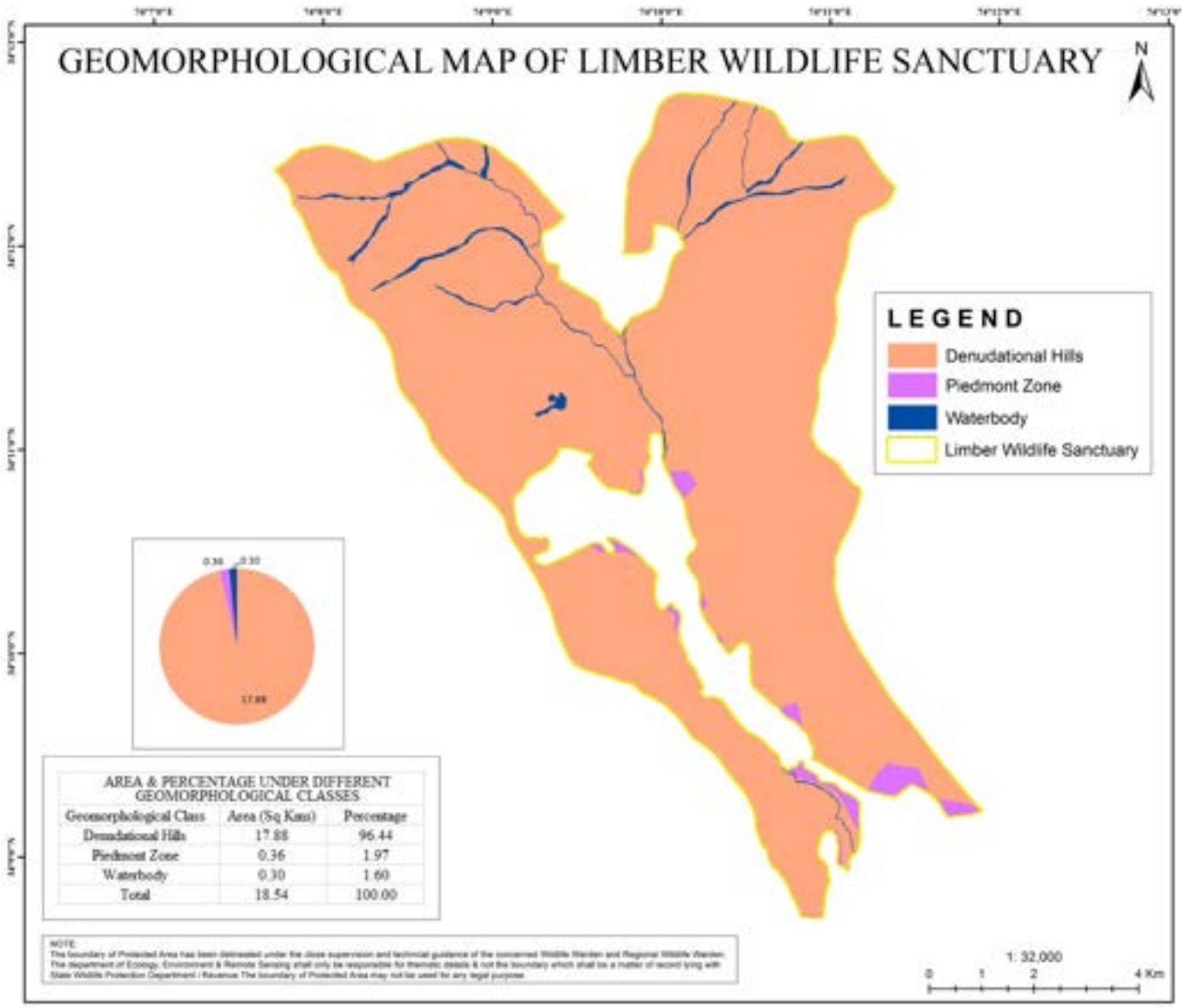


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.23	1.21
Agriculture plantation	0.43	2.31
Built up	0.01	0.07
Dense Scrub	0.02	0.11
Forest	13.06	70.42
Gullied / Revenous	0.49	2.64
Open Scrub	4.02	21.66
Waterbody	0.30	1.60
Total	18.54	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF LIMBER WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	17.88	96.44
Piedmont Zone	0.36	1.97
Waterbody	0.30	1.60
Total	18.54	100.00

NOTE:
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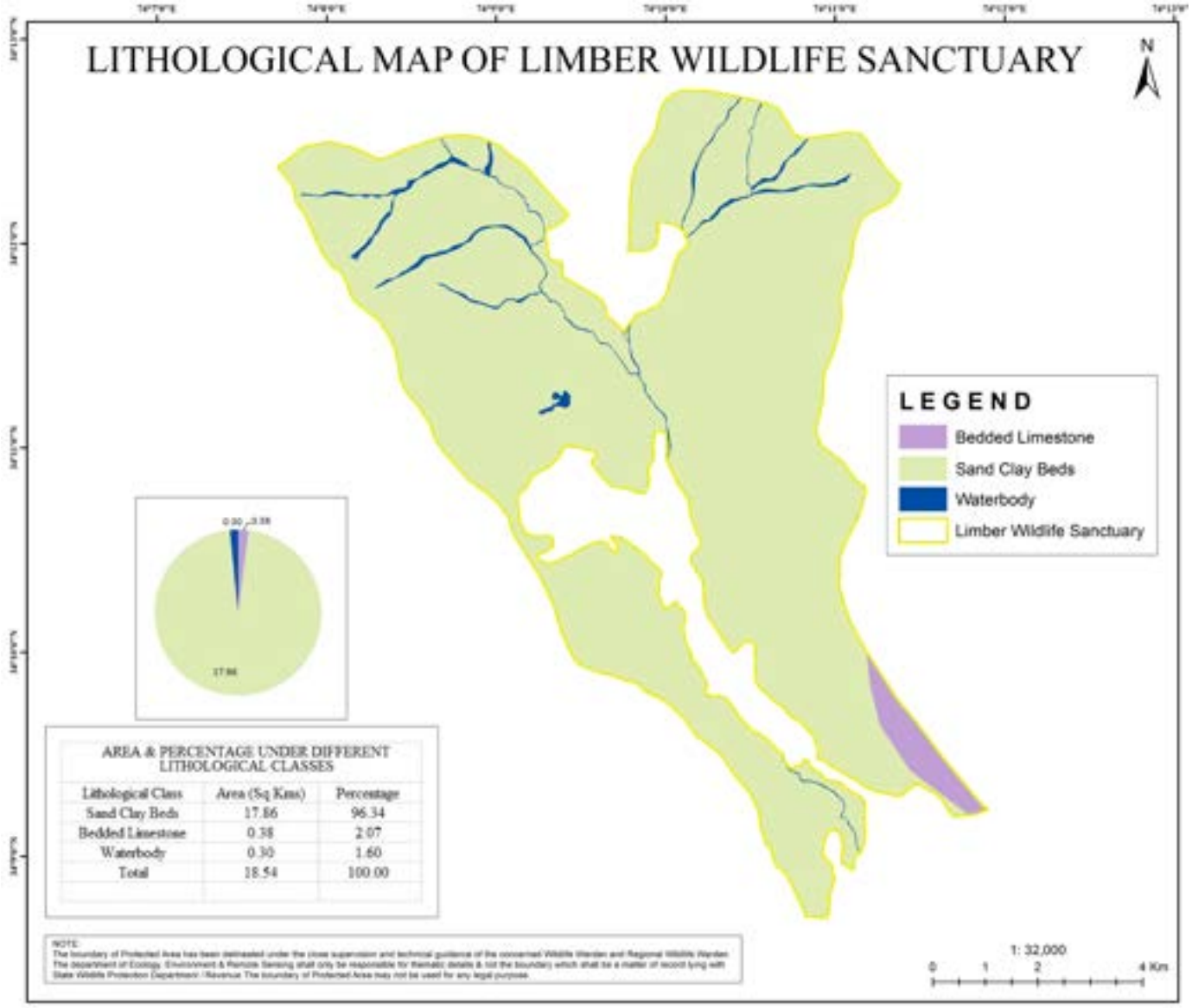
LITHOLOGICAL MAP OF LIMBER WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Clay Beds	17.86	96.34
Bedded Limestone	0.38	2.07
Waterbody	0.30	1.60
Total	18.54	100.00

NOTE:
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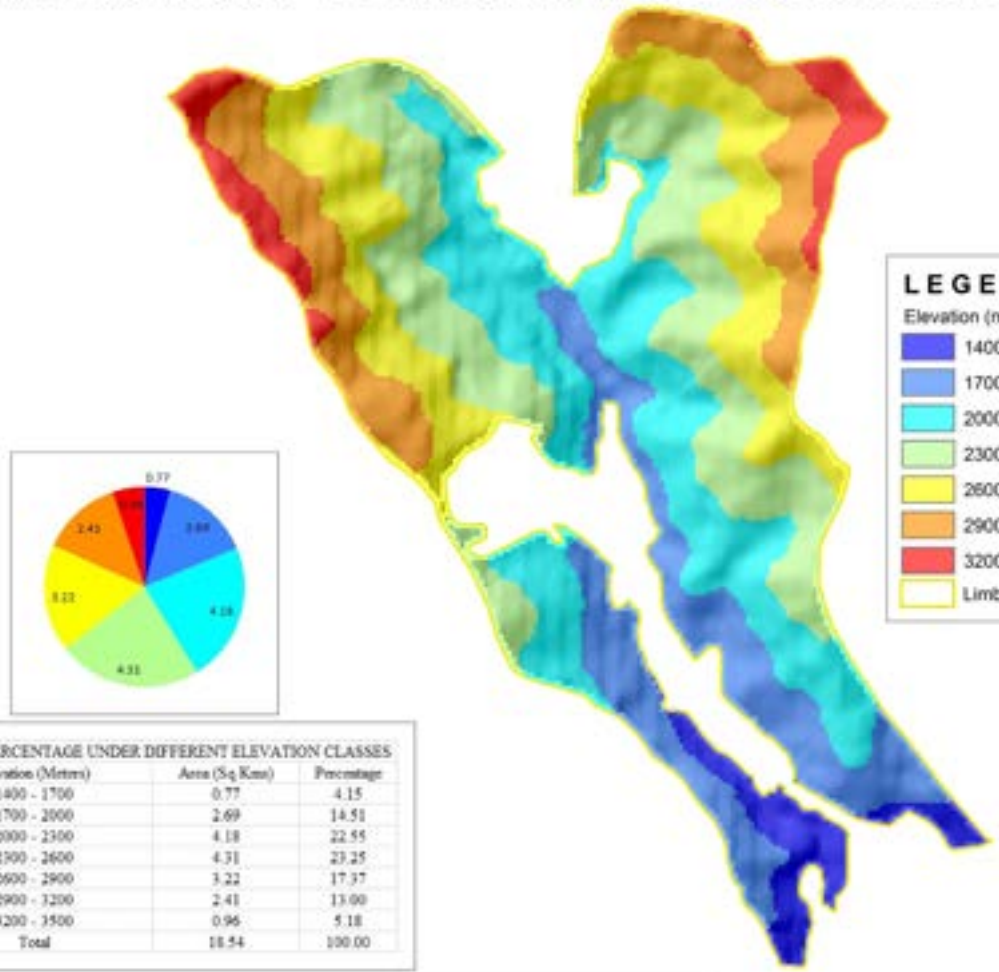
ELEVATION MAP OF LIMBER WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Metres)	Area (Sq Kms)	Percentage
1400 - 1700	0.77	4.15
1700 - 2000	2.69	14.51
2000 - 2300	4.18	22.55
2300 - 2600	4.31	23.25
2600 - 2900	3.22	17.37
2900 - 3200	2.41	13.00
3200 - 3500	0.96	5.18
Total	18.54	100.00

NOTE:
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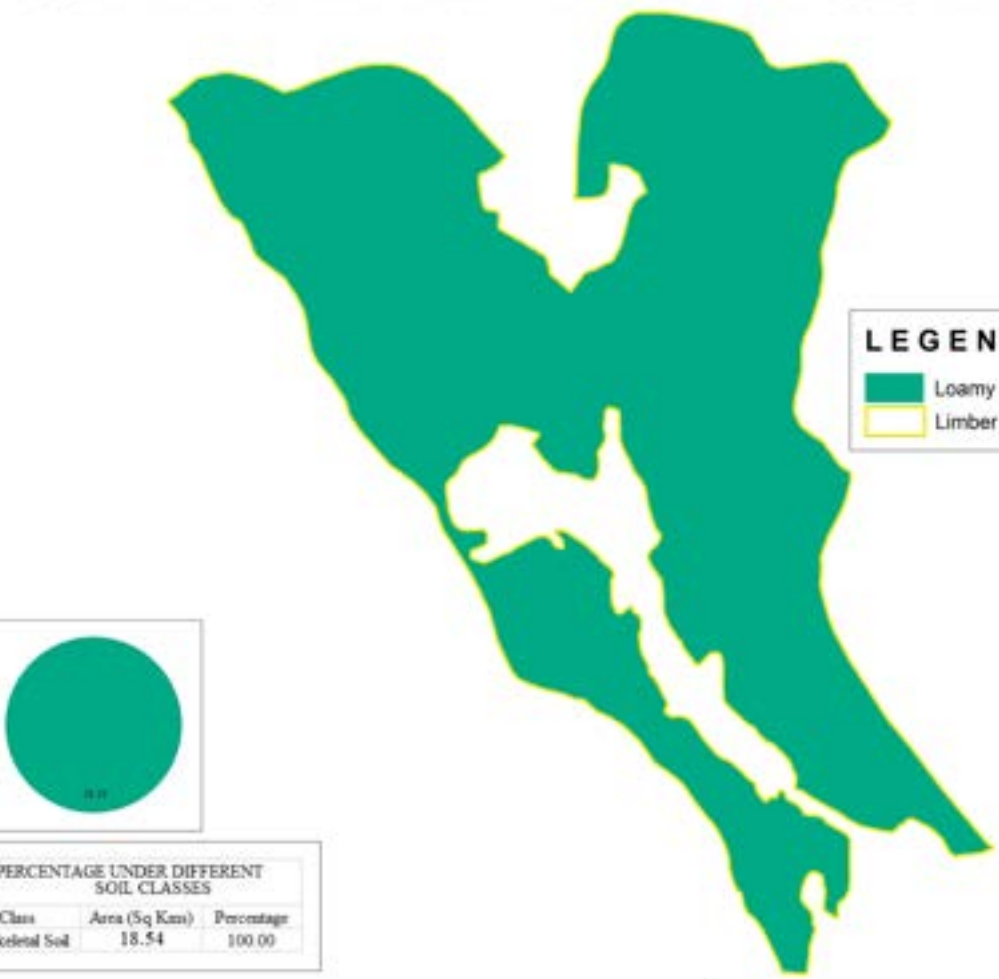
1: 32,000
0 1 2 4 Km

SOIL MAP OF LIMBER WILDLIFE SANCTUARY



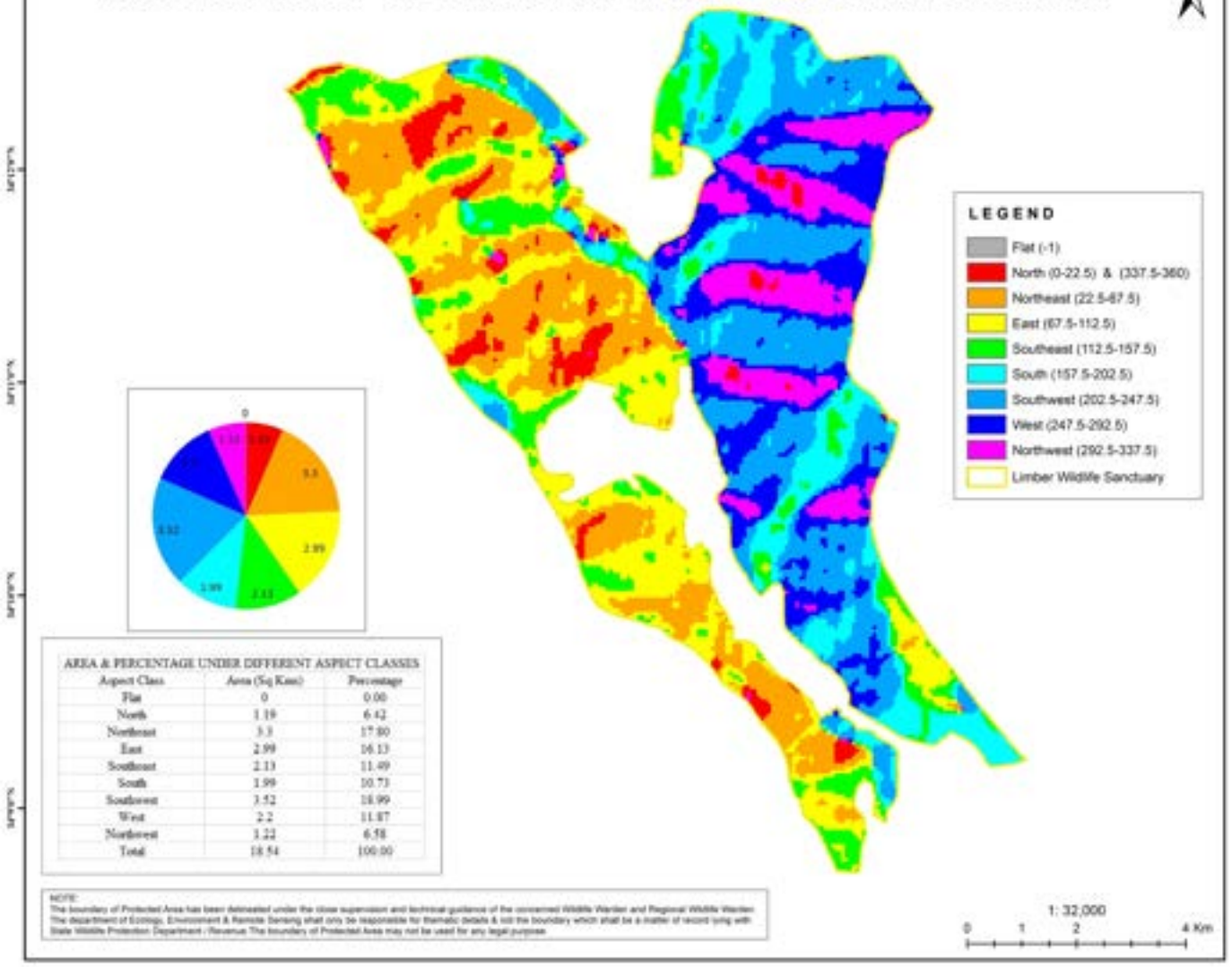
AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Loamy Skeletal Soil	18.54	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

1: 32,000
0 1 2 4 Km

ASPECT MAP OF LIMBER WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0	0.00
North	1.19	6.42
Northeast	3.3	17.80
East	2.99	16.13
Southeast	2.13	11.49
South	1.99	10.73
Southwest	3.52	18.99
West	2.2	11.87
Northwest	1.22	6.58
Total	18.54	100.00

NOTE:
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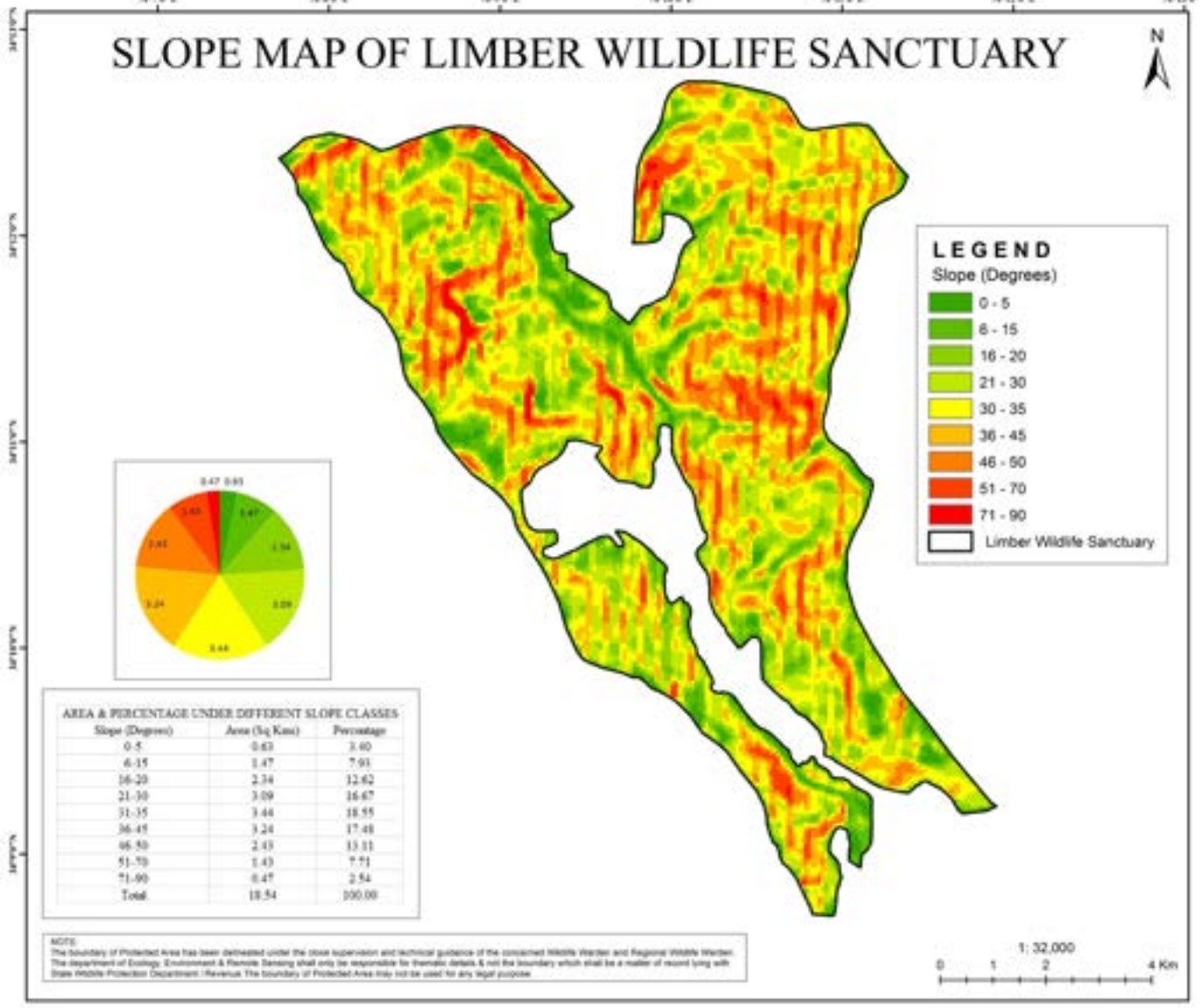
SLOPE MAP OF LIMBER WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	0.63	3.40
6-15	1.47	7.93
16-20	2.34	12.62
21-30	3.09	16.67
31-35	3.44	18.55
36-45	3.24	17.48
46-50	2.43	13.11
51-70	1.43	7.71
71-90	0.47	2.54
Total	18.54	100.00

NOTE:
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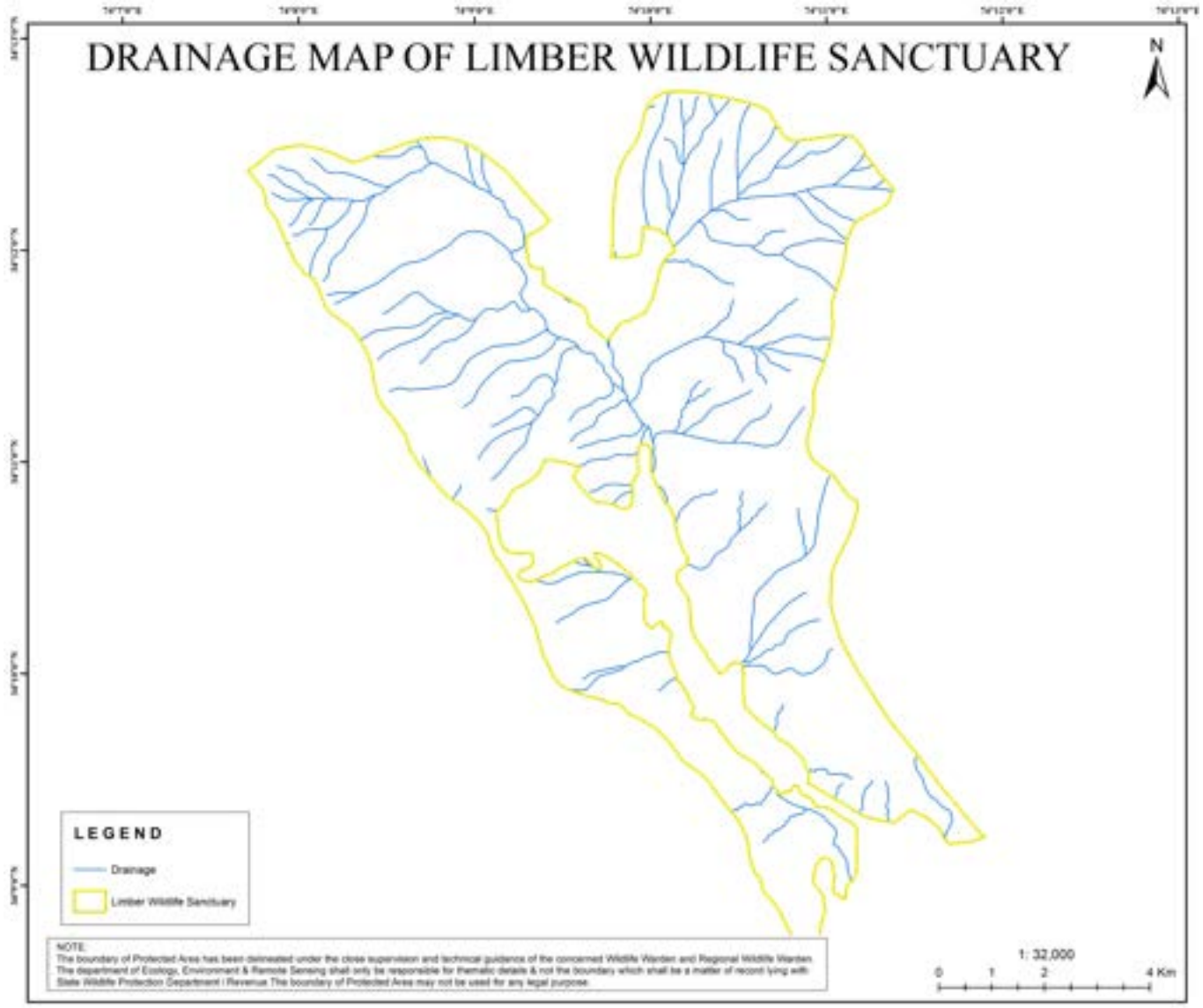
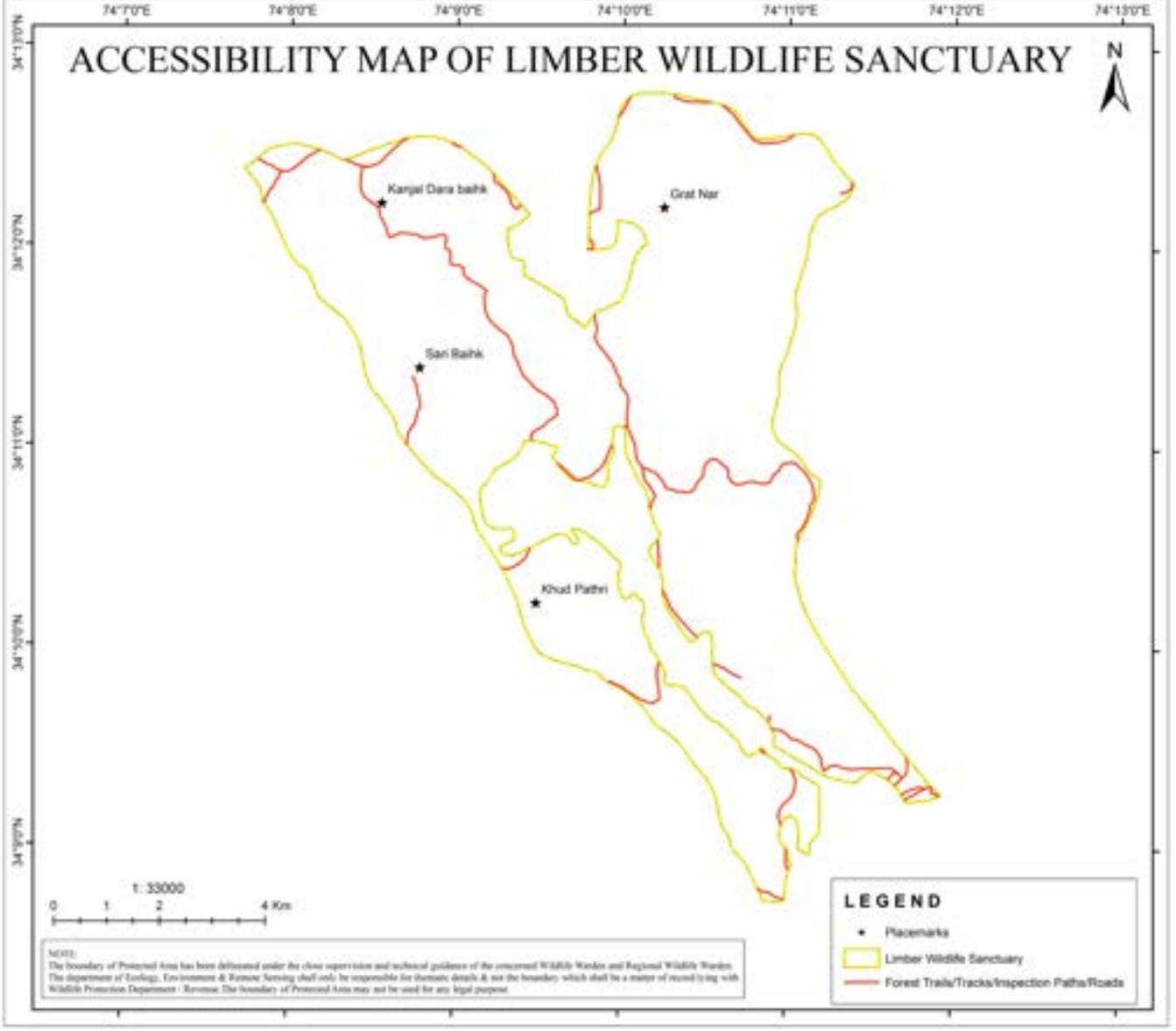
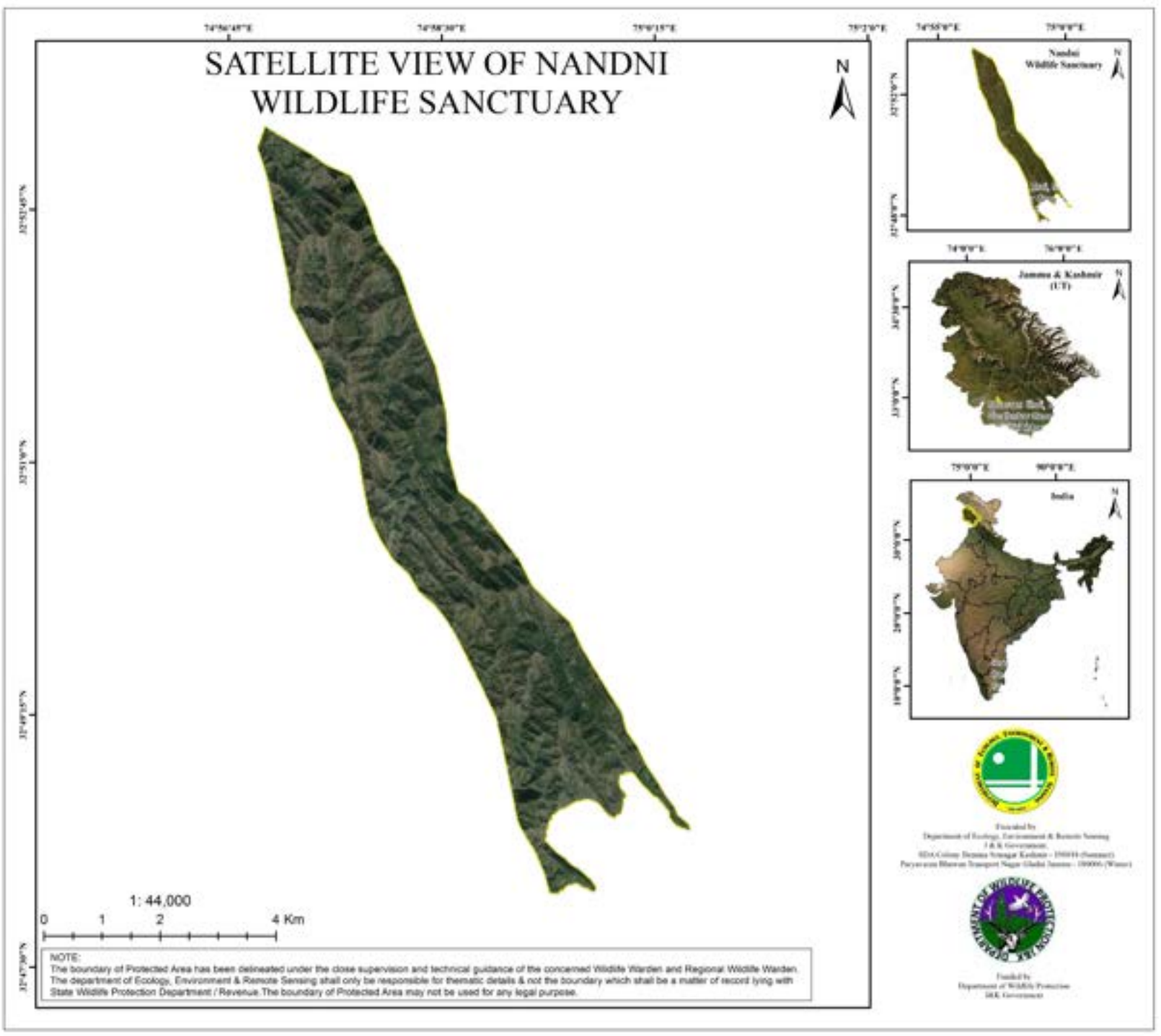

DRAINAGE MAP OF LIMBER WILDLIFE SANCTUARY
N
LEGEND
Drainage
Limber Wildlife Sanctuary
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden.
The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.
1: 32,000
0 1 2 4 Km


ACCESSIBILITY MAP OF LIMBER WILDLIFE SANCTUARY
N
Kanjal Dara baihk
Grat Nar
Sari Baihk
Khud Pathri
1: 33000
0 1 2 4 Km
LEGEND
Placemarks
Limber Wildlife Sanctuary
Forest Trails/Tracks/Inspection Paths/Roads



NANDNI WILDLIFE SANCTUARY

The sanctuary has been named after the Nandni village located at a distance of 28 kms from Jammu. The area is well known for still housing an appreciable and precious pheasents population. The Sanctuary occupies the South Western slopes of Nandni Ridge whereas Jammu-Kashmir highway zigzags right through its middle cutting into two, almost identical halves. The Nandni Tunnel is situated in its middle. The area lying at the slopes of Nandni ridge on the north east aspect has chir pine forests, forming top canopy while the second storey is occupied by other mixed species.

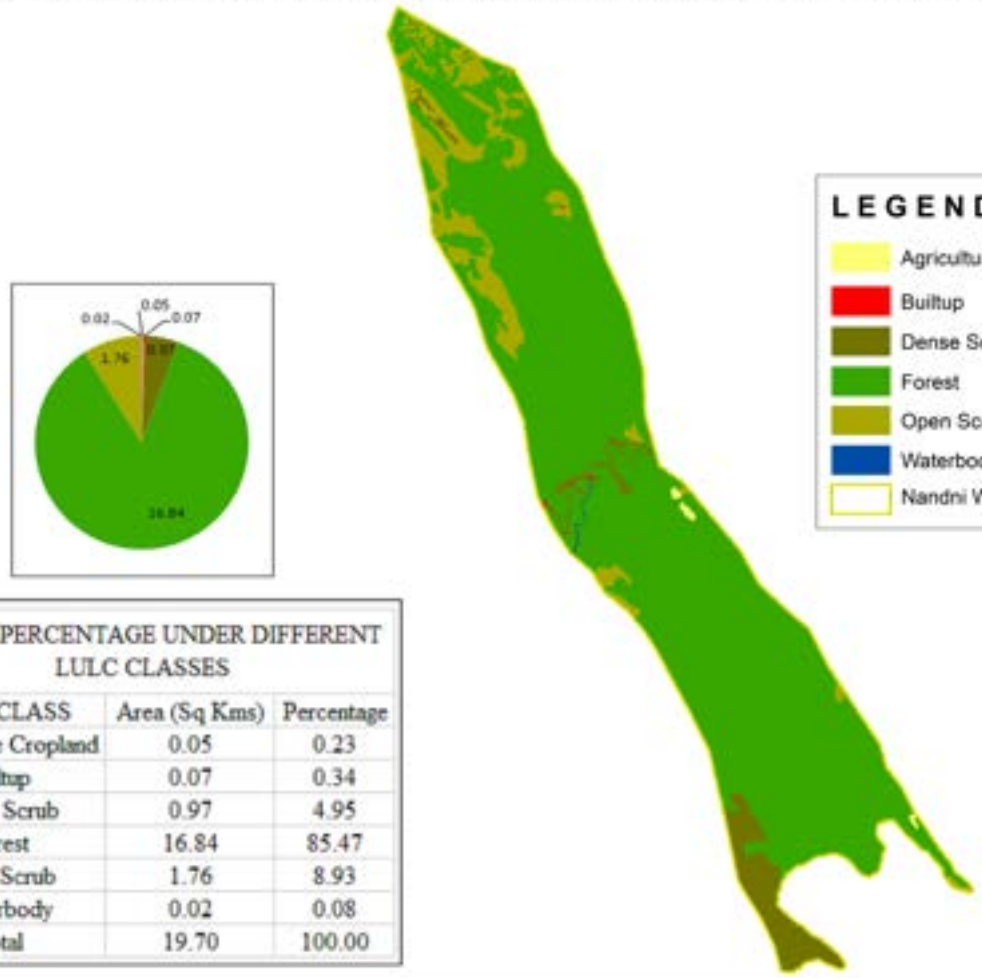
SRO/NOTIFICATION NO: SRO 137 dated 10.04.1990
NOTIFIED AREA (KM2): 33.34 **GIS AREA** (KM2): 19.70
PERIMETER (KMS): 32.48
ALTITUDE RANGE (M): 305 - 863
GEO – COORDINATES:
32° 47.707′ N - 32° 54.107′ N, 74° 55.501′ E - 75° 0.101′ E

MAJOR FAUNA: Nilgai (*Boselaphus tragocamelus*), Indian Crested Porcupine (*Hystrix indica*), Common Leopard (*Panthera pardus*), Barking Deer (*Muntiacus muntjak*), Chital (*Axis axis*), Himalayan goral (*Nemorhaedus goral*), Grey Langur (*Semnopithecus entellus*), Indian Jackal (*Canis aureus*), jungle Cat (*Felis chaus*).

MAJOR AVI FAUNA: Red Jungle Fowl (*Gallus gallus*), Common peafowl (*Pavo cristatus*), Grey Francolin (*Francolinus pondicerianus*), Blue Rock Pigeon (*Columba livia*), Eurasian collared dove (*Streptopelia decaocto*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundoo*), Griffon Vulture (*Gyps fulvus*) .

MAJOR FLORA: Cutch tree (*Senegalia catechu*), Fig (*Ficus carica*), Chir pine (*Pinus roxburghi*), Wood Apple (*Aegle marmelos*), Siris tree (*Albizia lebbeck*), Indian jujube (*Ziziphus jujuba*), Neem tree (*Azadirachta indica*), Indian thorny bamboo (*Bambusa bambos*), Lantana (*Lantana camara*), Carrisse (*Carissa spinarum*), Hopseed bush (*Dodonaea viscosa*).

LAND USE LAND COVERT MAP OF NANDNI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC CLASS	Area (Sq Kms)	Percentage
Agriculture Cropland	0.05	0.23
Builtup	0.07	0.34
Dense Scrub	0.97	4.95
Forest	16.84	85.47
Open Scrub	1.76	8.93
Waterbody	0.02	0.08
Total	19.70	100.00

NOTE:
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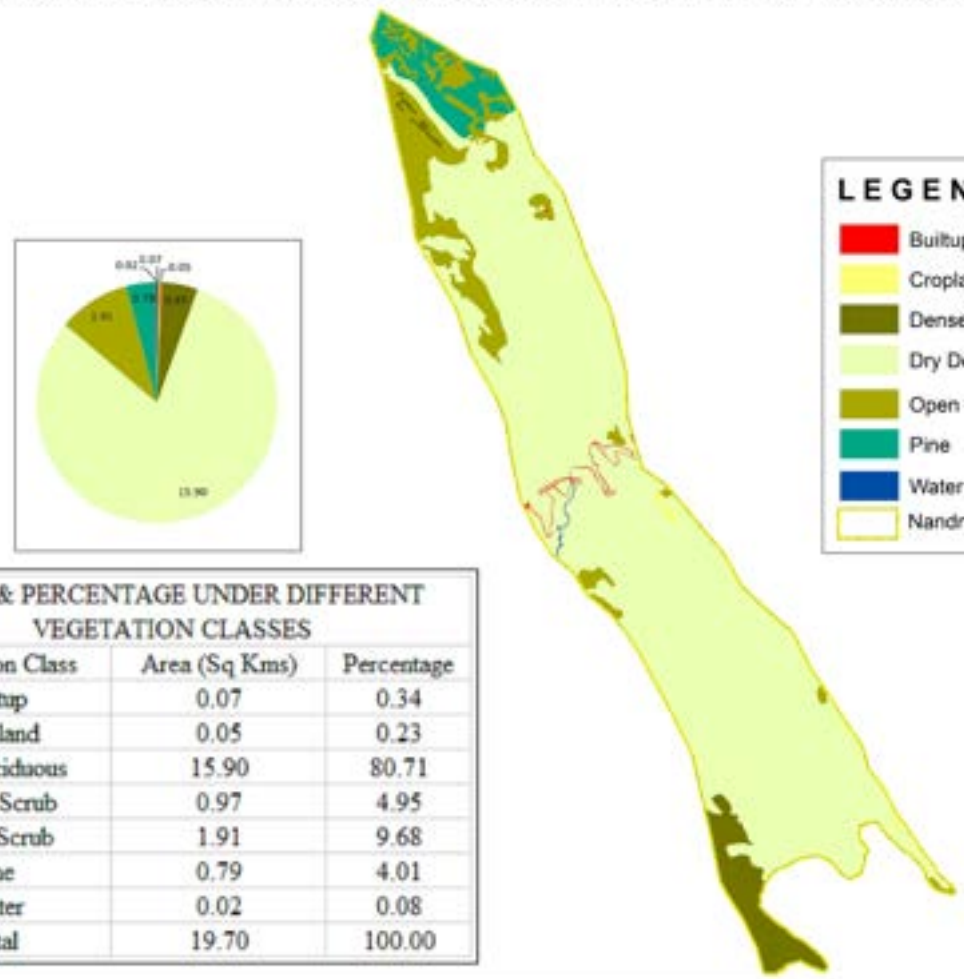
1: 53000
0 1 2 4 Km

VEGETATION MAP OF NANDNI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Builtup	0.07	0.34
Cropland	0.05	0.23
Dry Deciduous	15.90	80.71
Dense Scrub	0.97	4.95
Open Scrub	1.91	9.68
Pine	0.79	4.01
Water	0.02	0.08
Total	19.70	100.00

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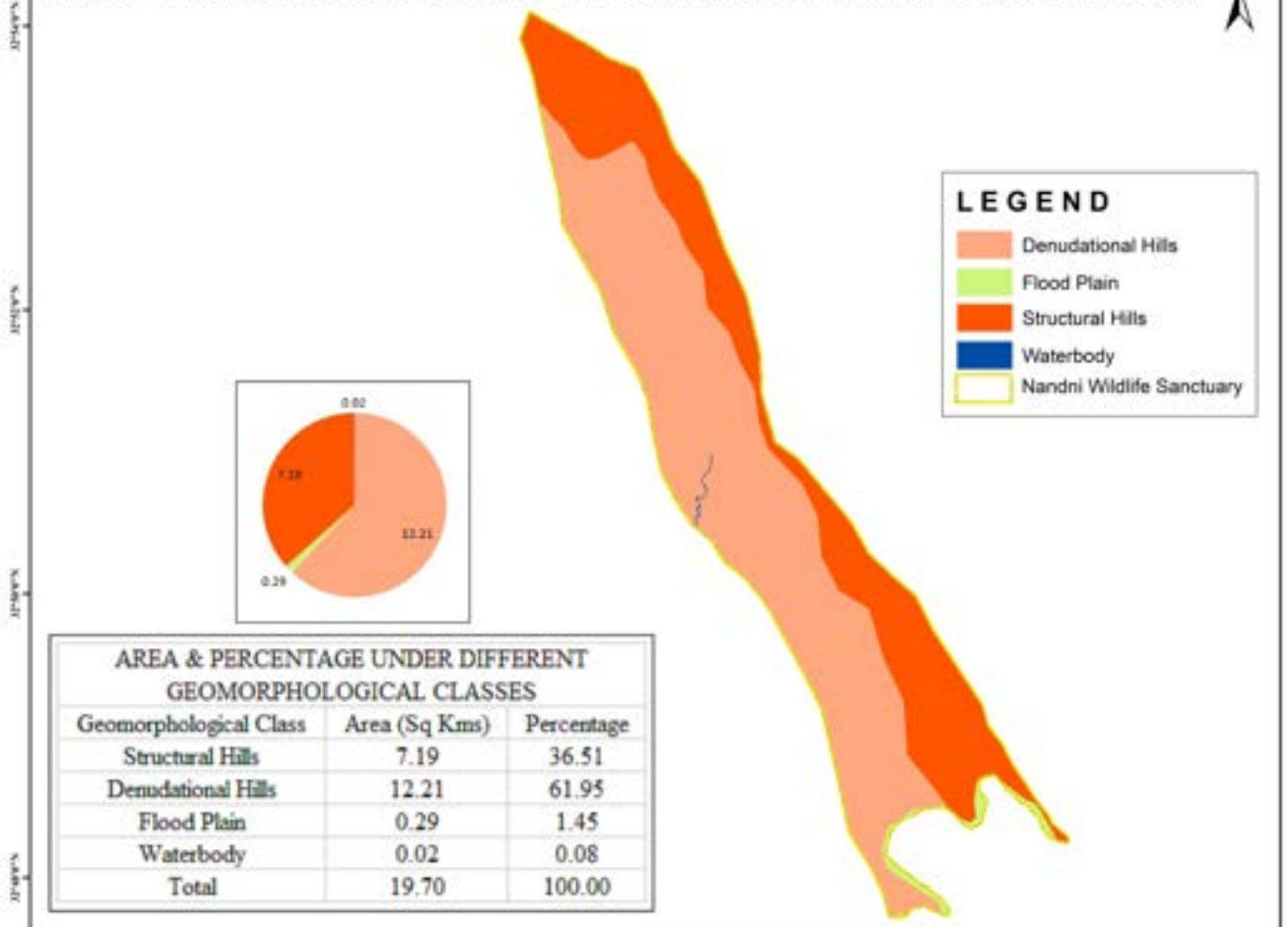
1: 53000
0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF NANDNI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES		
Geomorphological Class	Area (Sq Kms)	Percentage
Structural Hills	7.19	36.51
Denudational Hills	12.21	61.95
Flood Plain	0.29	1.45
Waterbody	0.02	0.08
Total	19.70	100.00

NOTE:
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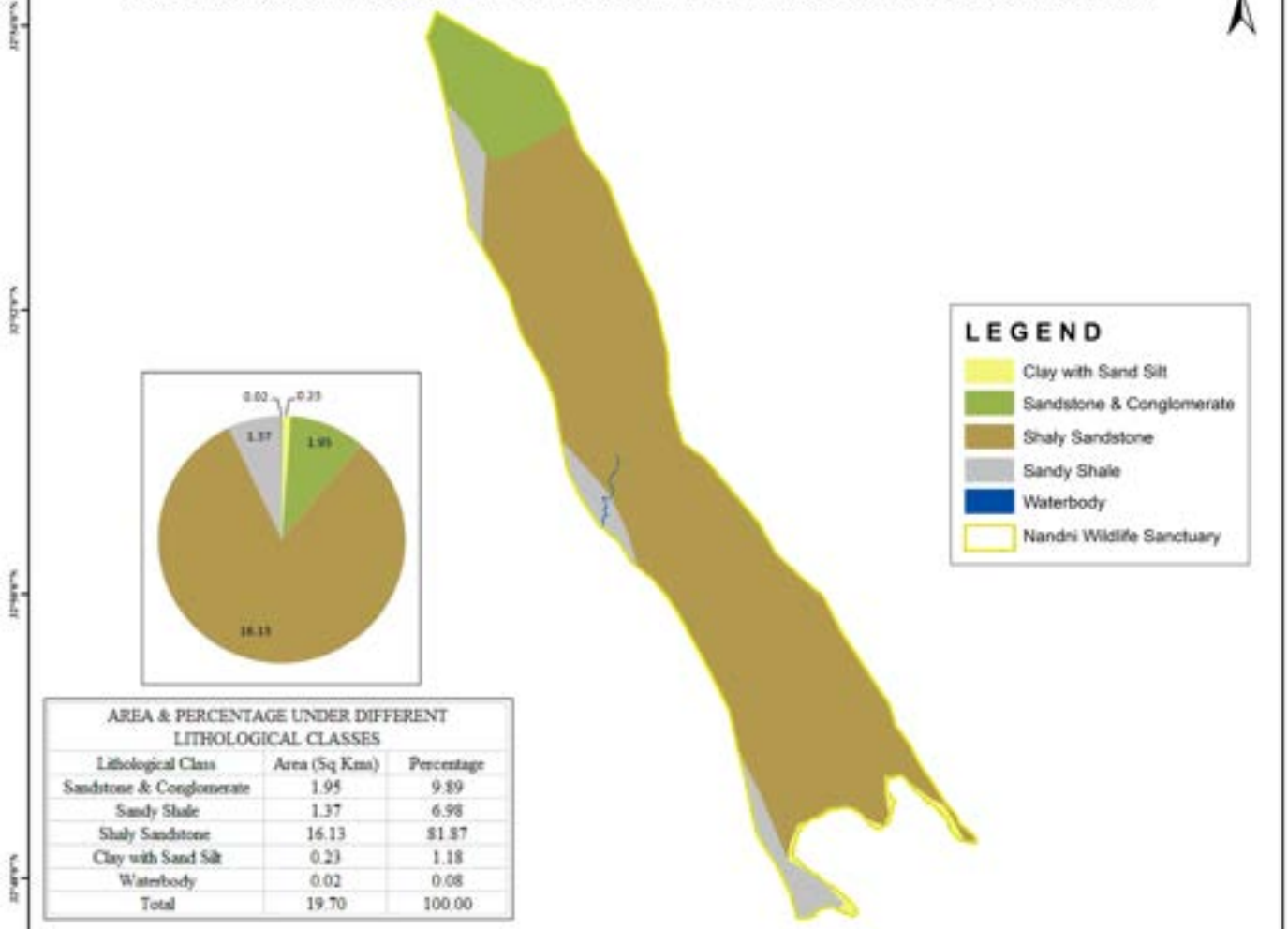
1: 53000
0 1 2 4 Km

LITHOLOGICAL MAP OF NANDNI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES		
Lithological Class	Area (Sq Kms)	Percentage
Sandstone & Conglomerate	1.95	9.89
Sandy Shale	1.37	6.98
Shaly Sandstone	16.13	81.87
Clay with Sand Silt	0.23	1.18
Waterbody	0.02	0.08
Total	19.70	100.00

NOTE:
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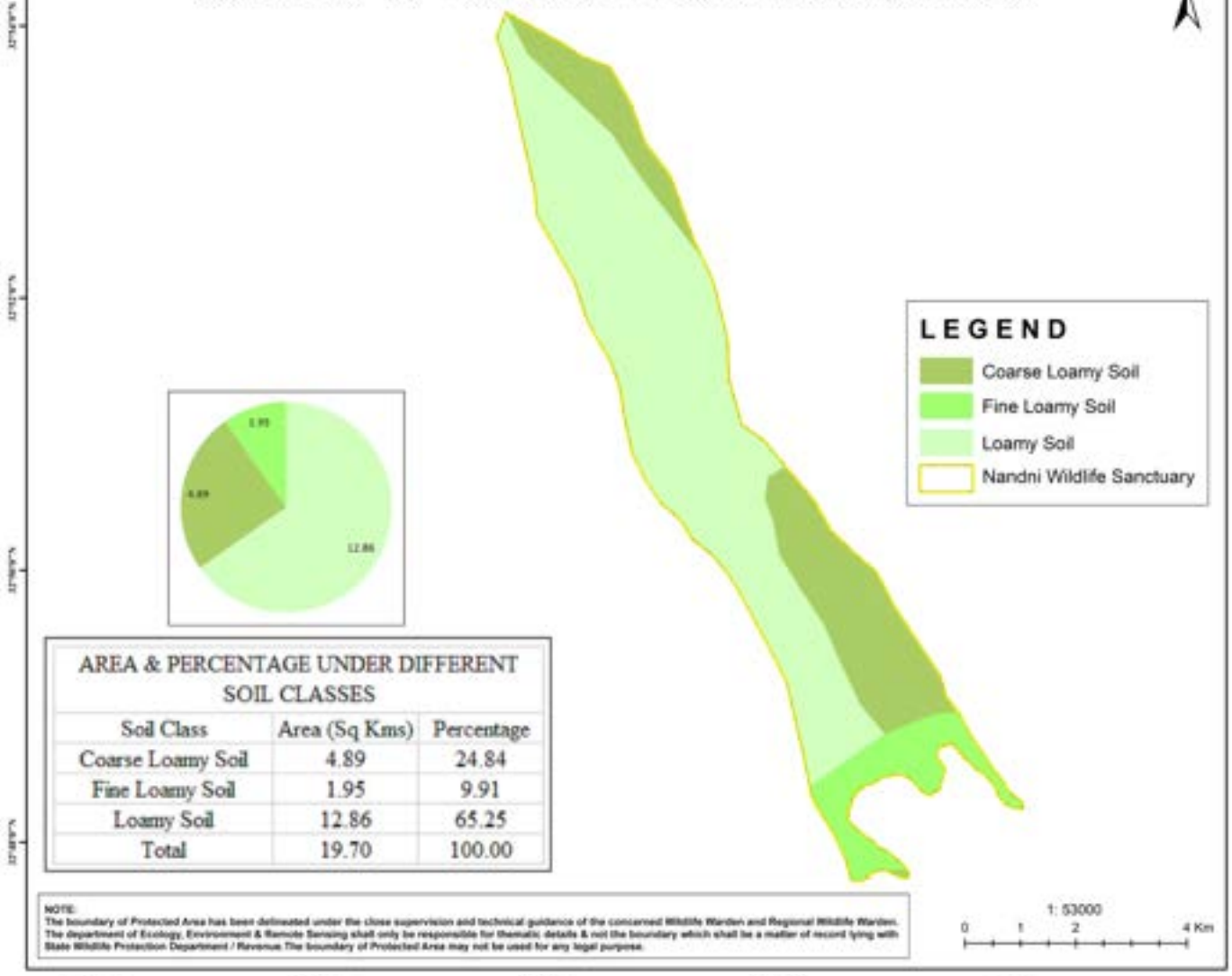
1: 53000
0 1 2 4 Km

SOIL MAP OF NANDNI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	4.89	24.84
Fine Loamy Soil	1.95	9.91
Loamy Soil	12.86	65.25
Total	19.70	100.00

NOTE:
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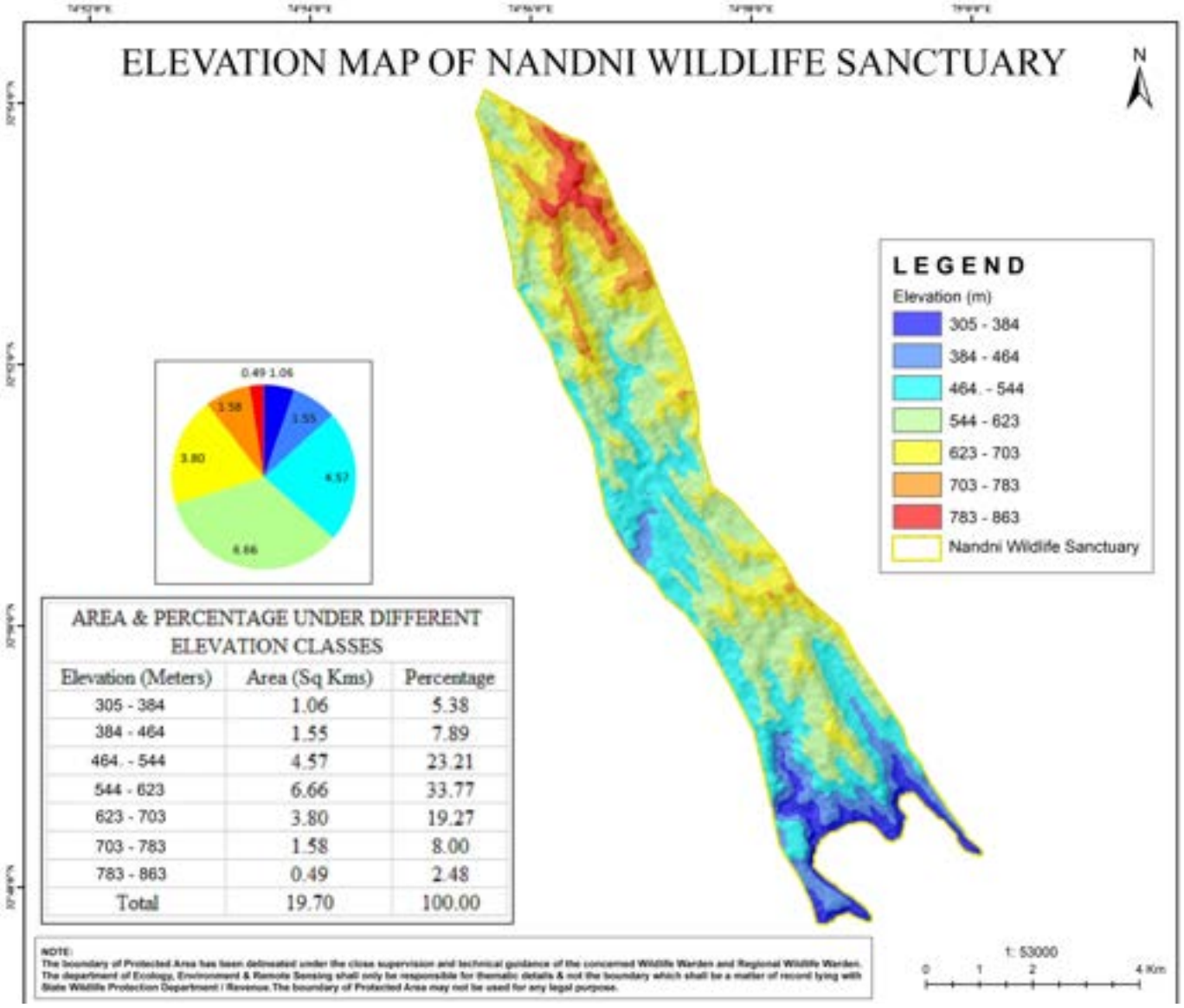
ELEVATION MAP OF NANDNI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
305 - 384	1.06	5.38
384 - 464	1.55	7.89
464. - 544	4.57	23.21
544 - 623	6.66	33.77
623 - 703	3.80	19.27
703 - 783	1.58	8.00
783 - 863	0.49	2.48
Total	19.70	100.00

NOTE:
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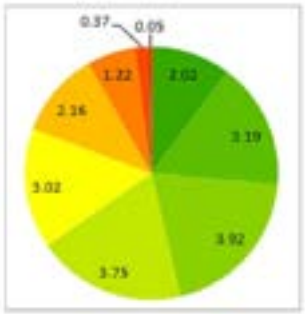
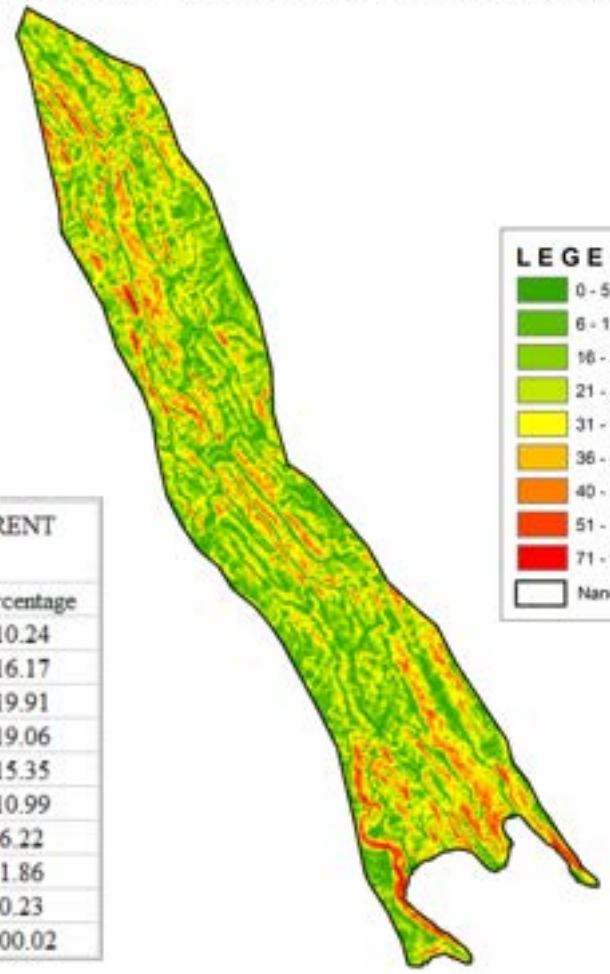
SLOPE MAP OF NANDNI WILDLIFE SANCTUARY





LEGEND

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 31 - 35
- 36 - 45
- 40 - 50
- 51 - 70
- 71 - 90
- Nandni Wildlife Sanctuary

AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	2.02	10.24
06-15	3.19	16.17
16-20	3.92	19.91
21-30	3.75	19.06
31-35	3.02	15.35
36-45	2.16	10.99
46-50	1.22	6.22
51-70	0.37	1.86
71-90	0.05	0.23
Total	19.70	100.02

NOTE:
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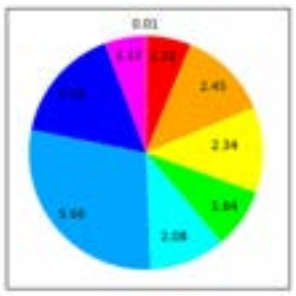
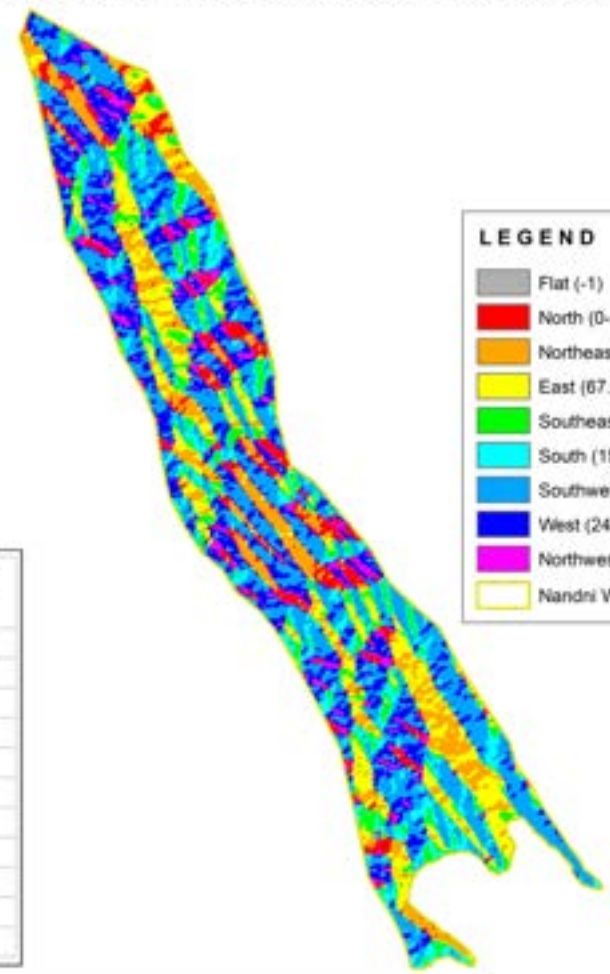
1: 53000
0 1 2 4 Km

ASPECT MAP OF NANDNI WILDLIFE SANCTUARY





LEGEND

- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Nandni Wildlife Sanctuary

AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.01	0.04
North	1.22	6.19
Northeast	2.45	12.42
East	2.34	11.87
Southeast	1.64	8.32
South	2.08	10.56
Southwest	5.66	28.75
West	3.18	16.13
Northwest	1.12	5.71
Total	19.70	100.00

NOTE:
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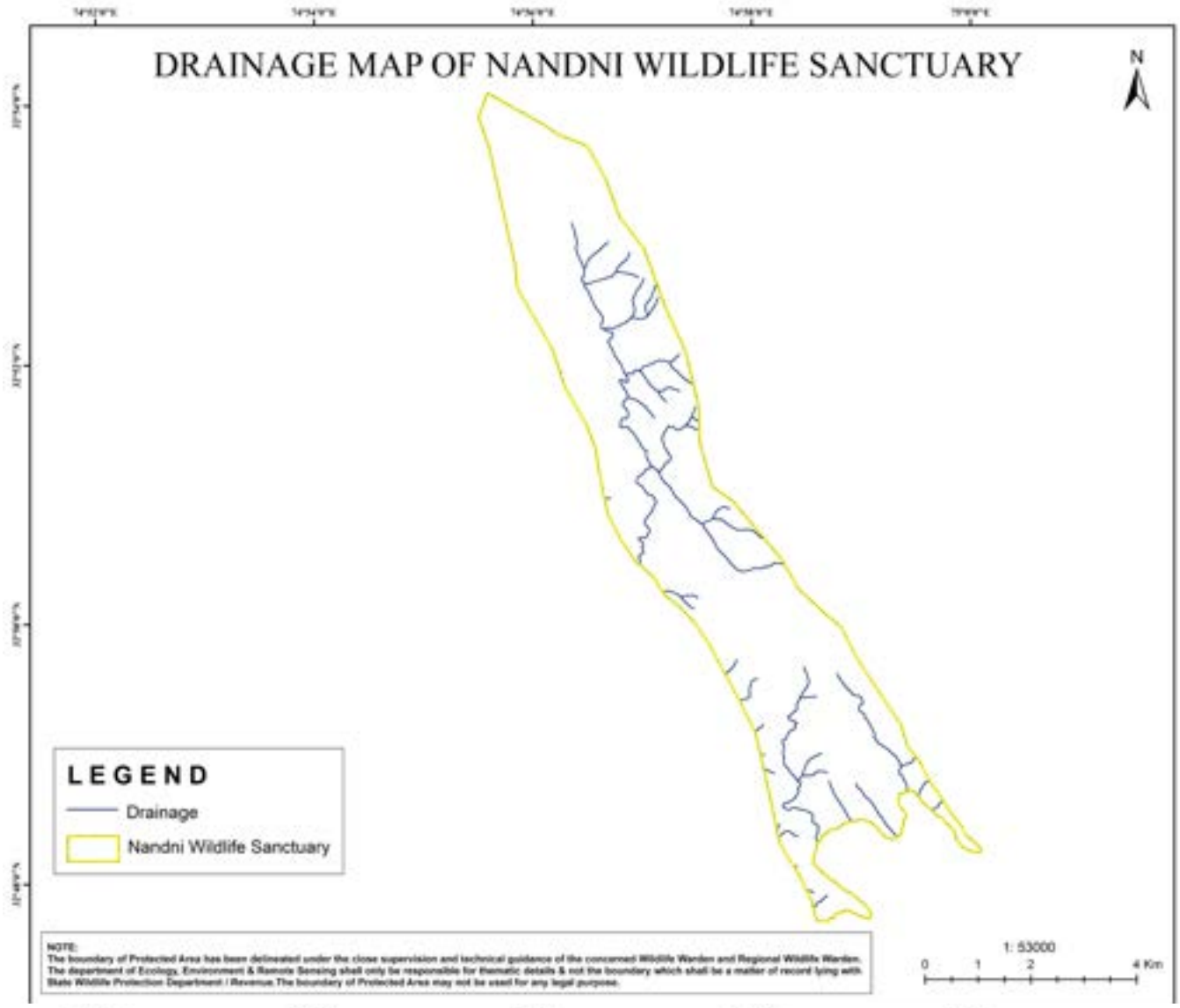
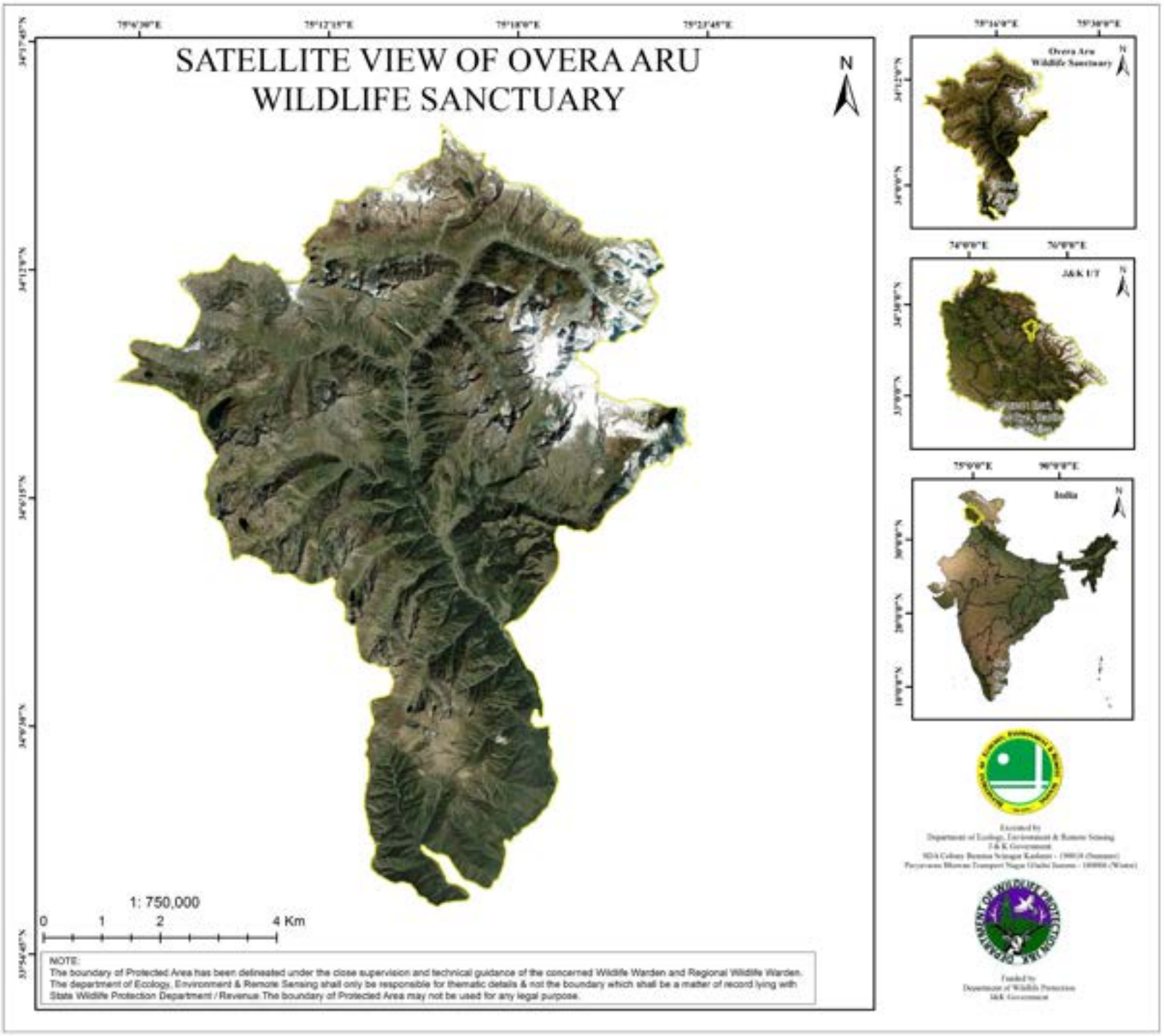
1: 53000
0 1 2 4 Km

DRAINAGE MAP OF NANDNI WILDLIFE SANCTUARY



ACCESIBILITY MAP OF NANDNI WILDLIFE SANCTUARY



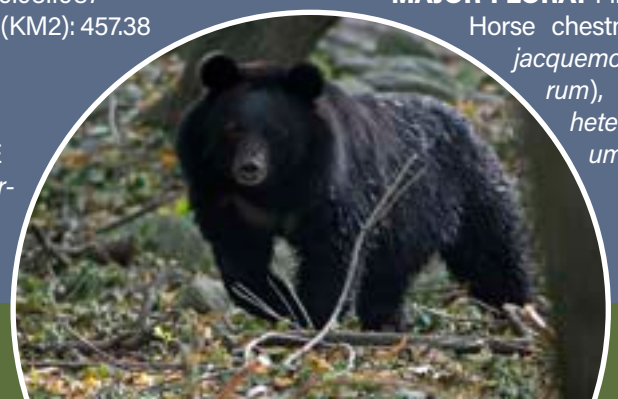
OVERA ARU WILDLIFE SANCTUARY

Overa - Aru Wildlife Sanctuary has been named after the two Villages Overa & Aru located at its fringes. It falls in Anantnag district of Kashmir division of Jammu & Kashmir and was notified in the year 1987. It forms a major catchment area of Lidder, a tributary of Jhelum River an important source of water for drinking & irrigation purposes for district Anantnag. The sanctuary is a great repository of bio diversity which includes above more than 15 mammal species, 120 bird species and 20 butterfly species. It forms the distibutory range of Kashmir Red Deer or Hangul.

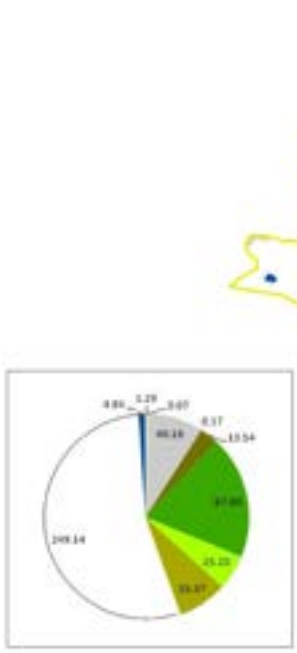
SRO/NOTIFICATION NO: SRO 154 dated 19.03.1987
NOTIFIED AREA (KM2): 425.00 **GIS AREA** (KM2): 457.38
PERIMETER (KMS): 135.52
ALTITUDE RANGE (M): 2200 – 5500
GEO - COORDINATES:
33° 55.925' N - 34° 15.660' N, 75° 5.774' E - 75° 23.230' E
MAJOR FAUNA: Kashmir Stag/Hangul (*Cervus hanglu*), Asiatic ibex (Capra sibrica), Himalayan Serow (*Capricornis thar*), Common Leopard (*Panthera pardus*), Asiatic Black Bear (*Ursus thibetanus*), Himalayan Brown Bear (*Ursus arctos*).

MAJOR AVI FAUNA: Egyptian vulture (*Neophron percnopterus*), Kashmir Flycatcher (*Ficedula subrubra*), European Roller (*Coracias garrulus*), Tytlers leaf warbler (*Phylloscopus tytleri*), Golden Eagle (*Aquila chrysaetos*), Sparow Hawk (*Accipiter nisus melaschistos*), Snow Pigeon (*Columba leuconota*) .

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Horse chestnut (*Aesculus indica*), Parrotia (*Parrotiopsis jacquemontiana*), Cranberry bush (*Viburnum grandiflorum*), Greenish Himalayan Monkshood *(Aconitum heterophyllum)*, Jimsonweed (*Datura stramonium*), Kuth (*Aucklandia costus*).



LAND USE LAND COVER MAP OF OVERA ARU WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	1.29	0.28
Agriculture Plantation	0.07	0.02
Barren Rocky	40.16	8.78
Builtup	0.17	0.04
Dense Scrub	13.54	2.96
Forest	87.60	19.15
Grassland & Grazing land	25.20	5.51
Open Scrub	35.37	7.73
Snow/Glacial	249.14	54.47
Waterbody	4.84	1.06
Total	457.38	100.00

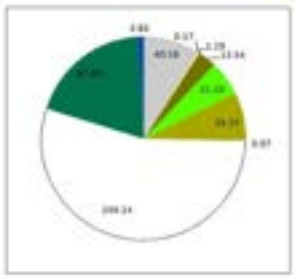
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND

- Agriculture Cropland
- Agriculture Plantation
- Barren Rocky
- Builtup
- Dense Scrub
- Forest
- Grassland & Grazing land
- Open Scrub
- Snow/Glacial
- Waterbody
- Overa Aru Wildlife Sanctuary

1: 750,000
0 1 2 4 Km

VEGETATION MAP OF OVERA ARU WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Cropland	1.29	0.28
Plantation	0.07	0.02
Builtup	0.17	0.04
Temperate Coniferous	87.60	19.15
Moist Alpine Pasture	25.20	5.51
Snow	249.14	54.47
Barren Land	40.16	8.78
Dense Scrub	13.54	2.96
Open Scrub	35.37	7.73
Water	4.84	1.06
Total	457.38	100.00

NOTE:
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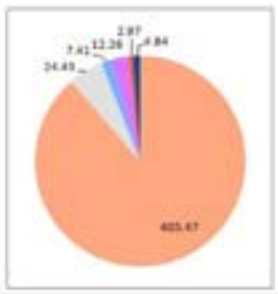
LEGEND

- Barren Land
- Builtup
- Cropland
- Dense Scrub
- Moist Alpine Pasture
- Open Scrub
- Plantation
- Snow
- Temperate Coniferous
- Water
- Overa Aru Wildlife Sanctuary

1: 750,000
0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF OVERA ARU WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	405.47	88.65
Eolian Plain	24.43	5.34
Glacial Plain	7.41	1.62
Piedmont Zone	12.26	2.68
Structural Hills	2.97	0.65
Waterbody	4.84	1.06
Total	457.38	100.00

NOTE:
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LEGEND

- Denudational Hills
- Eolian Plain
- Glacial Plain
- Piedmont Zone
- Structural Hills
- Waterbody
- Overa Aru Wildlife Sanctuary

1: 750,000
0 1 2 4 Km

LITHOLOGICAL MAP OF OVERA ARU WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Amygdoloidal Basalt	10.67	2.33
Bedded Limestone	96.08	21.01
Phyllites Schists Slates	339.81	74.29
Quartzite Shale Phyllite Beds	0.45	0.10
Sand Silt with Clay	0.25	0.05
Sandstone Claystone Siltstone	5.28	1.15
Waterbody	4.84	1.06
Total	457.38	100.00

NOTE:
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LEGEND

- Amygdoloidal Basalt
- Bedded Limestone
- Phyllites Schists Slates
- Quartzite Shale Phyllite Beds
- Sand Silt with Clay
- Sandstone Claystone Siltstone
- Waterbody
- Overa Aru Wildlife Sanctuary

1: 750,000
0 1 2 4 Km

SOIL MAP OF OVERA ARU WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	81.86	17.90
Loamy Soil	122.30	26.74
Rock Outcrop	253.22	55.37
Total	457.38	100.00

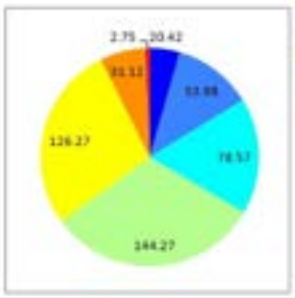
LEGEND

- Fine Loamy Soil
- Loamy Soil
- Rock Outcrop
- Overa Aru Wildlife Sanctuary

1: 750,000

0 1 2 4 Km

ELEVATION MAP OF OVERA ARU WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
2000 - 2500	20.42	4.46
2500 - 3000	53.98	11.80
3000 - 3500	78.57	17.18
3500 - 4000	144.27	31.54
4000 - 4500	126.27	27.61
4500 - 5000	31.12	6.80
5000 - 5500	2.75	0.60
Total	457.38	100.00

LEGEND

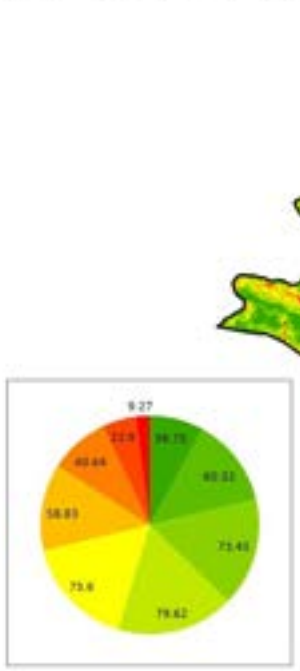
Elevation (m)

- 2000 - 2500
- 2500 - 3000
- 3000 - 3500
- 3500 - 4000
- 4000 - 4500
- 4500 - 5000
- 5000 - 5500
- Overa Aru Wildlife Sanctuary

1: 750,000

0 1 2 4 Km

SLOPE MAP OF OVERA ARU WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	36.75	8.03
6-15	60.32	13.19
16-20	73.45	16.06
21-30	79.62	17.41
31-35	75.6	16.53
36-45	58.83	12.86
46-50	40.64	8.89
51-70	22.9	5.01
71-90	9.27	2.03
Total	457.38	100.00

LEGEND

Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Overa Aru Wildlife Sanctuary

1: 750,000

0 1 2 4 Km

NOTE:
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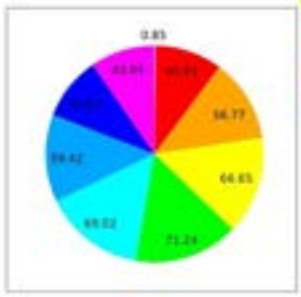
ASPECT MAP OF OVERA ARU WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.85	0.19
North	45.91	10.04
Northeast	56.77	12.41
East	66.65	14.57
Southeast	71.24	15.58
South	69.02	15.09
Southwest	59.42	12.99
West	43.57	9.53
Northwest	43.95	9.61
Total	457.38	100.00

LEGEND

- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Overa Aru Wildlife Sanctuary

1: 750,000

0 1 2 4 Km

NOTE:
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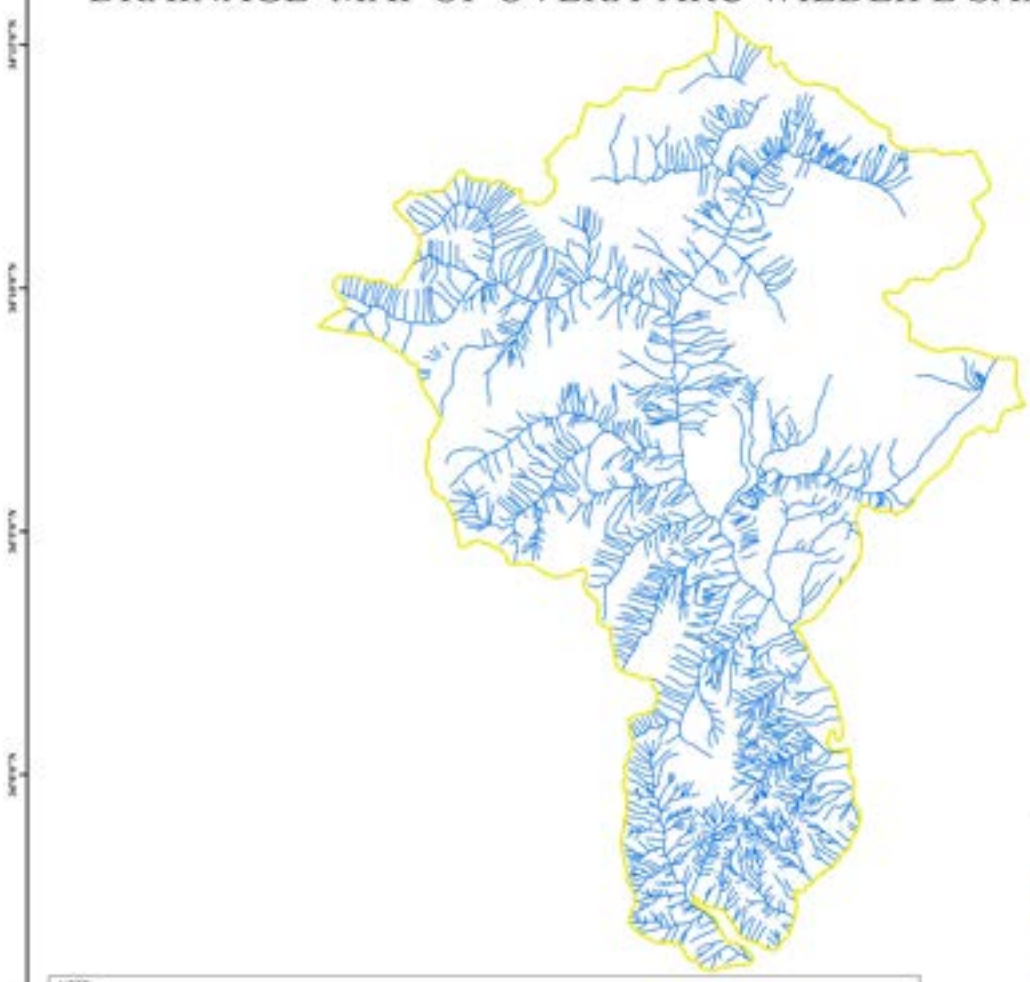
DRAINAGE MAP OF OVERA ARU WILDLIFE SANCTUARY



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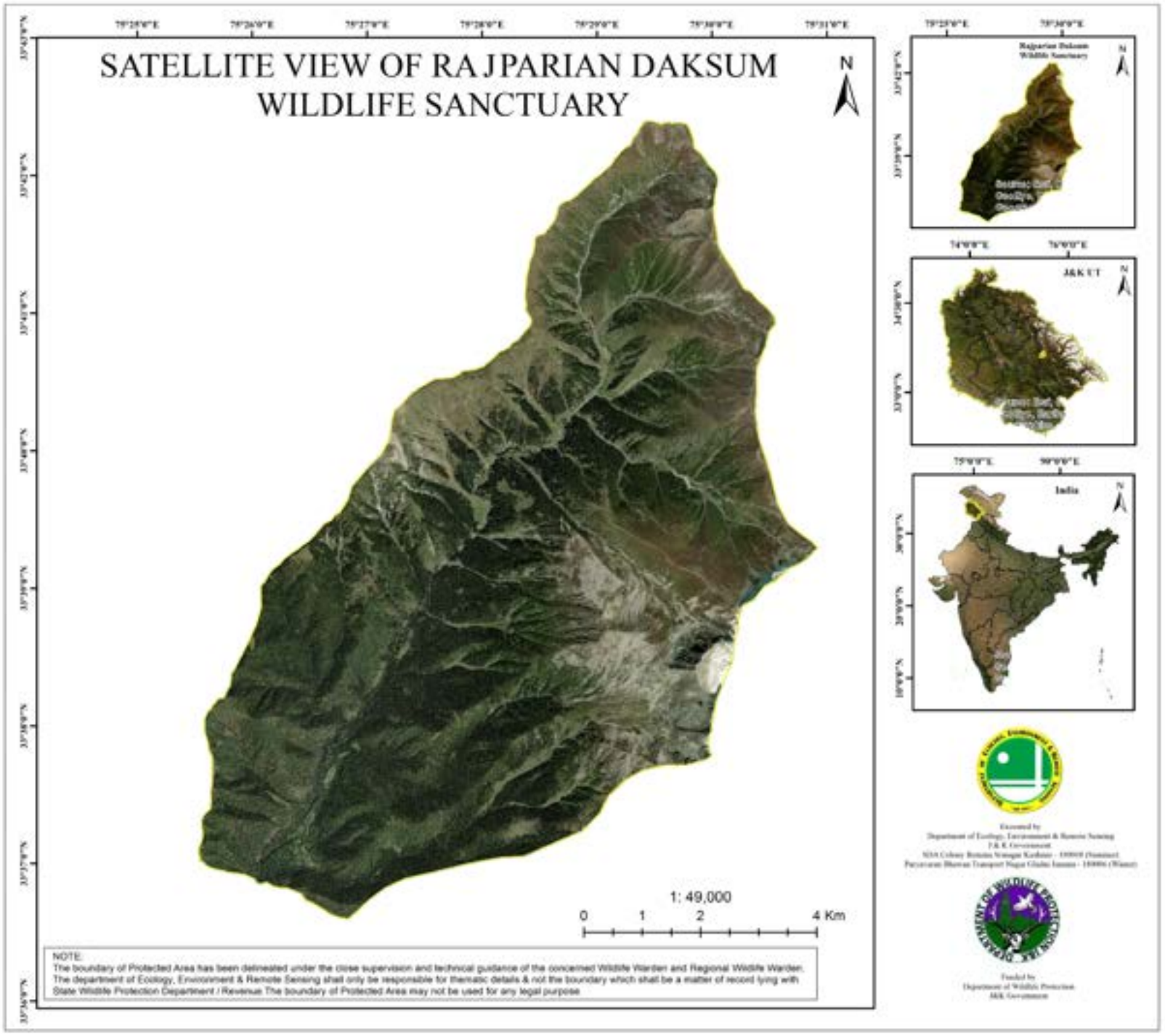
LEGEND

- Drainage
- Overa Aru Wildlife Sanctuary

1: 750,000

0 1 2 4 Km

ACCESSIBILITY MAP OF OVERA ARU WILDLIFE SANCTUARY



RAJPARIAN DAKSUM

WILDLIFE SANCTUARY

The Rajparian Daksum wildlife sanctuary is situated about 100Kms from Srinagar and was notified as Wildlife Sanctuary in the year 1945. Due to variation in altitude, aspect and soil, a diversity of vegetation is discernible in the tract. Rajparian Daksum Wildlife Sanctuary is the home of many common, rare and endangered mammalian species as well as different plant species.

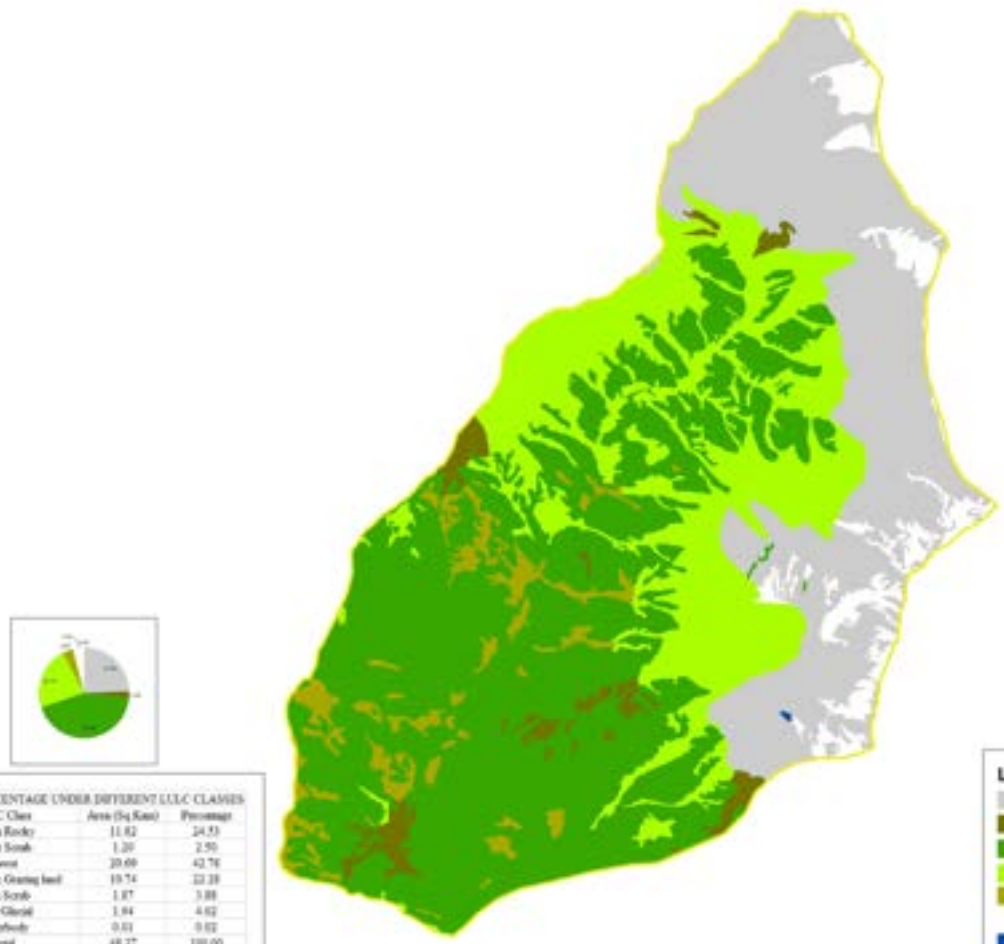
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 20.00 **GIS AREA** (KM2): 48.27
AREA (KM2): 48.27
PERIMETER (KMS): 31.08
ALTITUDE RANGE (M): 2360 – 4270
GEO - COORDINATES:
33° 36.584′ N - 33° 42.385′ N, 75° 25.497′ E - 75° 30.908′ E

MAJOR FAUNA: Yellow Throated Marten (*Martes flavigula*), Kashmir Stag/Hangul (*Cervus hanglu*), Common Leopard (*Panthera pardus*), Himalayan Serow (*Capricornis thar*), Long Tailed Marmot (*Marmota caudate*), Kashmir Musk Deer (*Moschus cupreus*), Himalayan Brown Bear (*Ursus arctos*), Himalayan Black Bear (*Ursus thibetanus*), Small Kashmir Flying Squirrel (*Eoglaucomys fimbriatus*).

MAJOR AVI FAUNA: Black Eared kite (*Milvus migrans*), White backed Vulture (*Psedopus bengalensis*), European Hoopoe (*Upopa epops epops*), Common Swallow (*Hirunda rustica*), Golden Oriole (*Oriolus kundo*), Grey Tit (*Parus major*), Indian barn Owl (*Tyto alba*).

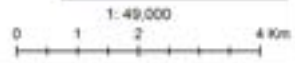
MAJOR FLORA: Himalayan Blue Pine (*Pinus wallichiana*), Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan birch (*Betula utilis*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*).

LAND USE LAND COVER MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Barren Rocky	11.82	24.53
Dense Scrub	1.20	2.50
Forest	20.69	42.78
Grassland & Grazing land	10.74	22.28
Open Scrub	1.87	3.88
Snow-Glacial	1.94	4.02
Waterbody	0.01	0.02
Total	48.27	100.00



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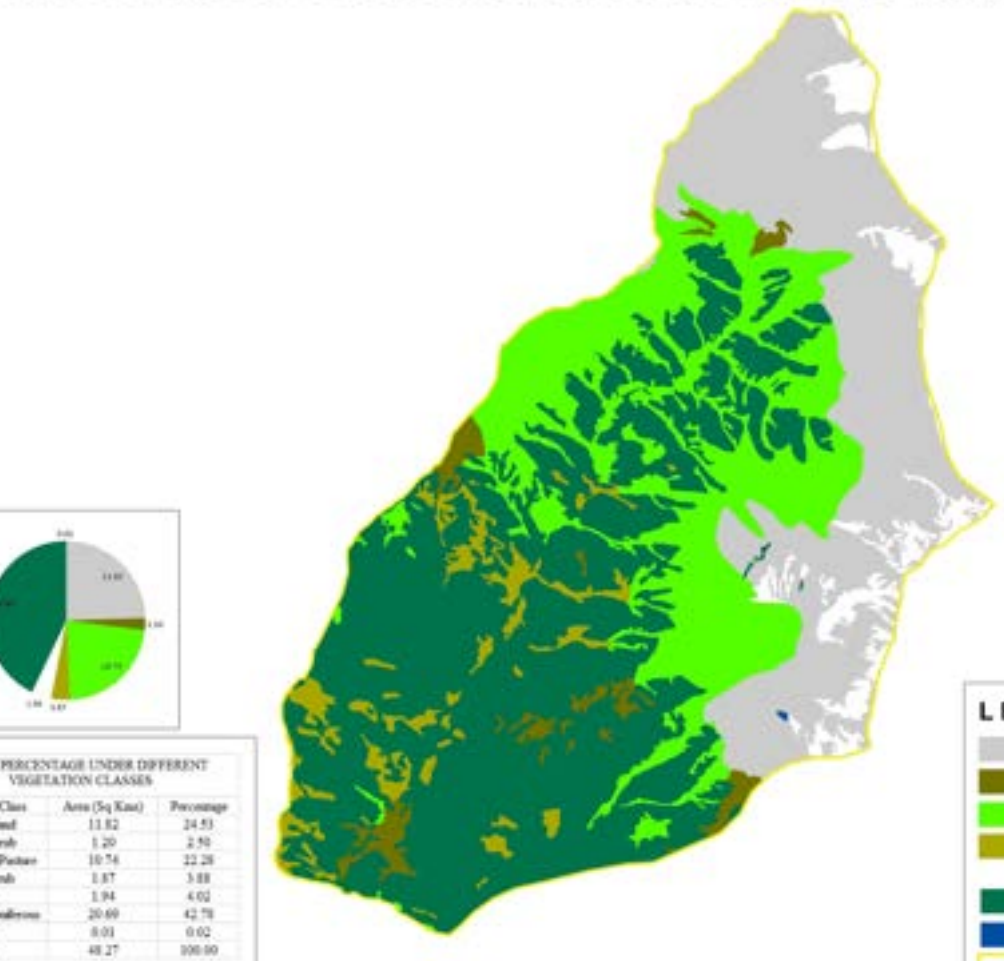
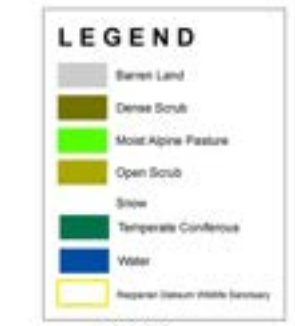
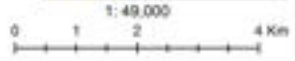
VEGETATION MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	11.82	24.53
Dense Scrub	1.20	2.50
Moist Alpine Pasture	10.74	22.28
Open Scrub	1.87	3.88
Snow	1.94	4.02
Temperate Coniferous	20.69	42.78
Water	0.01	0.02
Total	48.27	100.00





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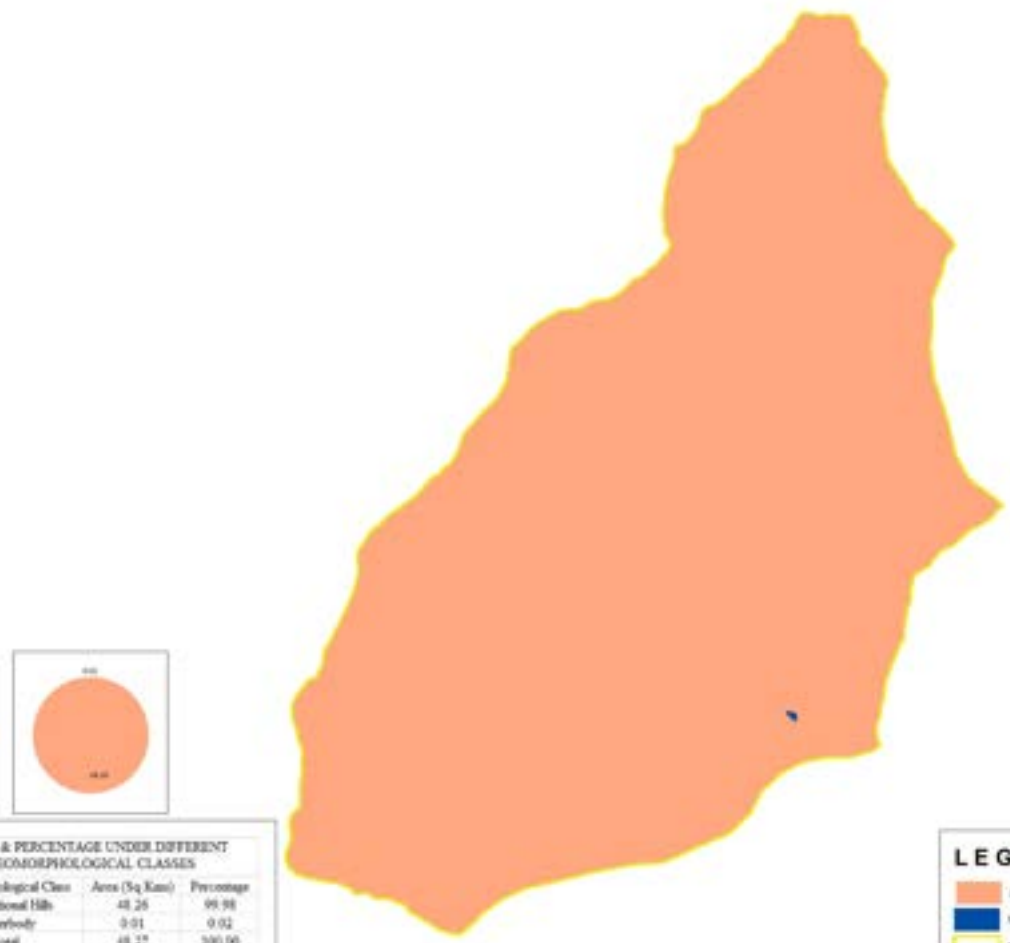
GEOMORPHOLOGICAL MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq.Kms)	Percentage
Denudational Hills	48.26	99.98
Waterbody	0.01	0.02
Total	48.27	100.00

NOTE:
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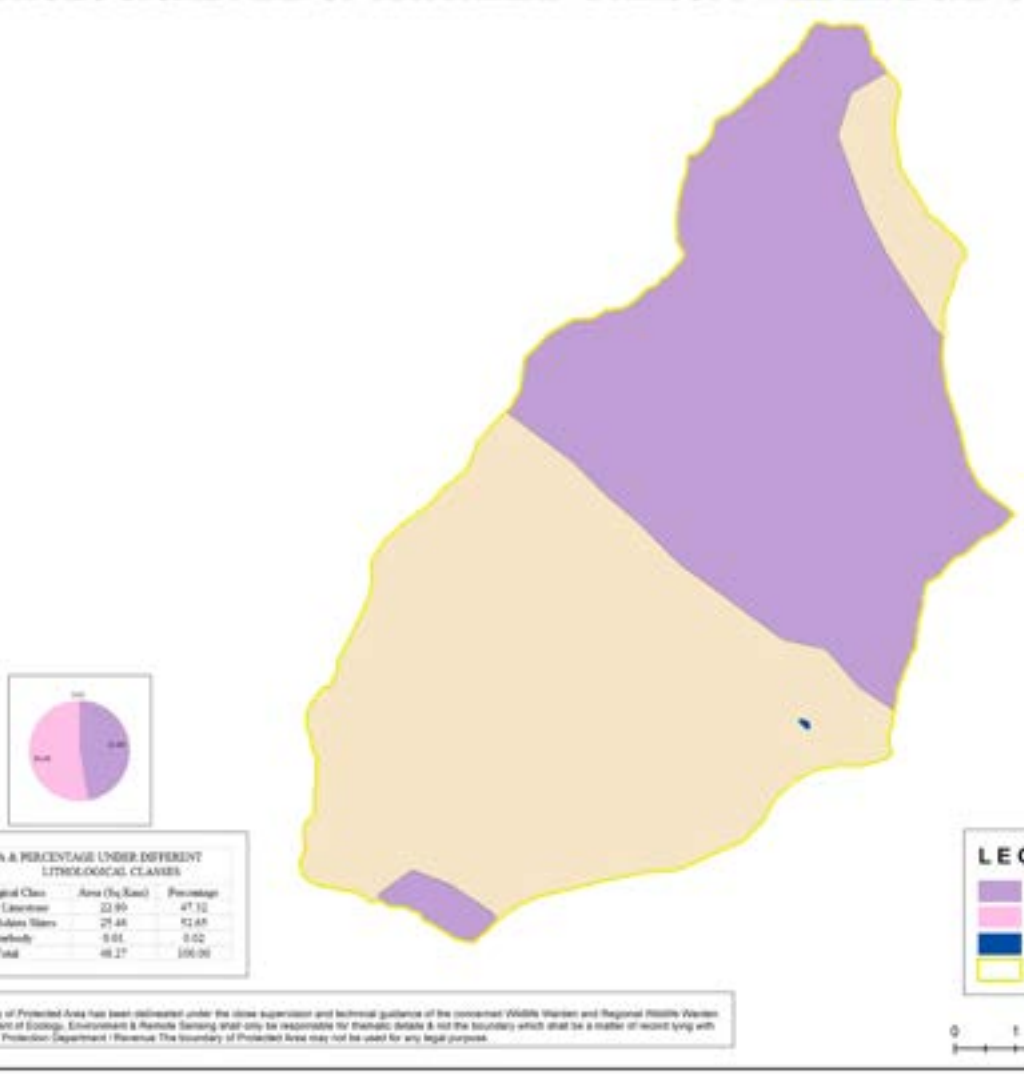
LITHOLOGICAL MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq.Kms)	Percentage
Bedded Limestone	22.99	47.32
Phyllites Schists Slates	25.46	52.65
Waterbody	0.01	0.02
Total	48.27	100.00

NOTE:
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SOIL MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Silty Soil	0.15	0.31
Loamy Soil	48.12	99.69
Total	48.27	100.00

NOTE:
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LEGEND
- Fine Silty Soil
- Loamy Soil
- Razparian Daksum Wildlife Sanctuary

1: 49,000
0 1 2 4 Km

ELEVATION MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Metres)	Area (Sq Kms)	Percentage
2360 - 2632	3.42	7.09
2632 - 2905	7.58	15.70
2905 - 3178	8.22	17.03
3178 - 3451	8.26	17.11
3451 - 3724	8.17	16.93
3724 - 3997	8.87	18.38
3997 - 4270	3.75	7.77
Total	48.27	100.00

NOTE:
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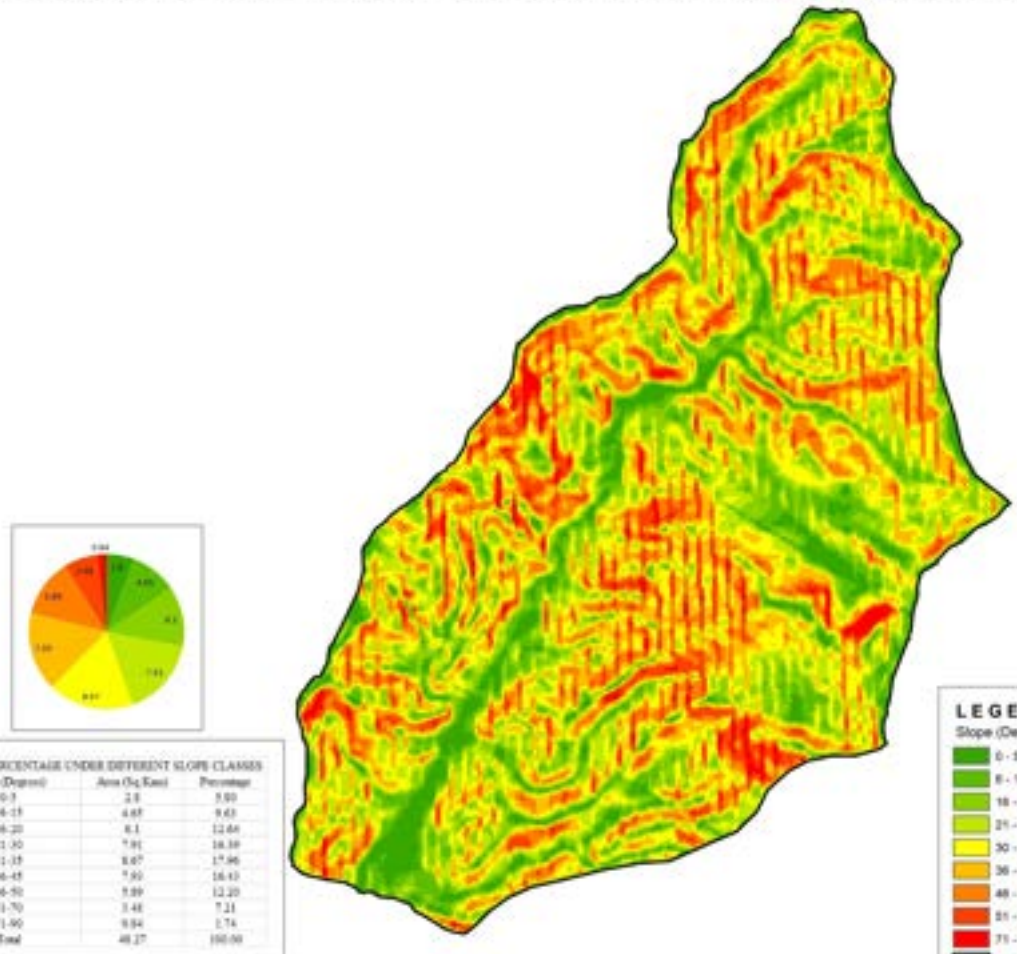
LEGEND
Elevation (m)
- 2360 - 2632
- 2632 - 2905
- 2905 - 3178
- 3178 - 3451
- 3451 - 3724
- 3724 - 3997
- 3997 - 4270
- Razparian Daksum Wildlife Sanctuary

1: 49,000
0 1 2 4 Km

SLOPE MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq.Kms)	Percentage
0-5	2.8	5.80
6-15	4.65	9.63
16-20	6.1	12.64
21-30	7.91	16.39
31-35	8.67	17.96
36-45	7.93	16.43
46-50	5.89	12.20
51-70	3.48	7.21
71-90	0.84	1.74
Total	48.27	100.00

LEGEND

Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Rajparian Daksum Wildlife Sanctuary

1: 49,000

0 1 2 4 Km

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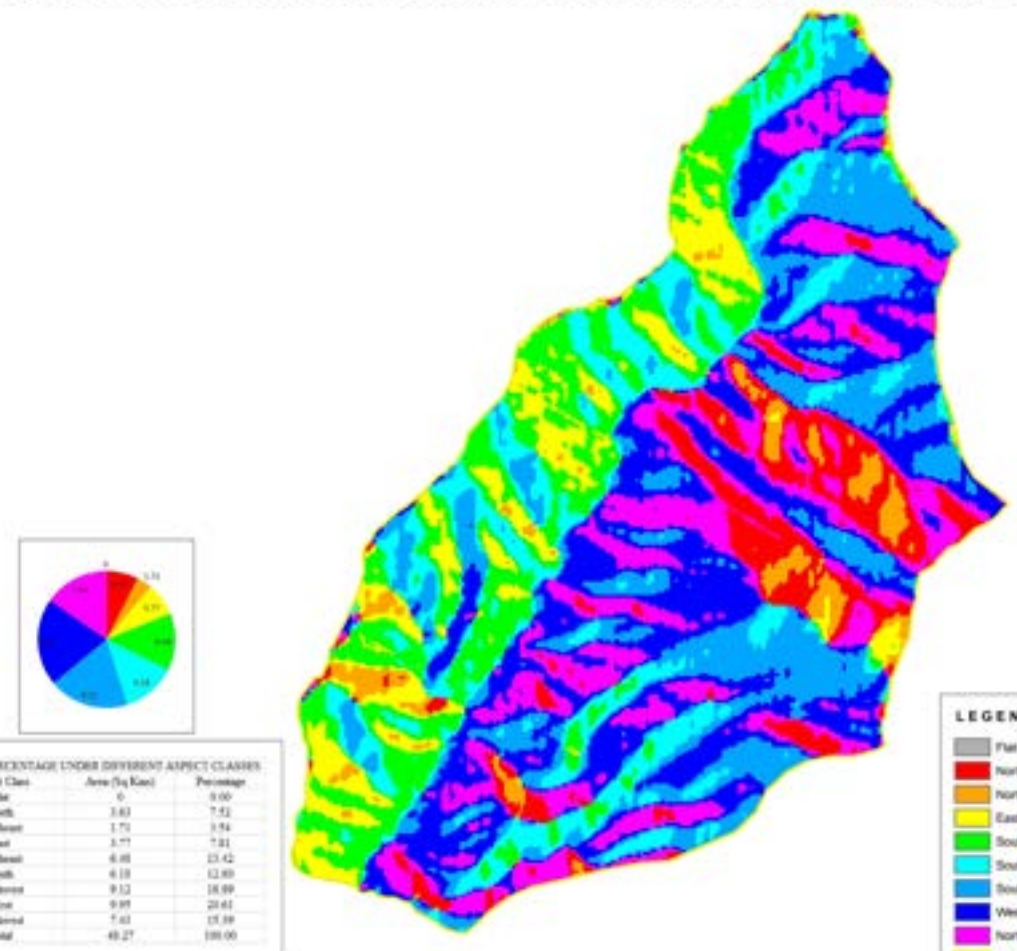
ASPECT MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq.Kms)	Percentage
Flat	0	0.00
North	3.63	7.51
Northeast	1.71	3.54
East	3.77	7.81
Southeast	6.48	13.42
South	6.18	12.80
Southwest	9.12	18.89
West	9.95	20.61
Northwest	7.43	15.39
Total	48.27	100.00

LEGEND

- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Rajparian Daksum Wildlife Sanctuary

1: 49,000

0 1 2 4 Km

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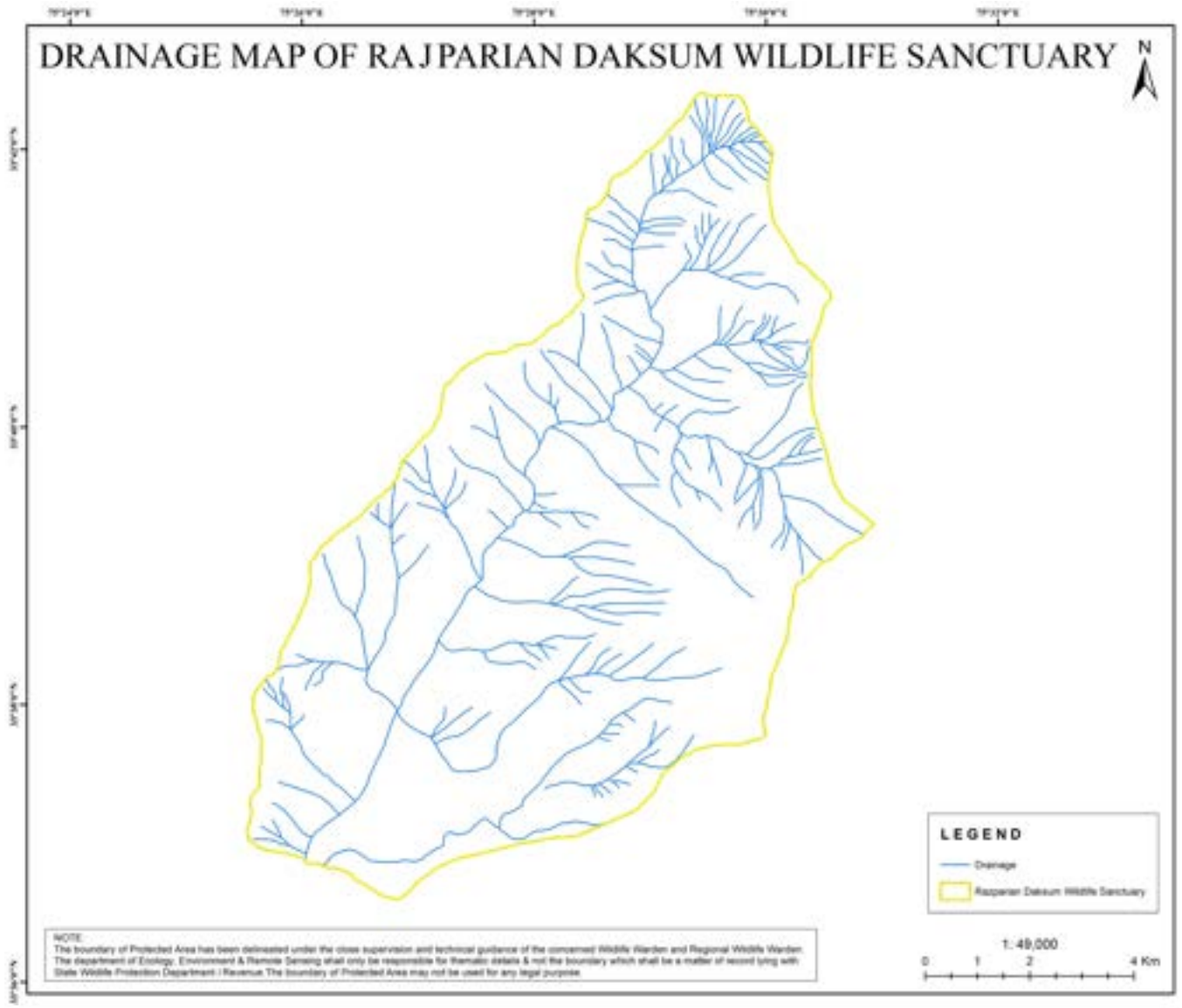
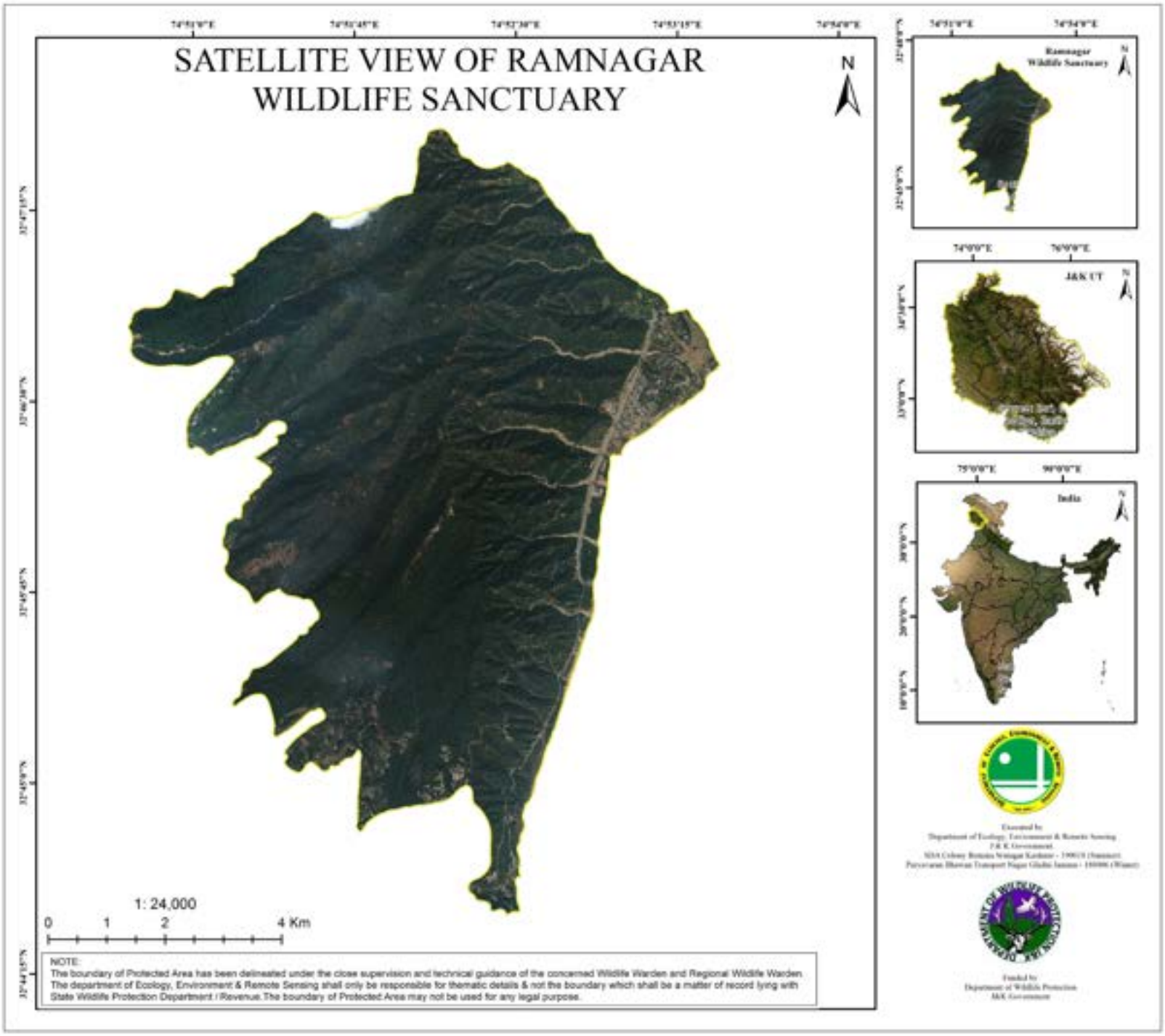
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY
N
LEGEND
Drainage
Rajparian Daksum Wildlife Sanctuary
1: 49,000
0 1 2 4 Km
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden.
The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.


ACCESSIBILITY MAP OF RAJPARIAN DAKSUM WILDLIFE SANCTUARY
N
Hamgun Nar
Naginmandu Nar
Nakhpau
Fatehmandu Nar
Wat Nar
Hokser Balhk
Tiung
Hokser Nar
Til Nar
Muinambal
Wogabal Sar
Bangidar Nar
Palwas
Gogaimandu Nar
1: 48000
0 1 2 4 Km
LEGEND
Placemarks
Rajparian Daksum Wildlife Sanctuary
Forest Trails/Tracks/Inspection Paths/Roads



RAMNAGAR WILDLIFE SANCTUARY

The Sanctuary is located on the Northern side of Jammu city. The Sanctuary was notified vide Govt. order No. 136 Dated 10-4-1990. It is located in the catchment zone of the Kar nalla of the Tawi River. Ramnagar Wildlife Sanctuary is well known for habitat of large number of herbivores and rich biodiversity of avifauna.

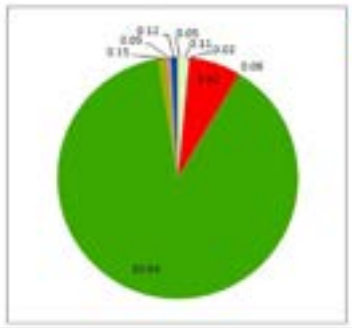
SRO/NOTIFICATION NO: SRO 136 dated 10.04.1990
NOTIFIED AREA (KM2): 31.50 **GIS AREA** (KM2): 12.02
PERIMETER (KMS): 21.62
ALTITUDE RANGE (M): 263 – 559
GEO – COORDINATES:
32° 44.480′ N - 32° 47.576′ N, 74° 50.699′ E - 74° 53.452′ E

MAJOR FAUNA: Himalayan goral (*Nemorhaedus goral*), Nilgai (*Boselaphus tragocamelus*), Barking Deer (*Muntiacus muntjak*), Wild Boar (*Sus scrofa cristatus*), Indian Crested Porcupine (*Hystrix indica*), Common Leopard (*Panthera pardus*), Barking Deer (*Muntiacus muntjak*), Chital (*Axis axis*), Grey Langur (*Semnopithecus entellus*), Indian Jackal (*Canis aureus*), jungle Cat (*Felis chaus*).

MAJOR AVI FAUNA: Red Jungle Fowl (*Gallus*), Common peafowl (*Pavo cristatus*), Grey Francolus (*Francolinus ponicerianus*), Blue Rock Pigeon (*Columba livia*), Eurasian Collared dove (*Streptopelia decaocto*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundo*), Griffon Vulture (*Gyps fulvus*).

MAJOR FLORA: Cutch tree (*Acacia catechu*), Fig (*Ficus carica*), Babool (*Acacia arabica*), chir pine (*Pinus roxburghi*), Wood Apple (*Aegle marmelos*), Siris tree (*Albizzia lebbek*), Indian jujube (*Zyzyphus jujuba*), Neem tree (*Azardirachta indica*), Indian thorny bamboo (*Bambusa bambos*), Lantana (*Lantana camara*), Hopseed bush (*Dedonea vesicosa*), Bihul (*Grewia optiva*), Hopseed bush (*Dedonea vesicosa*), Indian rosewood (*Dalbergia sissoo*).

LAND USE LAND COVER MAP OF RAMNAGAR WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.05	0.45
Agriculture Plantation	0.11	0.94
Barren Rocky	0.02	0.15
Builtup	0.82	6.82
Dense Scrub	0.06	0.51
Forest	10.64	88.51
Open Scrub	0.15	1.28
Sandy Area	0.05	0.38
Waterbody	0.12	0.96
Total	12.02	100.00

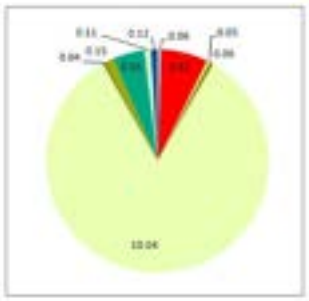
LEGEND

- Agriculture Cropland
- Agriculture Plantation
- Barren Rocky
- Builtup
- Dense Scrub
- Forest
- Open Scrub
- Sandy Area
- Waterbody
- Ramnagar Wildlife Sanctuary

1: 24,000

0 1 2 4 Km

VEGETATION MAP OF RAMNAGAR WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	0.06	0.95
Builtup	0.82	6.84
Cropland	0.05	0.45
Dense Scrub	0.06	0.51
Dry Deciduous	10.04	83.52
Evergreen	0.04	0.37
Open Scrub	0.15	1.28
Pine	0.55	4.61
Plantation	0.11	0.94
Water	0.12	0.96
Total	12.02	100.00

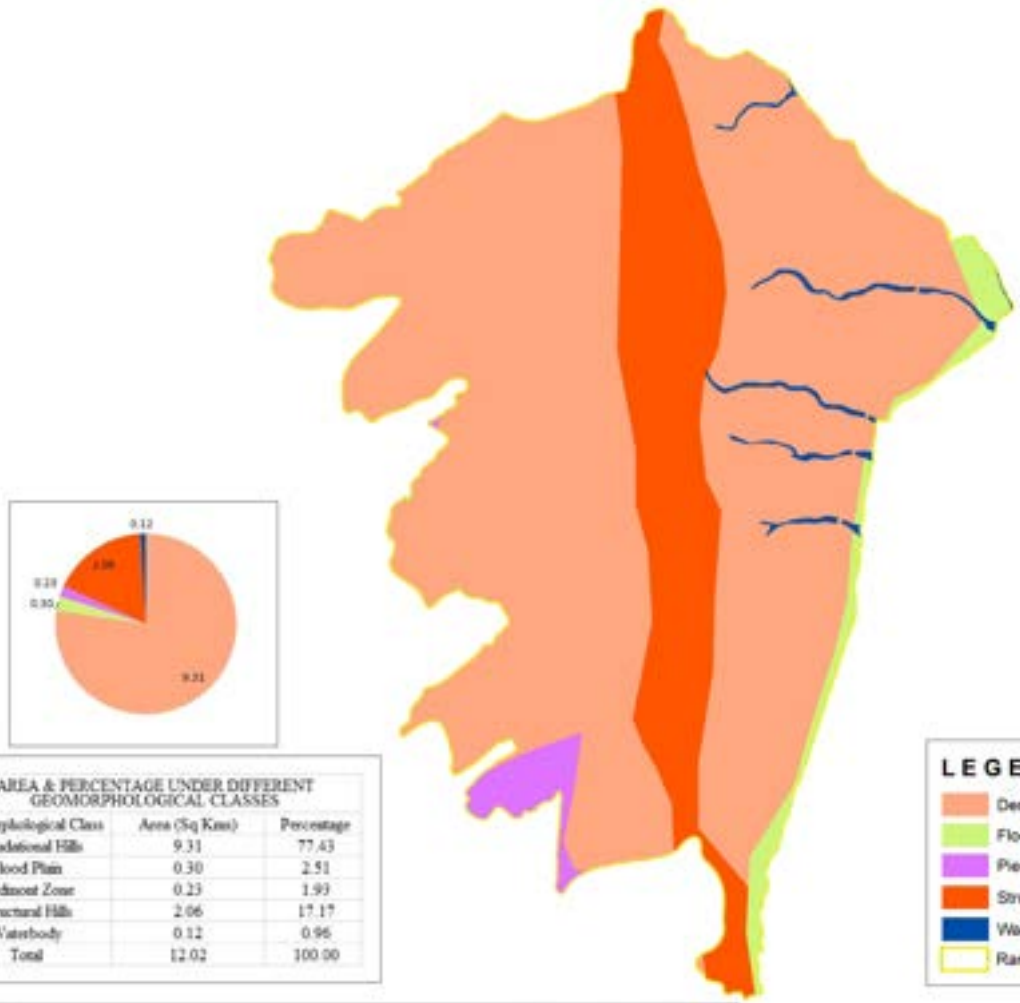
LEGEND

- Barren Land
- Builtup
- Cropland
- Dense Scrub
- Dry Deciduous
- Evergreen
- Open Scrub
- Pine
- Plantation
- Water
- Ramnagar Wildlife Sanctuary

1: 24,000

0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF RAMNAGAR WILDLIFE SANCTUARY

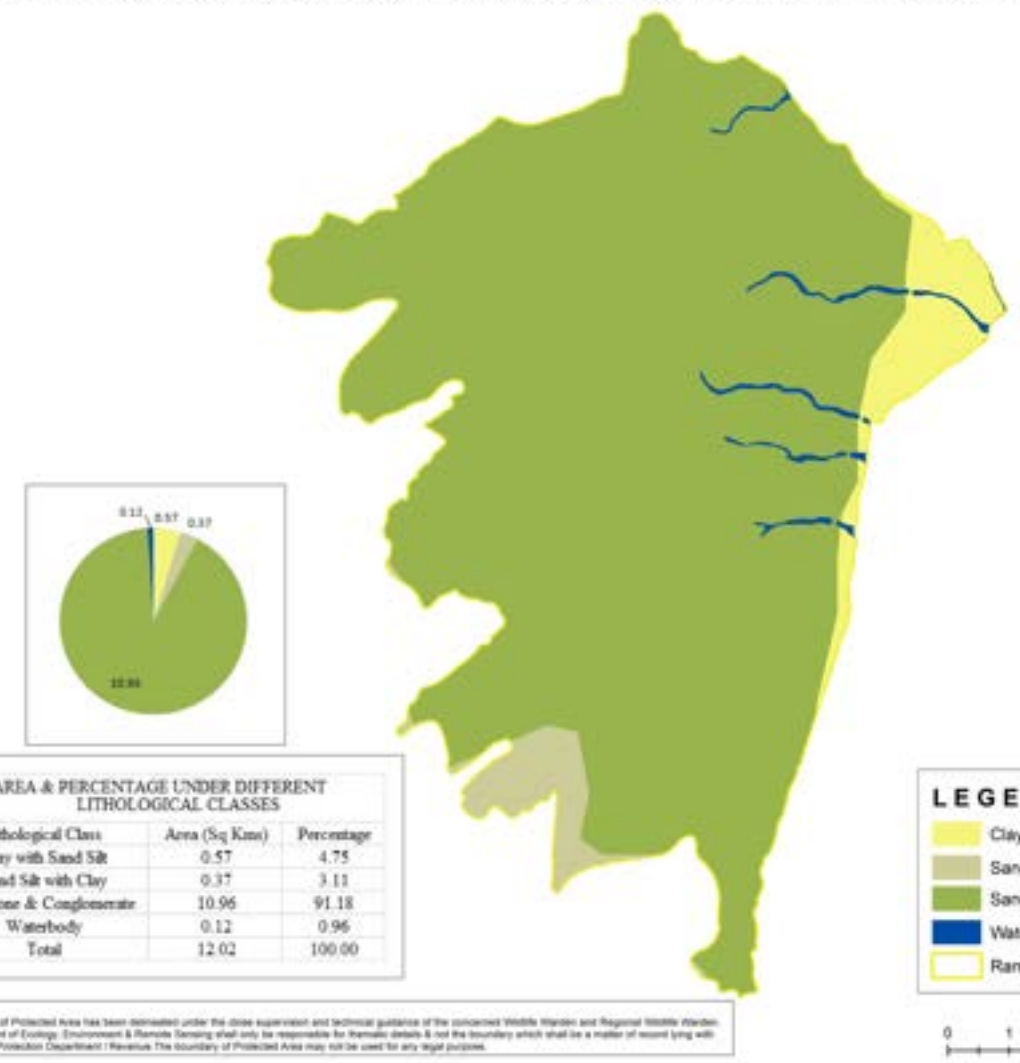


AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	9.31	77.43
Flood Plain	0.30	2.51
Piedmont Zone	0.23	1.93
Structural Hills	2.06	17.17
Waterbody	0.12	0.96
Total	12.02	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purposes.

LITHOLOGICAL MAP OF RAMNAGAR WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Clay with Sand Silt	0.57	4.75
Sand Silt with Clay	0.37	3.11
Sandstone & Conglomerate	10.96	91.18
Waterbody	0.12	0.96
Total	12.02	100.00

NOTE:
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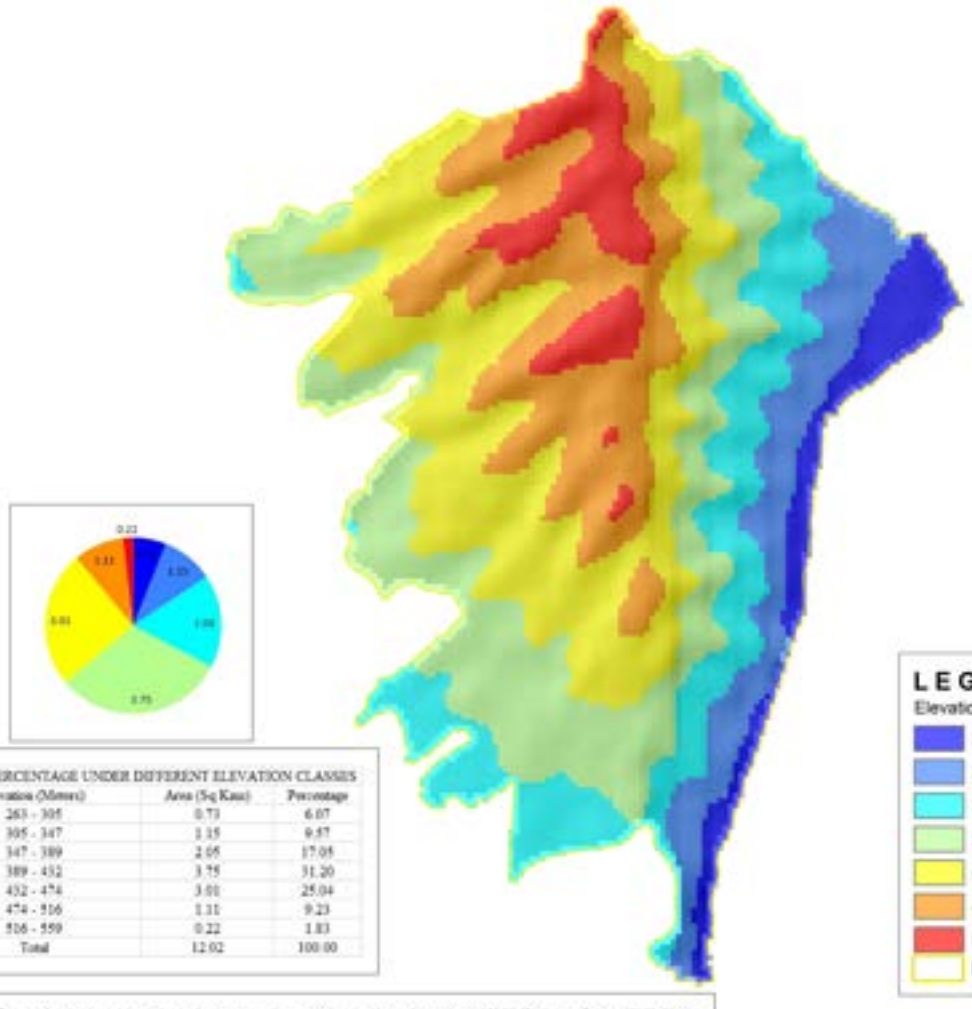
ELEVATION MAP OF RAMNAGAR WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
263 - 305	0.73	6.07
305 - 347	1.15	9.57
347 - 389	2.05	17.05
389 - 432	3.75	31.20
432 - 474	3.01	25.04
474 - 516	1.11	9.23
516 - 559	0.22	1.83
Total	12.02	100.00

NOTE:
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LEGEND

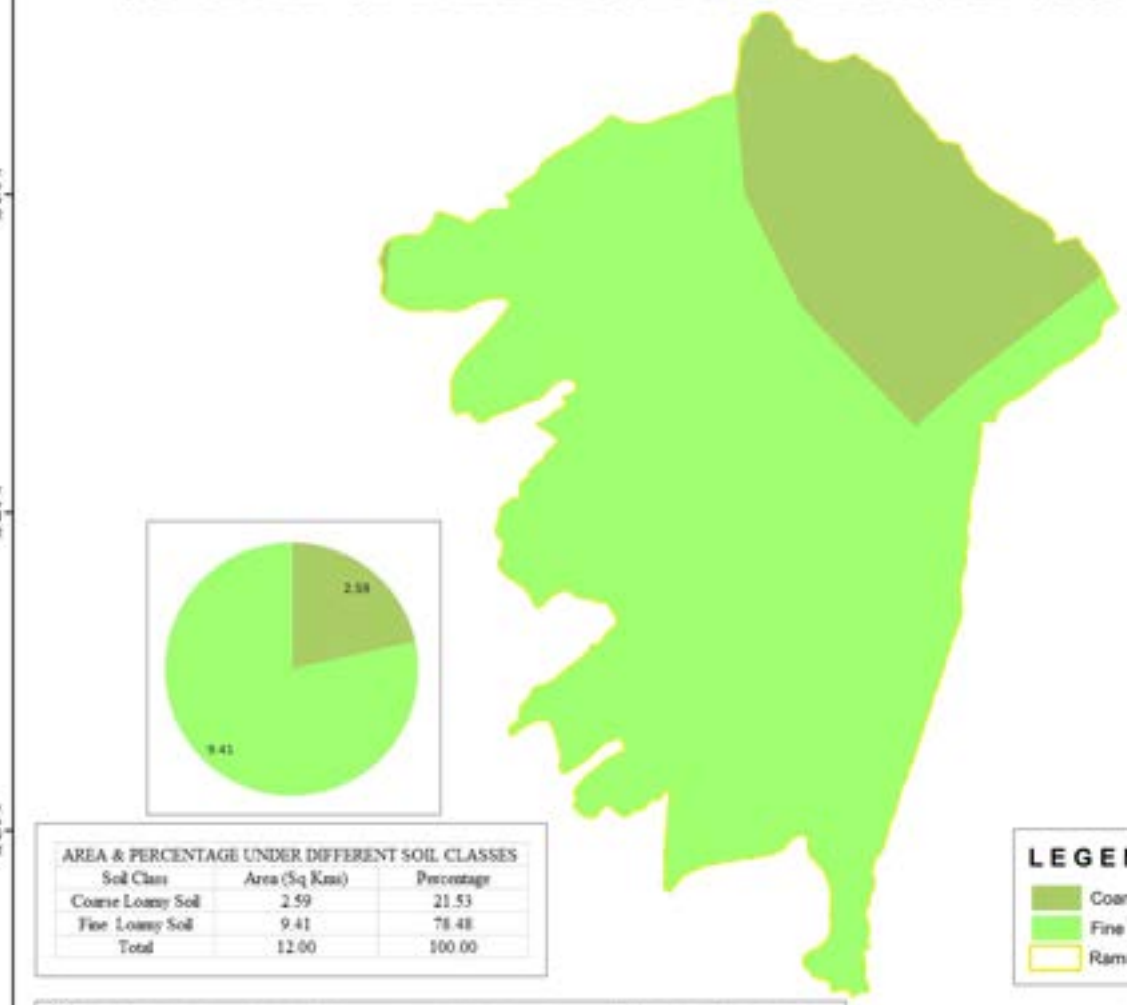
Elevation (m)

- 263 - 305
- 305 - 347
- 347 - 389
- 389 - 432
- 432 - 474
- 474 - 516
- 516 - 559
- Ramnagar Wildlife Sanctuary

1: 24,000

0 1 2 4 Km

SOIL MAP OF RAMNAGAR WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	2.59	21.53
Fine Loamy Soil	9.41	78.48
Total	12.00	100.00

NOTE:
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LEGEND

- Coarse Loamy Soil
- Fine Loamy Soil
- Ramnagar Wildlife Sanctuary

1: 24,000

0 1 2 4 Km

SLOPE MAP OF RAMNAGAR WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-3	1.8	14.98
3-6	2.4	19.97
6-8	2.14	17.80
8-10	1.91	15.89
10-12	1.57	13.06
12-15	1.18	9.82
15-18	0.68	5.66
18-22	0.29	2.41
22-29	0.05	0.42
Total	12.02	100.00

NOTE:
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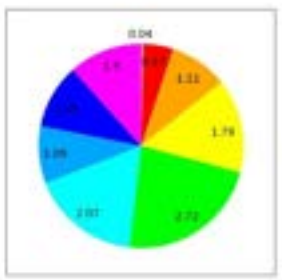
LEGEND
Slope (Degrees)
- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Ramnagar Wildlife Sanctuary

1: 24,000
0 1 2 4 Km

ASPECT MAP OF RAMNAGAR WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.04	0.33
North	0.57	4.74
Northeast	1.11	9.23
East	1.79	14.89
Southeast	2.72	22.63
South	2.07	17.22
Southwest	1.09	9.07
West	1.23	10.23
Northwest	1.4	11.65
Total	12.02	100.00

NOTE:
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LEGEND
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Ramnagar Wildlife Sanctuary

1: 24,000
0 1 2 4 Km

DRAINAGE MAP OF RAMNAGAR WILDLIFE SANCTUARY

N

LEGEND

Drainage

Ramnagar Wildlife Sanctuary

1: 750,000

0 1 2 4 Km

NOTE:
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ACCESSIBILITY MAP OF RAMNAGAR WILDLIFE SANCTUARY

N

1: 25000

0 1 2 4 Km

NOTE:
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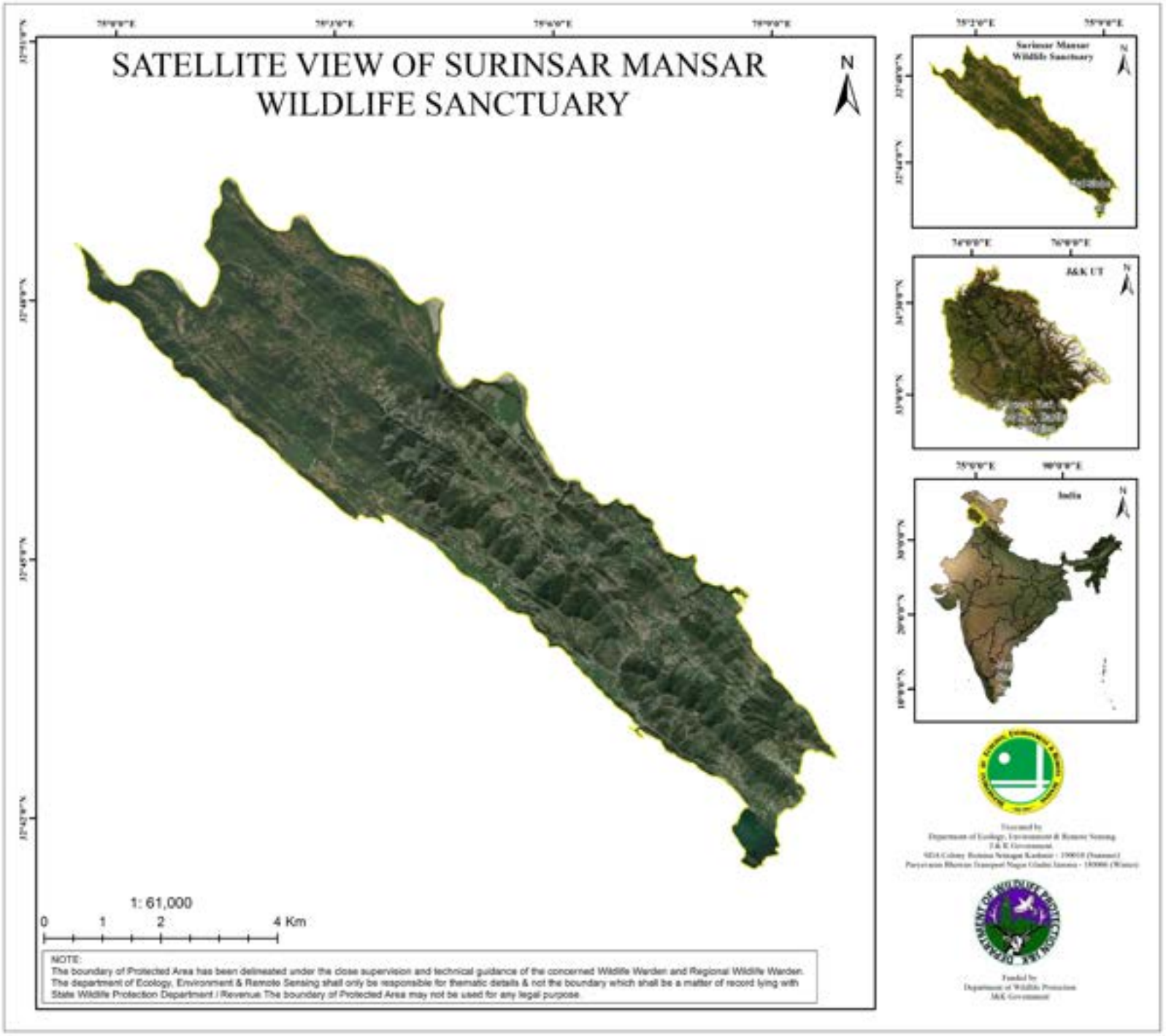
LEGEND

Placemarks

Ramnagar Wildlife Sanctuary

Forest Trails/Tracks/Inspection Paths/Roads



SURINSAR MANSAR
WILDLIFE SANCTUARY

The Surinsar Mansar Wildlife Sanctuary, notified in the year 1981 falls in Jammu division of UT of Jammu & Kashmir. The Sanctuary derives its name from two lakes, located at each corner of the sanctuary. The two lakes are socially and culturally very significant as they owes their origin to the Mahabharata period and form popular tourist destination in Jammu region. The diverse and varied faunal wealth of the area adds to its glory, besides it being easily accessible, aesthetic and ecologically significant.

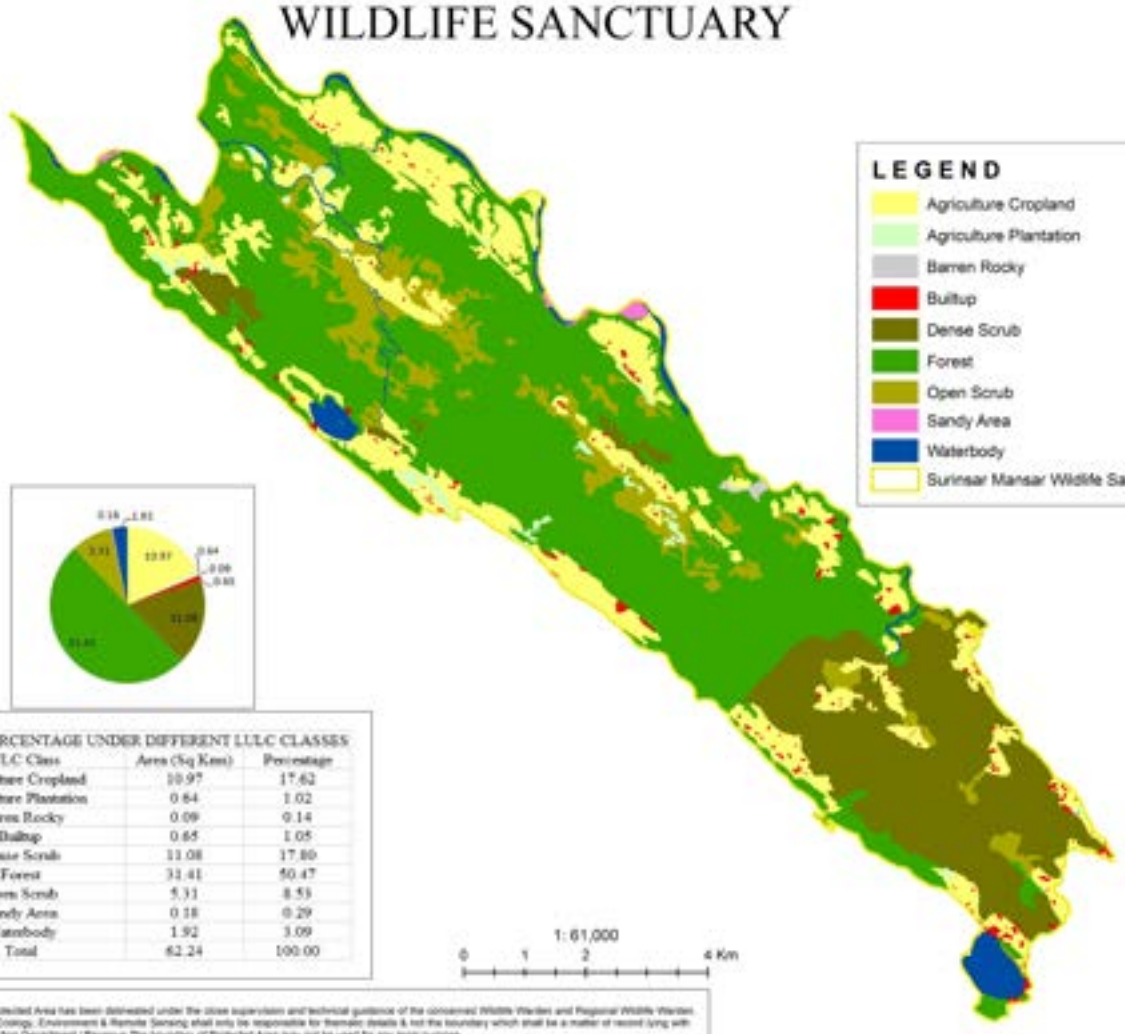
SRO/NOTIFICATION NO: SRO 138 dated 10.04.1990
NOTIFIED AREA (KM2): 97.82 **GIS AREA** (KM2): 62.24
PERIMETER (KMS): 57.34
ALTITUDE RANGE (M): 335 - 790
GEO - COORDINATES:
32° 41.403′ N - 32° 49.437′ N, 74° 59.423′ E - 75° 9.876′ E

MAJOR FAUNA: Nilgai (*Boselaphus tragocamelus*), Chital (*Axis axis*), Barking Deer (*Muntiacus muntjak*), Rhesus Monkey (*Macaca mulatta*), Himalayan goral (*Nemorhaedus goral*), Wild Boar (*Sus scrofa cristatus*), Hare (*Lepus nigricollis*), Indian Crested Porcupine (*Hystrix indica*), Mongoose (Herpestes), Leopard Cat (*Prionailurus bengalensis*), Grey Langur (*Semnopithecus entellus*), Indian Jackal (*Canis aureus*), jungle Cat (*Felis chaus*).

MAJOR AVI FAUNA: Common peafowl (*Pavo cristatus*), Blue Rock Pigeon (*Columba livia*), Eurasian collared dove (*Streptopelia decaocto*), Red Jungle Fowl (*Gallus*), Golden Eagle (*Aquila chrysaetos*), Grey Francolin (*Francolinus ponicerianus*), Golden Oriole (*Oriolus kundoo*), Griffon Vulture (*Gyps fulvus*).

MAJOR FLORA: Indian jujube (*Ziziphus jujuba*), Chir pine (*Pinus roxburghii*), Indian thorny bamboo (*Bambura bamboos*), Siris tree (*Albizia lebbeck*), Neem tree (*Azadirachta indica*), Hemp (*Cannabis sativa*), Common Nut Sedge (*Cyperus rotundus*), Munj sugarcane grass (*Saccharum spontaneum*).

LAND USE LAND COVER MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY

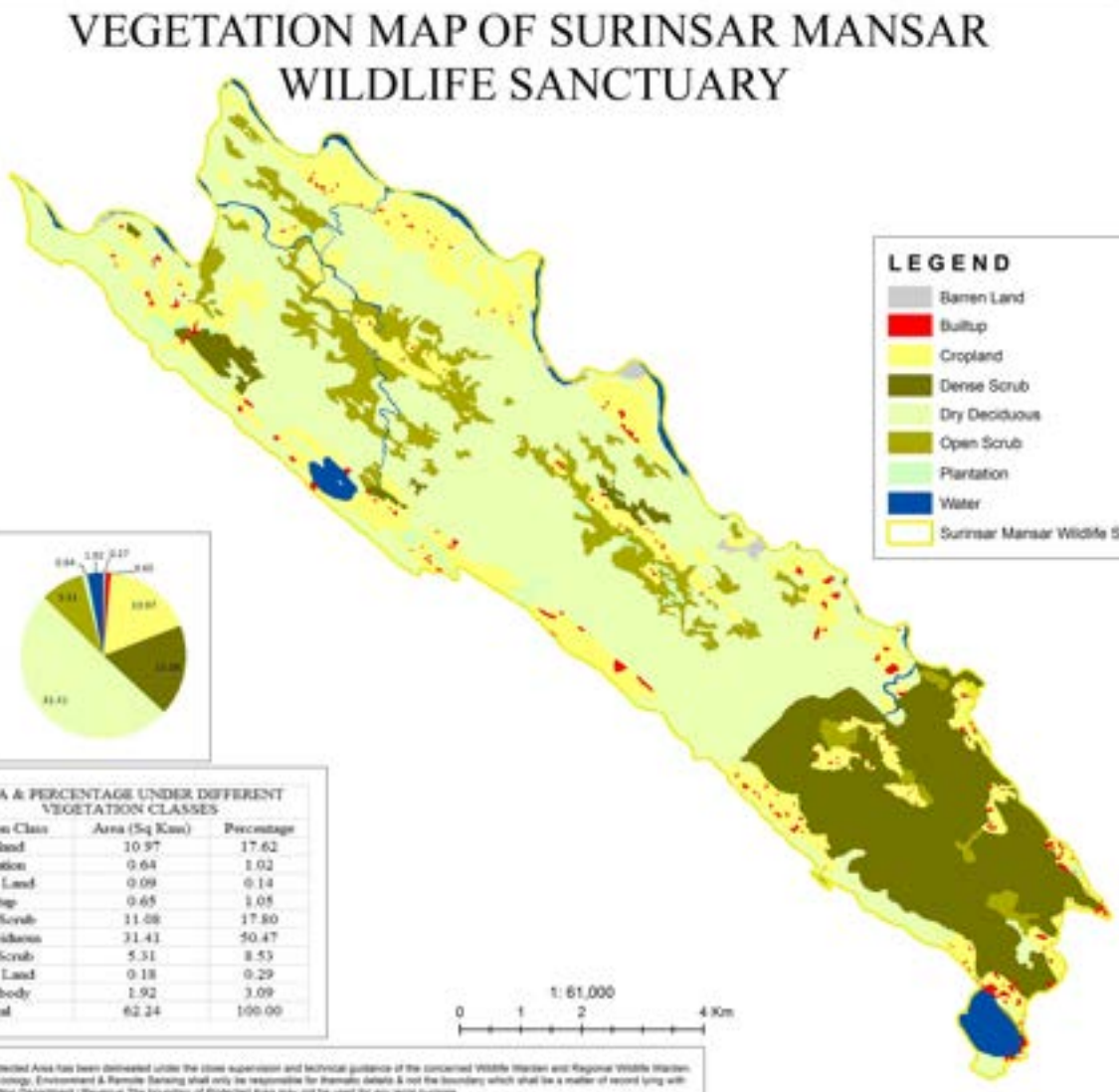


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	10.97	17.62
Agriculture Plantation	0.64	1.02
Barren Rocky	0.09	0.14
Builtup	0.65	1.05
Dense Scrub	11.08	17.80
Forest	31.41	50.47
Open Scrub	5.31	8.53
Sandy Area	0.18	0.29
Waterbody	1.92	3.09
Total	62.24	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY

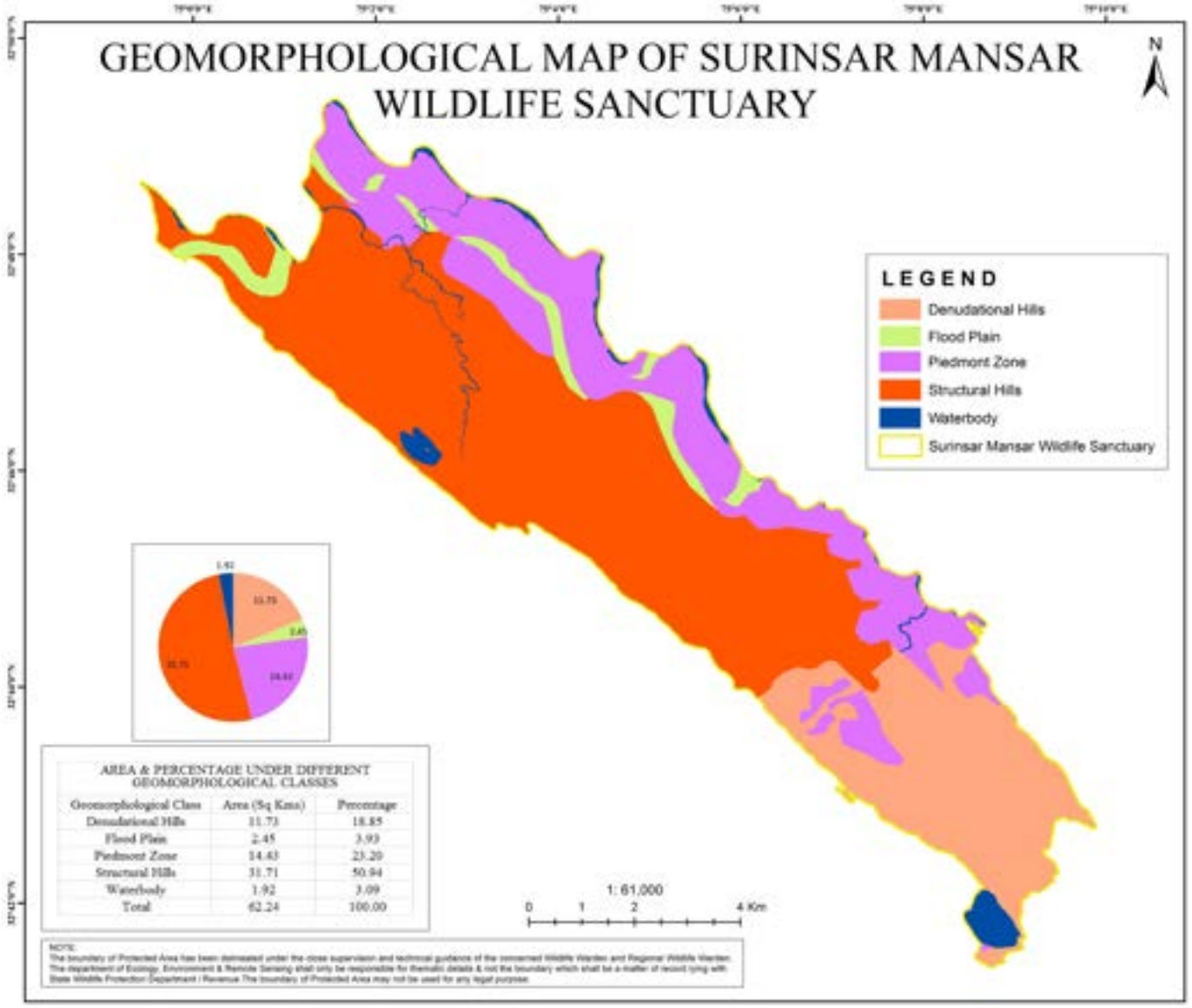


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Cropland	10.97	17.62
Plantation	0.64	1.02
Barren Land	0.09	0.14
Builtup	0.65	1.05
Dense Scrub	11.08	17.80
Dry Deciduous	31.41	50.47
Open Scrub	5.31	8.53
Barren Land	0.18	0.29
Waterbody	1.92	3.09
Total	62.24	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	11.73	18.85
Flood Plain	2.45	3.93
Piedmont Zone	14.43	23.20
Structural Hills	31.71	50.94
Waterbody	1.92	3.09
Total	62.24	100.00

NOTE:
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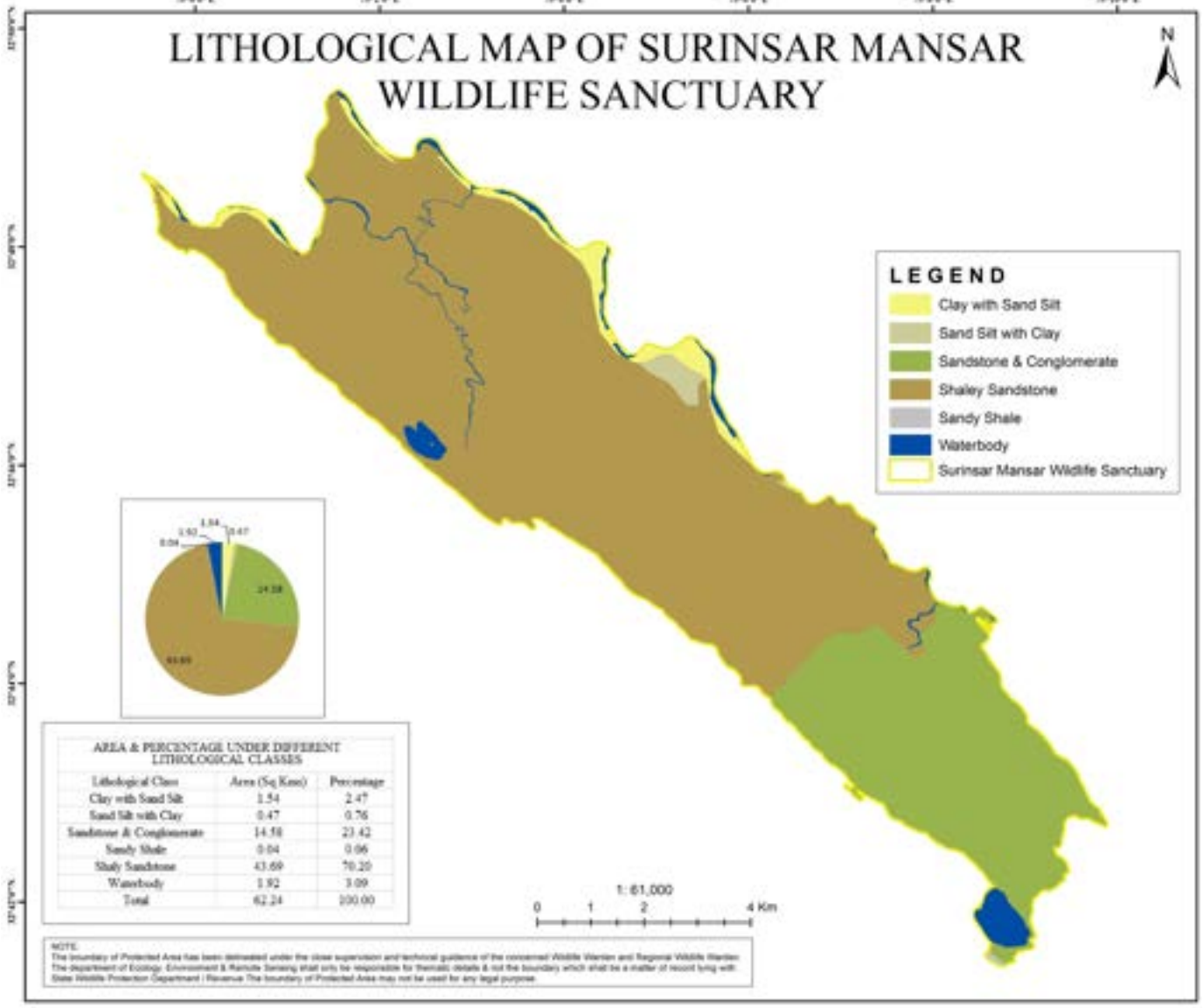
LITHOLOGICAL MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY

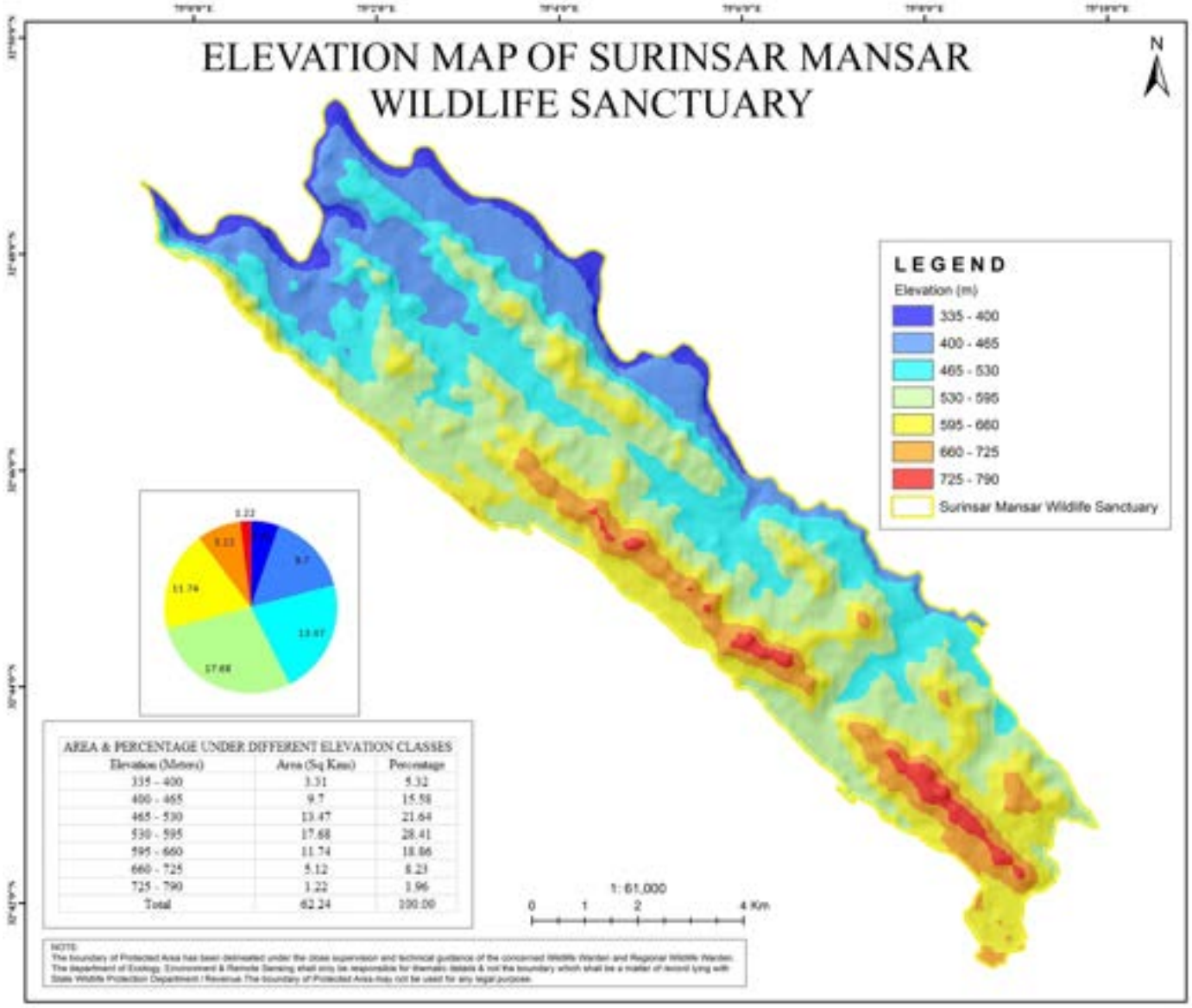


AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Clay with Sand Silt	1.54	2.47
Sand Silt with Clay	0.47	0.76
Sandstone & Conglomerate	14.58	23.42
Sandy Shale	0.04	0.06
Shaly Sandstone	43.69	70.20
Waterbody	1.92	3.09
Total	62.24	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

ELEVATION MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY

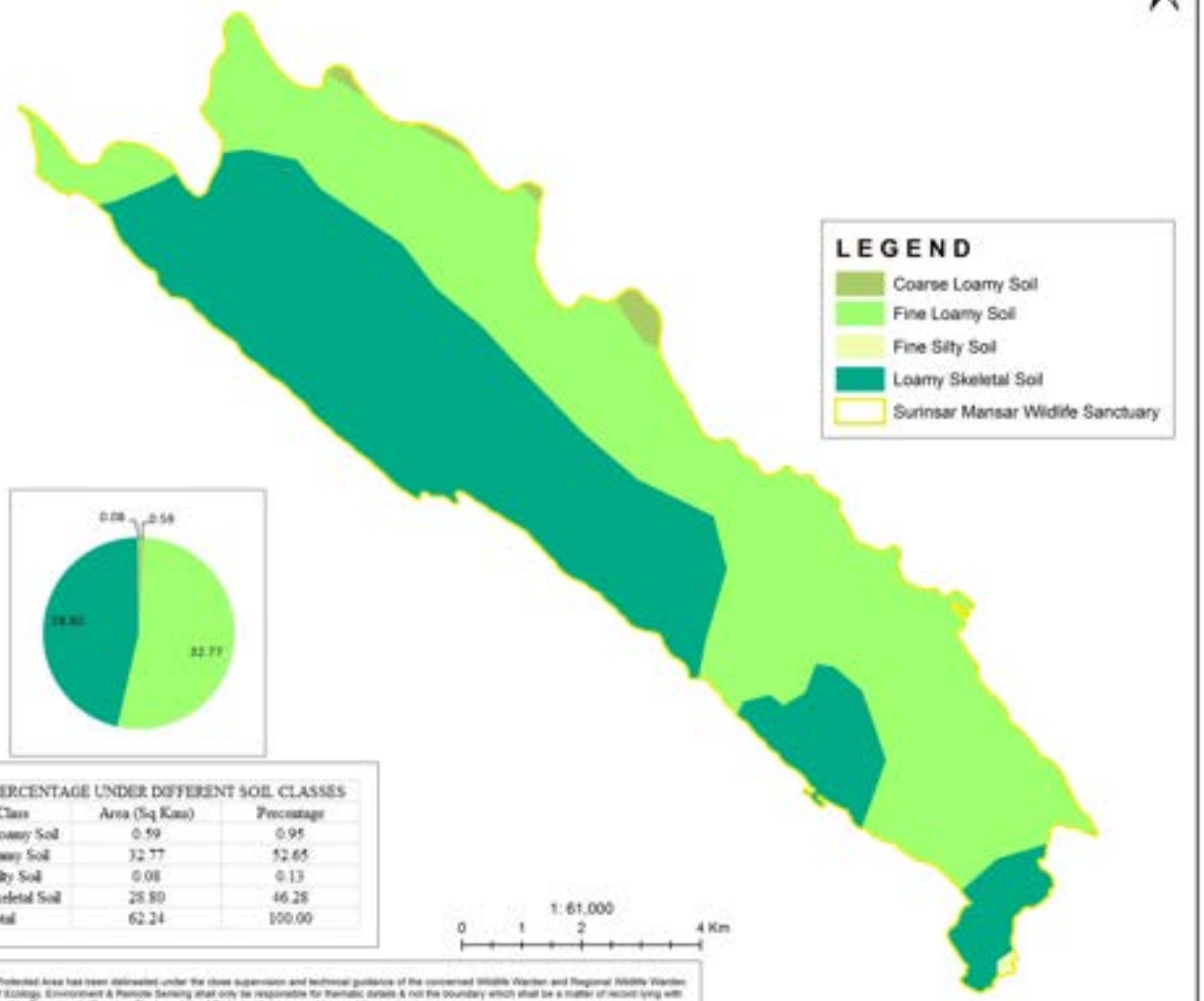


AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
335 - 400	3.31	5.32
400 - 465	9.7	15.58
465 - 530	13.47	21.64
530 - 595	17.68	28.41
595 - 660	11.74	18.86
660 - 725	5.12	8.23
725 - 790	1.22	1.96
Total	62.24	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY

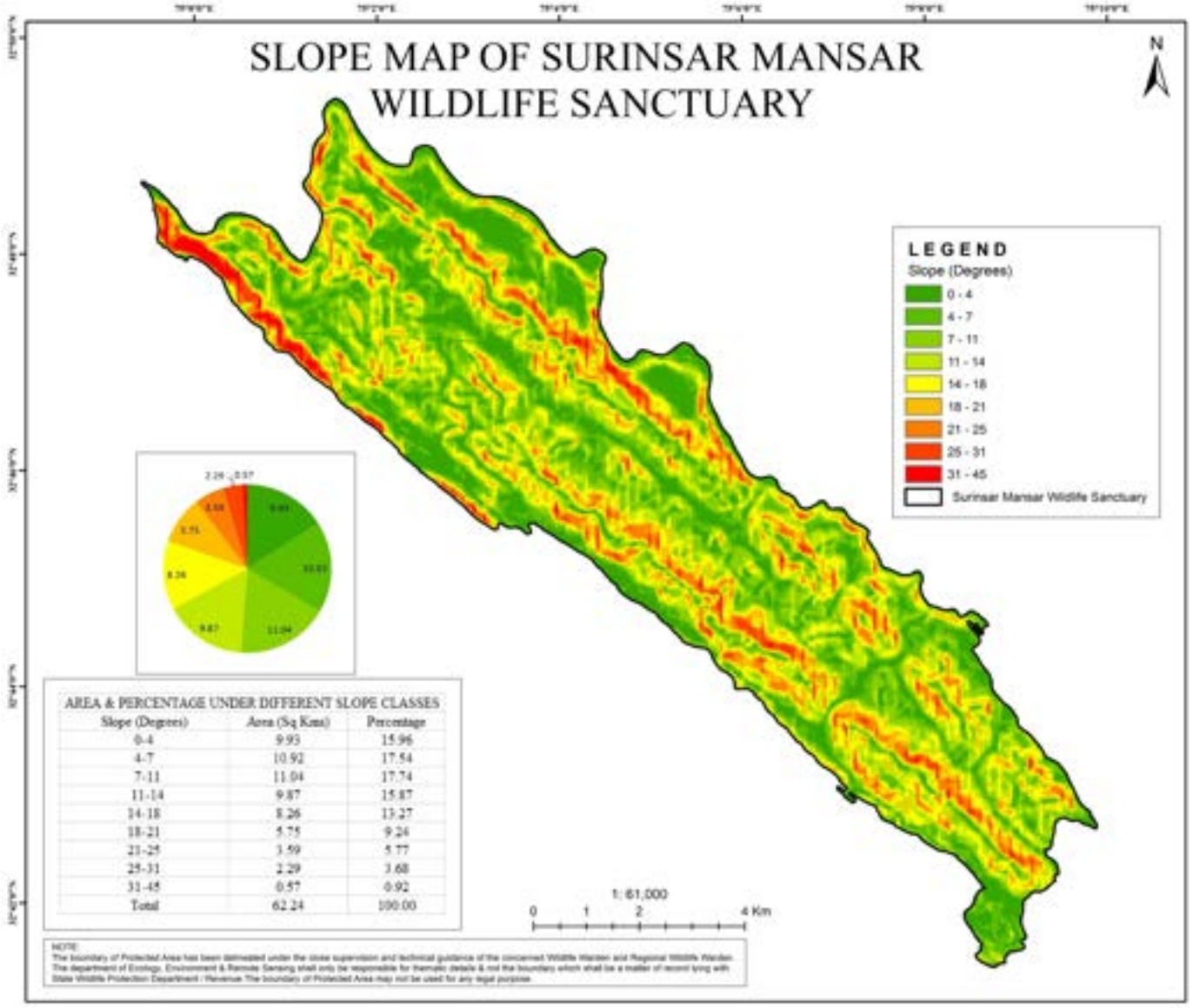


AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	0.59	0.95
Fine Loamy Soil	32.77	52.65
Fine Silty Soil	0.08	0.13
Loamy Skeletal Soil	28.80	46.28
Total	62.24	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SLOPE MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY

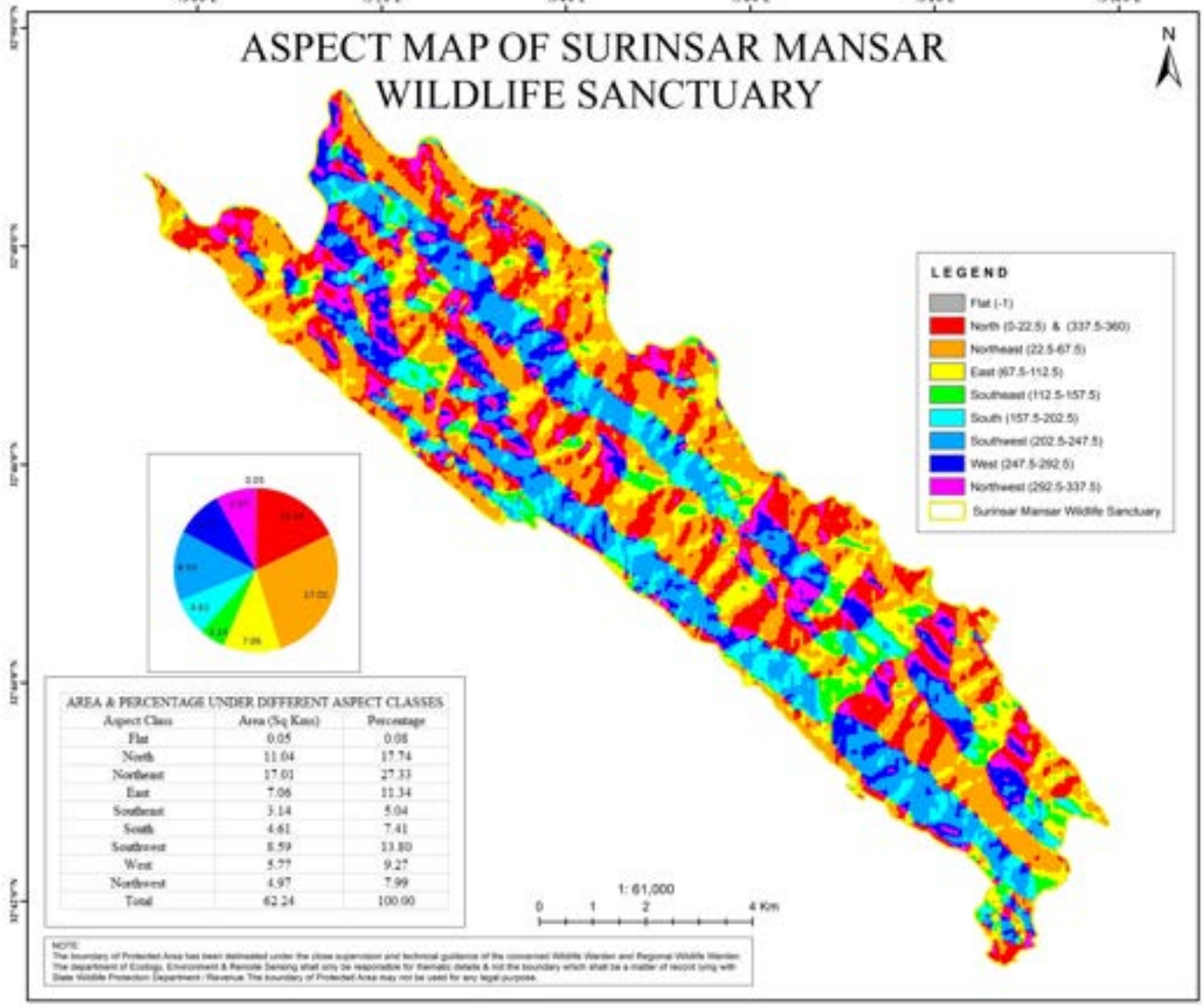


AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-4	9.93	15.96
4-7	10.92	17.54
7-11	11.04	17.74
11-14	9.87	15.87
14-18	8.26	13.27
18-21	5.75	9.24
21-25	3.59	5.77
25-31	2.29	3.68
31-45	0.57	0.92
Total	62.24	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

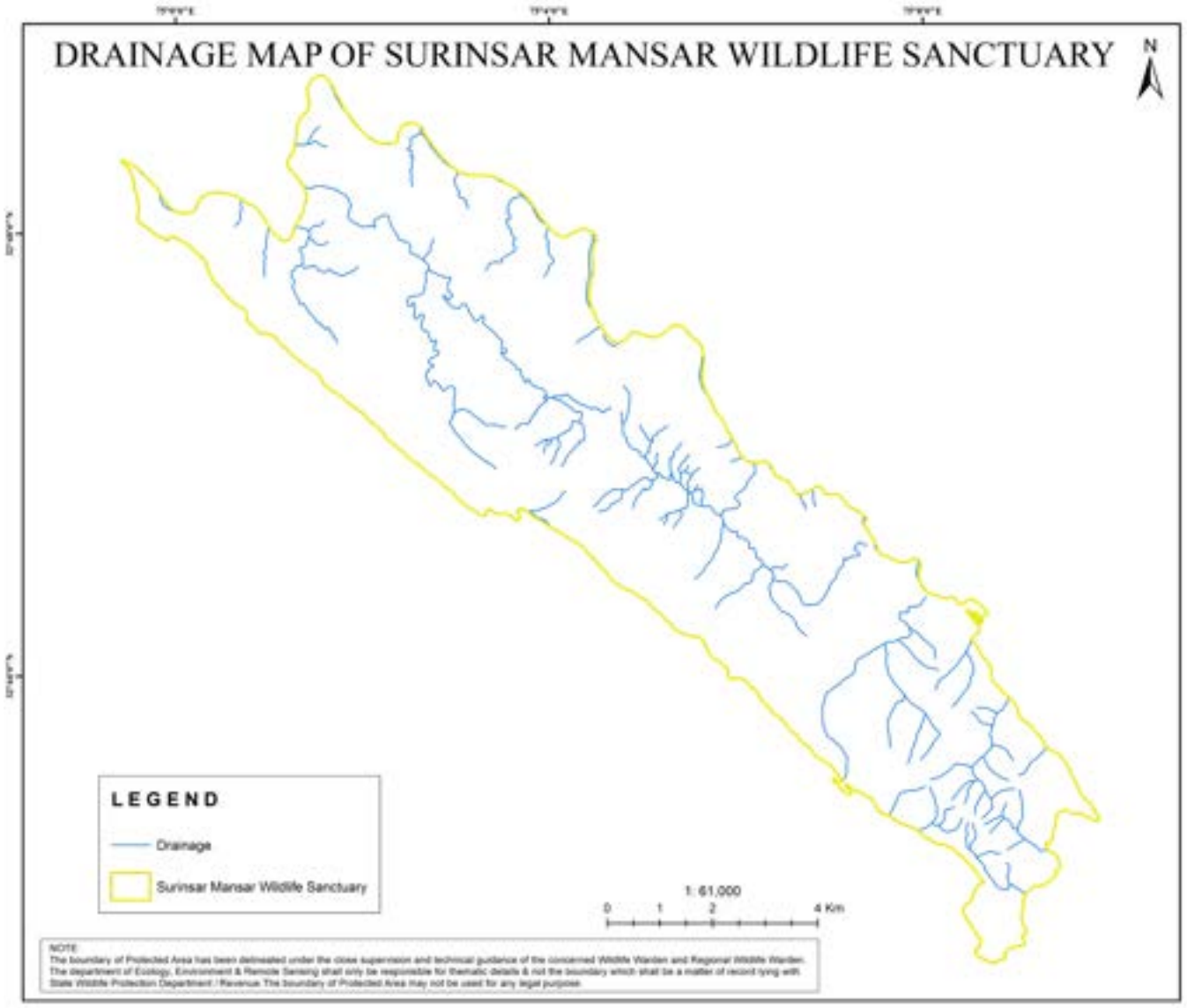
ASPECT MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY



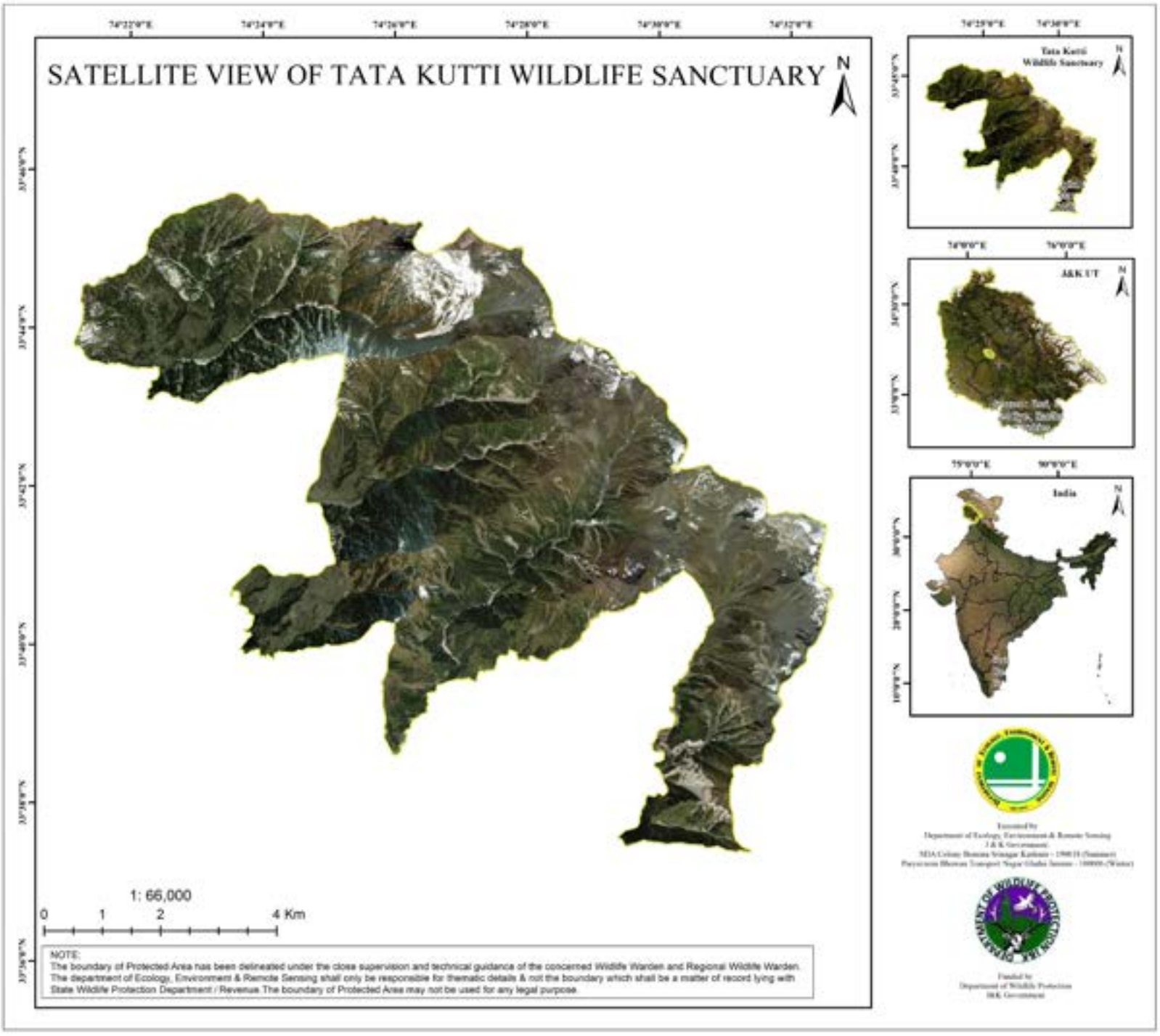
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.05	0.08
North	11.04	17.74
Northeast	17.01	27.33
East	7.06	11.34
Southeast	3.14	5.04
South	4.61	7.41
Southwest	8.59	13.80
West	5.77	9.27
Northwest	4.97	7.99
Total	62.24	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY
N
LEGEND
Drainage
Surinsar Mansar Wildlife Sanctuary
1: 61,000
0 1 2 4 Km
NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden.
The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.


ACCESSIBILITY MAP OF SURINSAR MANSAR WILDLIFE SANCTUARY
N
Kangar
Barga
Chilla
Jatlo Chak
Balahar
Tarjhar
Urkhal
Kanal
Surun Sar
Pushwar
Rangeal
Sokaun
Sagaun
Pagwal
Ramwal
Chona
Mansar
Mansar Lake
LEGEND
Placemarks
Surinsar Mansar Wildlife Sanctuary
Forest Trails/Tracks/Inspection Paths/Roads
1: 58000
0 1 2 4 Km
NOTE:



TATA KUTTI WILDLIFE SANCTUARY

The Tata Kutti Wildlife Sanctuary was notified in the year 2012 because of its adequate ecological, faunal, floral, geomorphological and natural significance. The Sanctuary is located in Surunkote area of Poonch district. The sanctuary is adjacent to the Hirpora Wildlife sanctuary. The Sanctuary supports diverse plant and animal species.

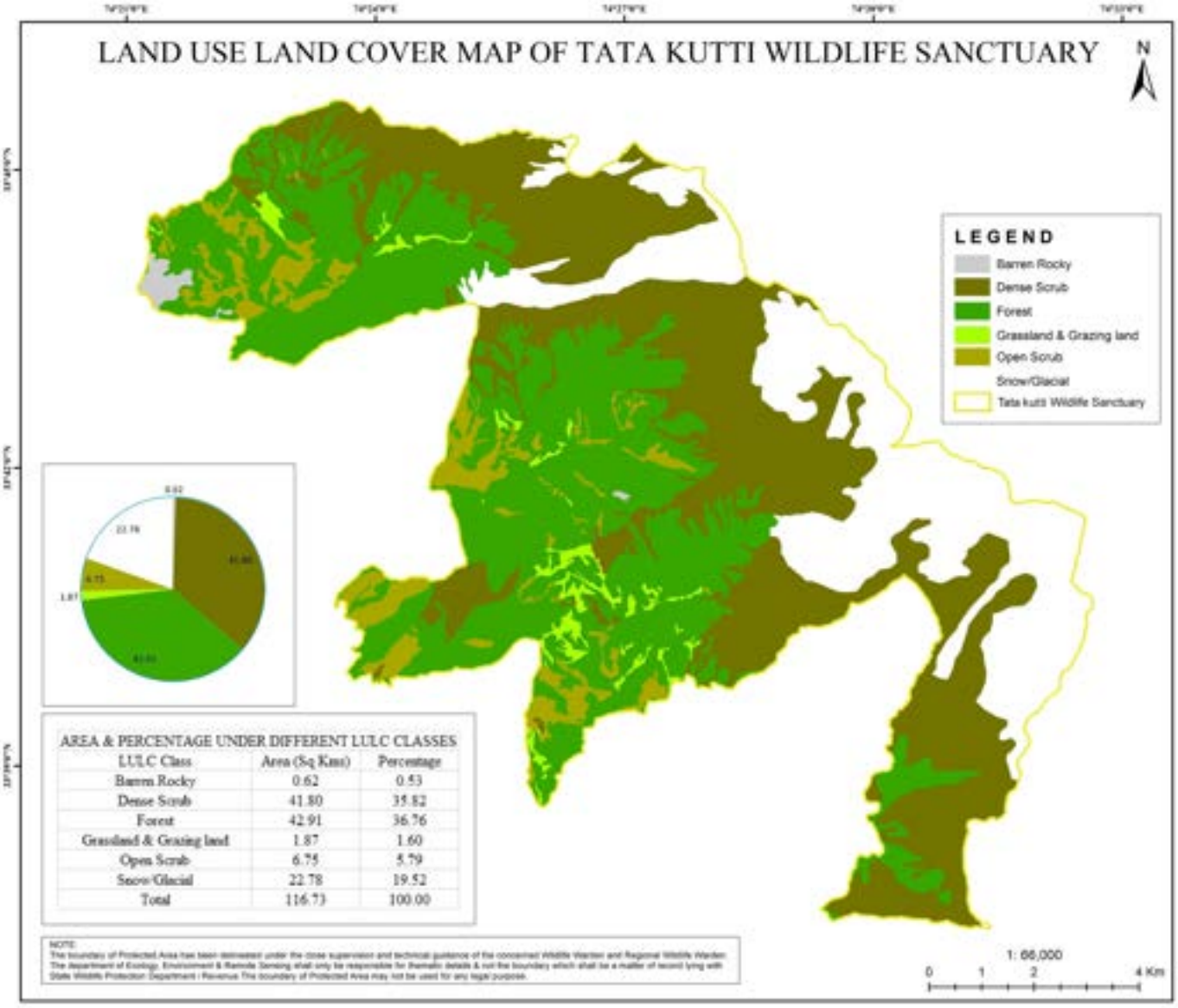
SRO/NOTIFICATION NO: SRO 47 dated 30.01.2012
NOTIFIED AREA (KM2): 66.27 **GIS AREA** (KM2): 116.73
PERIMETER (KMS): 84.78
ALTITUDE RANGE (M): 1833 - 4679
GEO - COORDINATES:
33° 37.416′ N - 33° 45.718′ N, 74° 21.156′ E - 74° 32.673′ E

MAJOR FAUNA: Markhor (*Capra falconeri*), Himalayan goral (*Nemorhaedus goral*), Common Leopard (*Panthera pardus*), Himalayan Brown Bear (*Ursus artos*), Himalayan Black Bear (*Ursus thibetanus*), Indian Jackal (*Canis aureus*), Rhesus Monkey (*Macaca mulatta*), Himalayan Red Fox (*Vulpes vulpes Montana*) .

MAJOR AVI FAUNA: Booted eagle (*Hieraaetus pennatus*), Golden eagle (*Aquila chrysaetos*), Griffon Vulture (*Gyps fulvus*), Himalayan Snowcock (Tetrao*gallus* Himalayensis), Western tragopan (*Tragopan melanocephalus*), Grey francolin (*Francolinus ponicerianus*), Blue Rock Pigeon (*Columba livia*).

MAJOR FLORA: Deodar (*Cedrus deodara*), Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Deadly nightshade (*Atropa*), Himalayan Mayapple (*Podophyllum hexandrum*).

LAND USE LAND COVER MAP OF TATA KUTTI WILDLIFE SANCTUARY

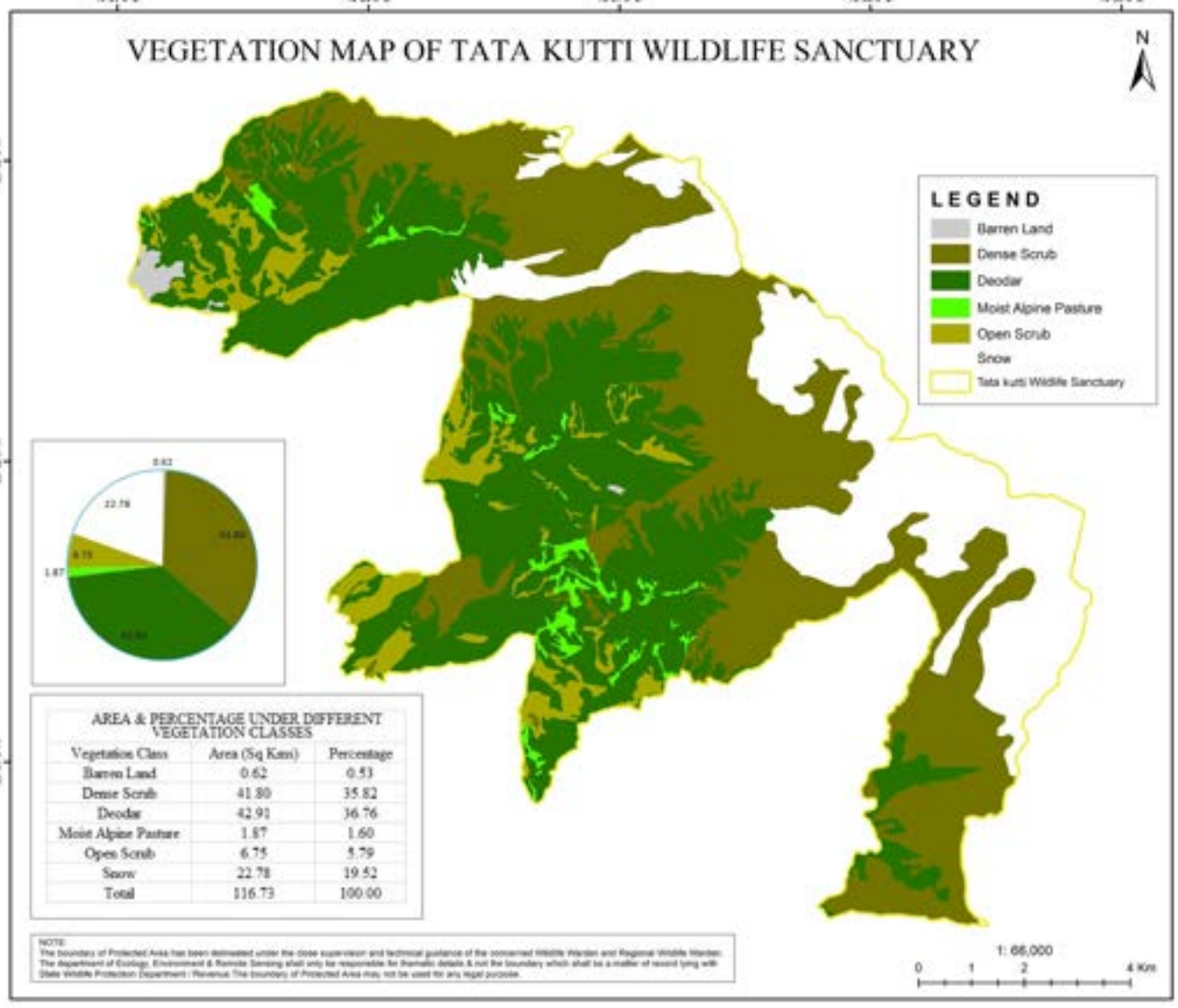


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Barren Rocky	0.62	0.53
Dense Scrub	41.80	35.82
Forest	42.91	36.76
Grassland & Grazing land	1.87	1.60
Open Scrub	6.75	5.79
Snow/Glacial	22.78	19.52
Total	116.73	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.This boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF TATA KUTTI WILDLIFE SANCTUARY

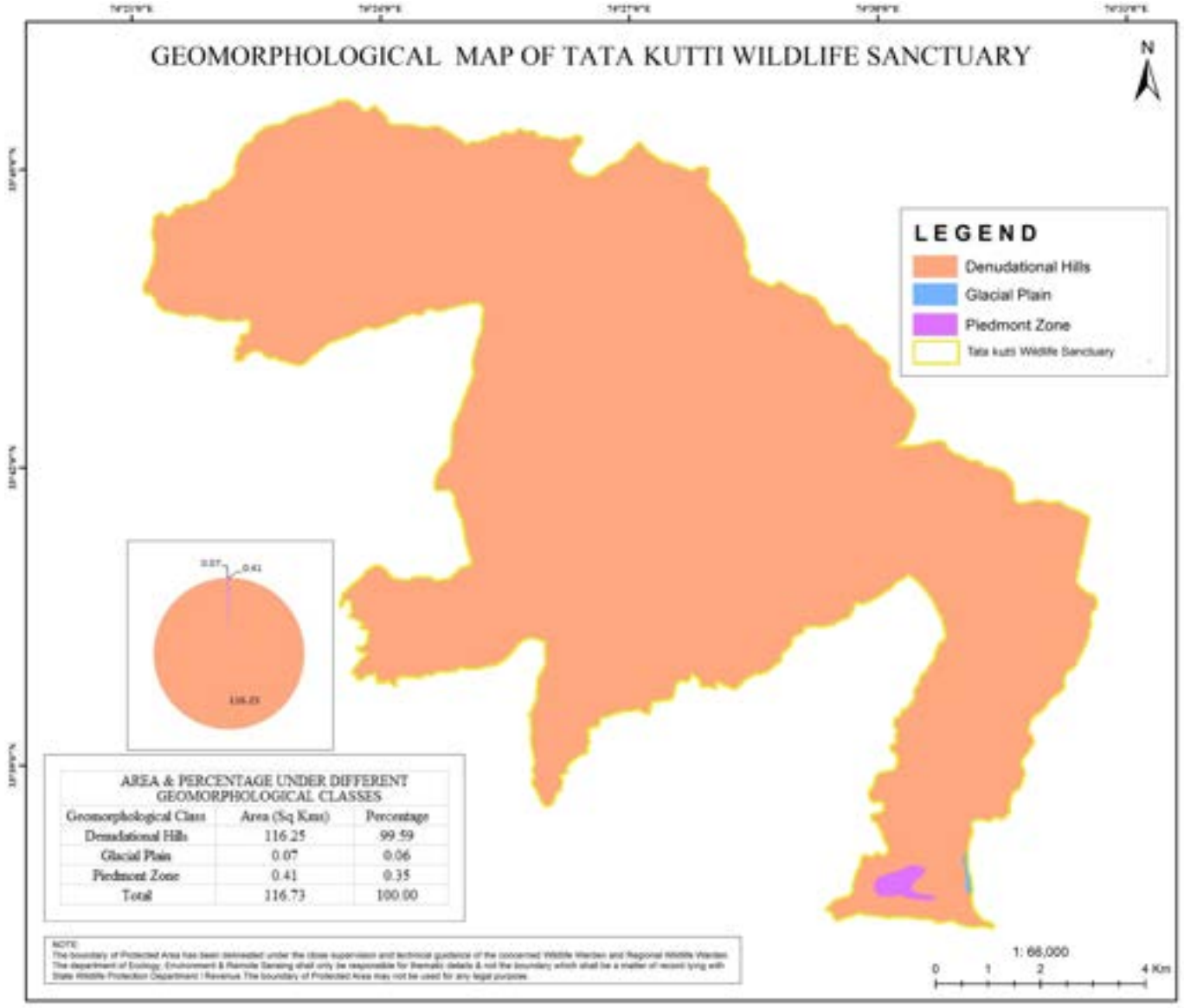


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	0.62	0.53
Dense Scrub	41.80	35.82
Deodar	42.91	36.76
Moist Alpine Pasture	1.87	1.60
Open Scrub	6.75	5.79
Snow	22.78	19.52
Total	116.73	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.This boundary of Protected Area may not be used for any legal purpose.

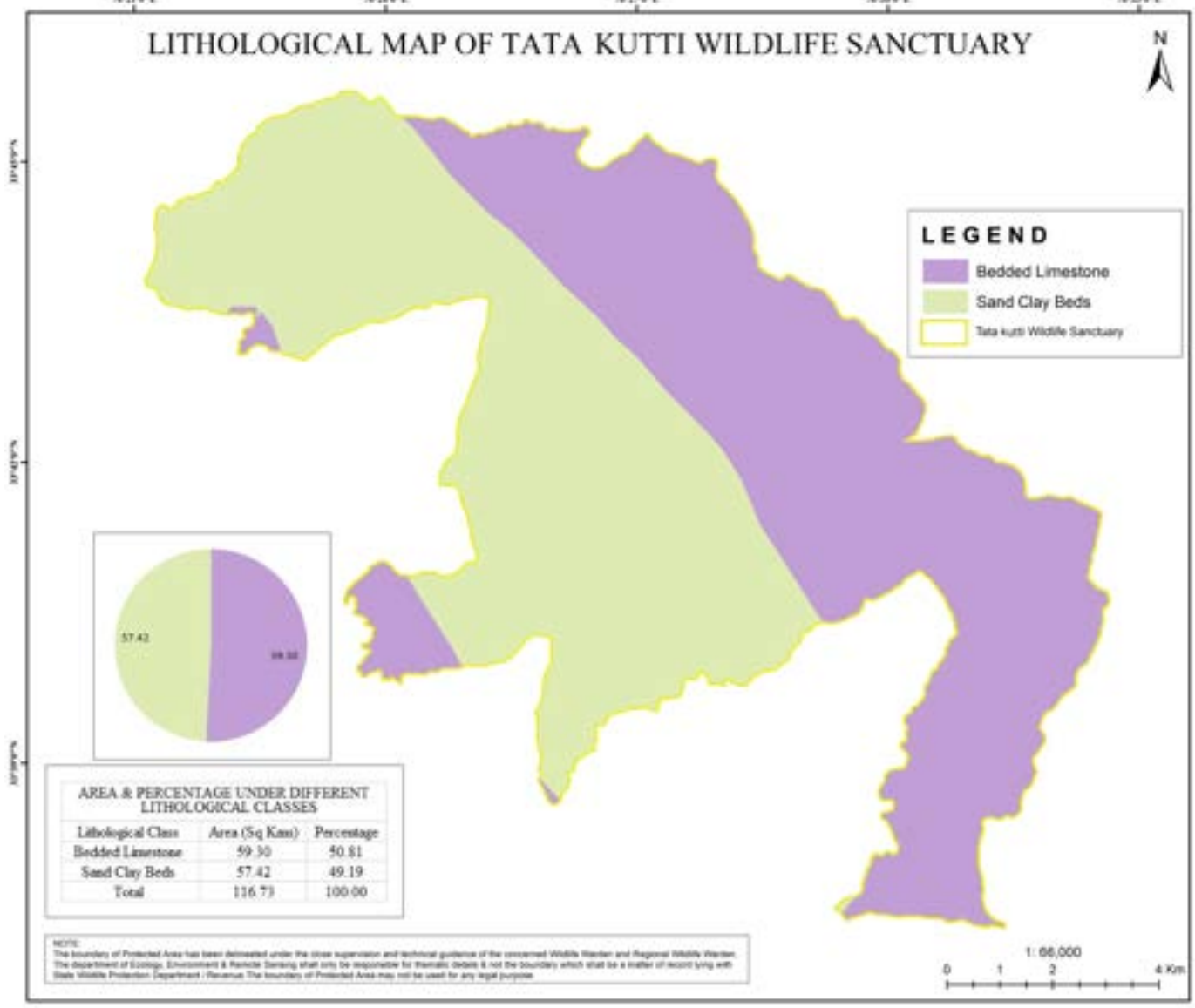
GEOMORPHOLOGICAL MAP OF TATA KUTTI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES		
Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	116.25	99.59
Glacial Plain	0.07	0.06
Piedmont Zone	0.41	0.35
Total	116.73	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

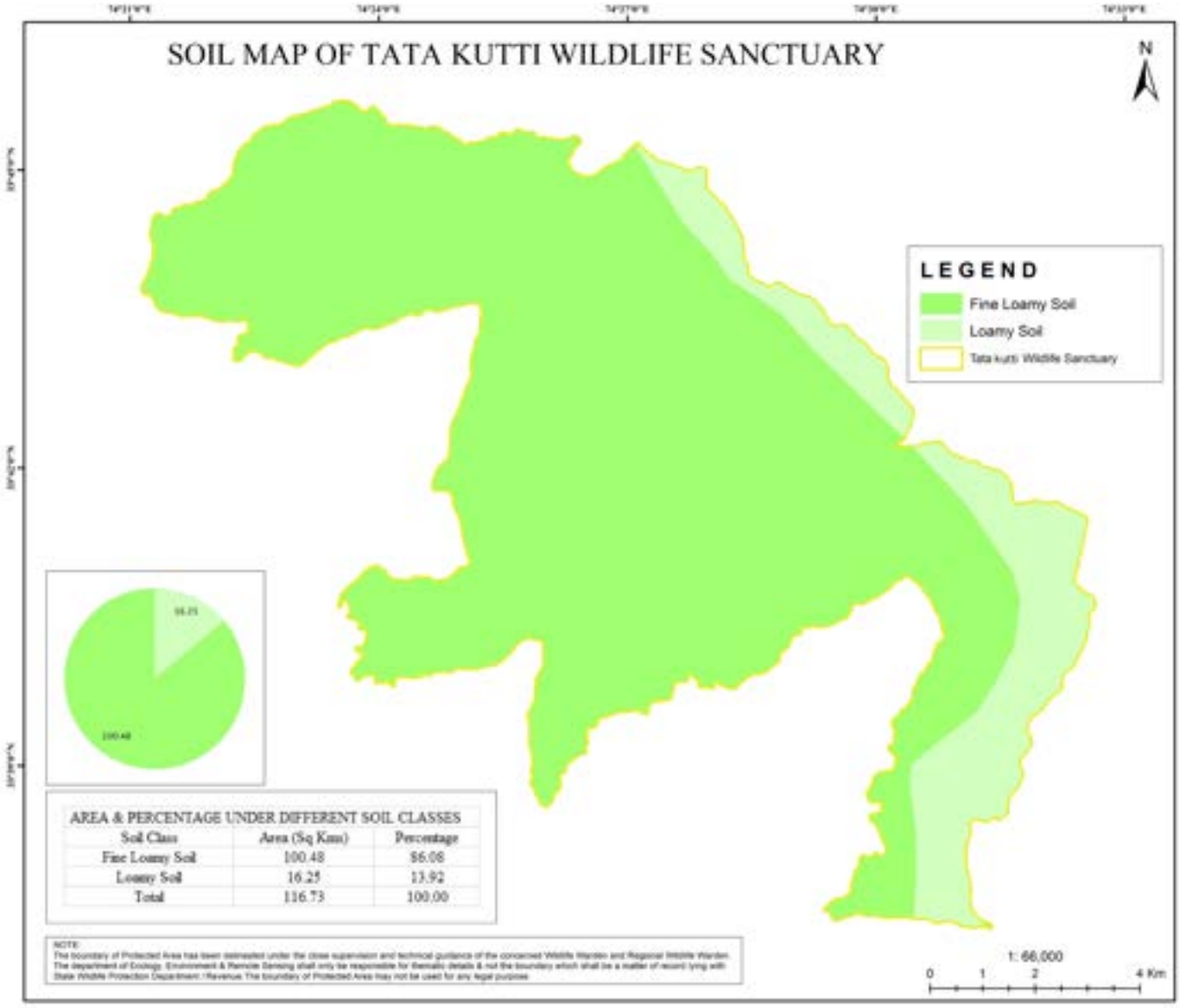
LITHOLOGICAL MAP OF TATA KUTTI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES		
Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	59.30	50.81
Sand Clay Beds	57.42	49.19
Total	116.73	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

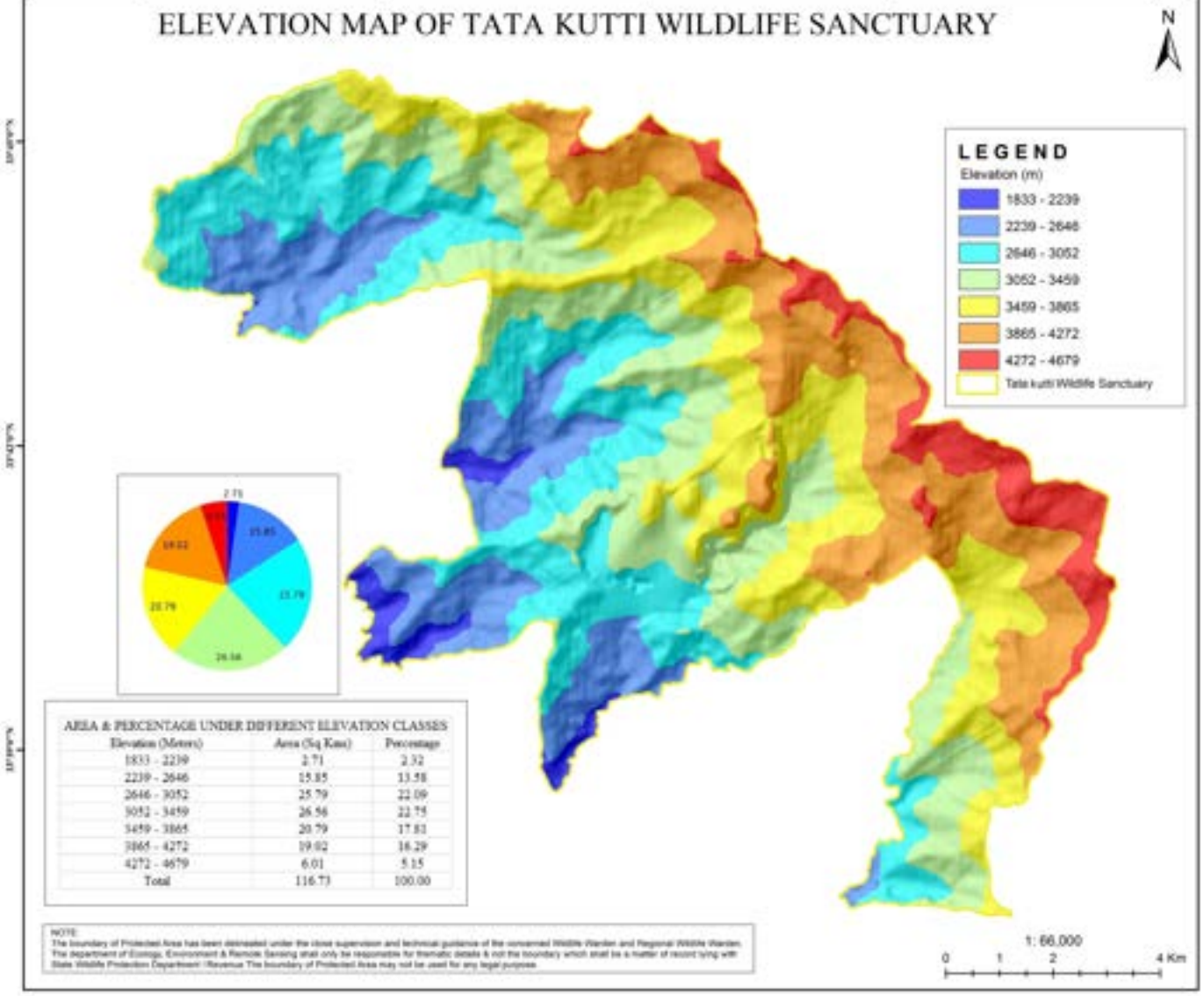
SOIL MAP OF TATA KUTTI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	100.48	86.08
Loamy Soil	16.25	13.92
Total	116.73	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

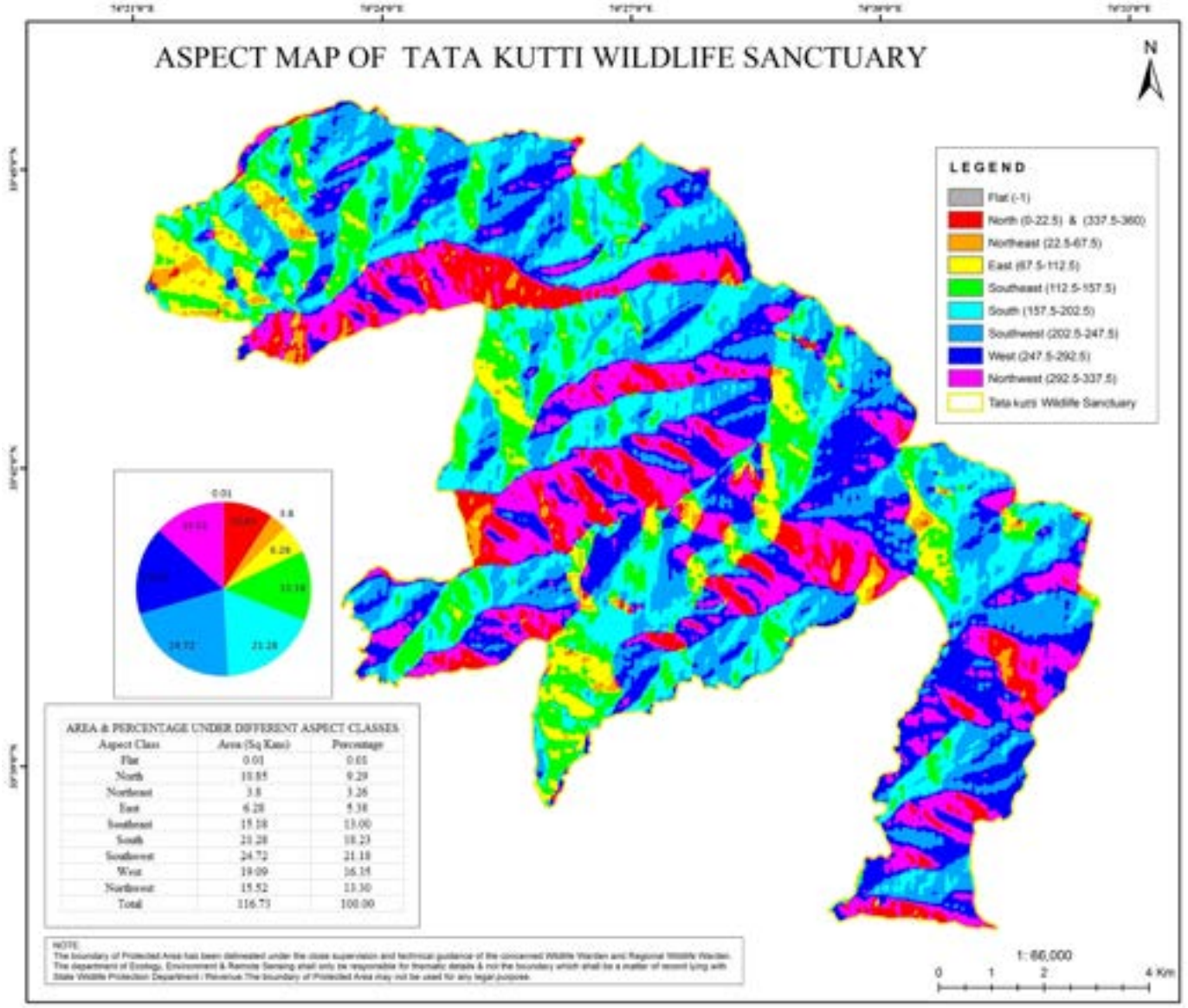
ELEVATION MAP OF TATA KUTTI WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES		
Elevation (Meters)	Area (Sq Kms)	Percentage
1833 - 2239	2.71	2.32
2239 - 2646	15.85	13.58
2646 - 3052	25.79	22.09
3052 - 3459	26.56	22.75
3459 - 3865	20.79	17.81
3865 - 4272	19.02	16.29
4272 - 4679	6.01	5.15
Total	116.73	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ASPECT MAP OF TATA KUTTI WILDLIFE SANCTUARY

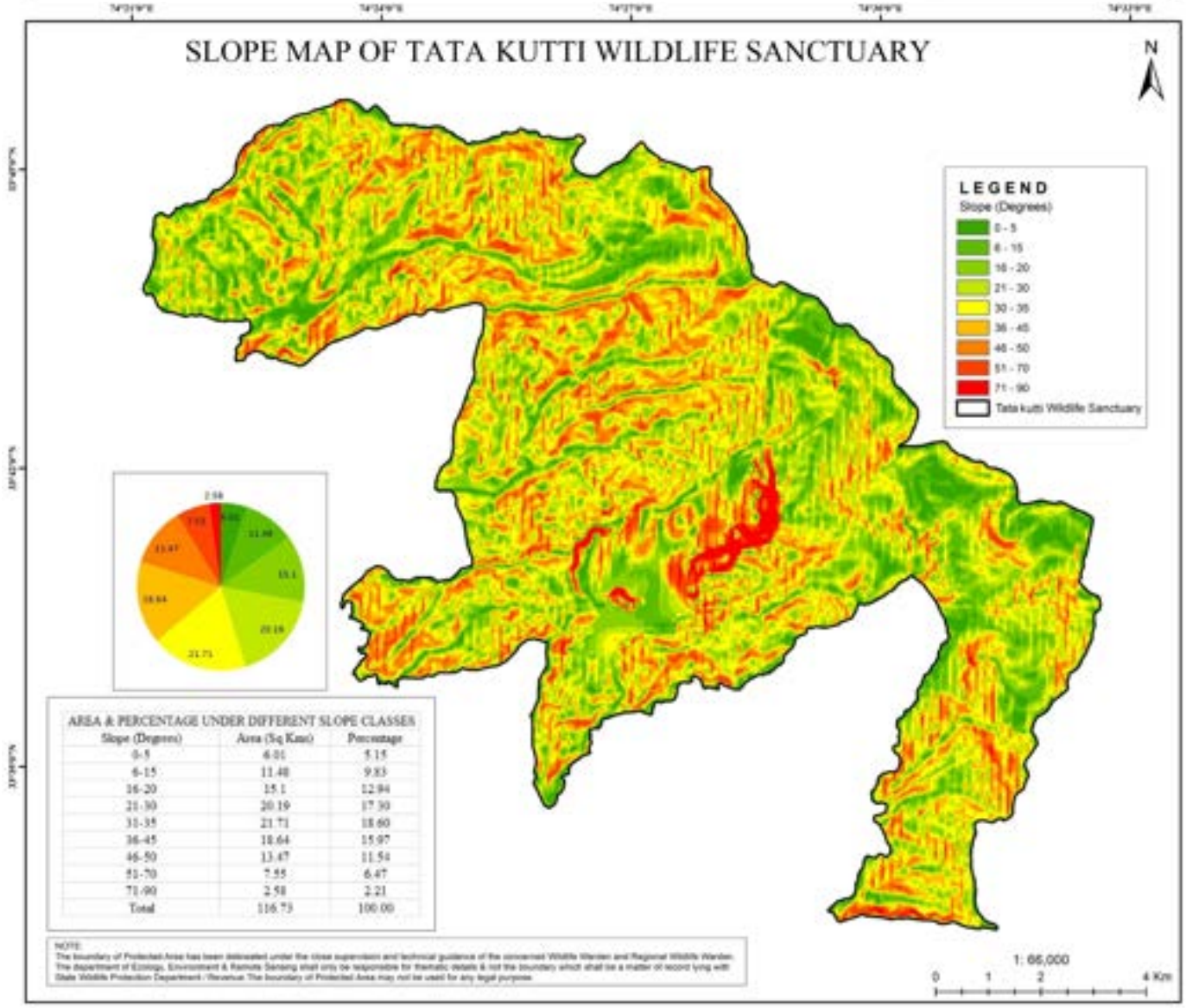


AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.01	0.01
North	10.85	9.29
Northeast	3.8	3.26
East	6.28	5.38
Southeast	15.16	13.00
South	21.28	18.23
Southwest	24.72	21.18
West	19.09	16.35
Northwest	15.52	13.30
Total	116.73	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

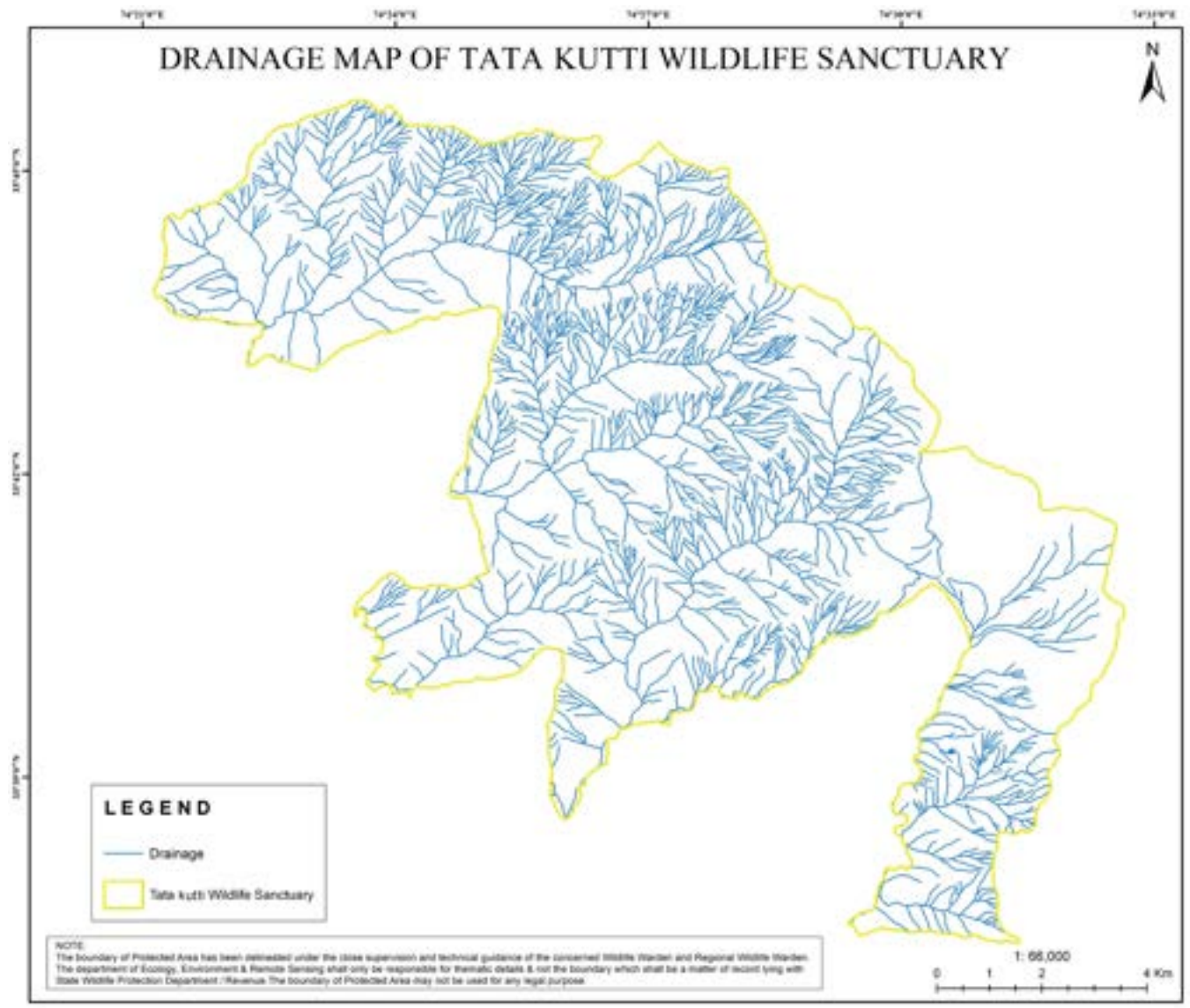
SLOPE MAP OF TATA KUTTI WILDLIFE SANCTUARY

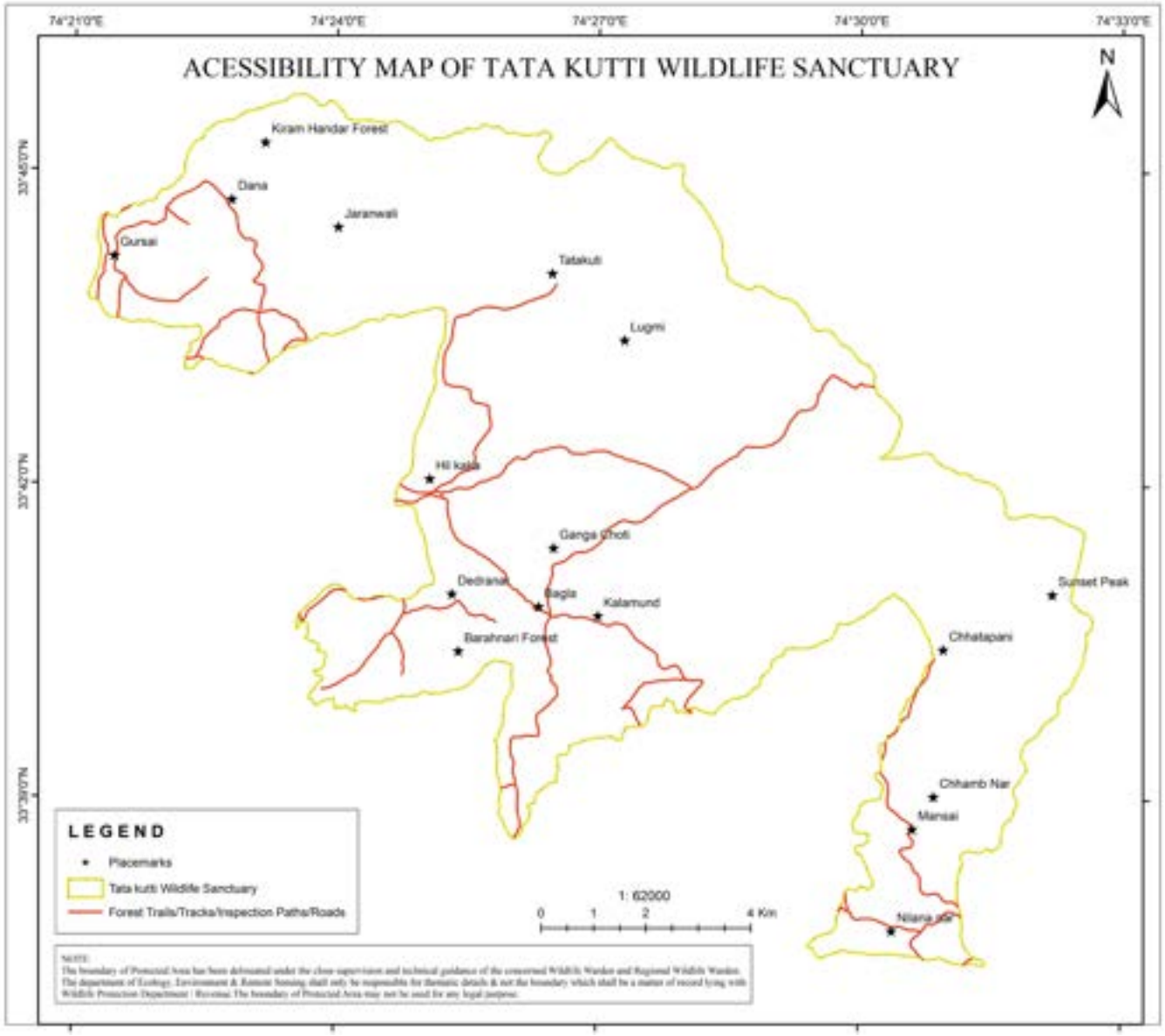


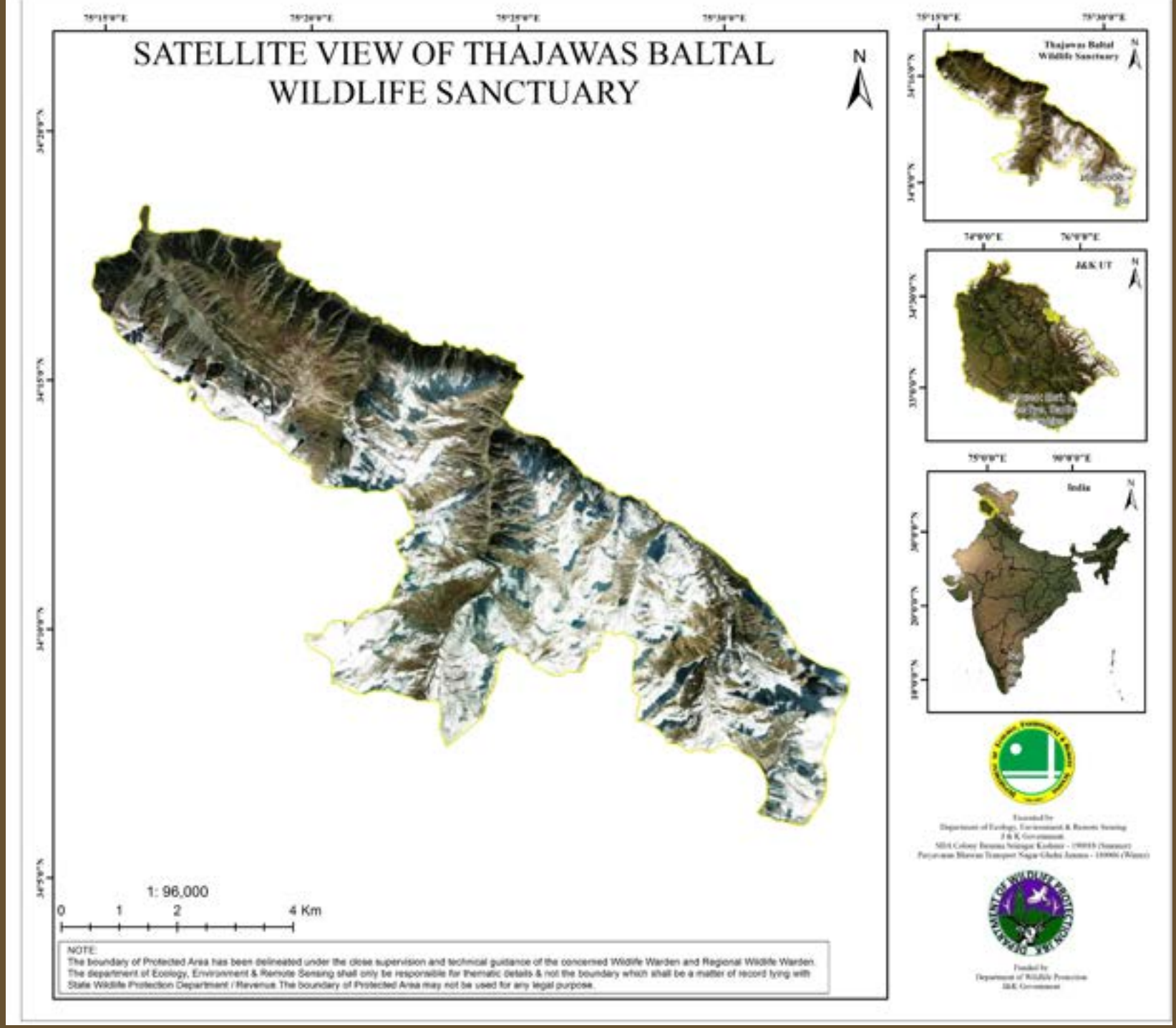
AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	6.01	5.15
6-15	11.48	9.83
16-20	15.1	12.94
21-30	20.19	17.30
31-35	21.71	18.60
36-45	18.64	15.97
46-50	13.47	11.54
51-70	7.55	6.47
71-90	2.58	2.21
Total	116.73	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF TATA KUTTI WILDLIFE SANCTUARY
N
LEGEND
Drainage
Tata kutti Wildlife Sanctuary
1: 66,000
0 1 2 4 Km


ACESSIBILITY MAP OF TATA KUTTI WILDLIFE SANCTUARY
N
Kiram Handar Forest
Dana
Jaranwali
Gursai
Tatakuti
Lugmi
Hil kala
Ganga Choti
Dedrana
Bagla
Kalamund
Barahnari Forest
Sunset Peak
Chhatapani
Chhamb Nar
Mansai
Nilana
LEGEND
Placemarks
Tata kutti Wildlife Sanctuary
Forest Trails/Tracks/Inspection Paths/Roads
1: 62000
0 1 2 4 Km



THAJWAS BALTAL
WILDLIFE SANCTUARY

The Thajwas Baltal Wildlife Sanctuary was notified in the year 1987 because of its adequate ecological, faunal, floral, geomorphological and natural significance. . The sanctuary is connected with other important wildlife areas, like Aru, Upper Dachigam and the Sind forest. The sanctuary has highly diversified ecologically sensitive habitats, comprising of evergreen forests, scrub forests and meadows. The area is inhabited by rare and endangered species like Asiatic Ibex, Snow Leopard and Red Fox.

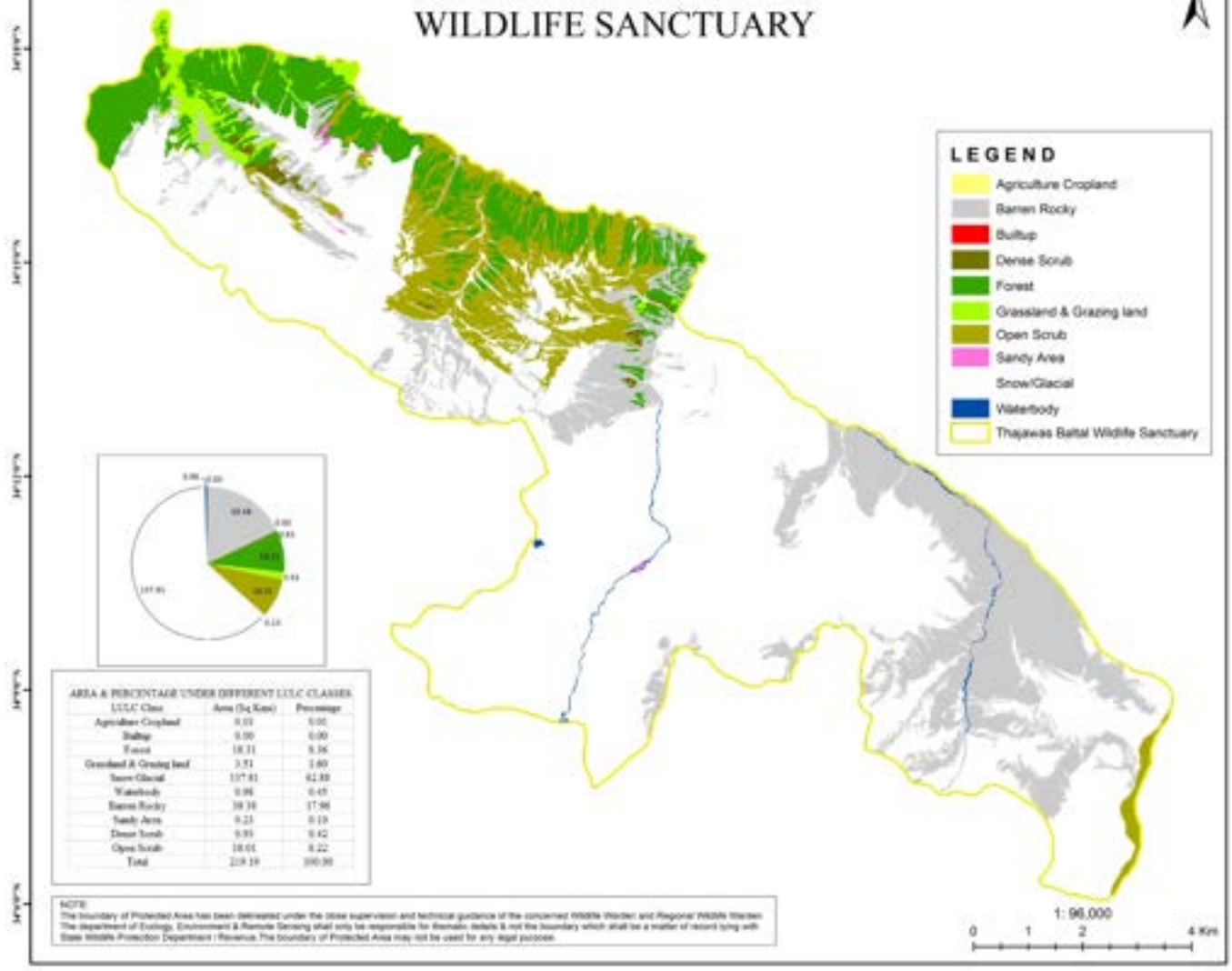
SRO/NOTIFICATION NO: SRO 156 dated 19.03.1987
NOTIFIED AREA (KM2): 203.00 **GIS AREA** (KM2): 219.19
PERIMETER (KMS): 103.44
ALTITUDE RANGE (M): 2500 - 5300
GEO - COORDINATES:
34° 16.910′ N - 34° 18.531′ N, 75° 31.800′ E - 75° 32.949′ E

MAJOR FAUNA: Asiatic Ibex (*Capra sibirica*), Common leopard (*Panthera pardus*), Kashmir Musk Deer (*Moschus cupreus*), Asiatic Black Bear (*Ursus thibetanus*), Red fox (*Vulpes vulpes*), Golden Indian Jackal (*canis aureus*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Yellow Throated Martin (*Martes flavigula*), Kashmir Grey Langur (*Semnopithecus Ajax*), Royles Pika (*Ochotona roylei*) .

MAJOR AVI FAUNA: Black eared kite (*Milvus migrans*), Himalayan Griffon vulture (*Gyps himalayansis*), Egyptian vulture (*Neophron percnopterus*), Kashmir Flycatcher (*Ficedula subrubra*), European Roller (*Coracias garrulus*), Blue Rock Pigeon (*Columba livia*), Kashmir Roller (Croscias galrulus semenvi), Indian Myna (*Acridotheres tristis*), Grey Tit (*Parus major*), koklass (*Pucrasia macrolopha*).

MAJOR FLORA: Fir (*Abies pindrow*), Himalayan birch (*Betula utilis*), Spruce (*Picea smithiana*), True indigo (*Indigofera articulata*) , wild blackberry (*Rubus fruticosus*), Himalayan Teasel (*Dipsacus*).

LAND USE LAND COVER MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY

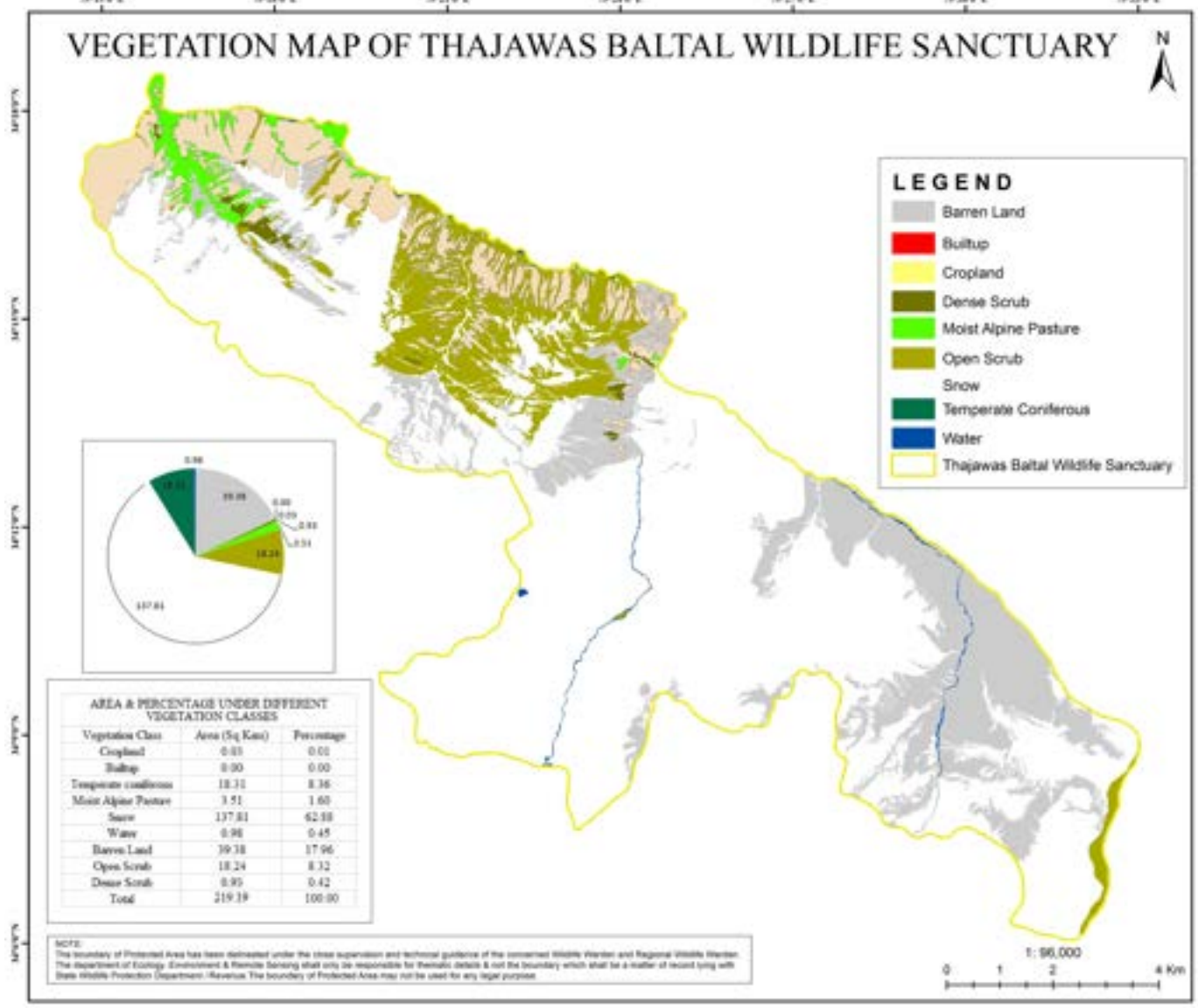


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq.Kms)	Percentage
Agriculture Cropland	0.03	0.01
Builtup	0.00	0.00
Forest	18.31	8.36
Grassland & Grazing land	3.51	1.60
Snow/Glacial	137.81	62.88
Waterbody	0.98	0.45
Barren Rocky	39.38	17.96
Sandy Area	0.23	0.10
Dense Scrub	0.93	0.42
Open Scrub	18.01	8.22
Total	219.19	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY

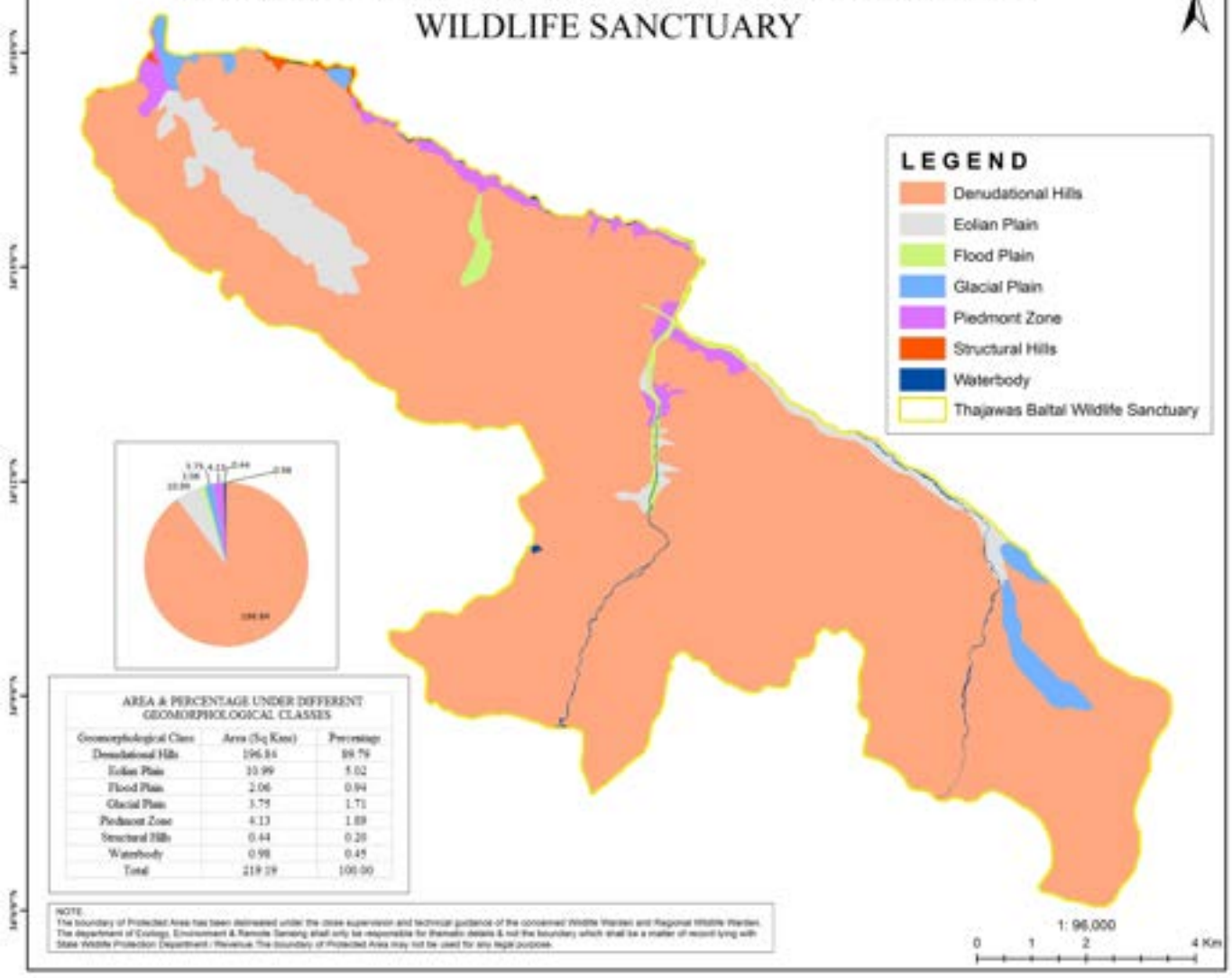


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq.Kms)	Percentage
Cropland	0.03	0.01
Builtup	0.00	0.00
Temperate coniferous	18.31	8.36
Moist Alpine Pasture	3.51	1.60
Snow	137.81	62.88
Water	0.98	0.45
Barren Land	39.38	17.96
Open Scrub	18.24	8.32
Dense Scrub	0.93	0.42
Total	219.19	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY

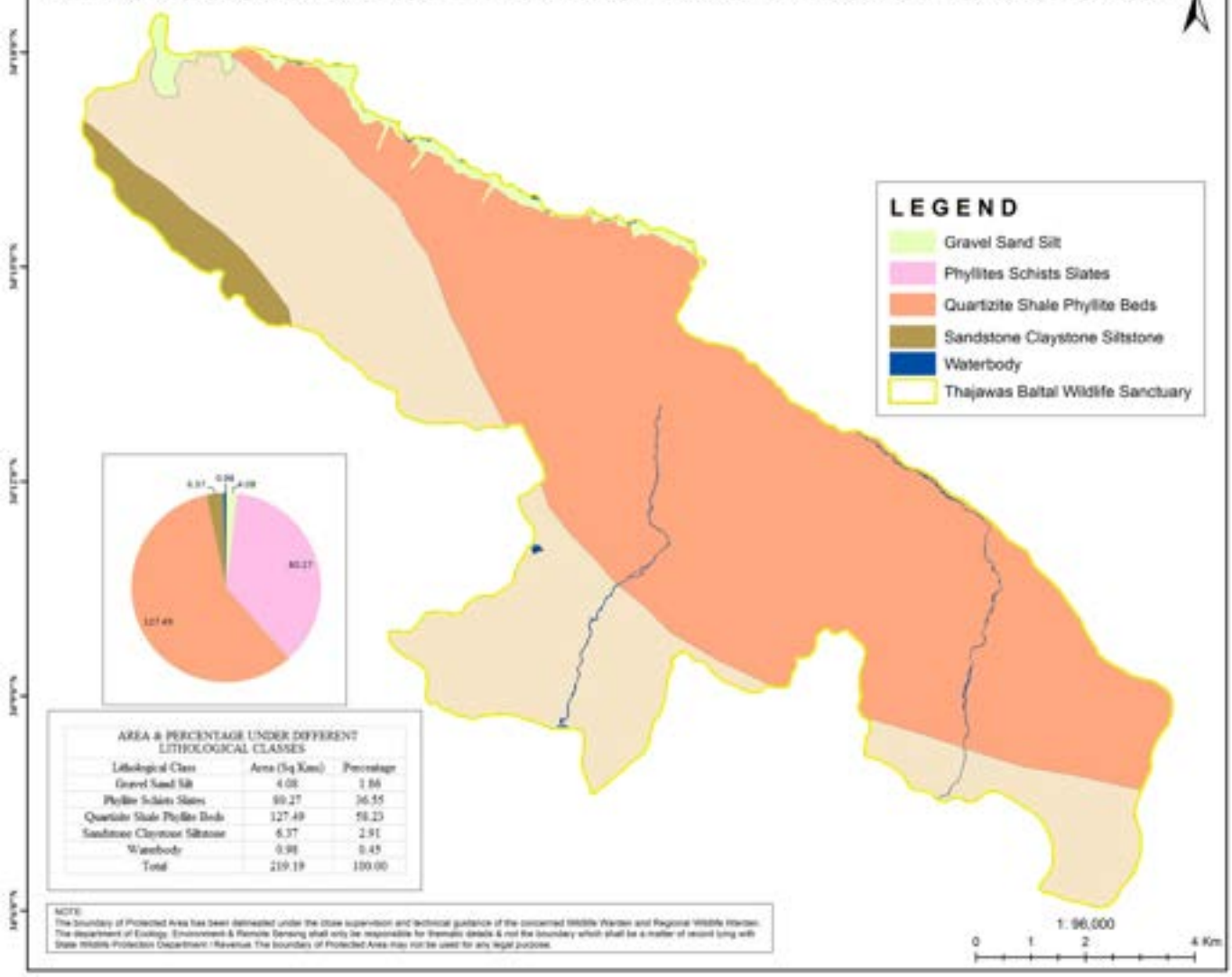


AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	196.84	89.79
Eolian Plain	10.99	5.02
Flood Plain	2.06	0.94
Glacial Plain	3.75	1.71
Piedmont Zone	4.13	1.89
Structural Hills	0.44	0.20
Waterbody	0.98	0.45
Total	219.19	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LITHOLOGICAL MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY

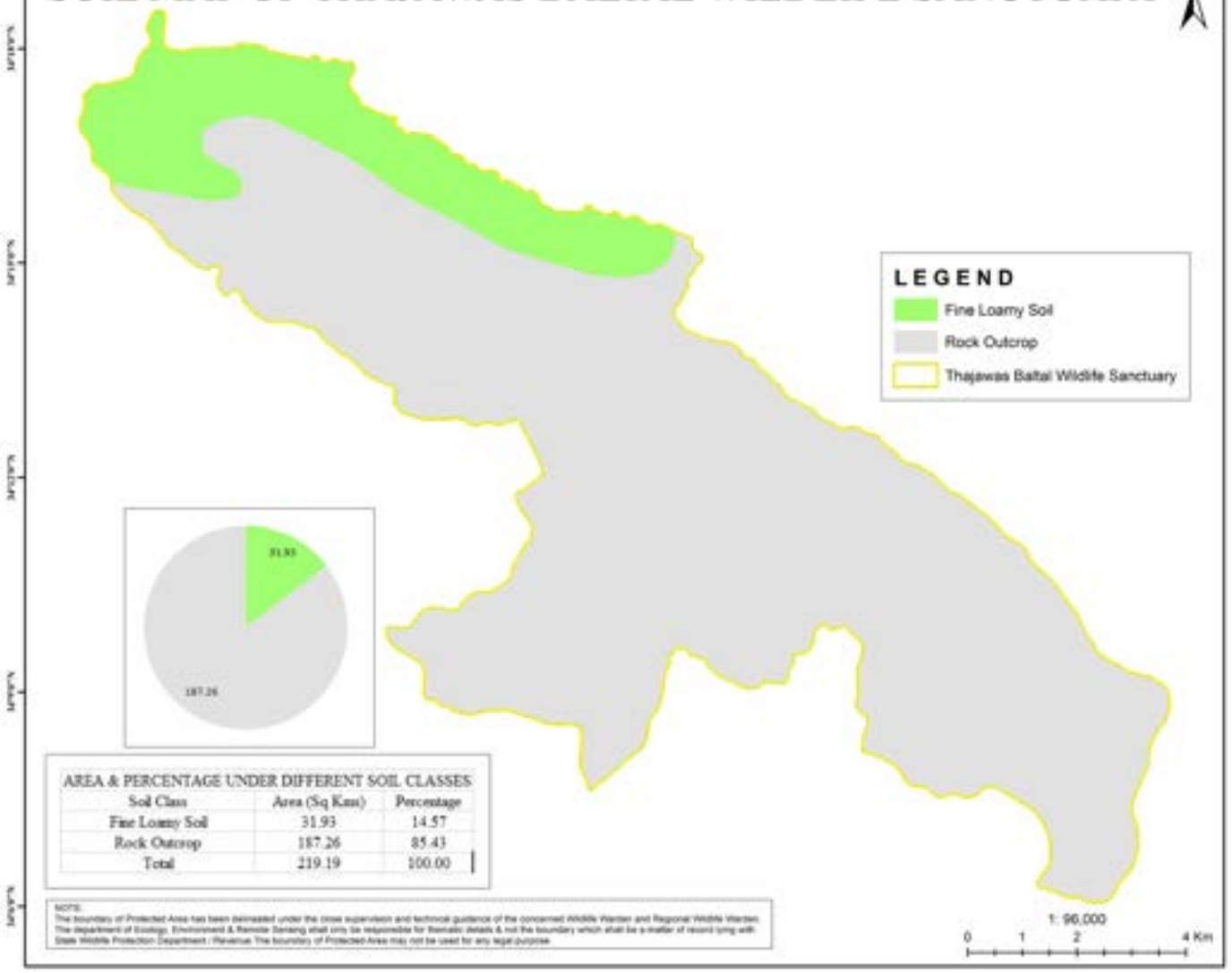


AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Gravel Sand Silt	4.08	1.86
Phyllite Schists Slates	80.27	36.55
Quartzite Shale Phyllite Beds	127.49	58.23
Sandstone Claystone Siltstone	6.37	2.91
Waterbody	0.98	0.45
Total	219.19	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY

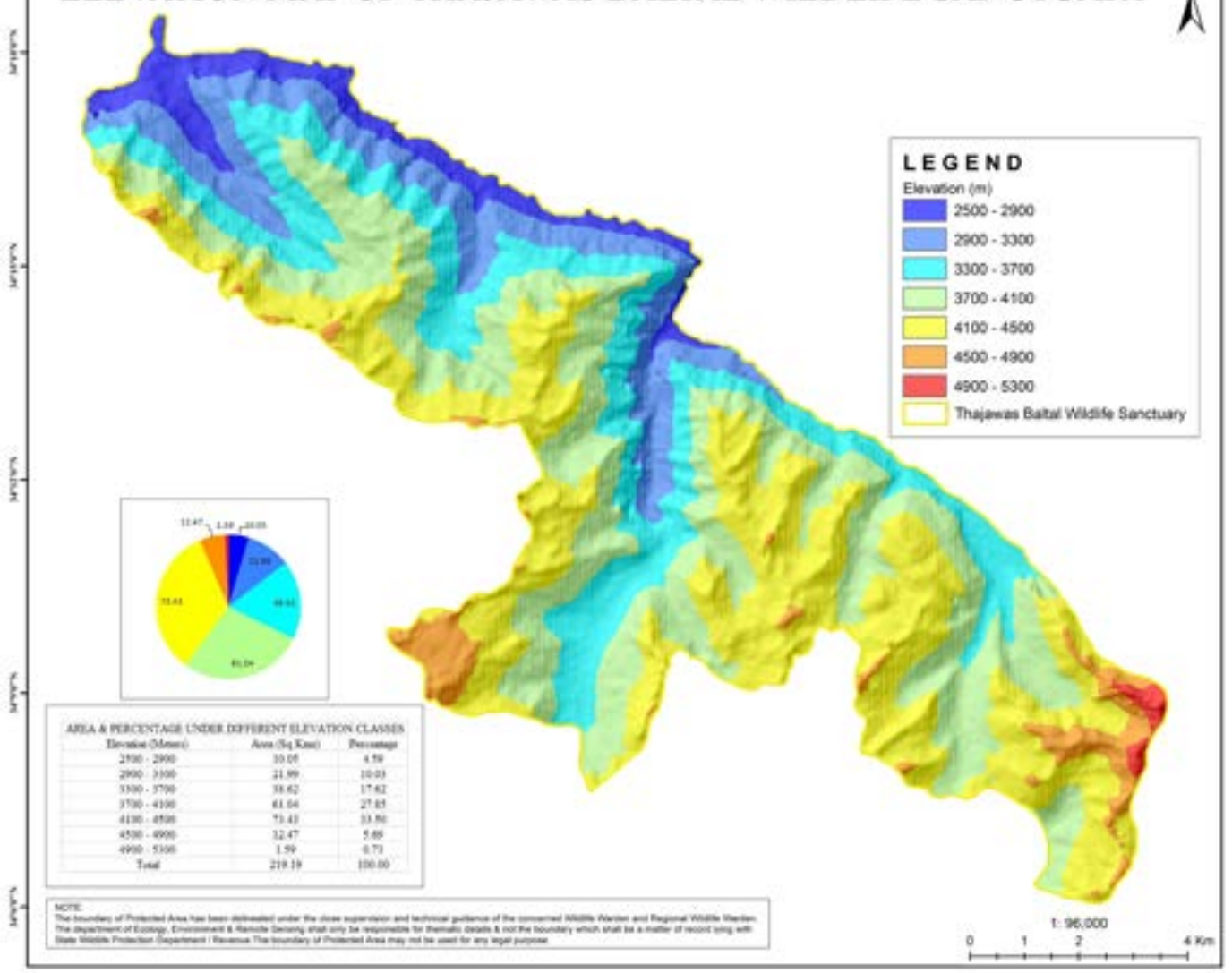


AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	31.93	14.57
Rock Outcrop	187.26	85.43
Total	219.19	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ELEVATION MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY

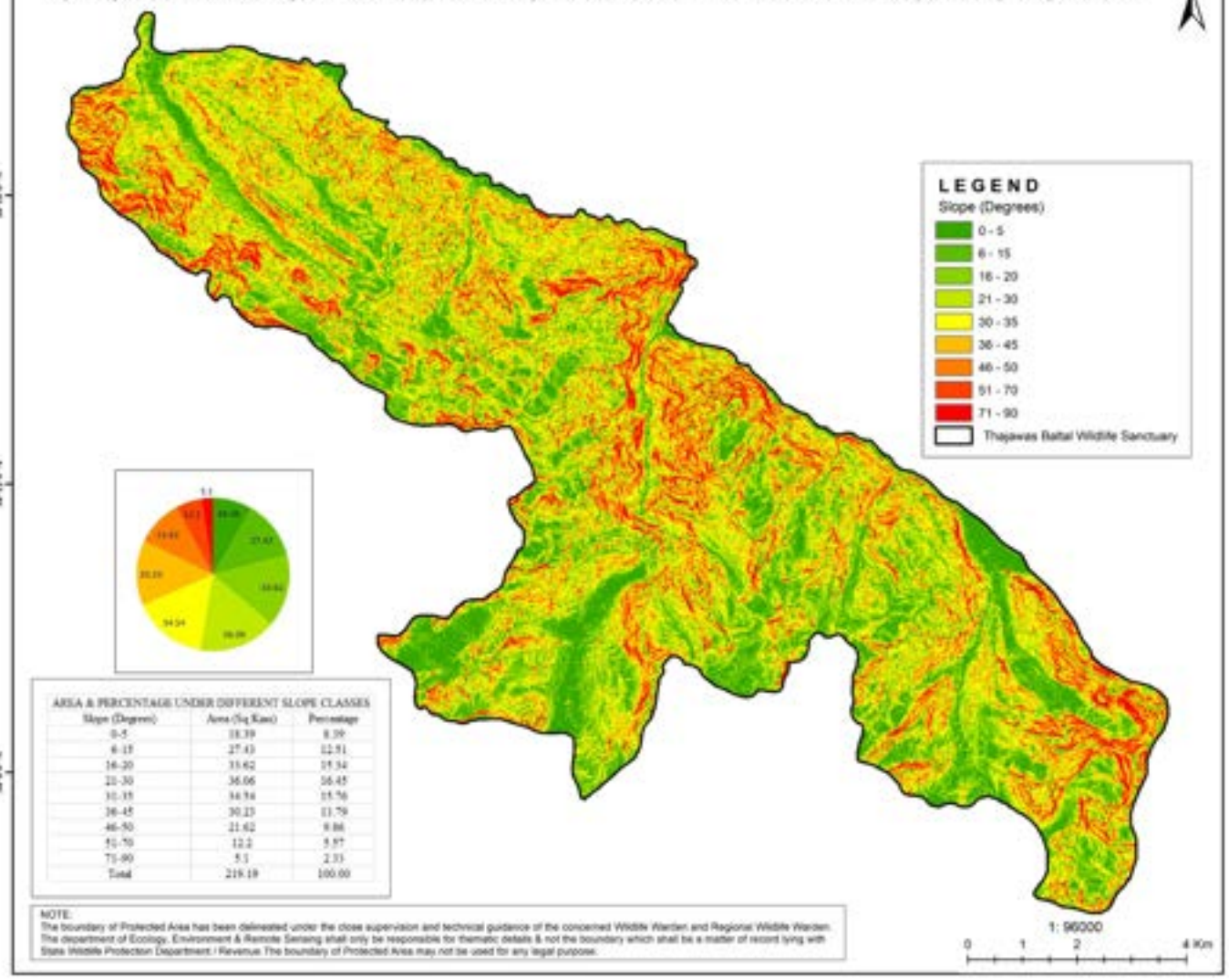


AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
2500 - 2900	10.05	4.59
2900 - 3300	21.99	10.03
3300 - 3700	38.62	17.62
3700 - 4100	61.04	27.85
4100 - 4500	73.43	33.50
4500 - 4900	12.47	5.69
4900 - 5300	1.59	0.73
Total	219.19	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SLOPE MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY

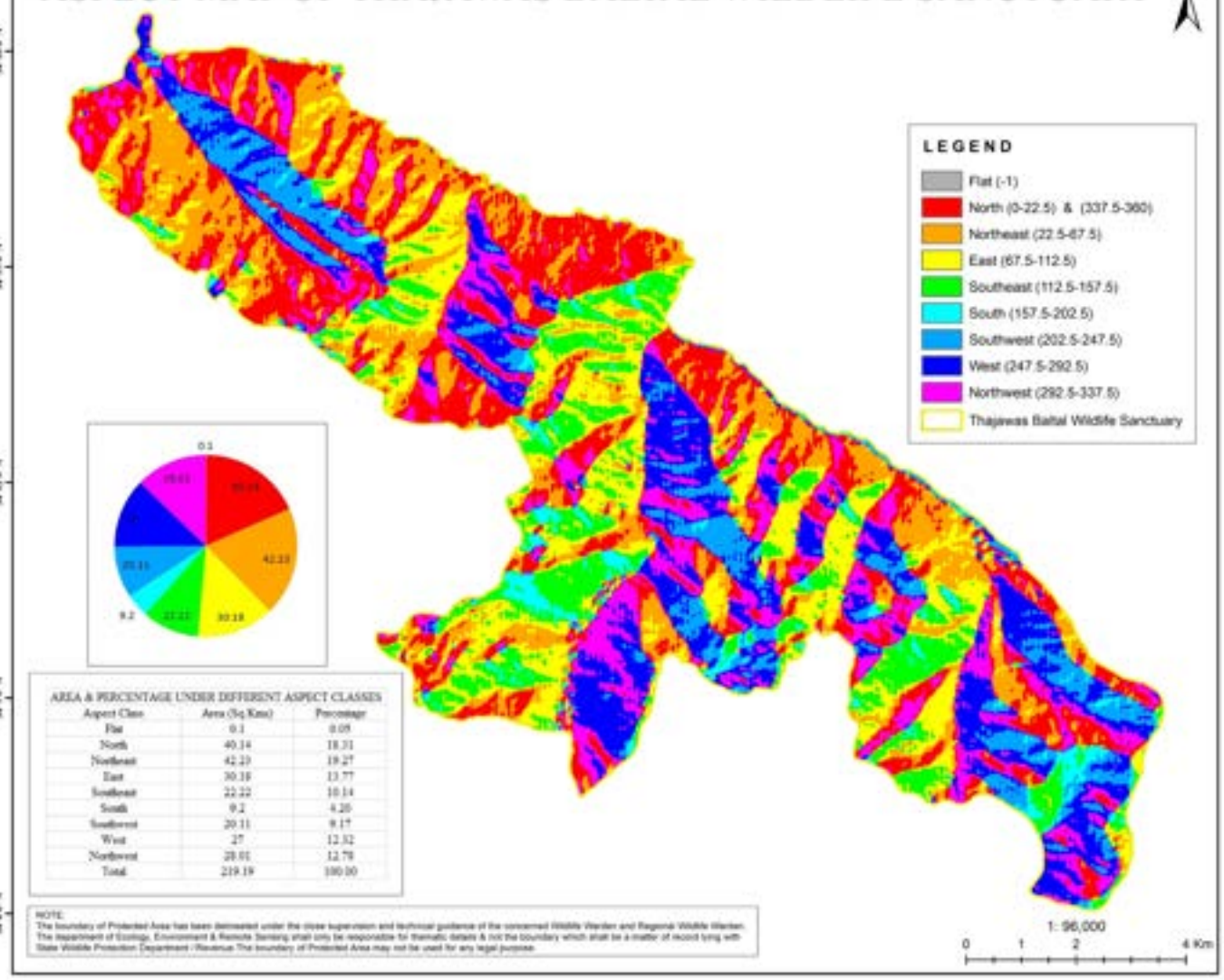


AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	18.39	8.39
6-15	27.43	12.51
16-20	33.62	15.34
21-30	36.06	16.45
31-35	34.54	15.76
36-45	30.23	13.79
46-50	21.62	9.86
51-70	12.2	5.57
71-90	5.1	2.33
Total	219.19	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

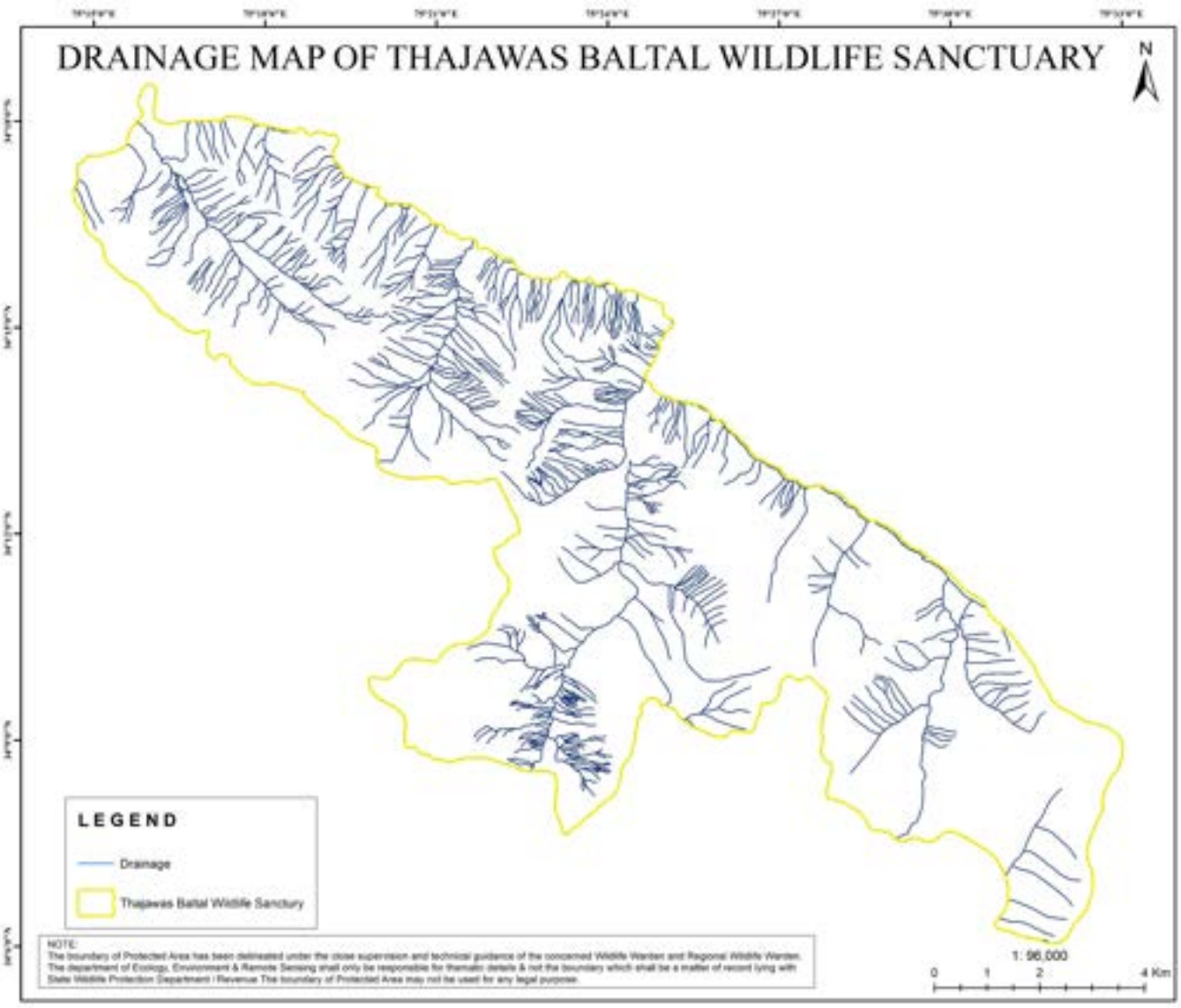
ASPECT MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY



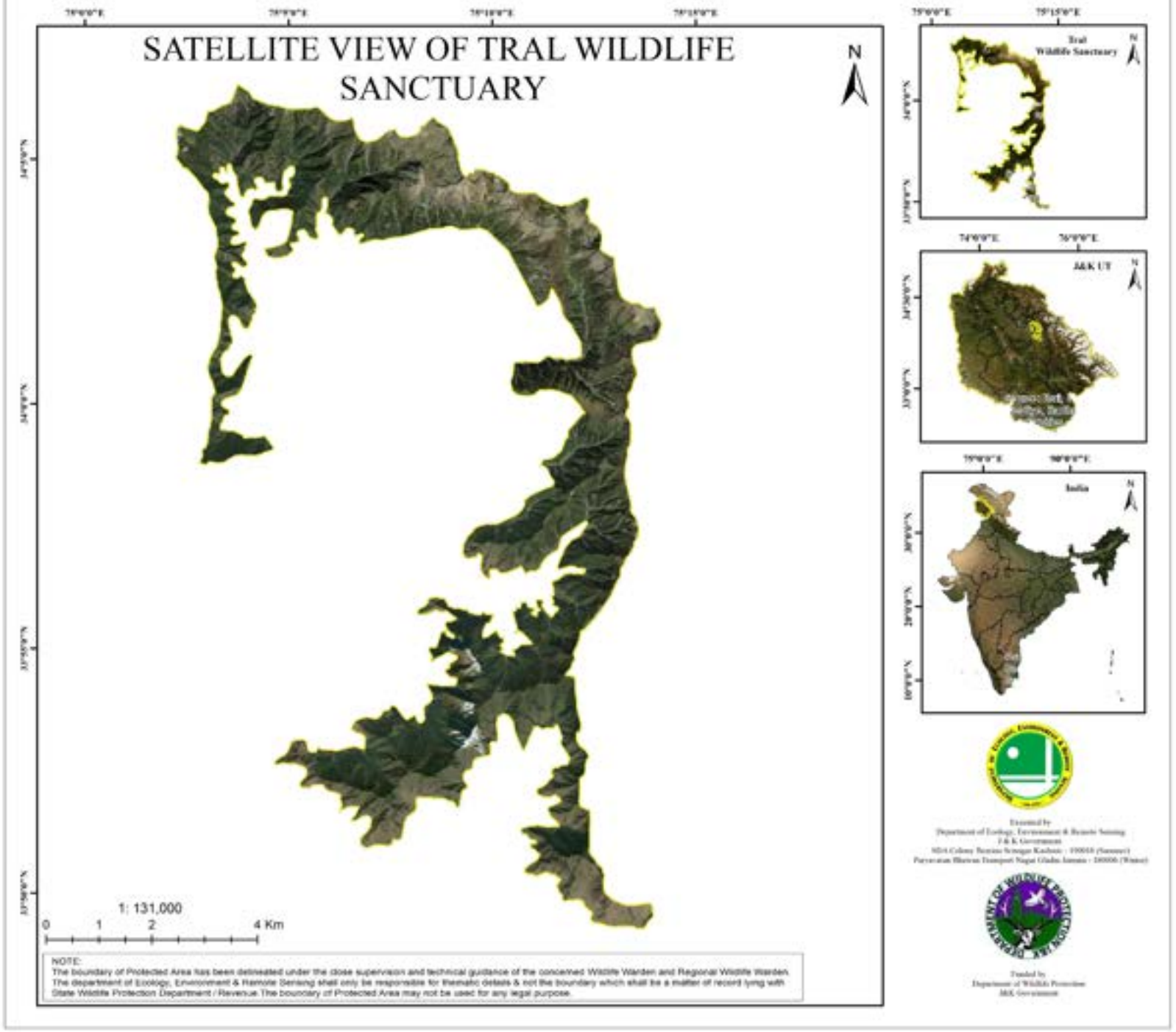
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.1	0.05
North	40.14	18.31
Northeast	42.23	19.27
East	30.18	13.77
Southeast	22.22	10.14
South	9.2	4.20
Southwest	20.11	9.17
West	27	12.32
Northwest	28.01	12.78
Total	219.19	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY
N
LEGEND
Drainage
Thajawas Baltal Wildlife Sanctury
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden.
The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with
State Wildlife Protection Department / Revenue The boundary of Protected Area may not be used for any legal purpose.
1: 96,000
0 1 2 4 Km


ACCESSIBILITY MAP OF THAJAWAS BALTAL WILDLIFE SANCTUARY
N
75°15'0"E
75°18'0"E
75°21'0"E
75°24'0"E
75°27'0"E
75°30'0"E
75°33'0"E
34°18'0"N
34°15'0"N
34°12'0"N
34°9'0"N
34°6'0"N
Thazwas Glacier
Durrin Nar
Nila Nag
Rasmur Bahk
Hurbagwan Nala
Nau Nar
Hang Dhar
Neh Nar
Karun
Posh Pathar
Gratabal Nar
LEGEND
Placemarks
Thajawas Baltal Wildlife Sanctuary
Forest Trails/Tracks/Inspection Paths/Roads
1:99000
0 1 2 4 Km



TRAL WILDLIFE SANCTUARY

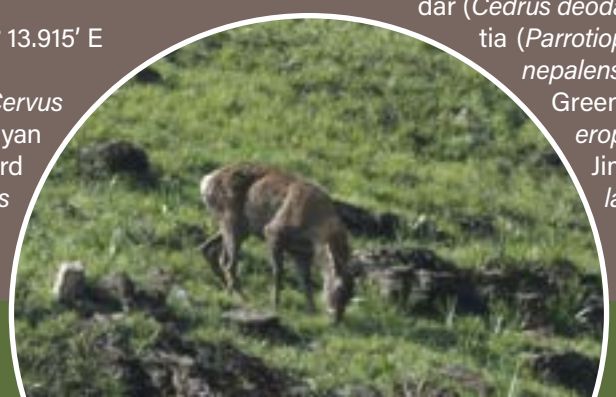
The Tral Wildlife sanctuary falls in the Pulwama district of south Kashmir and was notified in the year 2019 by merging Khangund, Panyar-Shikargah and Khiram wildlife conservation reserves and few other forest compartments of Awantipora forest division. The area harbours Halgul population. Besides, 15 species of mammals, including some rare ones are also found in the limits of the sanctuary. It is also home to more than 200 species of birds. The Tral Wildlife Sanctuary functions as a protected wildlife corridor for the endangered Kashmir Stag, also called Hangul.

SRO/NOTIFICATION NO: SRO 639 dated 23.10.2019
NOTIFIED AREA (KM2): 154.15 **GIS AREA** (KM2): 164.49
PERIMETER (KMS): 226.67
ALTITUDE RANGE (M): 1588 – 4388
GEO - COORDINATES:
34° 5.032′ N - 34° 6.541′ N, 75° 13.539′ E - 75° 13.915′ E

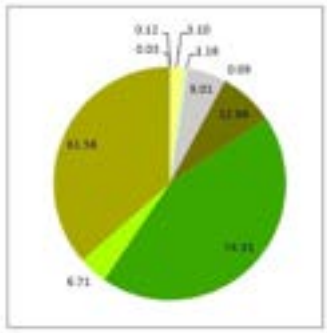
MAJOR FAUNA: Kashmir Stag/Hangul (*Cervus hanglu*), Asiatic ibex (Capra sibrica), Himaliyan Serow (*Capricornis thar*), Common Leopard (*Panthera pardus*), Asiatic Black Bear (*Ursus thibetanus*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*), Kasmir Grey Langur (*Semnopithecus ajax*).

MAJOR AVI FAUNA: The golden eagle (*Aquila chrysaetos*), Black Eared Kite (*Milvus migrans*), Himalayan Griffon vulture (*Gyps himalayansis*), Egyptian vulture (*Neophron percnopterus*), Kashmir Flycatcher (*Ficedula subrubra*), European Roller (*Coracias garrulus*), Blue Rock Pigeon (*Columba livia*), Kashmir Roller (Croscias gasrullus semenwi), Indian Myna (*Acridotheres tristis*), Grey Tit (*Parus major*), Tytlers leaf warbler (*Phylloscopus tytleri*), Golden Eagle (*Aquila chrysaetos*), Snow Pigeon (*Columba leuconota*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Deodar (*Cedrus deodara*), Horse chestnut (*Aesculus indica*), Parrotia (*Parrotiopsis jacquemontiana*), Himalayan ivy (*Hedera nepalensis*), Cranberry bush (*Viburnum grandiflorum*), Greenish Himalayan Monkshood *(Aconitum heterophyllum)*, Hooker's Iris (*Iris hookeriana Foster*), Jimsonweed (*Datura stramonium*), Kuth (*Aucklandia costus*).



LAND USE LAND COVER MAP OF TRAL WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	3.10	1.89
Agriculture Plantation	1.16	0.70
Barren Rocky	9.01	5.47
Builtup	0.09	0.05
Forest	74.33	45.20
Dense Scrub	12.96	7.88
Grassland & Grazing land	2.12	1.29
Open Scrub	61.58	37.43
Sandy Area	0.03	0.02
Waterbody	0.12	0.07
Total	164.49	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND

- Agriculture Cropland
- Agriculture Plantation
- Barren Rocky
- Builtup
- Dense Scrub
- Forest
- Grassland & Grazing land
- Open Scrub
- Sandy Area
- Waterbody
- Tral Wildlife Sanctuary

1: 131,000
0 1 2 4 Km

VEGETATION MAP OF TRAL WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Alpine Moist Pasture	2.12	1.29
Barren Land	9.03	5.49
Builtup	0.09	0.05
Cropland	3.10	1.89
Dense Scrub	12.96	7.88
Juniper	74.33	45.20
Open Scrub	61.58	37.43
Plantation	1.16	0.70
Water	0.12	0.07
Total	164.49	100.00

NOTE:
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LEGEND

- Barren Land
- Builtup
- Cropland
- Dense Scrub
- Juniper
- Open Scrub
- Plantation
- Moist Alpine Pasture
- Water
- Tral Wildlife Sanctuary

1: 131,000
0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF TRAL WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Alluvial Plain	0.10	0.06
Denudational Hill	135.26	82.24
Flood Plain	0.48	0.29
Piedmont Zone	6.03	3.67
Structural Hill	22.50	13.68
Waterbody	0.12	0.07
Total	164.49	100.00

NOTE:
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LEGEND

- Alluvial Plain
- Denudational Hills
- Flood Plain
- Piedmont Zone
- Structural Hills
- Waterbody
- Tral Wildlife Sanctuary

1: 131,000
0 1 2 4 Km

LITHOLOGICAL MAP OF TRAL WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	59.94	36.44
Clay with Sand Silt	0.16	0.10
Phyllites Schists Slates	70.73	43.01
Sand Silt with Clay	33.54	20.39
Waterbody	0.12	0.07
Toalt	164.49	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND

- Bedded Limestone
- Clay with Sand Silt
- Phyllites Schists Slates
- Sand Silt with Clay
- Waterbody
- Tral Wildlife Sanctuary

1: 131,000
0 1 2 4 Km

SOIL MAP OF TRAL WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	112.15	68.18
Loamy Soil	14.42	8.77
Rock Outcrop	37.92	23.05
Total	164.49	100.00

LEGEND

- Fine Loamy Soil
- Loamy Soil
- Rock Outcrop
- Tral Wildlife Sanctuary

1: 131,000

0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ELEVATION MAP OF TRAL WILDLIFE SANCTUARY

AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1588 - 1980	15.04	9.15
1980 - 2372	44.85	27.26
2372 - 2764	34.16	20.76
2764 - 3156	20.36	12.38
3156 - 3548	21.08	12.82
3548 - 3940	23.20	14.10
3940 - 4333	5.80	3.53
Total	164.49	100.00

LEGEND

Elevation (Meters)

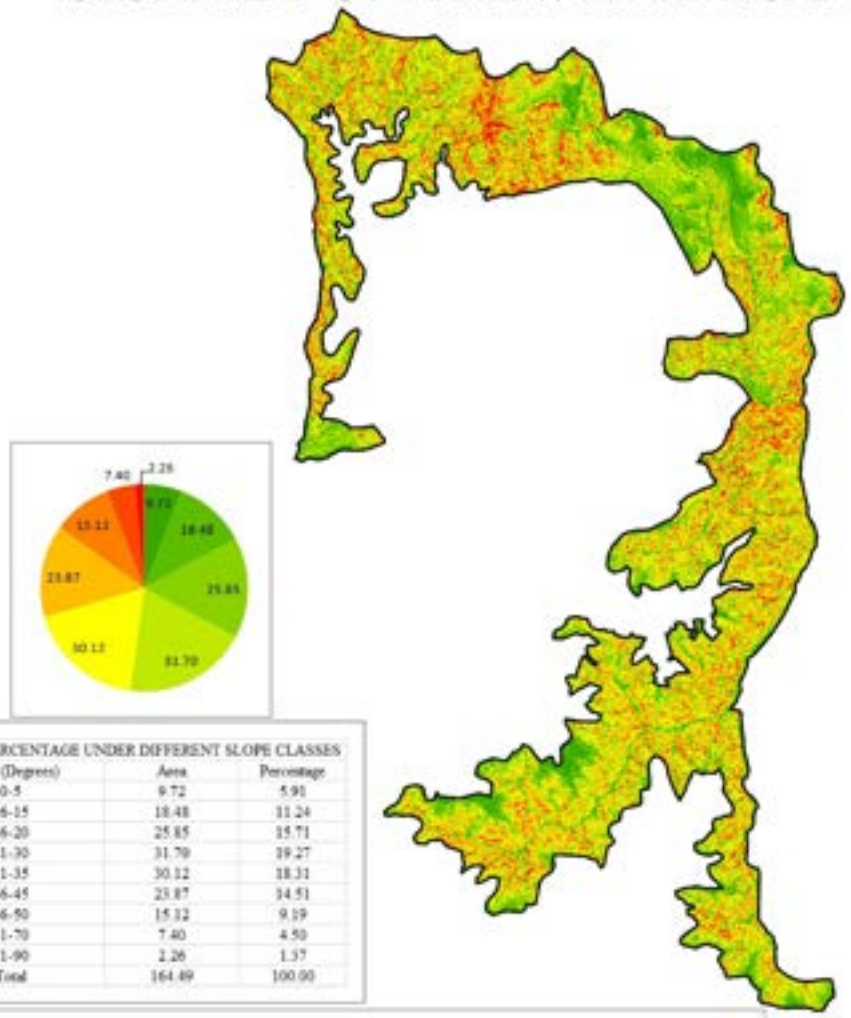
- 1,588 - 1,980
- 1,980 - 2,372
- 2,372 - 2,764
- 2,764 - 3,156
- 3,156 - 3,548
- 3,548 - 3,940
- 3,940 - 4,333
- Tral Wildlife Sanctuary

1: 131,000

0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SLOPE MAP OF TRAL WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area	Percentage
0-5	9.72	5.91
6-15	18.48	11.24
16-20	25.85	15.71
21-30	31.70	19.27
31-35	30.12	18.31
36-45	23.87	14.51
46-50	15.32	9.19
51-70	7.40	4.50
71-90	2.26	1.37
Total	164.49	100.00

NOTE:
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LEGEND

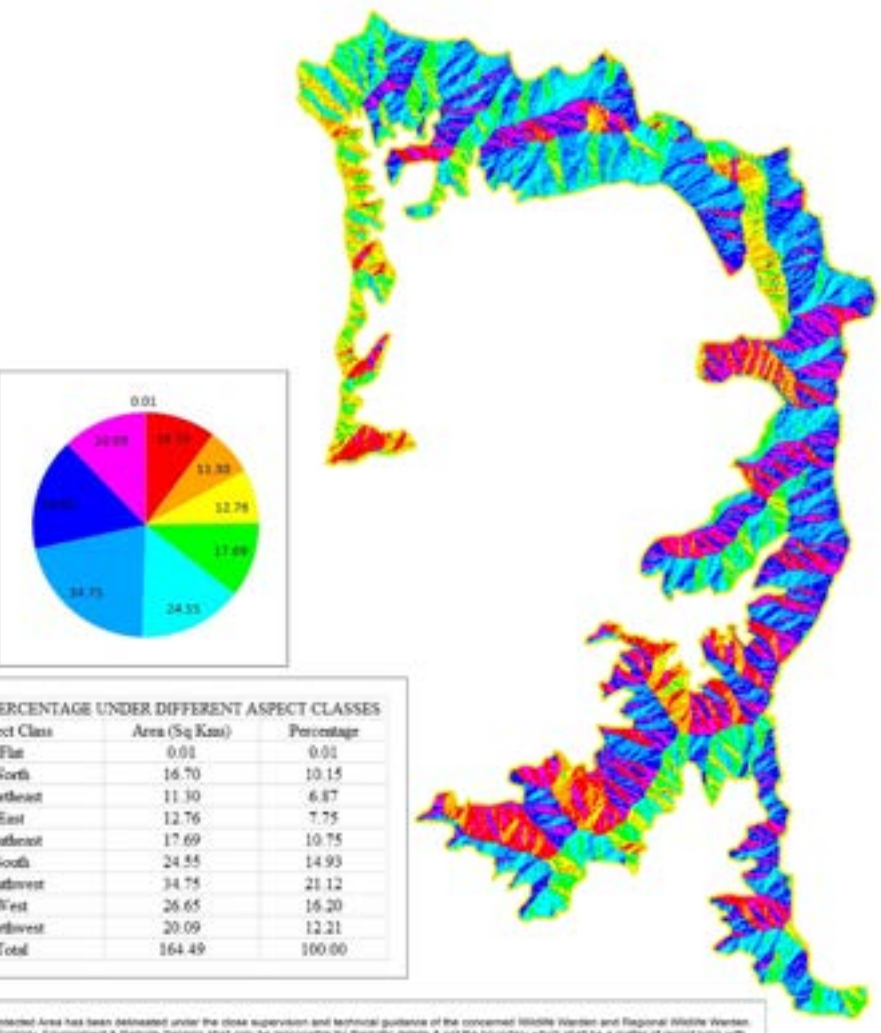
Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Tral Wildlife Sanctuary

1: 131,000

0 1 2 4 Km

ASPECT MAP OF TRAL WILDLIFE SANCTUARY



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.01	0.01
North	16.70	10.15
Northeast	11.30	6.87
East	12.76	7.75
Southeast	17.69	10.75
South	24.55	14.93
Southwest	34.75	21.12
West	26.65	16.20
Northwest	20.09	12.21
Total	164.49	100.00

NOTE:
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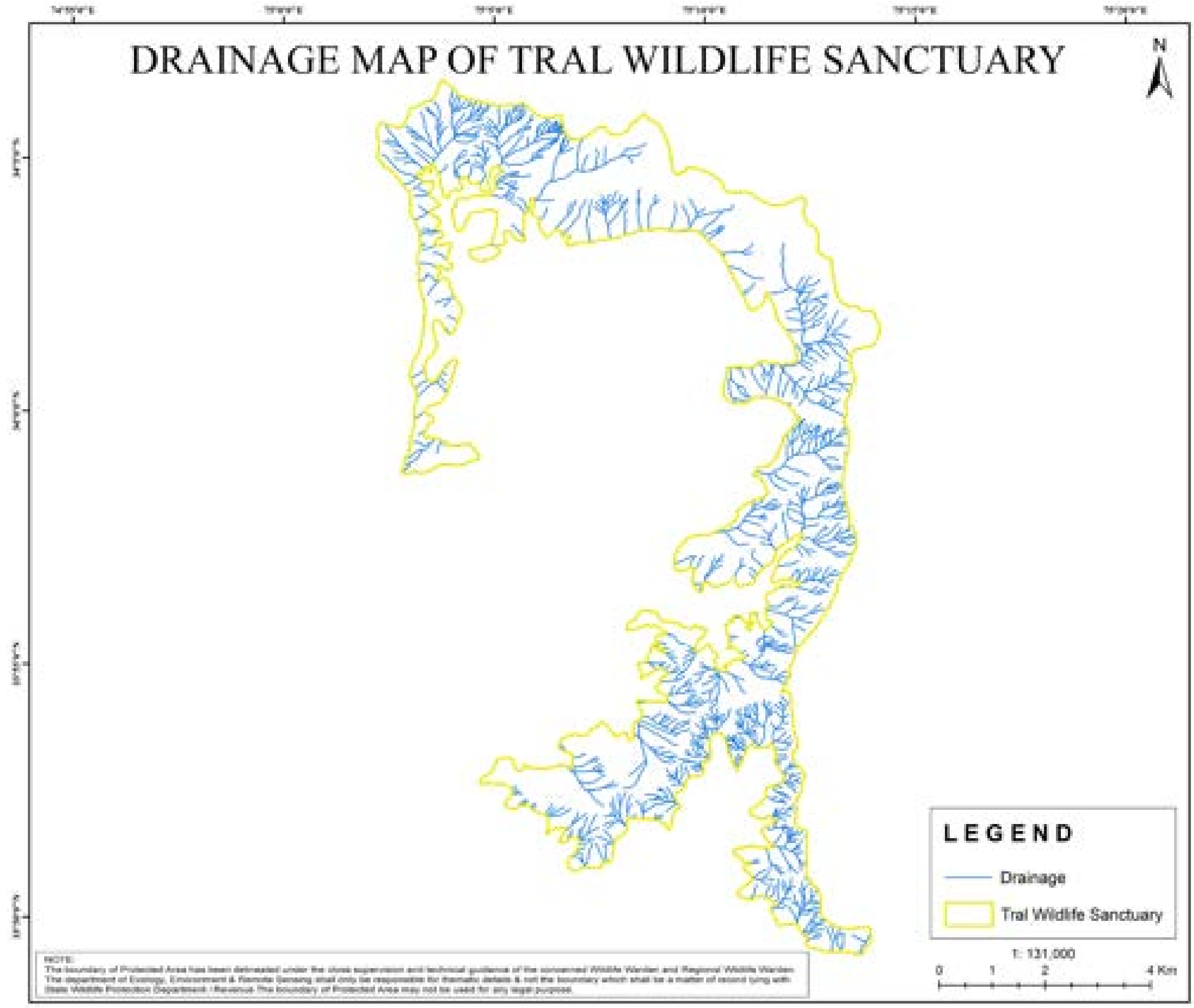
LEGEND

- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Tral Wildlife Sanctuary

1: 131,000

0 1 2 4 Km

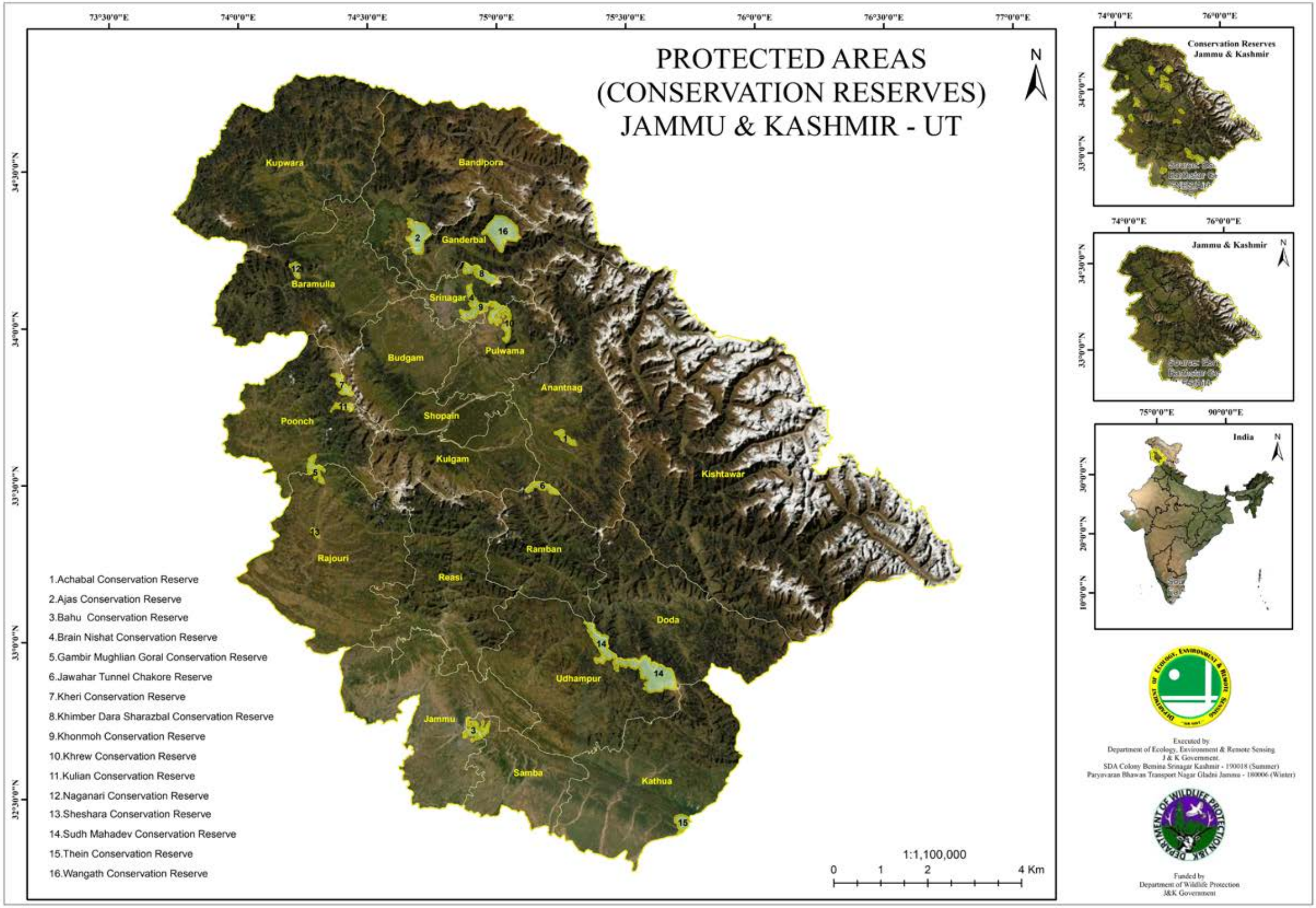

DRAINAGE MAP OF TRAL WILDLIFE SANCTUARY
N
LEGEND
Drainage
Tral Wildlife Sanctuary
1: 131,000
0 1 2 4 Km


ACCESSIBILITY MAP OF TRAL WILDLIFE SANCTUARY
N
75°0'0"E
75°4'0"E
75°8'0"E
75°12'0"E
75°16'0"E
75°20'0"E
Pambach Khod
Kan Nar
Tral Forest
Sundar Nag
Bughamar Gali
1: 135000
0 1 2 4 Km
LEGEND
Placemarks
Tral Wildlife Sanctuary
Forest Trails/Tracks/Inspection Paths/Roads

WILDLIFE PROTECTED AREA NETWORK J&K

CONSERVATION RESERVES

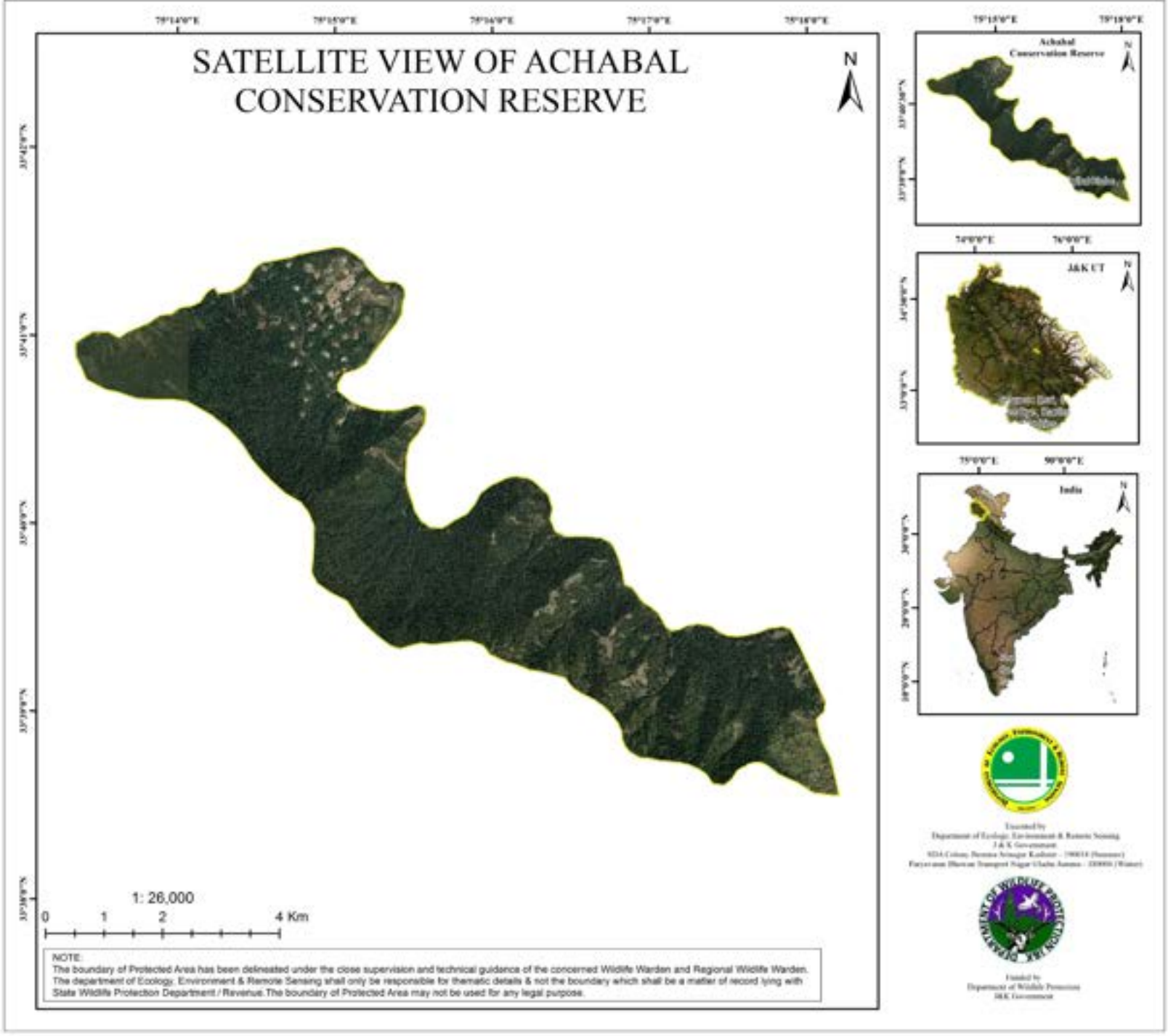
PROTECTED AREAS (CONSERVATION RESERVES) JAMMU & KASHMIR - UT



1.Achabal Conservation Reserve
2.Ajas Conservation Reserve
3.Bahu Conservation Reserve
4.Brain Nishat Conservation Reserve
5.Gambir Mughlian Goral Conservation Reserve
6.Jawahar Tunnel Chakore Reserve
7.Kheri Conservation Reserve
8.Khimber Dara Sharazbal Conservation Reserve
9.Khonmoh Conservation Reserve
10.Khrew Conservation Reserve
11.Kulian Conservation Reserve
12.Naganari Conservation Reserve
13.Sheshara Conservation Reserve
14.Sudh Mahadev Conservation Reserve
15.Thein Conservation Reserve
16.Wangath Conservation Reserve

Executed by
Department of Ecology, Environment & Remote Sensing
J & K Government.
SDA Colony Bemina Srinagar Kashmir - 190018 (Summer)
Paryavaran Bhawan Transport Nagar Gladni Jammu - 180006 (Winter)

Funded by
Department of Wildlife Protection
J&K Government



ACHABAL CONSERVATION RESERVE

The Achabal Conservation Reserve derives its name from the famous 'Achhabal Garden' built by the Mughal emperors falling on the North-West of the Conservation Reserve. The famous Achhabal Nallah emerges from the Northeast of the reserve and merges finally into River Jehlum. The Reserve was earlier used as game reserve by the earstwhile Maharajas, now harbours good amount of biodiversity. It was notified in the year 1991.

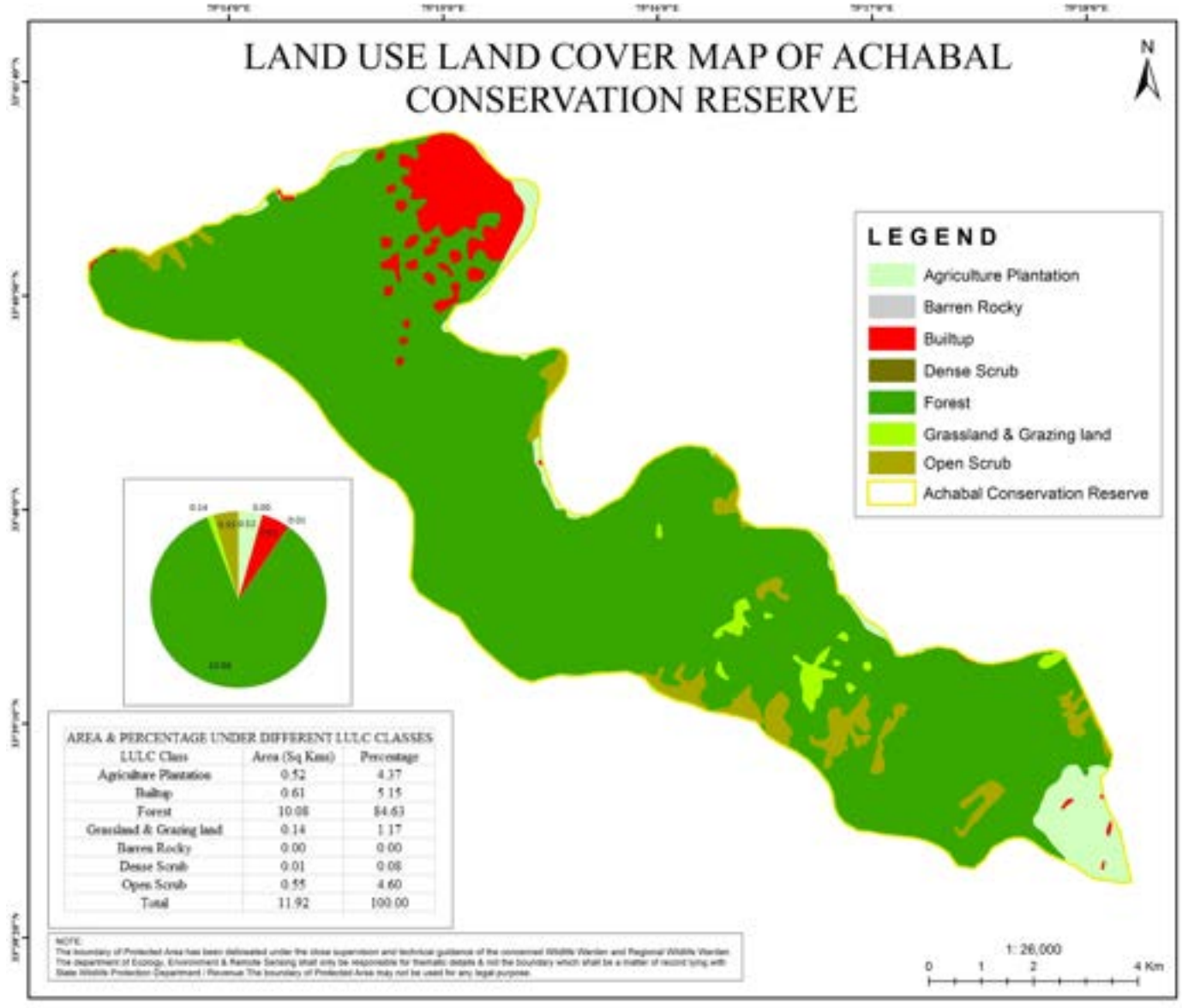
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 20.00 **GIS AREA** (KM2): 11.92
PERIMETER (KMS): 23.65
ALTITUDE RANGE (M): 1636 - 2434
GEO - COORDINATES:
E 33° 38.540′ N - 33° 41.468′ N, 75° 13.341′ E - 75° 18.198′ E

MAJOR FAUNA: Kashmir Grey Langur (*Semnopithecus ajax*), Kashmir Stag/Hangul (*Cervus hanglu*), Common Leopard (*Panthera pardus*), Kashmir Musk Deer (*Moschus cupreus*), Himalayan Brown Bear (*Ursus arctos*), , Himalayan Black Bear (*Ursus thibetanus*), Himayan Serow (*Capricornis thar*), Long Tailed Marmot (*Marmota caudata*), Small Kashmir Flying Squirrel (*Eoglaucomys fimbriatus*), Red Fox (*Vulpus Vulpus*) , Indian Jackal (*Canis aureus*).

MAJOR AVI FAUNA: The Black Eared kite (*Milvus migrans*), White backed Vulture (*Psedopus bengalensis*), European Hoopoe (*Upupa epops*), Common Swallow (*Hirunda rustica*), White Cheeked Bulbul (*Pycnonotus leucogenys*), White Cheeked nuthatch (*Sitta leucospis*), Golden Oriole (*Oriolus kundoo*), Grey Tit (*Parus major*), Indian barn Owl (*Tyto alba*).

MAJOR FLORA: Deodar (*Cedrus deodara*), Fir (*Abies pindrow*), Himalayan Blue Pine (*Pinus wallichiana*), Spruce (*Picea smithiana*), Himalayan horse chestnut (*Aesculus indica*), Common Wallnut (*Juglans regia*), Himalayan elm (*Ulmus wallichiana*), Himalayan birch (*Betula utilis*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*).

LAND USE LAND COVER MAP OF ACHABAL CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Plantation	0.52	4.37
Builtup	0.61	5.15
Forest	10.08	84.63
Grassland & Grazing land	0.14	1.17
Barren Rocky	0.00	0.00
Dense Scrub	0.01	0.08
Open Scrub	0.55	4.60
Total	11.92	100.00

NOTE:
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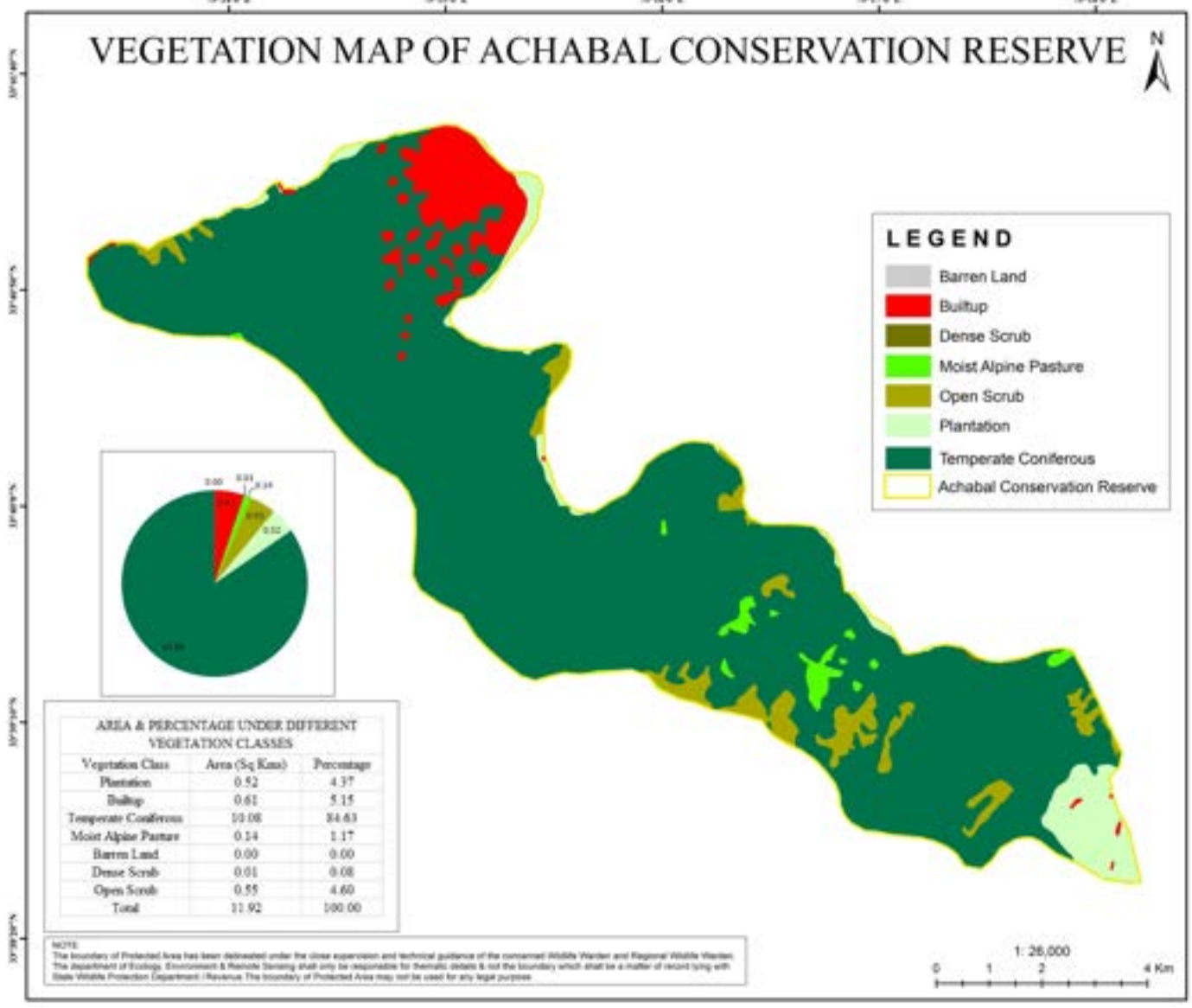
VEGETATION MAP OF ACHABAL CONSERVATION RESERVE

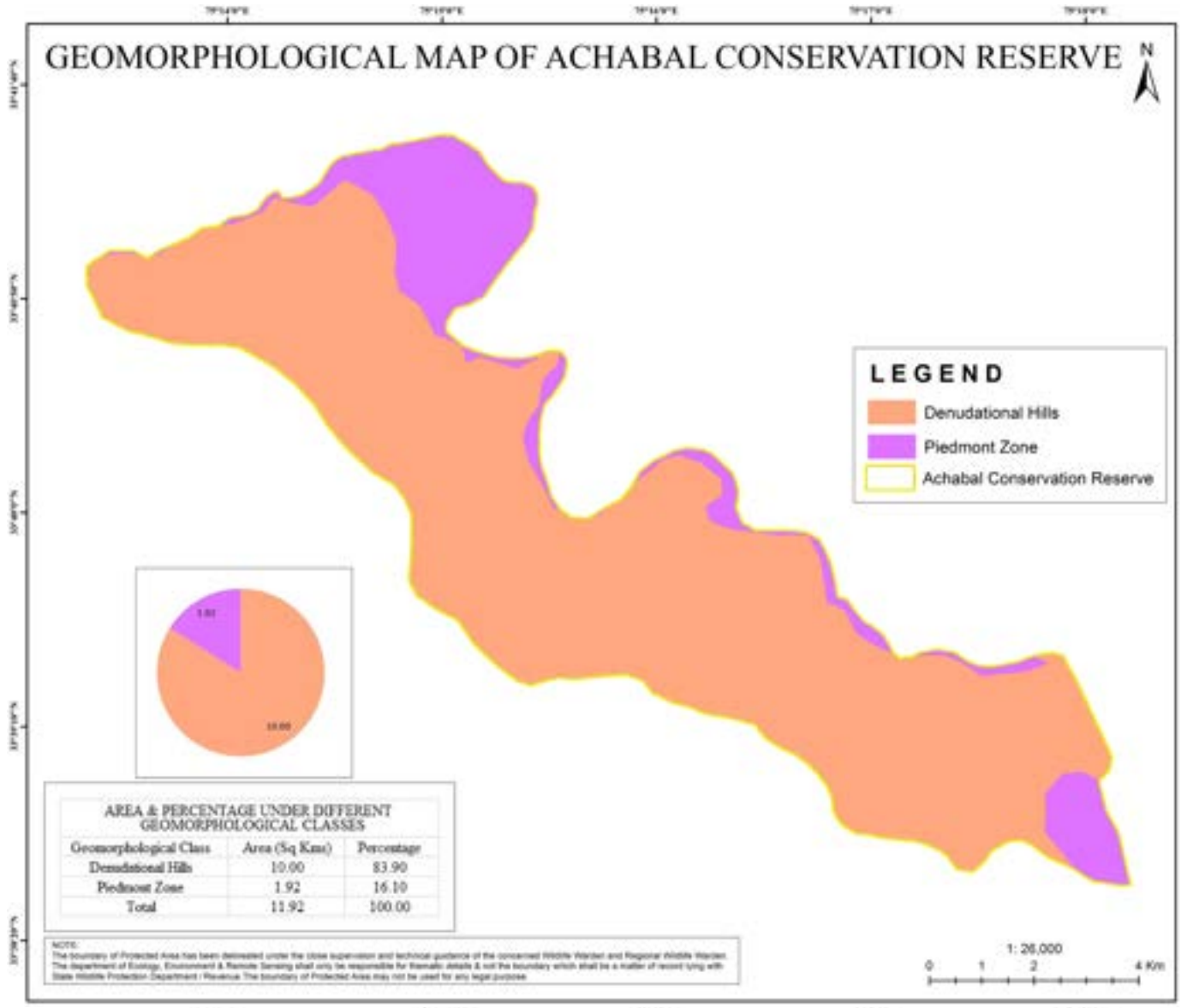


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Plantation	0.52	4.37
Builtup	0.61	5.15
Temperate Coniferous	10.08	84.63
Moist Alpine Pasture	0.14	1.17
Barren Land	0.00	0.00
Dense Scrub	0.01	0.08
Open Scrub	0.55	4.60
Total	11.92	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF ACHABAL CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	10.00	83.90
Piedmont Zone	1.92	16.10
Total	11.92	100.00

NOTE:
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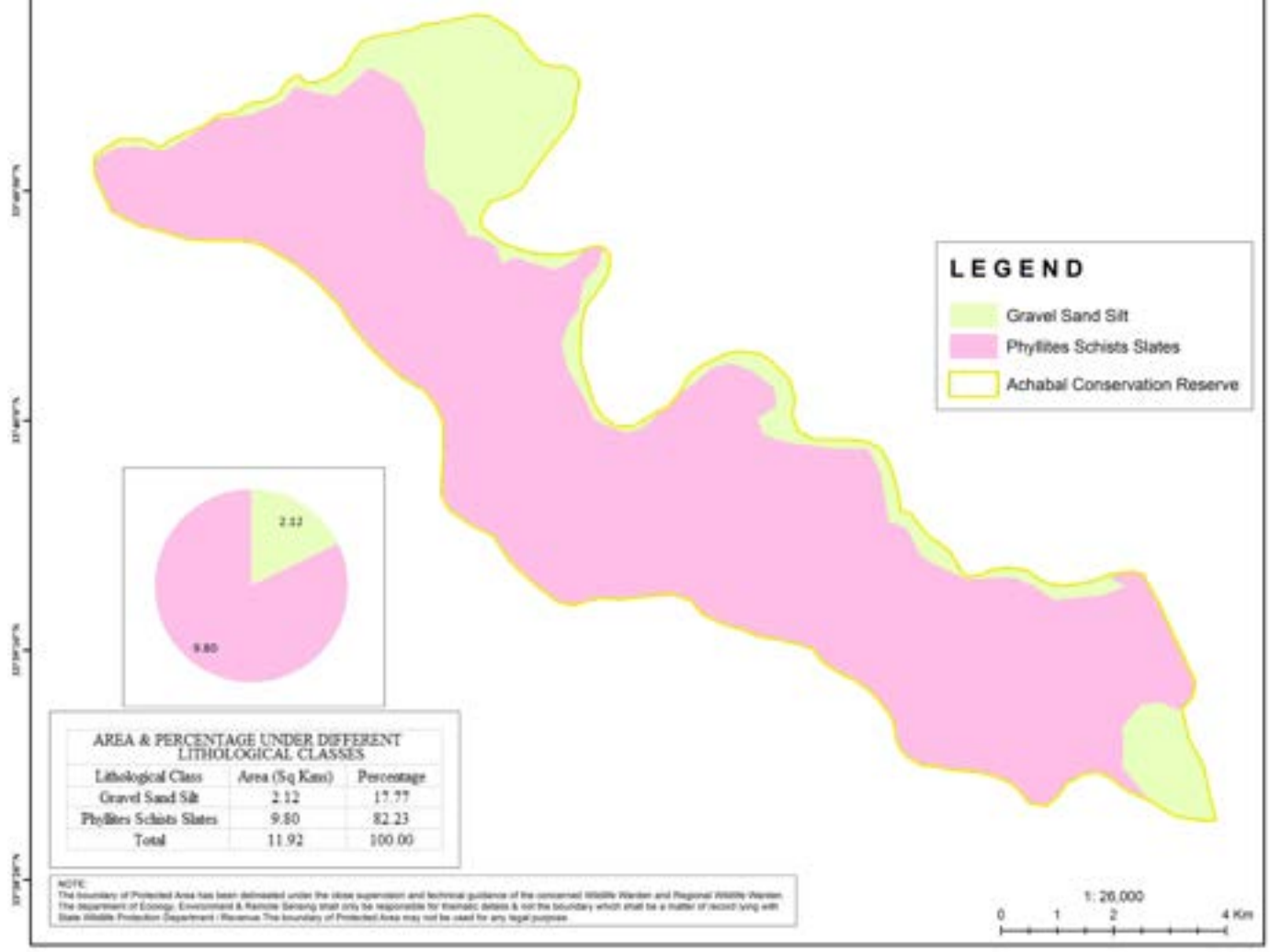
LITHOLOGICAL MAP OF ACHABAL CONSERVATION RESERVE

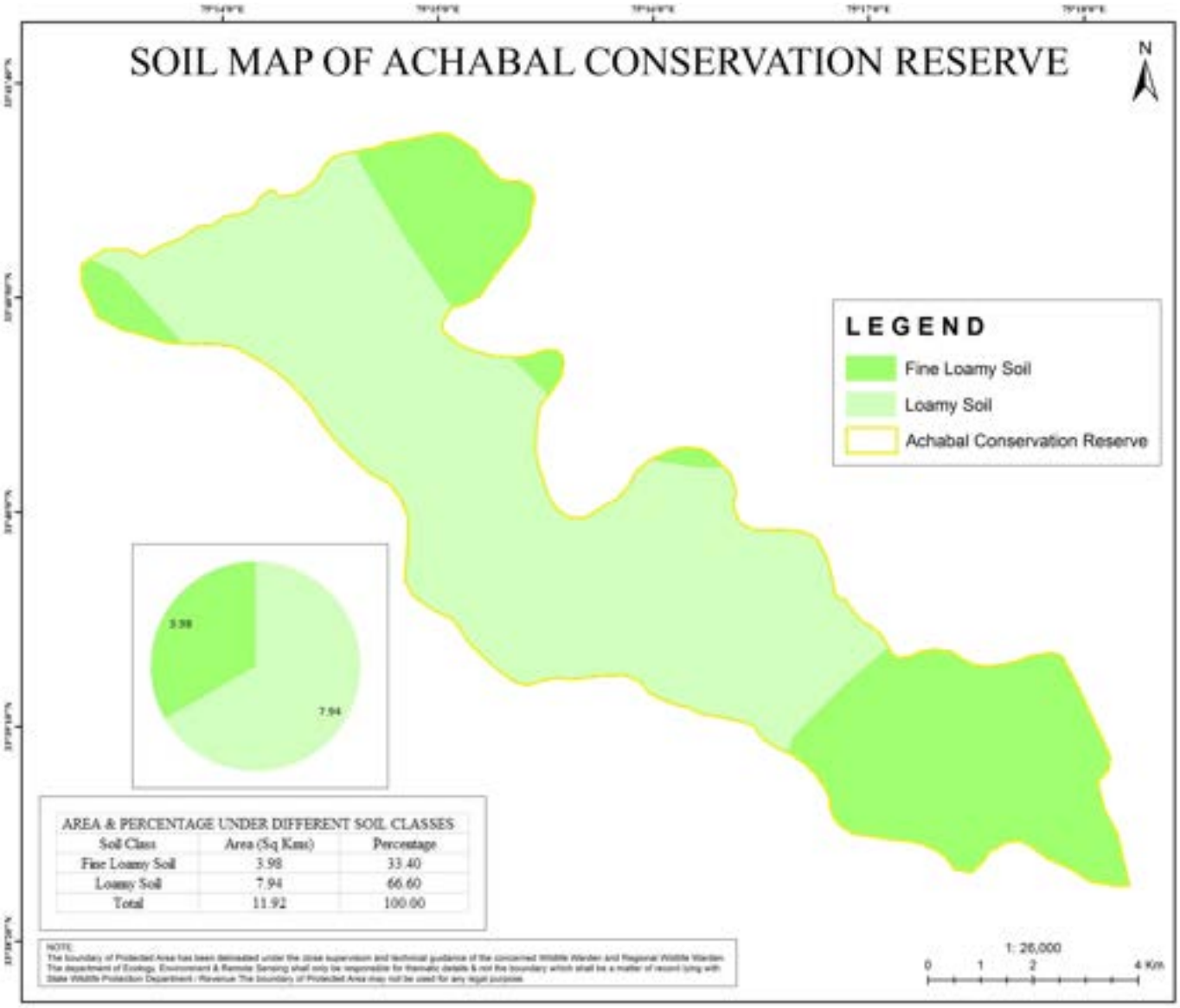


AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Gravel Sand Silt	2.12	17.77
Phyllites Schists Slates	9.80	82.23
Total	11.92	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF ACHABAL CONSERVATION RESERVE



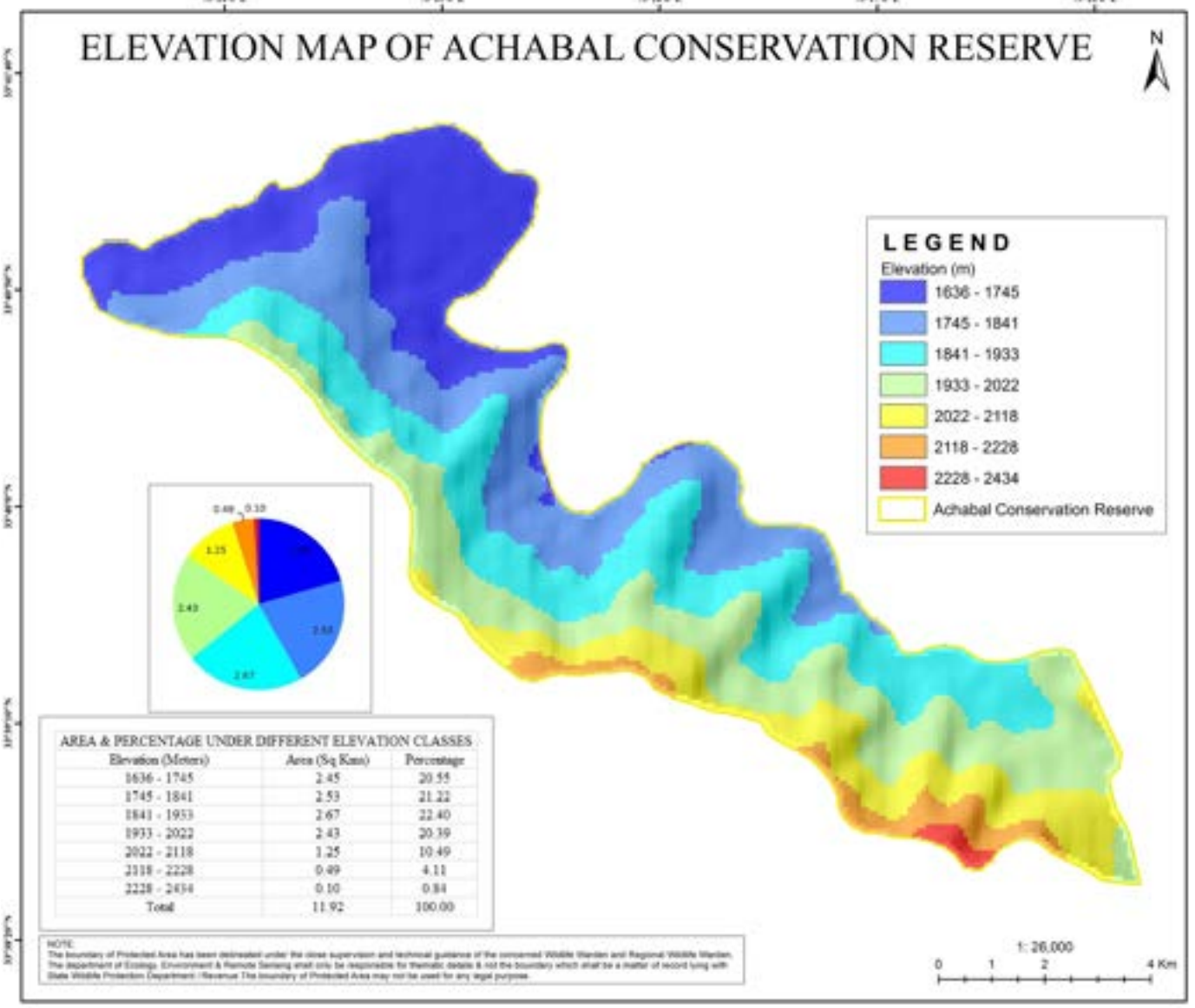
AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	3.98	33.40
Loamy Soil	7.94	66.60
Total	11.92	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

1: 26,000
0 1 2 4 Km

ELEVATION MAP OF ACHABAL CONSERVATION RESERVE



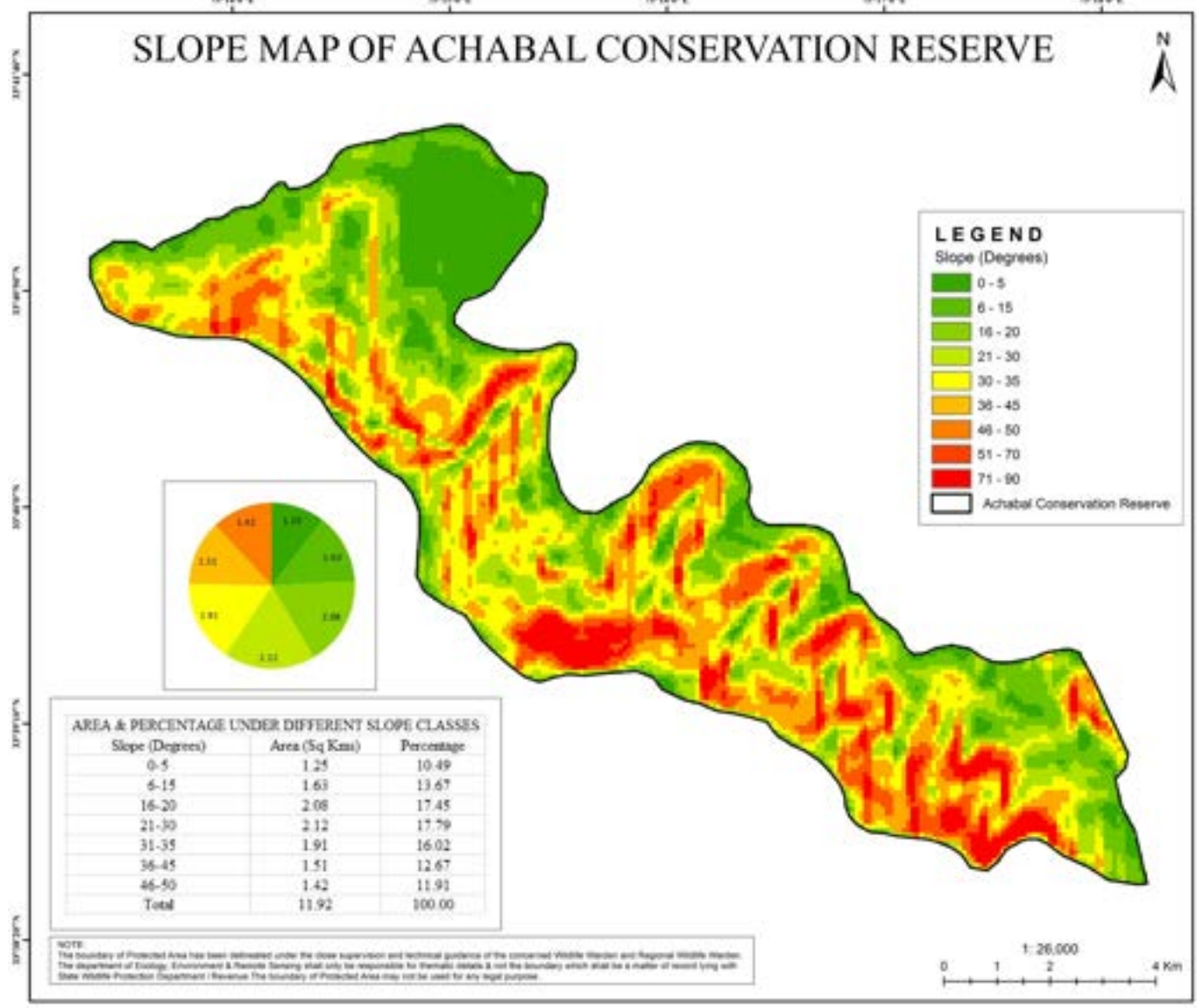
AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1636 - 1745	2.45	20.55
1745 - 1841	2.53	21.22
1841 - 1933	2.67	22.40
1933 - 2022	2.43	20.39
2022 - 2118	1.25	10.49
2118 - 2228	0.49	4.11
2228 - 2434	0.10	0.84
Total	11.92	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

1: 26,000
0 1 2 4 Km

SLOPE MAP OF ACHABAL CONSERVATION RESERVE

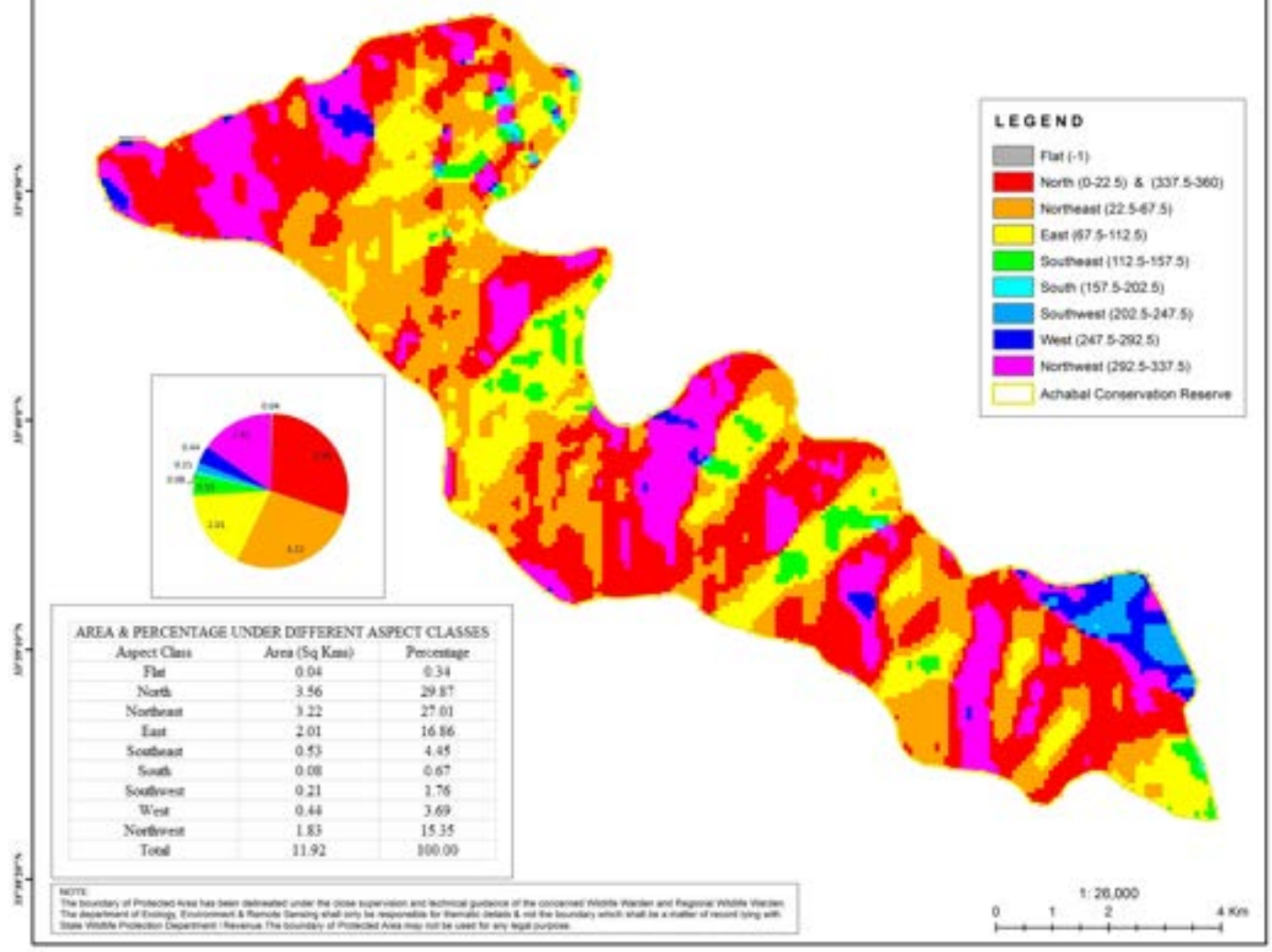


AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	1.25	10.49
6-15	1.63	13.67
16-20	2.08	17.45
21-30	2.12	17.79
31-35	1.91	16.02
36-45	1.51	12.67
46-50	1.42	11.91
Total	11.92	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ASPECT MAP OF ACHABAL CONSERVATION RESERVE

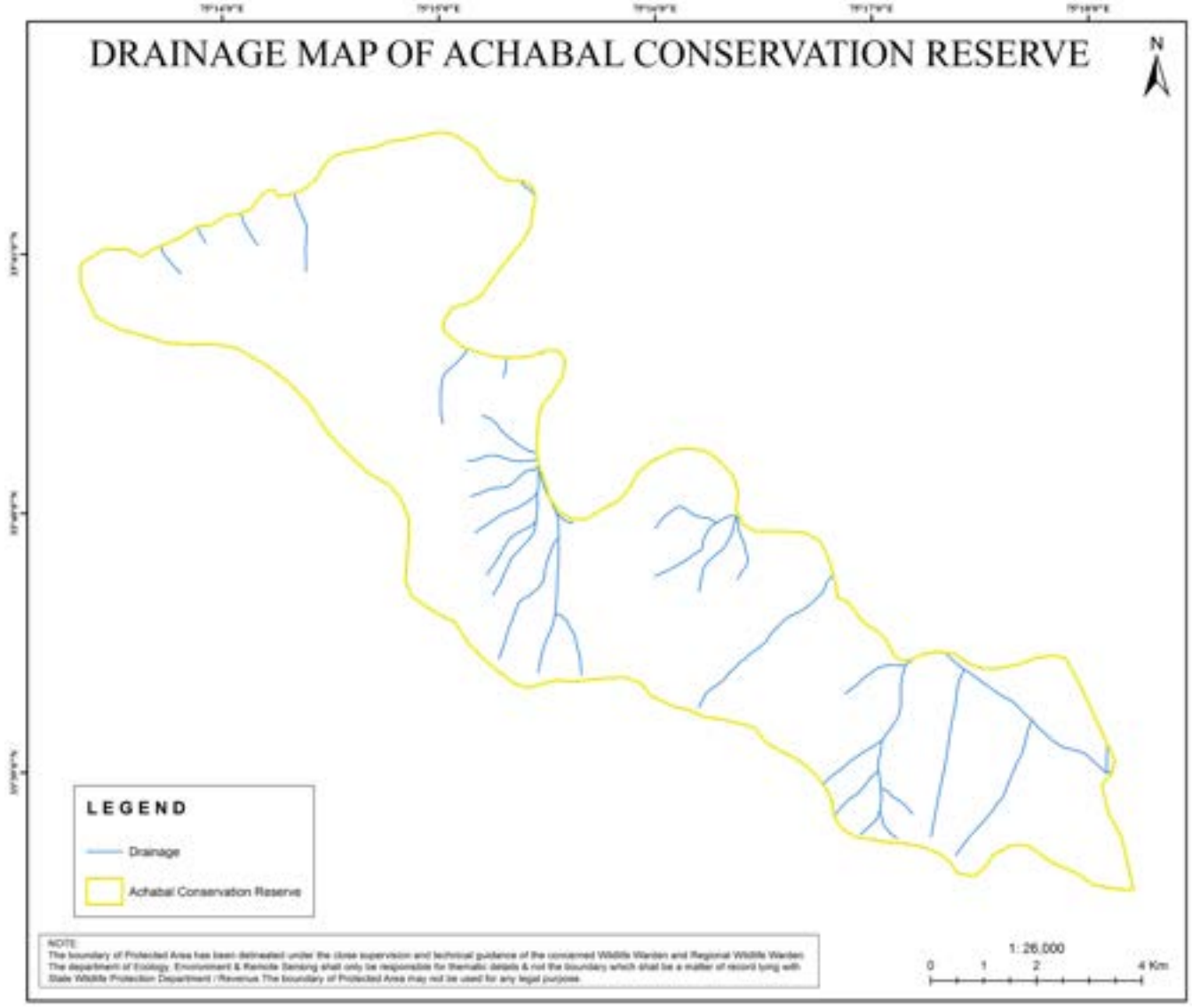


AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

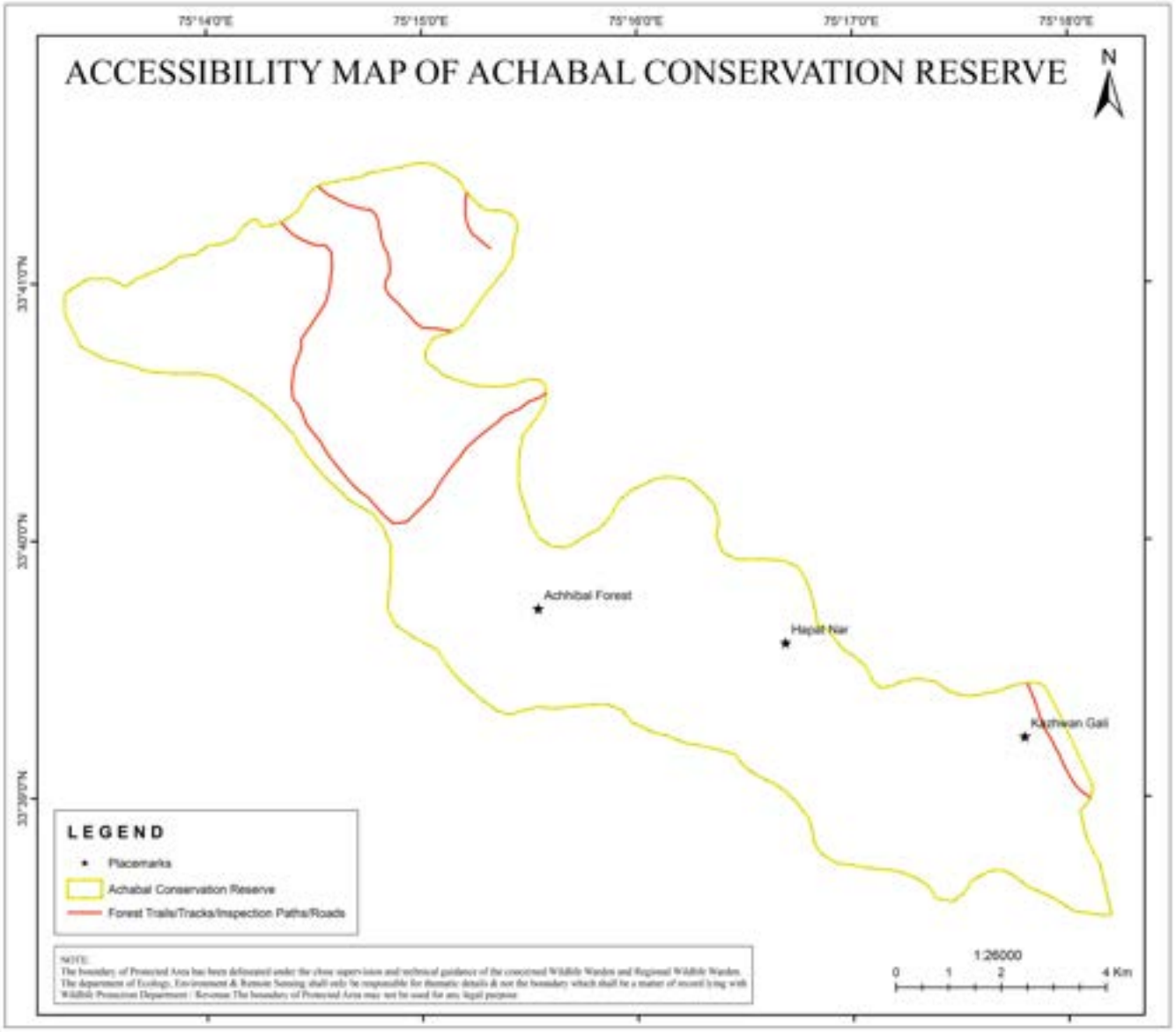
Aspect Class	Area (Sq Kms)	Percentage
Flat	0.04	0.34
North	3.56	29.87
Northeast	3.22	27.01
East	2.01	16.86
Southeast	0.53	4.45
South	0.08	0.67
Southwest	0.21	1.76
West	0.44	3.69
Northwest	1.83	15.35
Total	11.92	100.00

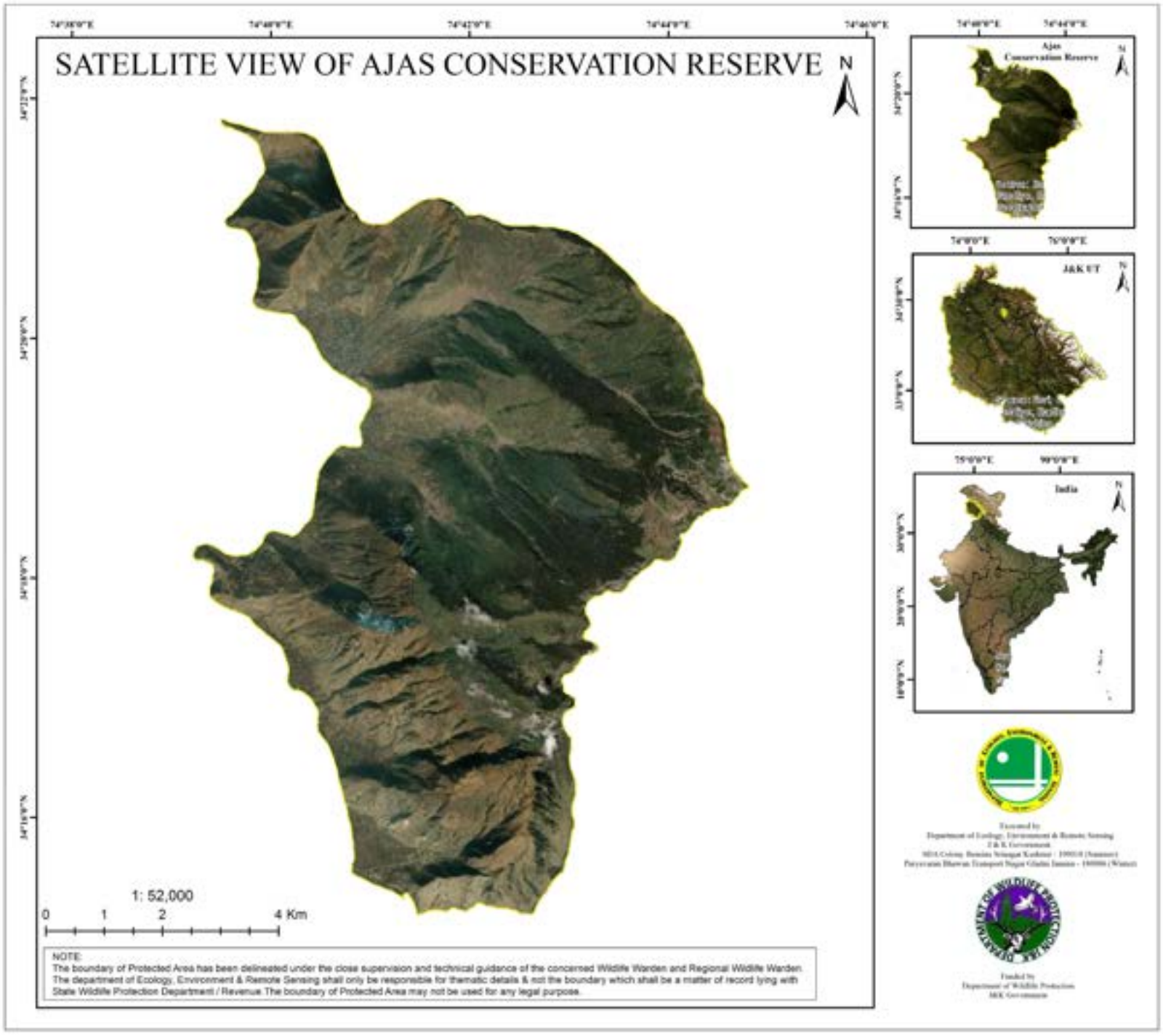
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

DRAINAGE MAP OF ACHABAL CONSERVATION RESERVE



ACCESSIBILITY MAP OF ACHABAL CONSERVATION RESERVE





AJAS CONSERVATION RESERVE

The Ajas conservation Reserve has been named after the Village Ajas, situated on the banks of famous and largest fresh water Wular lake of India. The reserve was notified in the year 1945. Ajas Conservation Reserve has wide variety of Flora and Fauna. The conservation reserve is home to Chukor.

SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 48.00 **GIS AREA** (KM2): 55.36
PERIMETER (KMS): 41.02
ALTITUDE RANGE (M): 1500 -3600
GEO - COORDINATES:
34° 15.200′ N - 34° 21.839′ N, 74° 39.229′ E - 74° 44.837′ E

MAJOR FAUNA: Kashmir Musk Deer (*Moschus cupreus*), Common Leopard (*Panthera pardus*), Yellow Throated Martin (*Martes flavigula*), Long Tailed Marmot (*Marmota caudata*), Himalayan Brown Bear (*Ursus arctos*), , Himalayan Black Bear (*Ursus thibetanus*), Small Kashmir Flying Squirrel (*Eoglaucomys fimbriatus*), Kashmir Grey Langur (*Semnopithecus Ajax*), Leopard Cat (*Prionailurus bengalensis*), Rhesus Macaque (*Macaca mulatta*).

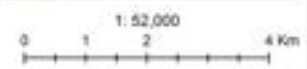
MAJOR AVI FAUNA: Chukor (*Alectoris chukar*), Cuckoo (*Cuculus canorus*), Yellow-billed blue magpie (*Urocissa flavirostris*), Western Tragopan (*Tragopan melanocephalus*), Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Golden Eagle (*Aquila chrysaetos*), Sparow Hawk (*Accipiter nisus melaschistos*), Snow Pigeon (*Columba leuconota*), Lesser pied kingfisher (*Ceryle rudis*), Nutcracker (*Nucifraga caryocatactes*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Deodar (*Cedrus deodara*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Parrotia (*Parrotiopsis jacquemontiana*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*),Himalayan rhubarb (*Rheum webbianum*), Indian barberry (*Berberis lycium* Royle).

LAND USE LAND COVER MAP OF AJAS CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	2.16	3.91
Agriculture Plantation	3.56	6.43
Builtup	1.63	2.95
Forest	19.49	35.21
Grassland & Grazing land	0.12	0.22
Barren Rocky	5.51	9.96
Dense Scrub	3.90	7.05
Open Scrub	18.98	34.28
Total	55.36	100.00

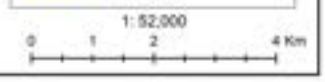


NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF AJAS CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Cropland	2.16	3.91
Plantation	3.56	6.43
Builtup	1.63	2.95
Temperate Coniferous	19.49	35.21
Moist Alpine Pasture	0.12	0.22
Barren Land	5.51	9.96
Dense Scrub	3.90	7.05
Open Scrub	18.98	34.28
Total	55.36	100.00



NOTE:
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GEOMORPHOLOGICAL MAP OF AJAS CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	47.06	85.01
Flood Plain	0.07	0.12
Piedmont Zone	8.23	14.87
Total	55.36	100.00

NOTE:
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LEGEND

- Denudational Hills
- Flood Plain
- Piedmont Zone
- Ajas Conservation Reserve

1: 52,000

0 1 2 4 Km

LITHOLOGICAL MAP OF AJAS CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	0.26	0.48
Gravel Sand Silt	0.00	0.00
Phyllites Schists Slates	35.96	64.95
Sand Silt with Clay	6.58	11.89
Sandstone & Conglomerate	12.55	22.67
Total	55.36	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

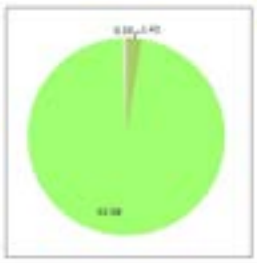
LEGEND

- Bedded Limestone
- Gravel Sand Silt
- Phyllites Schists Slates
- Sand Silt with Clay
- Sandstone & Conglomerate
- Ajas Conservation Reserve

1: 52,000

0 1 2 4 Km

SOIL MAP OF AJAS CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	1.42	2.57
Fine Loamy Soil	53.58	96.79
Rock Outcrop	0.35	0.64
Total	55.36	100.00

NOTE:
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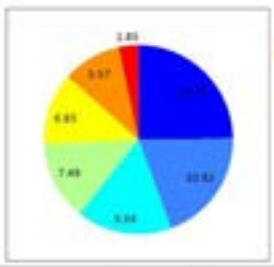
LEGEND

- Coarse Loamy Soil
- Fine Loamy Soil
- Rock Outcrop
- Ajas Conservation Reserve

1: 52,000
0 1 2 4 Km

ELEVATION MAP OF AJAS CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES		
Elevation (Meters)	Area (Sq Kms)	Percentage
1500 - 1800	13.74	24.82
1800 - 2100	10.82	19.54
2100 - 2400	9.04	16.33
2400 - 2700	7.49	13.53
2700 - 3000	6.85	12.37
3000 - 3300	5.57	10.06
3300 - 3600	1.85	3.34
Total	55.36	100.00

NOTE:
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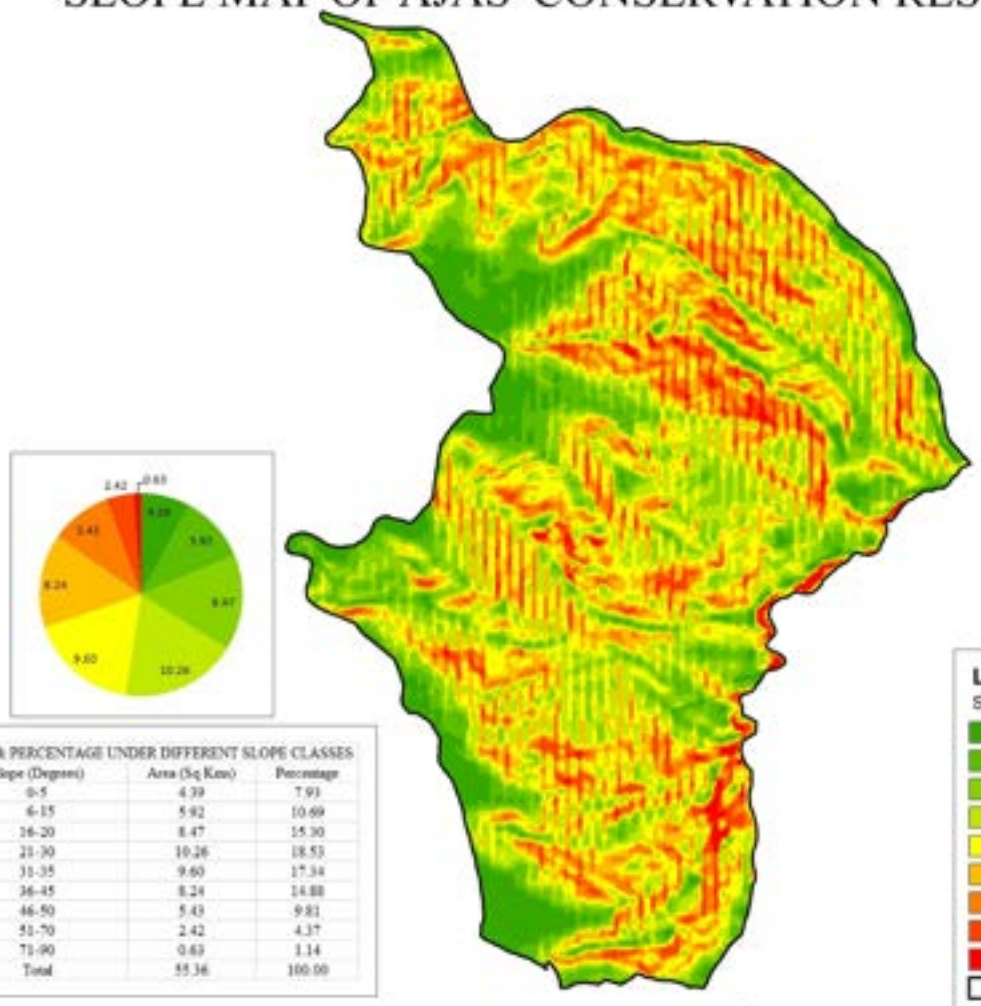
LEGEND

Elevation (m)

- 1500 - 1800
- 1800 - 2100
- 2100 - 2400
- 2400 - 2700
- 2700 - 3000
- 3000 - 3300
- 3300 - 3600
- Ajas Conservation Reserve

1: 52,000
0 1 2 4 Km

SLOPE MAP OF AJAS CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	4.39	7.93
6-15	5.92	10.69
16-20	8.47	15.30
21-30	10.26	18.53
31-35	9.60	17.34
36-45	8.24	14.88
46-50	5.43	9.81
51-70	2.42	4.37
71-90	0.63	1.14
Total	55.36	100.00

NOTE:
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LEGEND

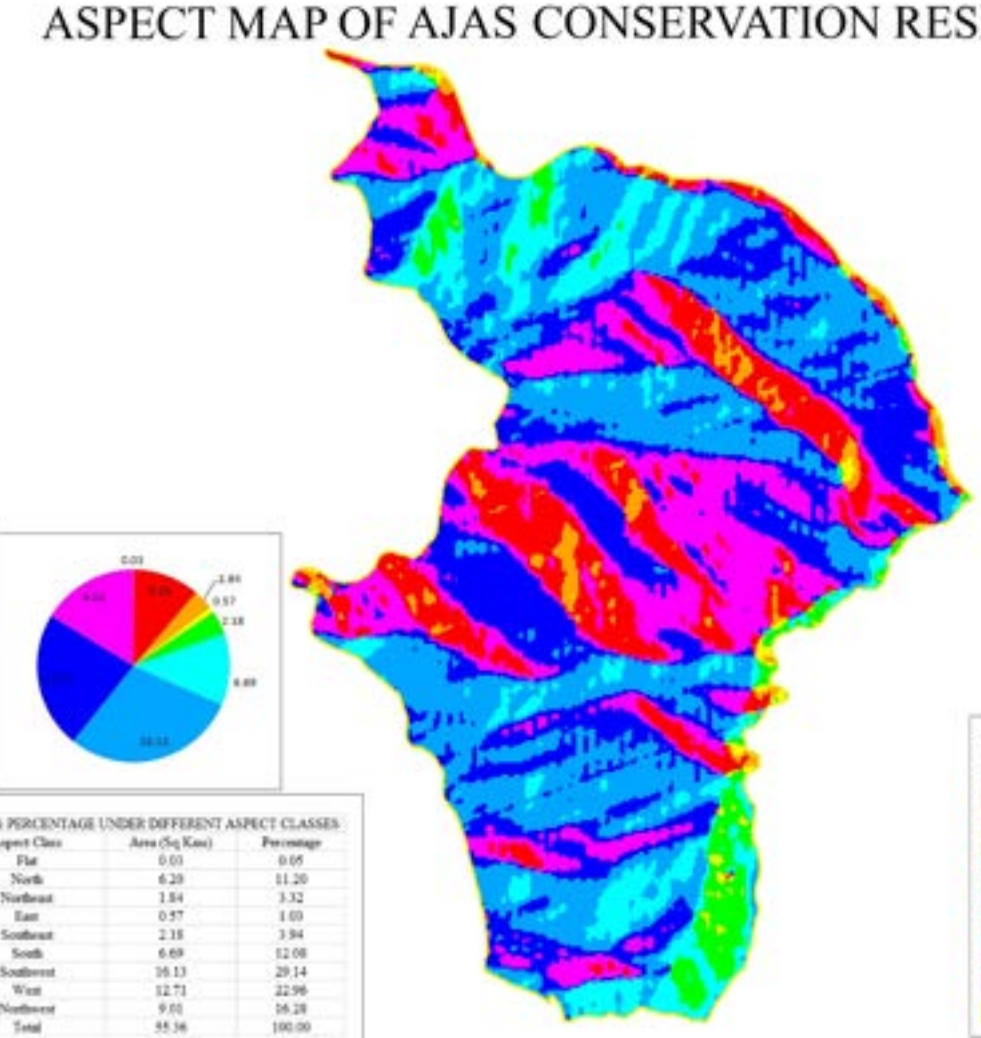
Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Ajas Conservation Reserve

1: 52,000

0 1 2 4 Km

ASPECT MAP OF AJAS CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.03	0.05
North	6.20	11.20
Northeast	1.84	3.32
East	0.57	1.03
Southeast	2.18	3.94
South	6.69	12.08
Southwest	16.13	29.14
West	12.71	22.96
Northwest	9.01	16.28
Total	55.36	100.00

NOTE:
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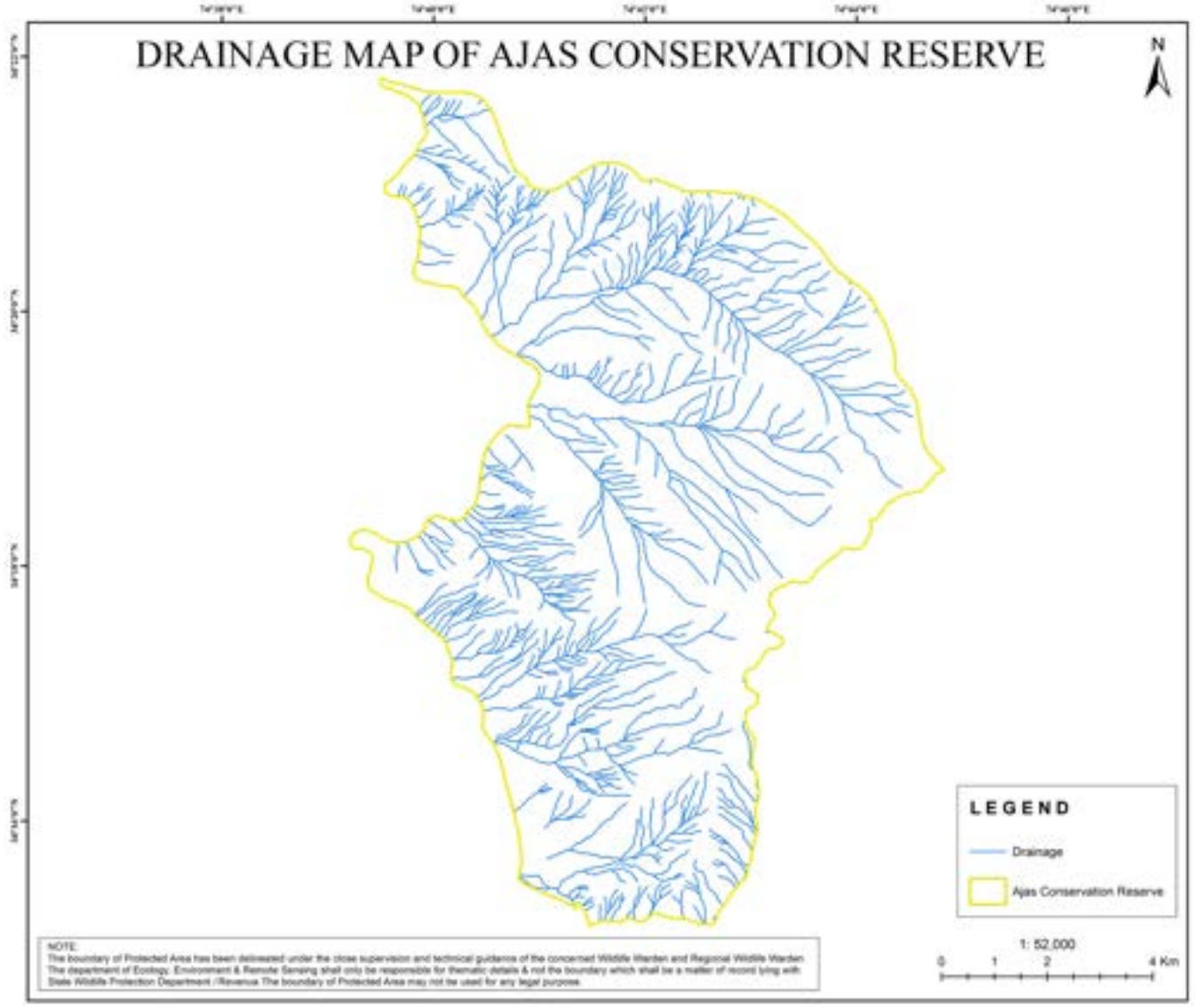
LEGEND

- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Ajas Conservation Reserve

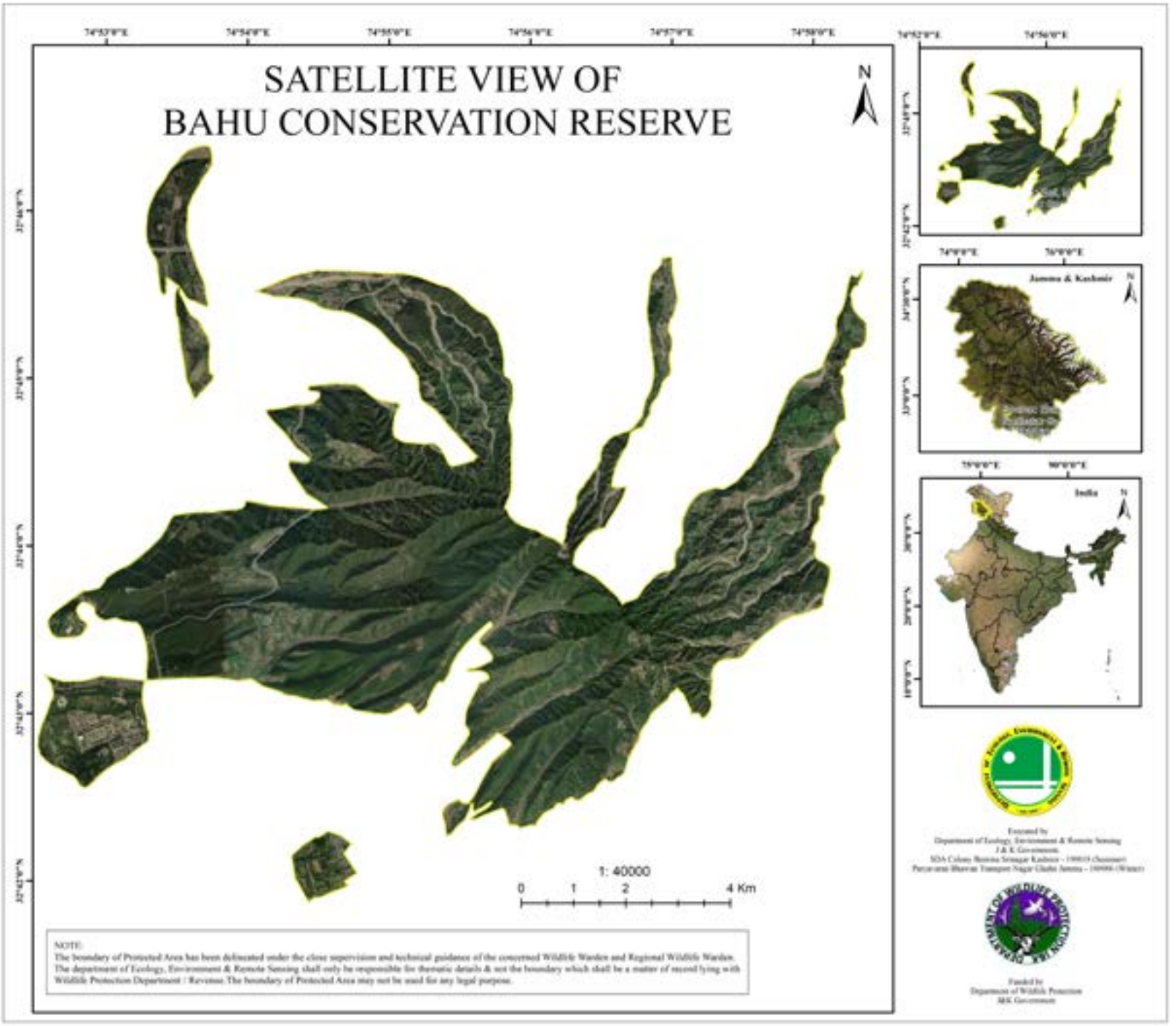
1: 52,000

0 1 2 4 Km

DRAINAGE MAP OF AJAS CONSERVATION RESERVE



ACCESSIBILITY MAP OF AJAS CONSERVATION RESERVE



BAHU CONSERVATION RESERVE

The area is situated on the outskirts of Jammu city along the left bank of river Tawi. The area acts as a catchment for river Tawi. The area has adequate ecological, faunal, floral, geomorphological and natural significance for the purposes of protecting, propagating and developing its wildlife environment.

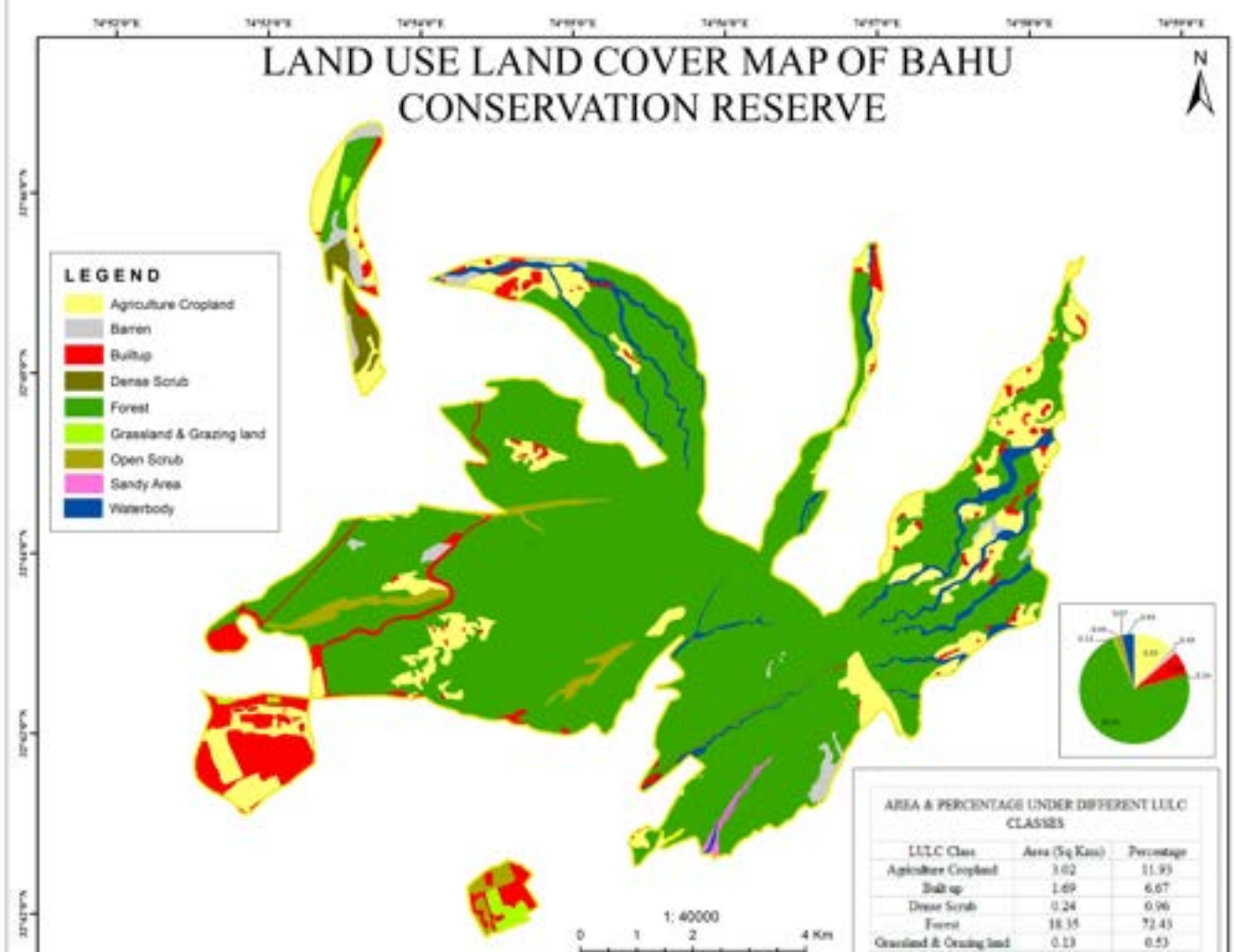
SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981
NOTIFIED AREA (KM2): 19.75 **GIS AREA** (KM2): 25.33
AREA (KM2): 25.33
PERIMETER (KMS): 68.06
ALTITUDE RANGE (M): 259 – 740
GEO - COORDINATES:
E 32° 41.869′ N - 32° 46.393′ N, 74° 52.514′ E - 74° 58.378′ E

MAJOR FAUNA: Barking Deer (*Muntiacus muntjak*), Chital (*Axis axis*), Himalayan goral (*Nemorrhaedus goral*), Grey Langur (*Semnopithecus entellus*), Indian Jackal (*Canis aureus*), jungle Cat (*Felis chaus*), Nilgai (*Boselaphus tragocamelus*), Indian Crested Porcupine (*Hystrix indica*), Common Leopard (*Panthera pardus*).

MAJOR AVI FAUNA: Red Jungle Fowl (*Gallus*), Common peafowl (*Pavo cristatus*), Grey francolin (*Francolinus pondicerianus*), Blue Rock Pigeon (*Columba livia*), Eurasian collard dove (*Streptopelia decaocto*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundoo*), Griffon Vulture (*Gyps fulvus*) .

MAJOR FLORA: Cutch tree (*Senegalia catechu*), Fig (*Ficus carica*), Chir pine (*Pinus roxburghi*), Wood Apple (*Aegle marmelos*), Siris tree (*Albizia lebbeck*), Indian jujube (*Ziziphus jujuba*), Neem tree (*Azadirachta indica*), Indian thorny bamboo (*Bambusa bambos*), Lantana (*Lantana camara*), Carrisse (*Carissa spinarum*), Hopseed bush (*Dodonaea viscosa*).

LAND USE LAND COVER MAP OF BAHU CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	3.02	11.93
Built up	1.69	6.67
Dense Scrub	0.24	0.96
Forest	18.35	72.43
Grassland & Grazing land	0.13	0.53
Open Scrub	0.49	1.95
Sandy Area	0.07	0.26
Barren	0.43	1.69
Waterbody	0.91	3.57
Total	25.33	100.00

NOTE:
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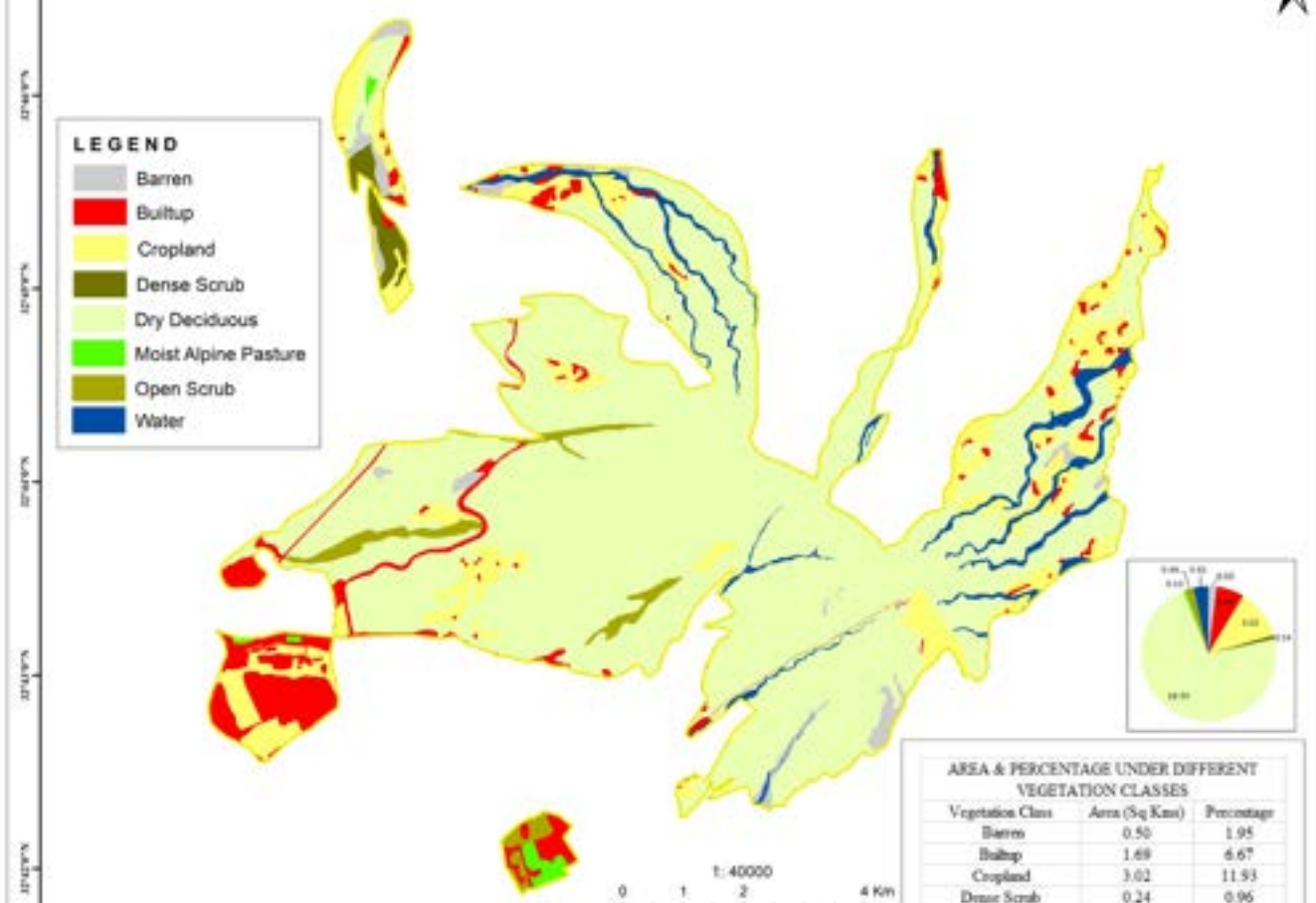
VEGETATION MAP OF BAHU CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren	0.50	1.95
Builtup	1.69	6.67
Cropland	3.02	11.93
Dense Scrub	0.24	0.96
Dry Deciduous	18.35	72.44
Open Scrub	0.49	1.95
Moist Alpine Pasture	0.13	0.53
Water	0.91	3.57
Total	25.34	100.00

NOTE:
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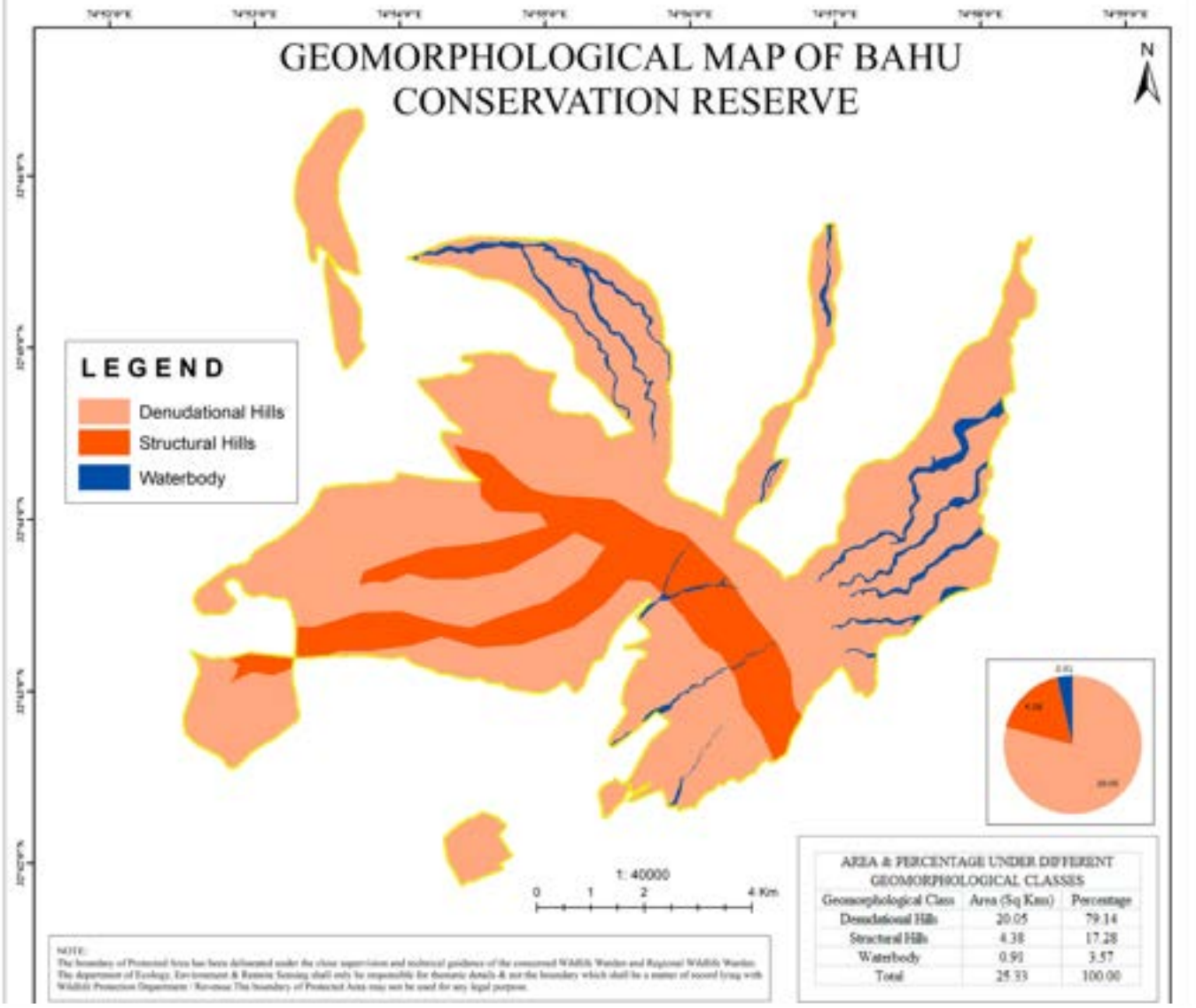
GEOMORPHOLOGICAL MAP OF BAHU CONSERVATION RESERVE

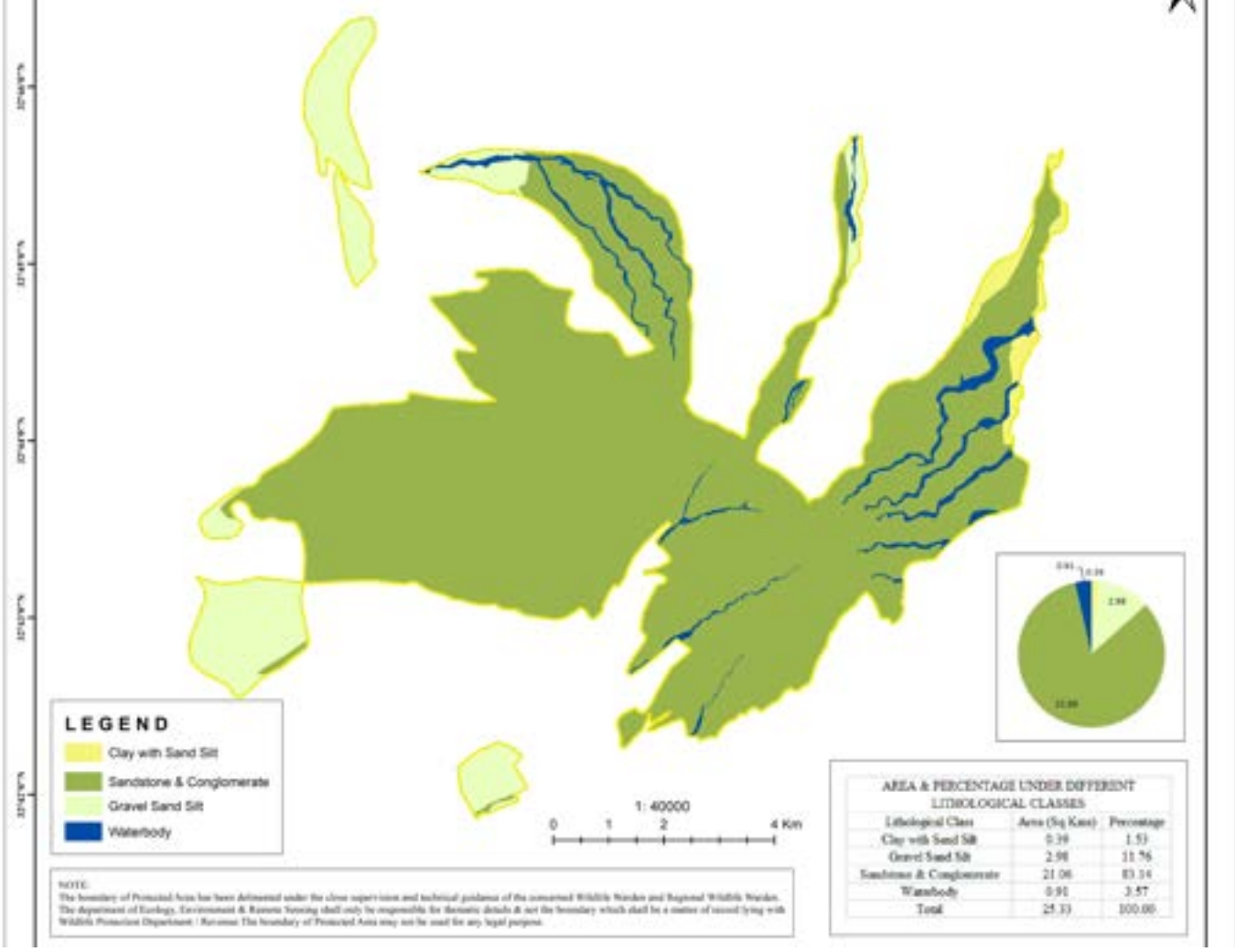


AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	20.05	79.14
Structural Hills	4.38	17.28
Waterbody	0.91	3.57
Total	25.33	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LITHOLOGICAL MAP OF BAHU CONSERVATION RESERVE

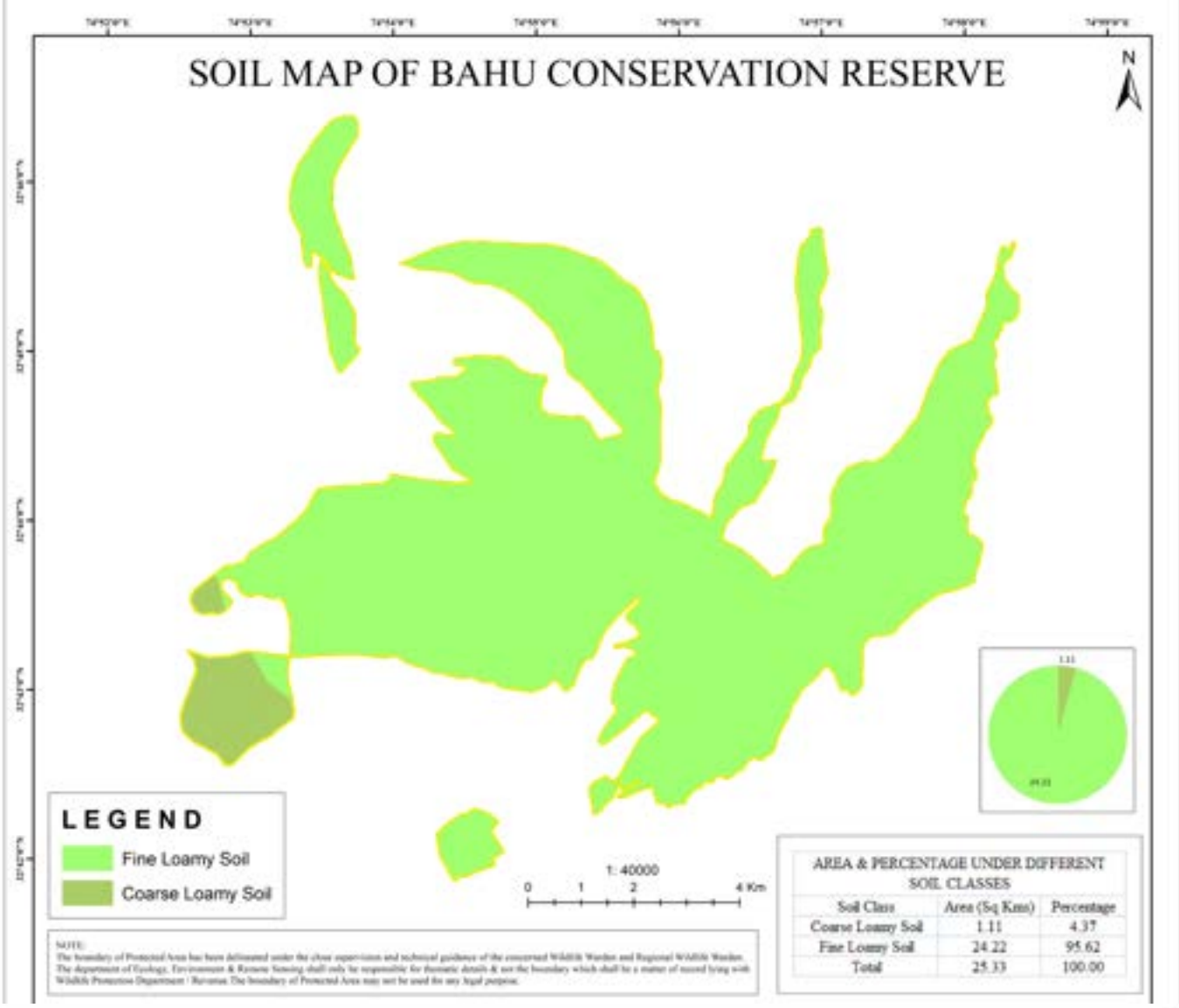


AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Clay with Sand Silt	0.39	1.53
Gravel Sand Silt	2.98	11.76
Sandstone & Conglomerate	21.06	83.14
Waterbody	0.91	3.57
Total	25.33	100.00

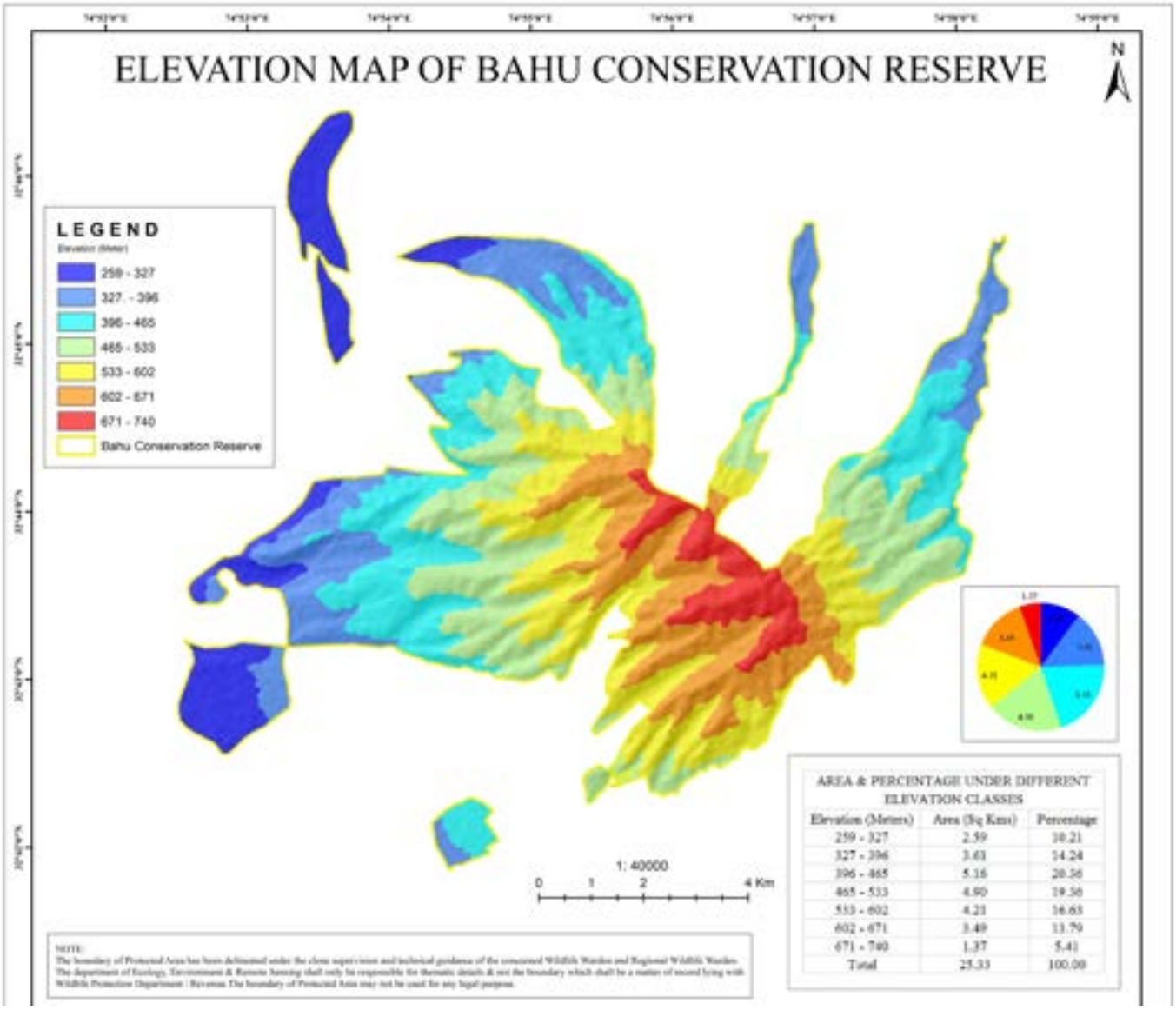
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF BAHU CONSERVATION RESERVE



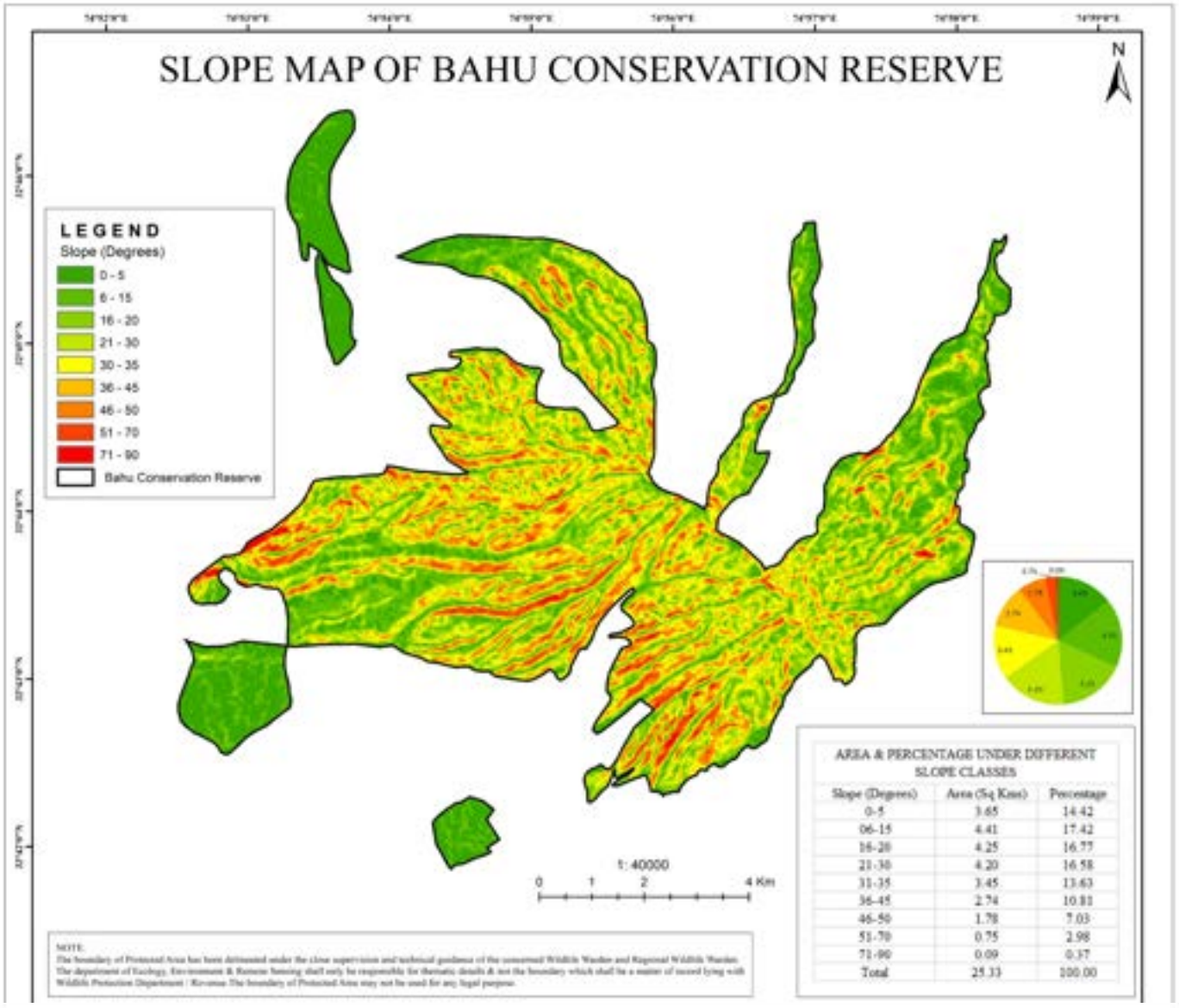
AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	1.11	4.37
Fine Loamy Soil	24.22	95.62
Total	25.33	100.00

ELEVATION MAP OF BAHU CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES		
Elevation (Meters)	Area (Sq Kms)	Percentage
259 - 327	2.59	10.21
327 - 396	3.61	14.24
396 - 465	5.16	20.36
465 - 533	4.90	19.36
533 - 602	4.21	16.63
602 - 671	3.49	13.79
671 - 740	1.37	5.41
Total	25.33	100.00

SLOPE MAP OF BAHU CONSERVATION RESERVE

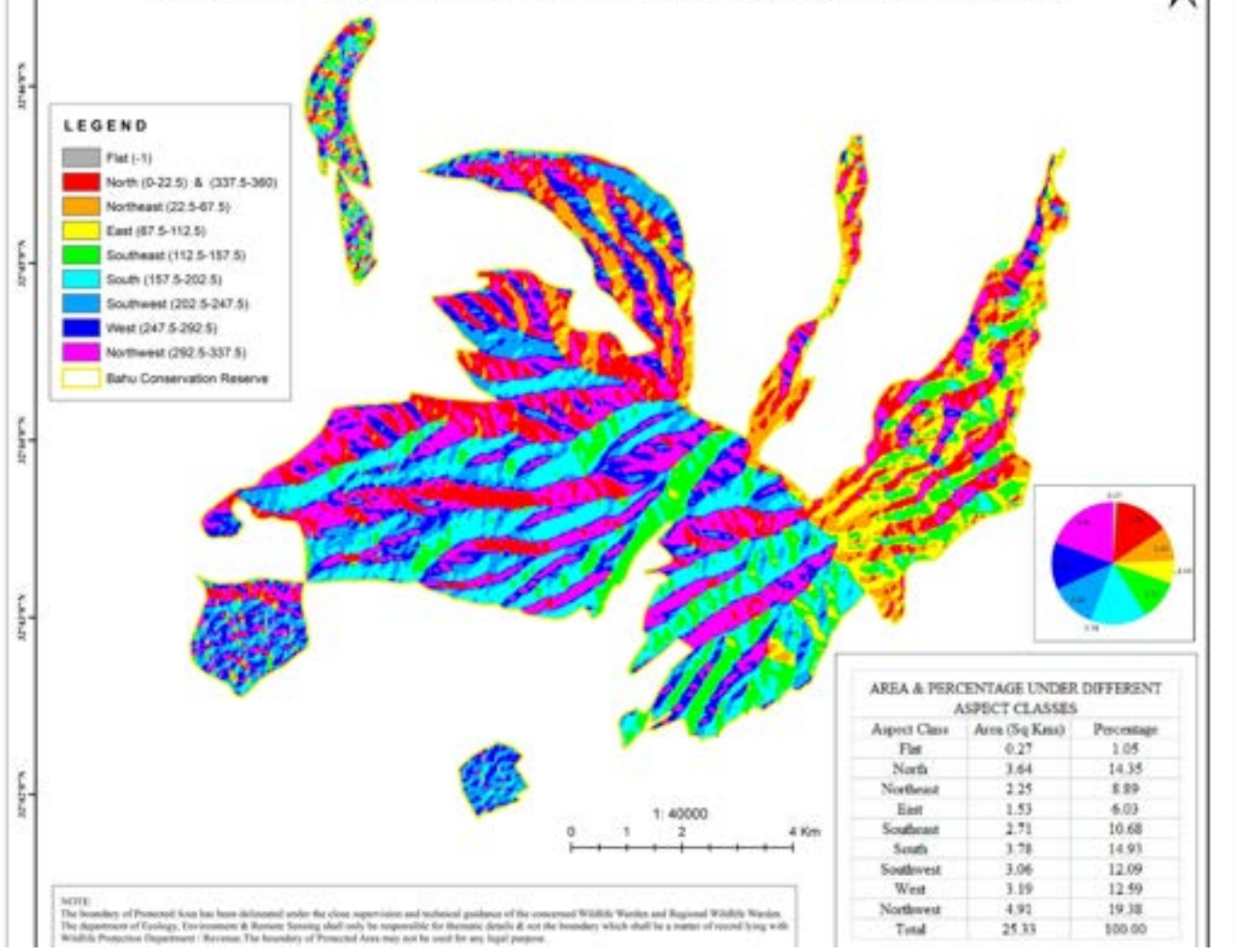


AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	3.65	14.42
06-15	4.41	17.42
16-20	4.25	16.77
21-30	4.20	16.58
31-35	3.45	13.63
36-45	2.74	10.81
46-50	1.78	7.03
51-70	0.75	2.98
71-90	0.09	0.37
Total	25.33	100.00

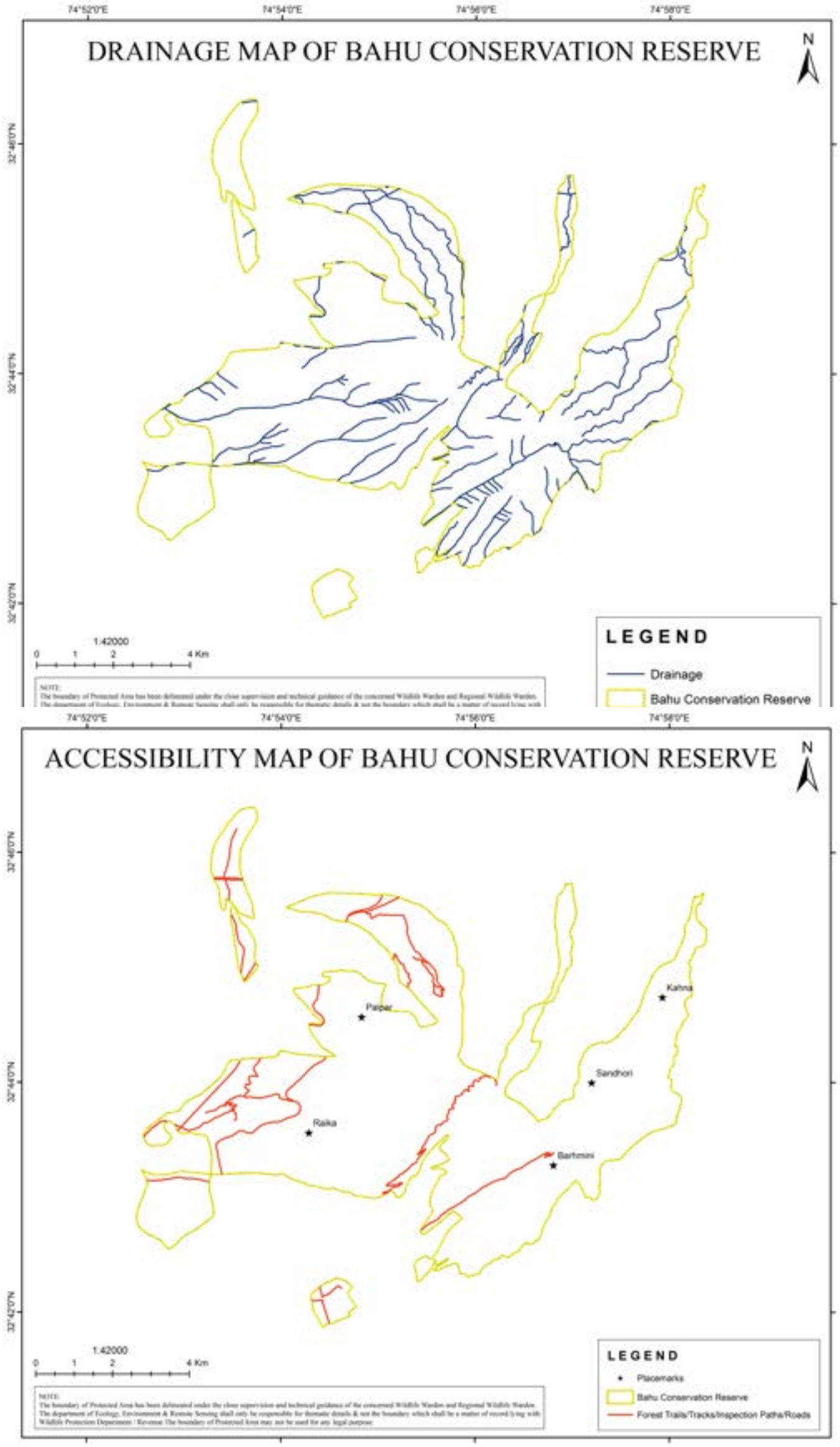
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

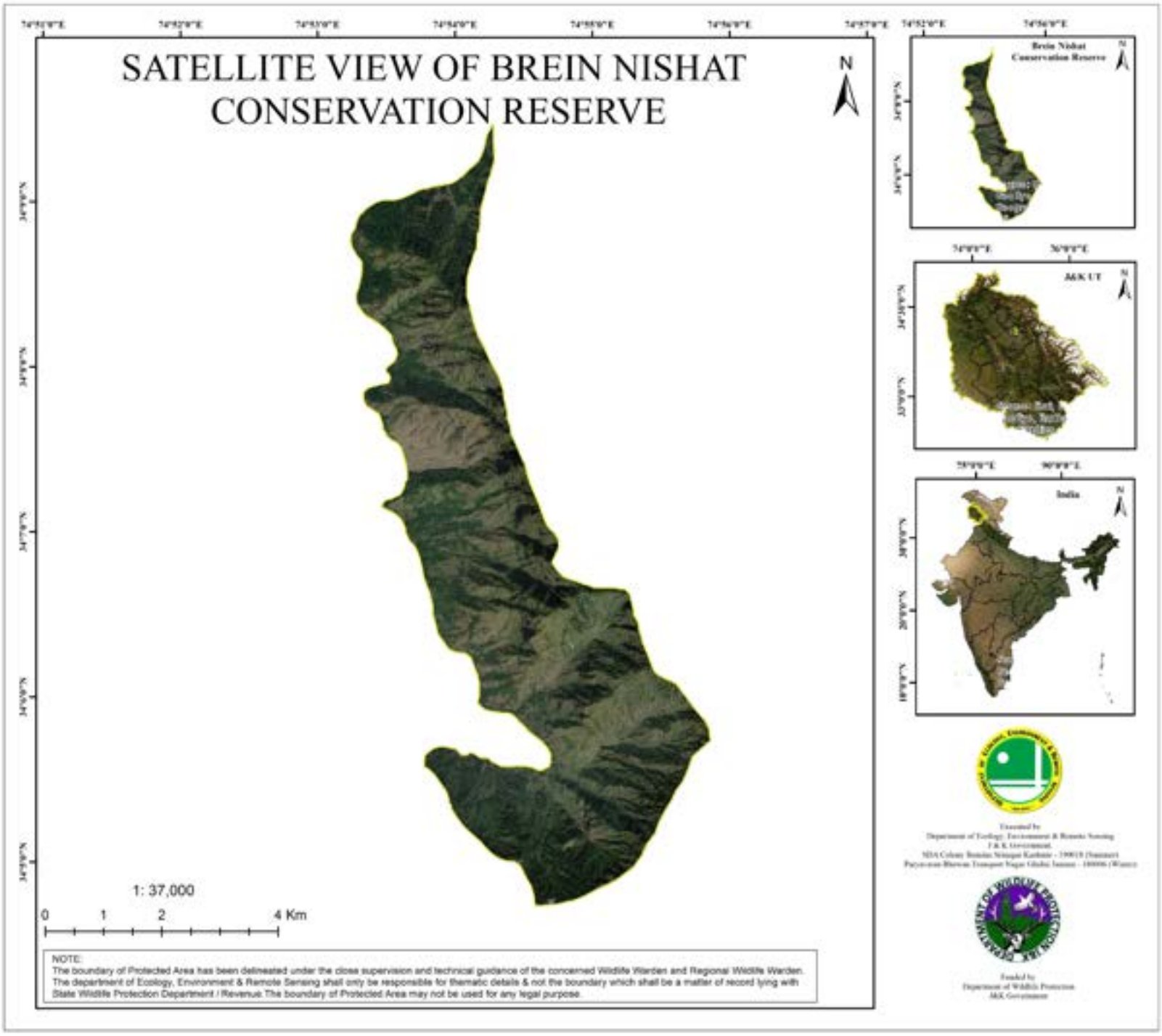
ASPECT MAP OF BAHU CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.27	1.05
North	3.64	14.35
Northeast	2.25	8.89
East	1.53	6.03
Southeast	2.71	10.68
South	3.78	14.93
Southwest	3.06	12.09
West	3.19	12.59
Northwest	4.91	19.38
Total	25.33	100.00


DRAINAGE MAP OF BAHU CONSERVATION RESERVE
N
74°52'0"E
74°54'0"E
74°56'0"E
74°58'0"E
32°46'0"N
32°44'0"N
32°42'0"N
1:42000
0 1 2 4 Km
LEGEND
Drainage
Bahu Conservation Reserve
ACCESSIBILITY MAP OF BAHU CONSERVATION RESERVE
Paipar
Kahna
Sandhori
Raika
Barhmini
Placemarks
Forest Trails/Tracks/Inspection Paths/Roads



BREIN NISHAT

CONSERVATION RESERVE

The reserve is located in the Srinagar district of UT of Jammu and Kashmir. Notified in the year 1945, Brein Conservation Reserve is an important landscape for Hangul. It shares boundary with Dachigam National park in the East and with Khonmoh Conservation reserve in the North. Besides Hangul the Reserve also supports large number of wildlife Species.

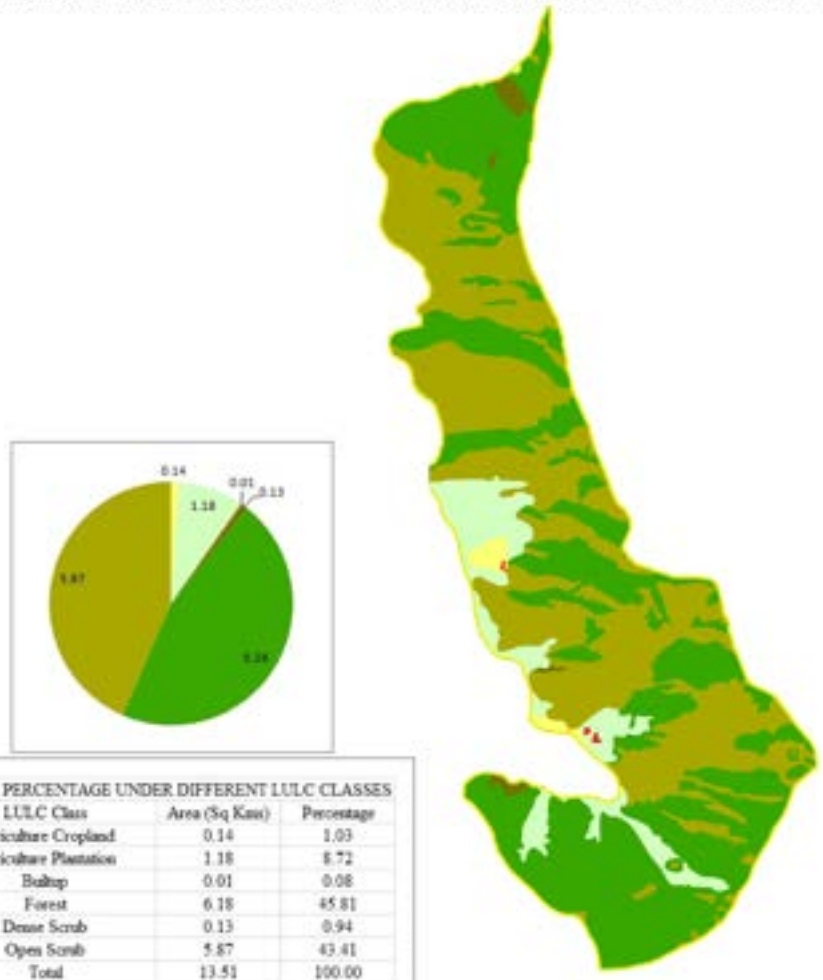
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 15.75 **GIS AREA** (KM2): 13.51
ALTITUDE RANGE (M): 1658 - 2913
PERIMETER (KMS): 24.75
GEO - COORDINATES:
34° 4.738′ N - 34° 9.475′ N, 74° 53.238′ E - 74° 55.871′ E

MAJOR FAUNA: Himalayan Serow (*Capricornis thar*), Kashmir Stag/Hangul (*Cervus hanglu*), Asiatic Black Bear (*Ursus thibetanus*), Common Leopard (*Panthera pardus*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*), Kashmir Grey Langur (*Semnopithecus Ajax*), Indian Jackal (*Canis aureus*).

MAJOR AVI FAUNA: Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Himalayan Griffon Vulture (*Gyps himalayensis*), Black Eared kite (*Milvus migrans*), The pied Woodpecker (*Drybates himalayensis*), Indian Myna (*Acridotheres tristis*), White Cheeked Bulbul (*Pycnonotus leucogenys*), , House sparrow (*Passer domesticus*)

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), wild Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan elm (*Ulmus wallichiana*), Parrotia (*Parrotiopsis jacquemontiana*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lycium*), Himalayan rhubarb (*Rheum webbianum*), Indian Atees *(Aconitum heterophyllum)*

LAND USE LAND COVER MAP OF BREIN NISHAT CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

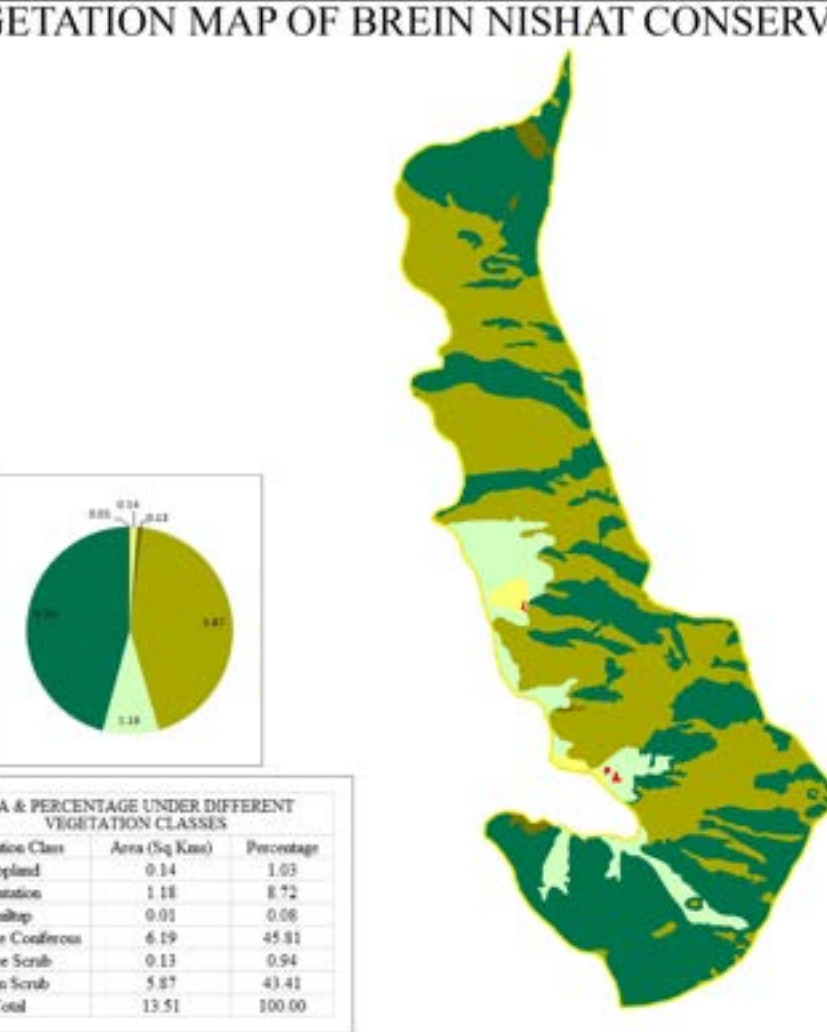
LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.14	1.03
Agriculture Plantation	1.18	8.72
Builtup	0.01	0.08
Forest	6.18	45.81
Dense Scrub	0.13	0.94
Open Scrub	5.87	43.41
Total	13.51	100.00

LEGEND
- Agriculture Cropland
- Agriculture Plantation
- Builtup
- Dense Scrub
- Forest
- Open Scrub
- Brein Nishat Conservation Reserve

1: 37,000
0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF BREIN NISHAT CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Cropland	0.14	1.03
Plantation	1.18	8.72
Builtup	0.01	0.08
Temperate Coniferous	6.19	45.81
Dense Scrub	0.13	0.94
Open Scrub	5.87	43.41
Total	13.51	100.00

LEGEND
- Builtup
- Cropland
- Dense Scrub
- Open Scrub
- Plantation
- Temperate Coniferous
- Brein Nishat Conservation Reserve

1: 37,000
0 1 2 4 K/m

NOTE:
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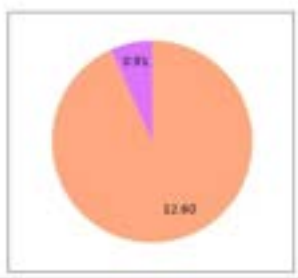
GEOMORPHOLOGICAL MAP OF BREIN NISHAT CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	12.60	93.27
Piedmont Zone	0.91	6.73
Total	13.51	100.00

LEGEND
- Denudational Hills
- Piedmont Zone
- Brein Nishat Conservation Reserve

1: 37,000
0 1 2 4 Km

LITHOLOGICAL MAP OF BREIN NISHAT CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Amygdaloidal Basalt	12.72	94.18
Sand Silt with Clay	0.79	5.82
Total	13.51	100.00

LEGEND
- Amygdaloidal Basalt
- Sand Silt with Clay
- Brein Nishat Conservation Reserve

1: 37,000
0 1 2 4 Km

SOIL MAP OF BREIN NISHAT CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	13.49	99.86
Loamy Soil	0.02	0.14
Total	13.51	100.00

NOTE
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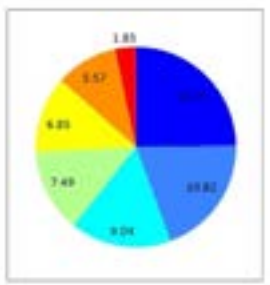
LEGEND
- Fine Loamy Soil
- Loamy Soil
- Brein Nishat Conservation Reserve

1: 37,000
0 1 2 4 Km

ELEVATION MAP OF BREIN NISHAT CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Mtrs)	Area (Sq Kms)	Percentage
1658 - 1837	1.56	11.55
1837 - 2010	2.98	22.06
2010 - 2190	2.62	19.39
2190 - 2370	2.1	15.54
2370 - 2250	2.26	16.73
2250 - 2730	1.62	11.99
2730 - 2913	0.37	2.74
Total	13.51	100.00

NOTE
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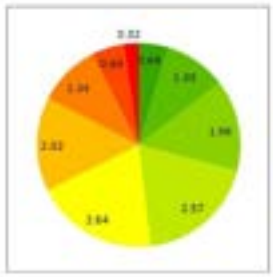
LEGEND
Elevation (m)
- 1658 - 1837
- 1837 - 2010
- 2010 - 2190
- 2190 - 2370
- 2370 - 2250
- 2250 - 2730
- 2730 - 2913
- Brein Nishat Conservation Reserve

1: 37,000
0 1 2 4 Km

SLOPE MAP OF BREIN NISHAT CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	0.64	4.74
6-15	1.33	9.84
16-20	1.96	14.51
21-30	2.57	19.02
31-35	2.64	19.54
36-45	2.02	14.95
46-50	1.34	9.92
51-70	0.69	5.11
71-90	0.32	2.37
Total	13.51	100.00

NOTE:
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LEGEND
Slope (Degrees)
- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Brein Nishat Conservation Reserve

1: 37,000
0 1 2 4 Km

ASPECT MAP OF BREIN NISHAT CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0	0.00
North	1.58	11.70
Northeast	0.56	4.15
East	0.12	0.89
Southeast	0.12	0.89
South	1.06	7.85
Southwest	3.61	26.72
West	3.73	27.61
Northwest	2.73	20.21
Total	13.51	100.00

NOTE:
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LEGEND
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Brein Nishat Conservation Reserve

1: 37,000
0 1 2 4 Km

DRAINAGE MAP OF BREIN NISHAT CONSERVATION RESERVE

N

LEGEND

Drainage

Brein Nishat Conservation Reserve

1: 37,000

0 1 2 4 Km

NOTE:
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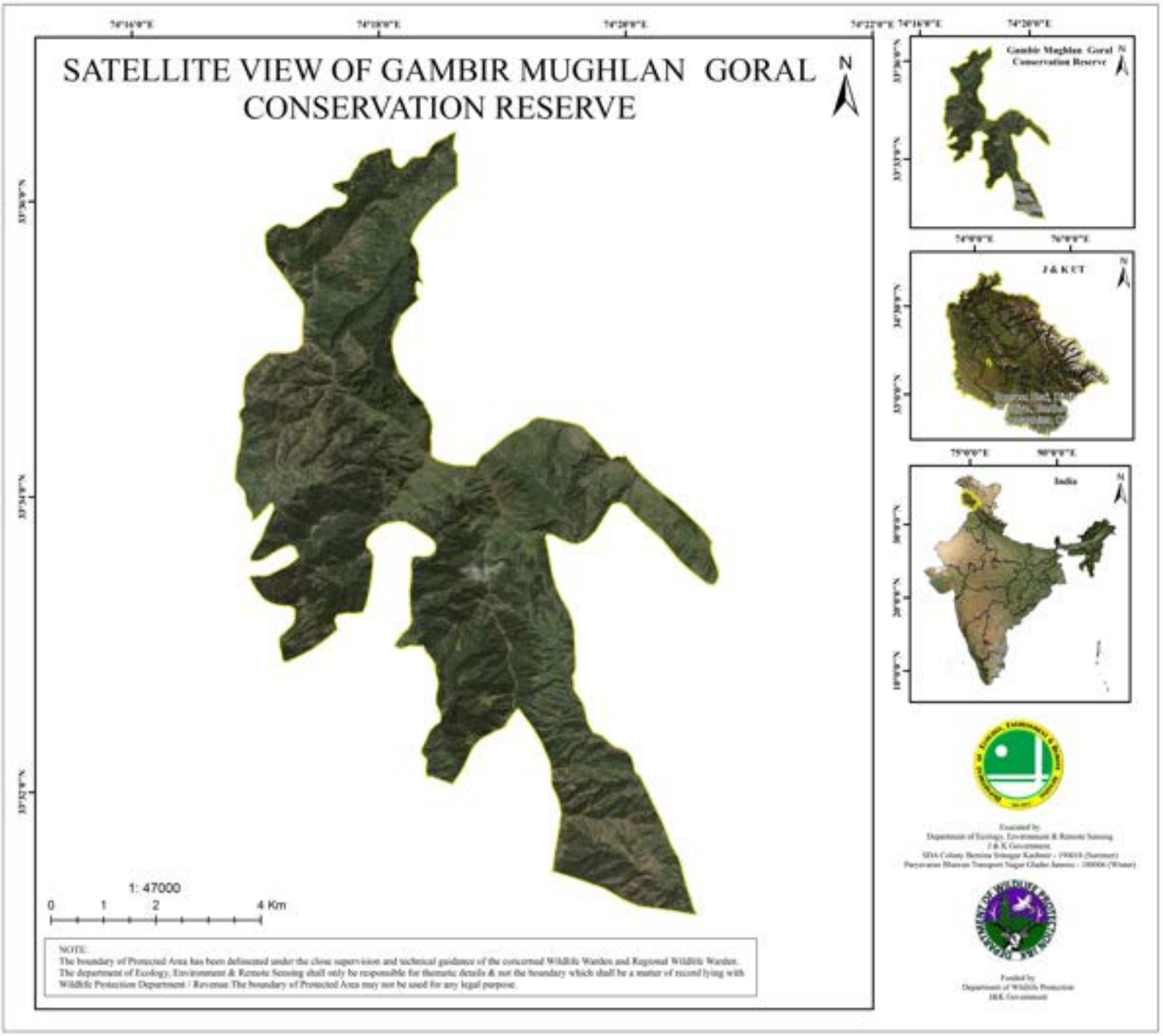


GAMBIR MUGHLAN

CONSERVATION RESERVE

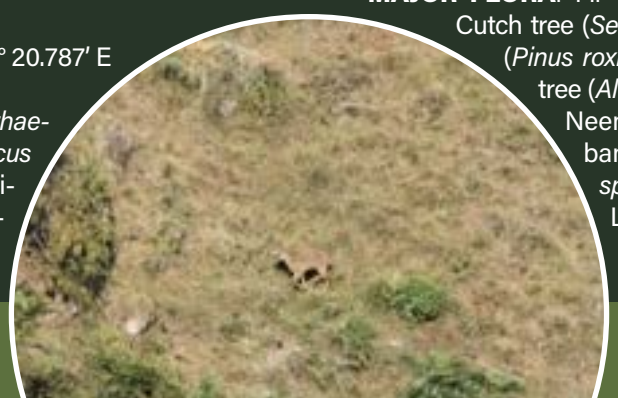
The Gambir Mughlan goral Wildlife Conservation Reserve is spread over 21.30 square kilometres in Manjakote, Thanamandi and Surankote tehsils. The Protected area is rich and diverse in faunal species due to attitudinal variation in climatic conditions. Among the prominent mammal species in the area is Himalayan goral, a goat like animal holding an intermediate position between goat and antelope.

SRO/NOTIFICATION NO: SRO 29 dated 10.12.2019
NOTIFIED AREA (KM2): 21.30 **GIS AREA** (KM2): 21.30
PERIMETER (KMS): 42.71
ALTITUDE RANGE (M): 1350 – 2431
GEO - COORDINATES:
33° 31.195′ N - 33° 36.499′ N, 74° 16.856′ E - 74° 20.787′ E

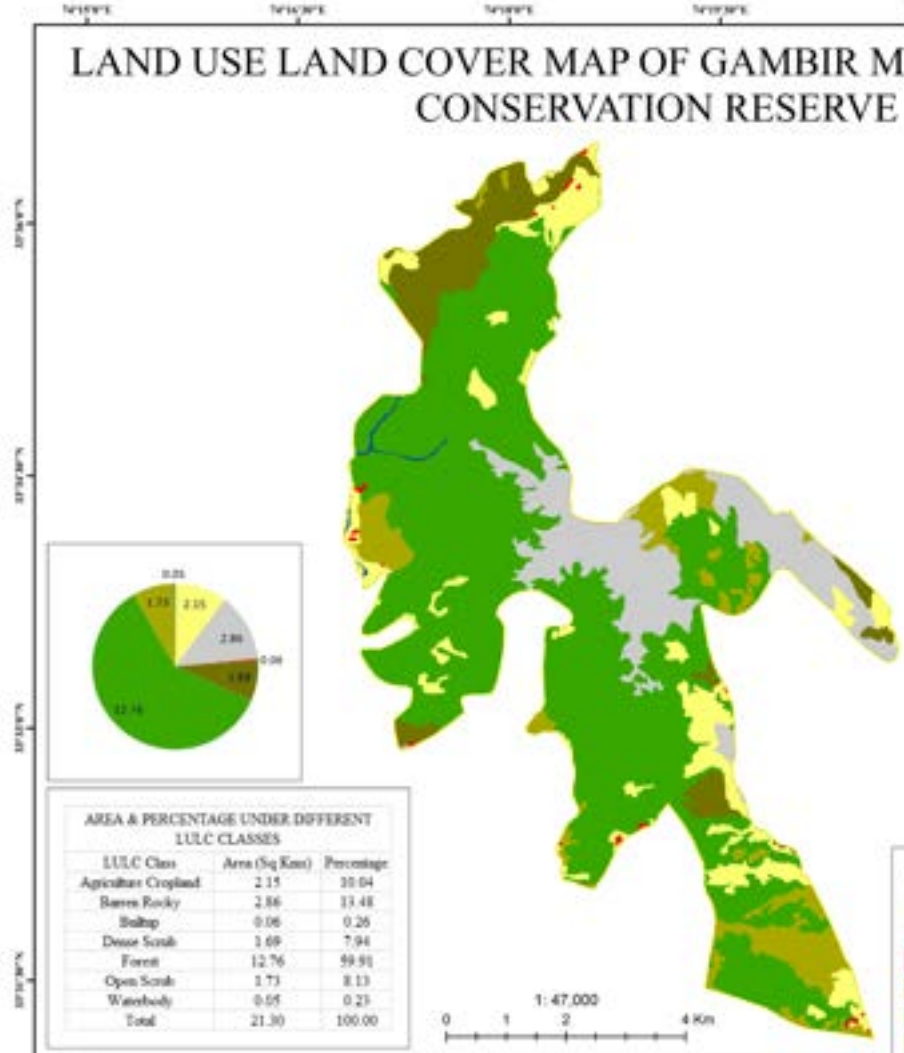
MAJOR FAUNA: Himalayan goral (*Nemorrhaedus goral*), Common Langur (*Semnopithecus entellus*), Grey Musk Shrew (Suncus Murinus), Hog Deer (*Axis Porcinus*), indian porcupine (*hystrix indica*), Indian fox (*Vulpes bengalensis*), Common Leopard (*Panthera pardus*), Indian Hare (*Lepus Nigricollis*), Indian Jackal (*Canis aureus*), Jungle Cat (*Felis chaus*).

MAJOR AVI FAUNA: Baya/Weaver bird (*Pioceus philippinus*), Black & Yellow grosbeak (*Mycerobas icterioides*), Blue Rock Pigeon (*Columba livia*), Common Kingfisher (*Alcedo atthis*), Common Myna (*Acridotheres tristis*), Eagle Owl (*Bubo bubo*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundoo*), Griffon Vulture (*Gyps fulvus*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Cutch tree (*Senegalia catechu*), Fig (*Ficus carica*), Chir pine (*Pinus roxburghii*), Wood Apple (*Aegle marmelos*), Siris tree (*Albizia lebbeck*), Indian jujube (*Ziziphus jujuba*), Neem tree (*Azadirachta indica*), Indian thorny bamboo (*Bambusa bambos*) Carrisse (*Carissa spinarum*), Hopseed bush (*Dodonaea viscosa*), Lantana (*Lantana camara*).



LAND USE LAND COVER MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	2.15	10.04
Barren Rocky	2.86	13.48
Builtup	0.06	0.26
Dense Scrub	1.69	7.94
Forest	12.76	59.91
Open Scrub	1.73	8.13
Waterbody	0.05	0.23
Total	21.30	100.00

NOTE:
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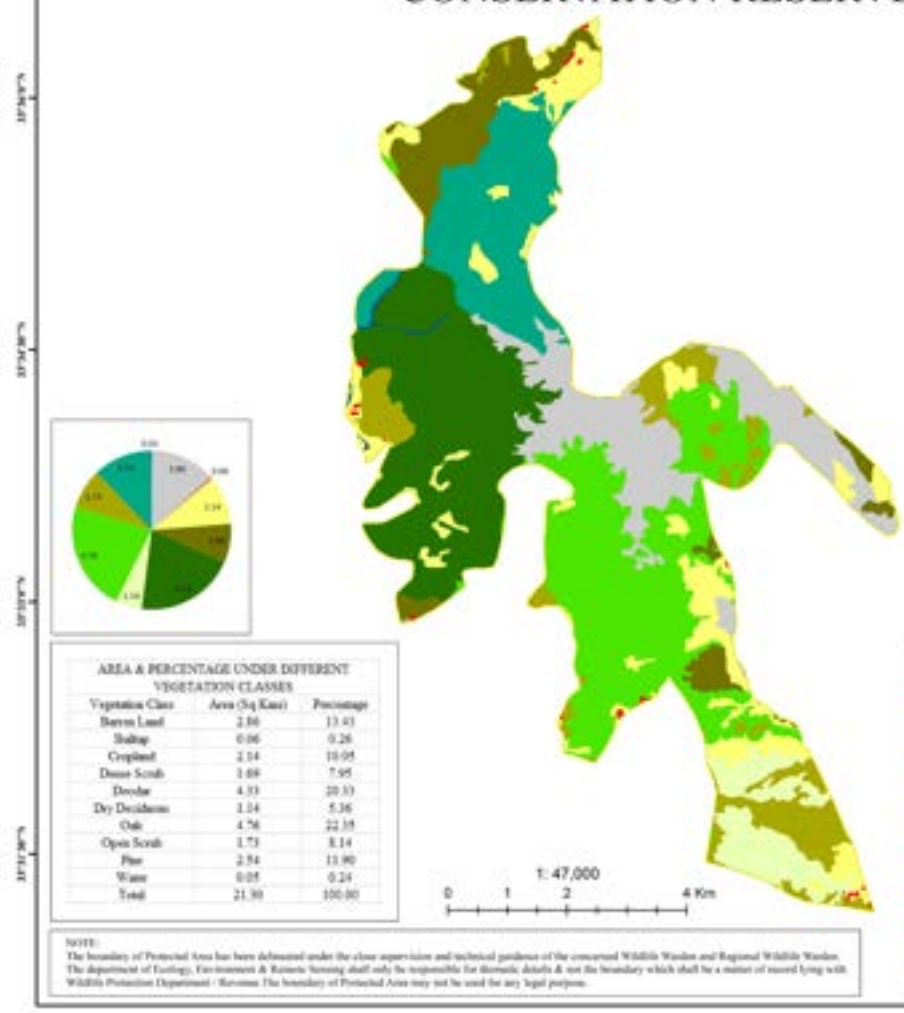
VEGETATION MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	2.86	13.43
Builtup	0.06	0.26
Cropland	2.14	10.05
Dense Scrub	1.69	7.95
Deodar	4.33	20.33
Dry Deciduous	1.14	5.36
Oak	4.76	22.35
Open Scrub	1.73	8.14
Pine	2.94	13.90
Water	0.05	0.24
Total	21.30	100.00

NOTE:
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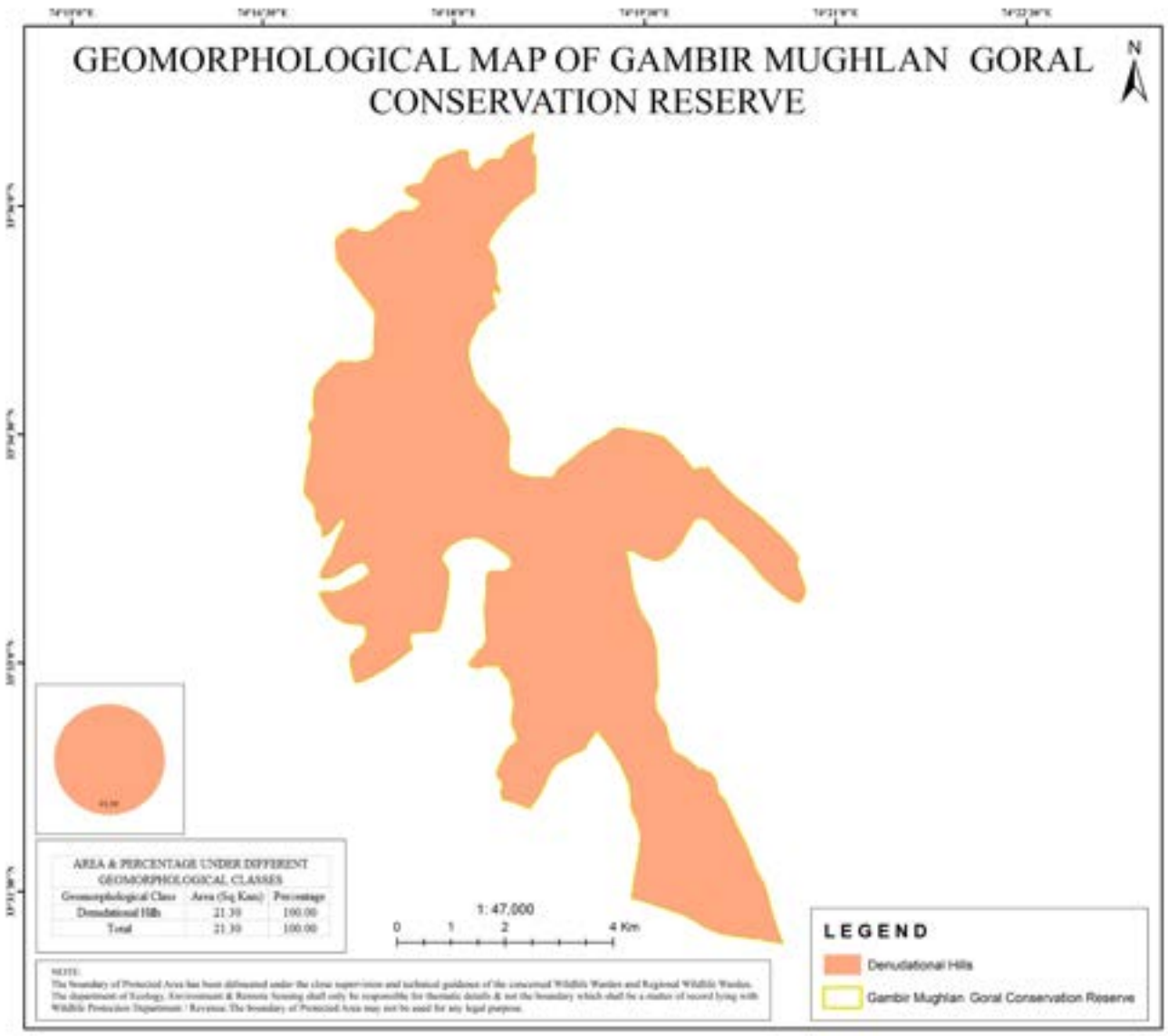
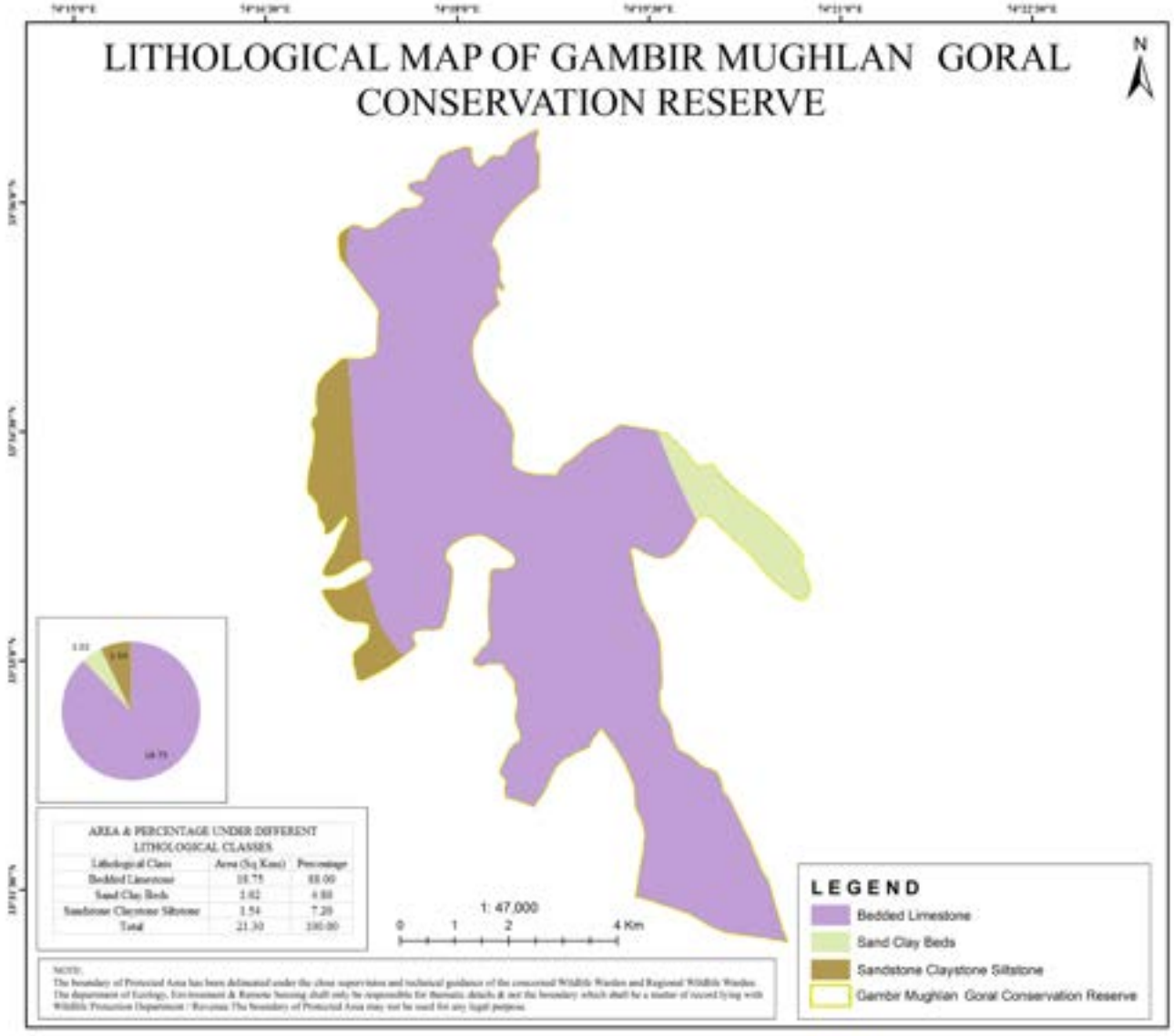
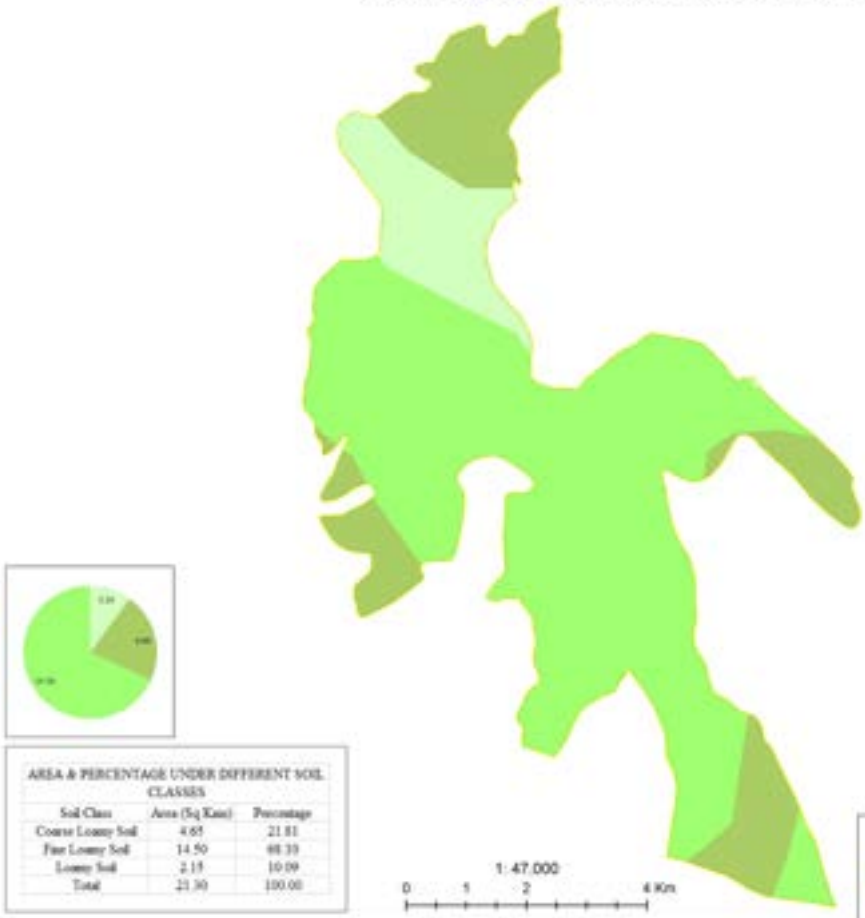

GEOMORPHOLOGICAL MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE
N
AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES
Geomorphological Class | Area (Sq Kms) | Percentage
Denudational Hills | 21.30 | 100.00
Total | 21.30 | 100.00
1: 47,000
0 1 2 4 Km
LEGEND
Denudational Hills
Gambir Mughlan Goral Conservation Reserve


LITHOLOGICAL MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE
N
AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES
Lithological Class | Area (Sq Kms) | Percentage
Bedded Limestone | 18.75 | 88.00
Sand Clay Beds | 1.02 | 4.80
Sandstone Claystone Siltstone | 1.54 | 7.20
Total | 21.30 | 100.00
1: 47,000
0 1 2 4 Km
LEGEND
Bedded Limestone
Sand Clay Beds
Sandstone Claystone Siltstone
Gambir Mughlan Goral Conservation Reserve

SOIL MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	4.65	21.81
Fine Loamy Soil	14.50	68.39
Loamy Soil	2.15	10.09
Total	21.30	100.00

1: 47,000

0 1 2 4 Km

LEGEND

- Coarse Loamy Soil
- Fine Loamy Soil
- Loamy Soil
- Gambir Mughlan Goral Conservation Reserve

NOTE:
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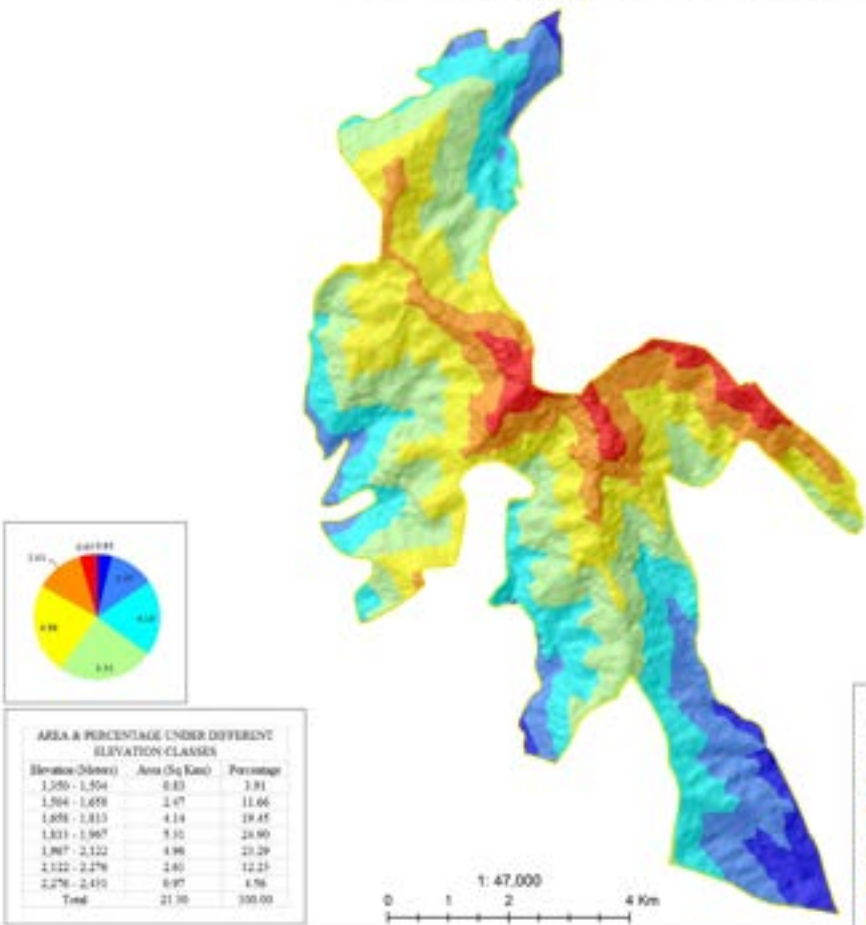
ELEVATION MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1,350 - 1,504	0.83	3.91
1,504 - 1,658	2.47	11.66
1,658 - 1,813	4.14	19.45
1,813 - 1,967	5.31	24.90
1,967 - 2,122	4.98	23.29
2,122 - 2,276	2.61	12.23
2,276 - 2,431	0.97	4.56
Total	21.30	100.00

1: 47,000

0 1 2 4 Km

LEGEND

Elevation (m)

- 1,350 - 1,504
- 1,504 - 1,658
- 1,658 - 1,813
- 1,813 - 1,967
- 1,967 - 2,122
- 2,122 - 2,276
- 2,276 - 2,431
- Gambir Mughlan Goral Conservation Reserve

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ASPECT MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.00	0.01
North	2.06	9.67
Northeast	2.45	11.52
East	3.25	15.25
Southeast	2.47	11.60
South	2.77	13.00
Southwest	3.44	16.17
West	2.72	12.79
Northwest	2.13	9.99
Total	21.30	100.00

1: 47,000

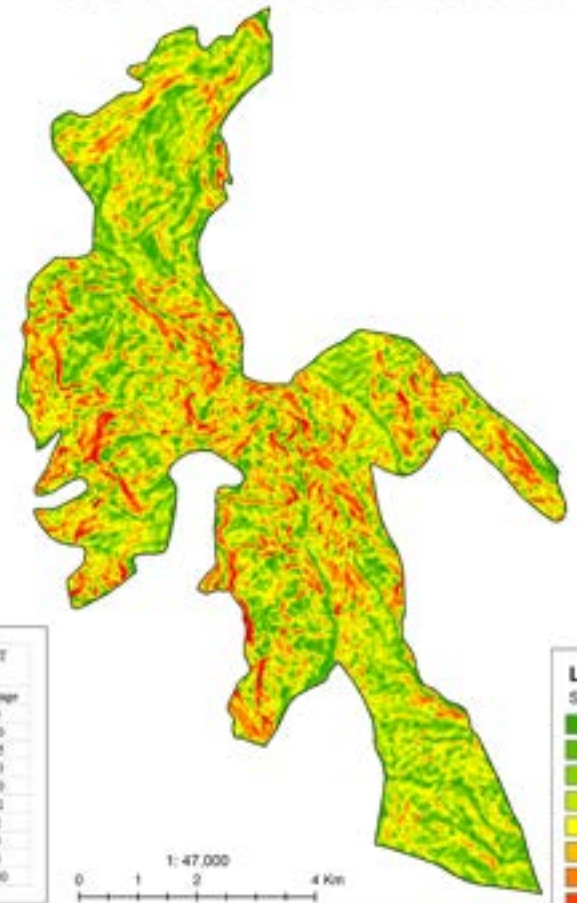
0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND

- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Gambir Mughlan Goral Conservation Reserve

SLOPE MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	1.07	5.03
6-15	2.47	11.60
16-20	3.63	17.05
21-30	4.14	19.43
31-35	3.96	18.60
36-45	2.96	13.91
46-50	1.92	9.02
51-70	0.90	4.20
71-90	0.25	1.16
Total	21.30	100.00

1: 47,000

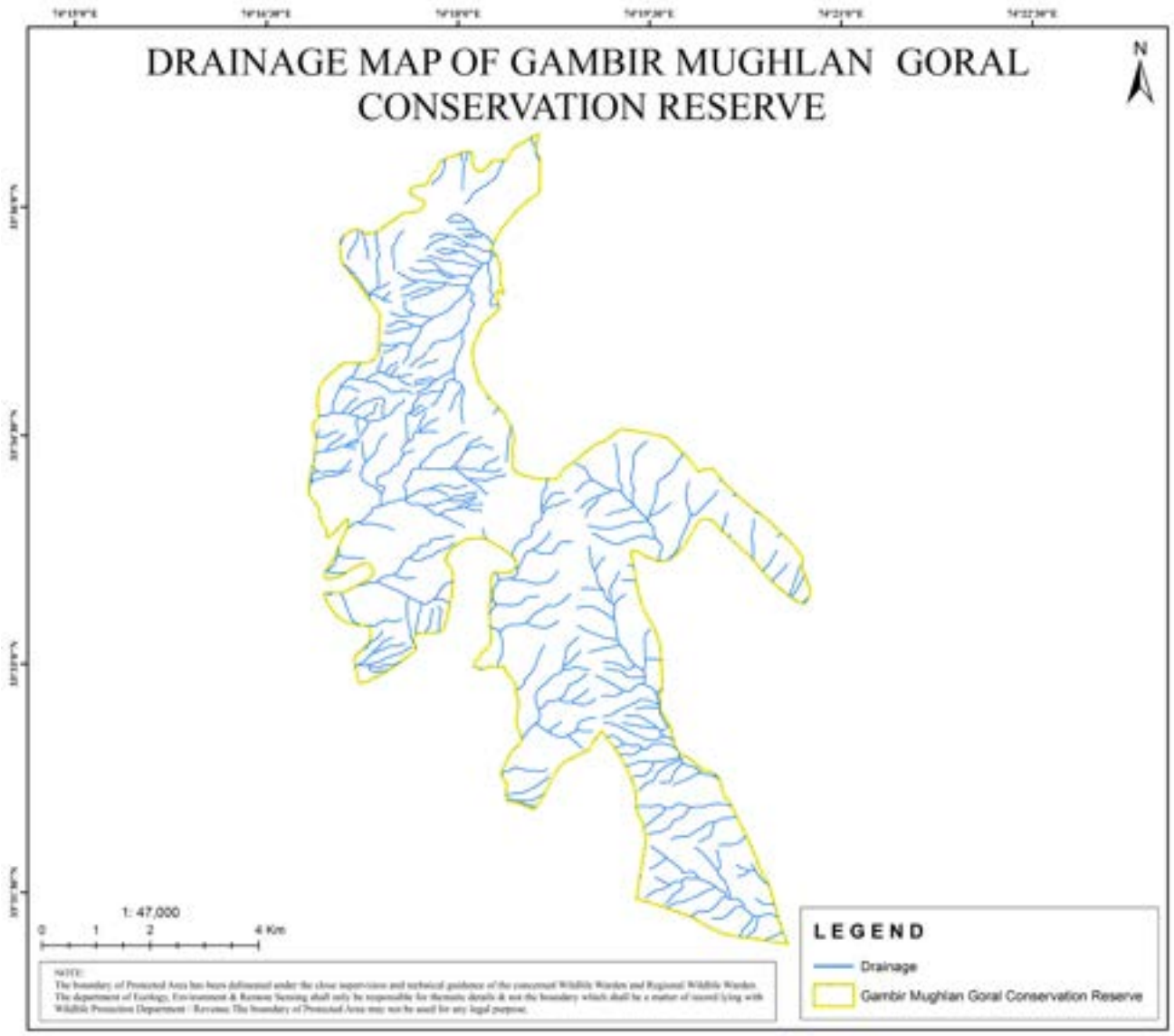
0 1 2 4 Km

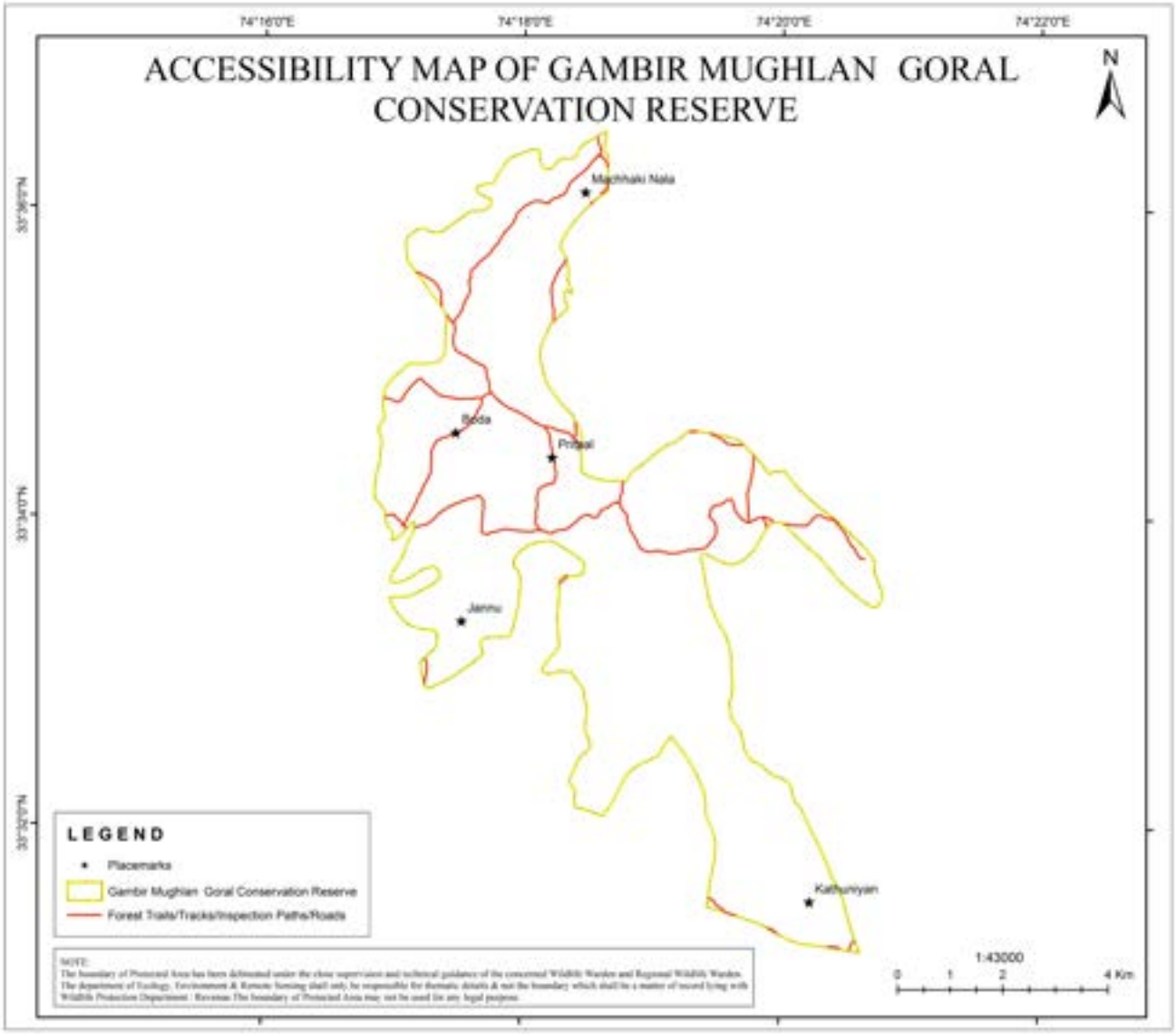
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

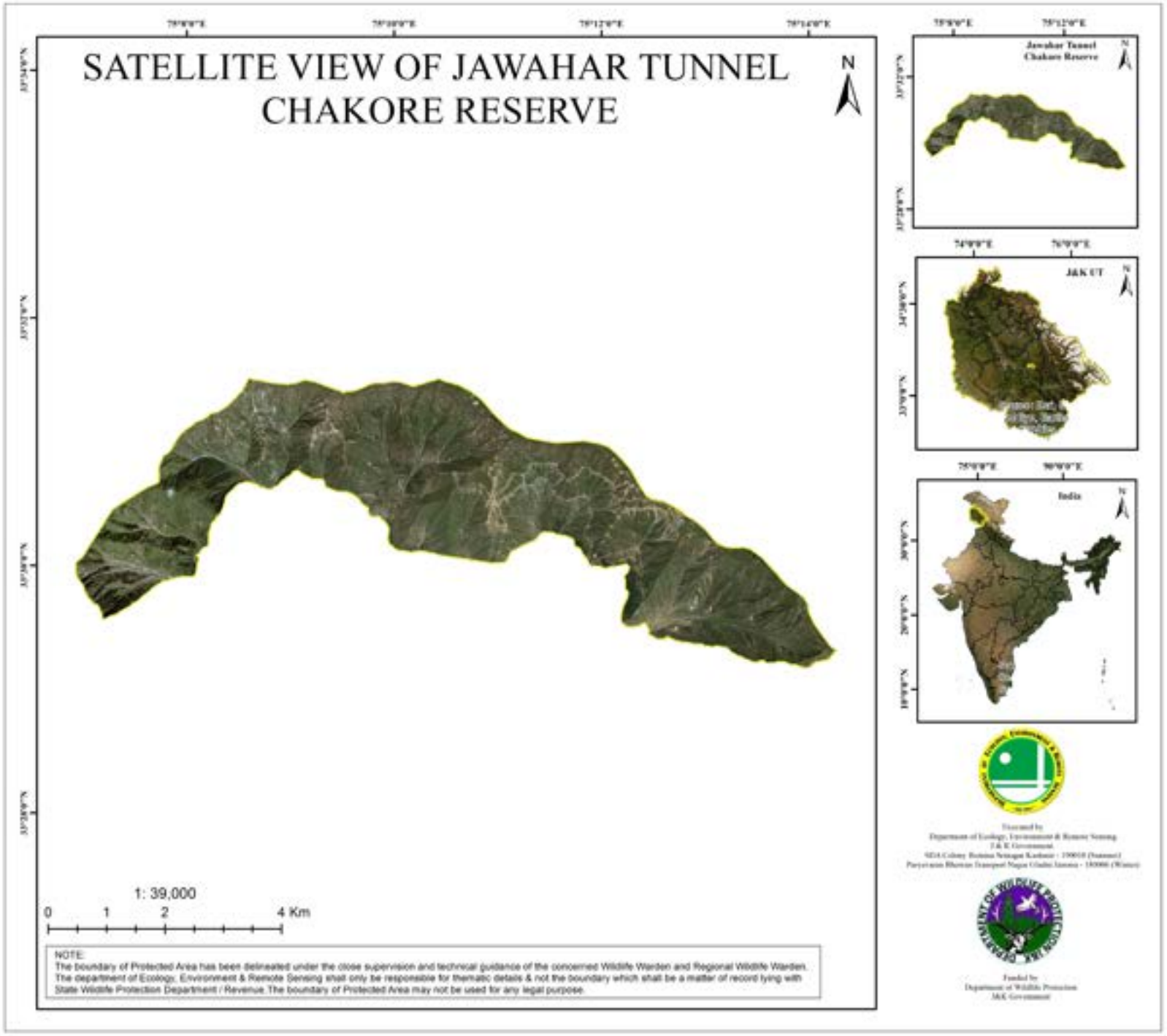
LEGEND

Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Gambir Mughlan Goral Conservation Reserve


DRAINAGE MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE
N
1: 47,000
0 1 2 4 Km
LEGEND
Drainage
Gambir Mughlan Goral Conservation Reserve


ACCESSIBILITY MAP OF GAMBIR MUGHLAN GORAL CONSERVATION RESERVE
N
Machhaki Nala
Bada
Pritaal
Jammu
Kathuniyan
LEGEND
Placemarks
Gambir Mughlan Goral Conservation Reserve
Forest Trails/Tracks/Inspection Paths/Roads
1:43000
0 1 2 4 Km



JAWAHAR TUNNEL CHAKORE
CONSERVATION RESERVE

The Jawahar Tunnel Chakore Conservation Reserve located at a distance of about 10 km from Banihal and the Jammu Srinagar National Highway traverses through the Chakore Conservation Reserve. The area morphologically approximates to a crescent shape. Geomorphologically the Conservation Reserve is bounde on the North by the mighty Pir Panjal Mountain Range and to the south lies the town of Banihal. Legally the Jawahar Tunnel Chakur Conservation Reserve was notified as Game reserve in 1981 and by the amendment to the J&K Wildlife Act in 2002 was converted to Conservation Reserve. The area predominantly receives precipitation in the winter months and the southern aspects are covered by thick blanket of snow in winter months. Chakore is the flagship species in the areas.

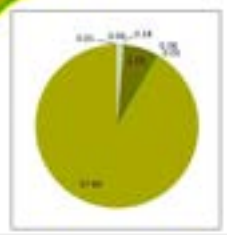
SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981 **NOTIFIED AREA** (KM2): 19.57
GIS AREA (KM2): 19.50 **PERIMETER** (KMS): 30.56
ALTITUDE RANGE (M): 1996 – 3494
GEO - COORDINATES:
33° 29.157′ N - 33° 31.516′ N, 75° 6.919′ E - 75° 14.265′ E

MAJOR FAUNA: Brown Bear (Uusus arctos), Common Langur (*Semnopithecus entellus*), Himalayan Black Bear (*Ursus thibetanus*), Hog Deer (*Axis porcinus*), Indian Porcupine (*Hystrix indica*), Indian fox (*Vulpes bengalensis*), Common Leopard (*Panthera pardus*), Indian Hare (*Lepus nigricollis*), Indian Jackal (*Canis aureus*), Jungle Cat (*Felis chaus*).

MAJOR AVI FAUNA: Chakore (*Alectoris chukar*), Alpine swift (*Tachymarptis melba*), Black & Yellow grosbeak (*Mycerobas icterioides*), Blue Rock Pigeon (*Columba livia*), Common Kingfisher (*Alcedo atthis*), Common Myna (*Acridotheres tristis*), Eagle Owl (*Bubo bubo*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundoo*), Griffon Vulture (*Gyps fulvus*).

MAJOR FLORA: Himalayan rhubarb (*Rheum australe*), saffron (*Crocus sativus*), Burdock (*Arctium lappa*), Hemp (*Cannabis sativa*), Himalayan Blue Sage (*Salvia hians*), Red Clover (*Trifolium pratense*), Indian Berberis (*Berberis lycerum*), Veined leafed viburnum (*Viburnum nervosum*).

LAND USE LAND COVER MAP OF JAWAHAR TUNNEL CHAKORE RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.01	0.05
Agriculture Plantation	0.06	0.33
Barren Rocky	0.18	0.94
Dense Scrub	1.33	6.82
Forest	0.08	0.44
Grassland & Grazing land	0.00	0.00
Open Scrub	17.83	91.42
Total	19.50	100.00

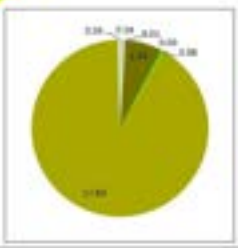
LEGEND

- Agriculture Cropland
- Agriculture Plantation
- Barren Rocky
- Dense Scrub
- Forest
- Grassland & Grazing land
- Open Scrub
- Jawahar Tunnel Chakore Reserve

1: 39,000

0 1 2 4 Km

VEGETATION MAP OF JAWAHAR TUNNEL CHAKORE RESERVE



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Cropland	0.01	0.05
Plantation	0.06	0.33
Barren Land	0.18	0.94
Dense Scrub	1.33	6.81
Oak	0.08	0.44
Moist Alpine Pasture	0.00	0.00
Open Scrub	17.83	91.43
Total	19.50	100.00

LEGEND

- Barren Land
- Cropland
- Dense Scrub
- Moist Alpine Pasture
- Oak
- Open Scrub
- Plantation
- Jawahar Tunnel Chakore Reserve

1: 39,000

0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF JAWAHAR TUNNEL CHAKORE RESERVE

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	19.48	99.96
Piedmont Zone	0.02	0.03
Total	19.50	100.00

1: 39,000
0 1 2 4 Km

LEGEND
- Denudational Hills
- Piedmont Zone
- Jawahar Tunnel Chakore Reserve

LITHOLOGICAL MAP OF JAWAHAR TUNNEL CHAKORE RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Phyllites Schists Slates	19.50	100.00
Total	19.50	100.00

1: 39,000
0 1 2 4 Km

LEGEND
- Phyllites Schists Slates
- Jawahar Tunnel Chakore Reserve

SOIL MAP OF JAWAHAR TUNNEL CHAKORE RESERVE

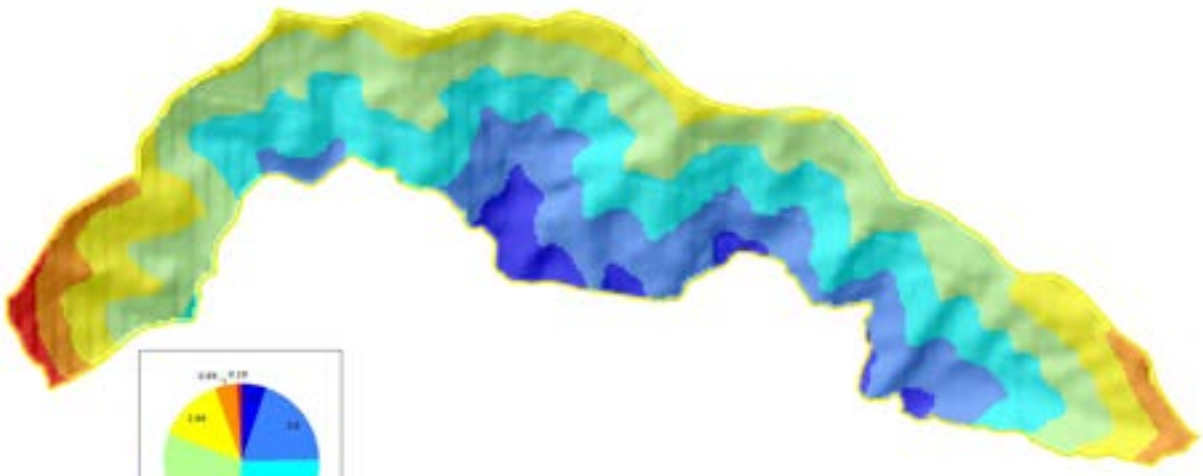
AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	0.10	0.51
Loamy Soil	9.59	49.17
Rock Outcrop	9.81	50.32
Total	19.50	100.00

LEGEND
- Fine Loamy Soil
- Loamy Soil
- Rock Outcrop
- Jawahar Tunnel Chakore Reserve

1: 39,000
0 1 2 4 Km

ELEVATION MAP OF JAWAHAR TUNNEL CHAKORE RESERVE



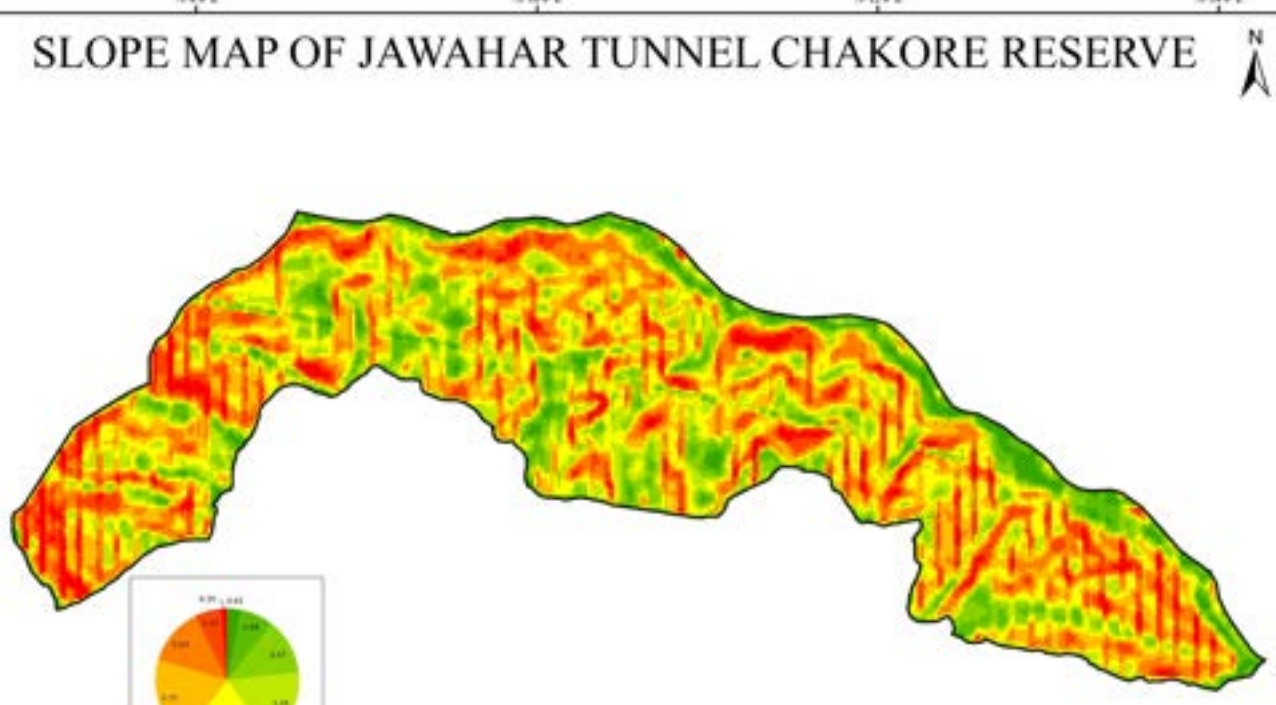
AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1996 - 2210	1.01	5.18
2210 - 2424	3.8	19.49
2424 - 2638	5.17	26.51
2638 - 2852	5.78	29.64
2852 - 3066	2.66	13.64
3066 - 3280	0.89	4.56
3280 - 3494	0.19	0.97
Total	19.50	100.00

LEGEND
Elevation (m)
- 1996 - 2210
- 2210 - 2424
- 2424 - 2638
- 2638 - 2852
- 2852 - 3066
- 3066 - 3280
- 3280 - 3494
- Jawahar Tunnel Chakore Reserve

1: 39,000
0 1 2 4 Km

SLOPE MAP OF JAWAHAR TUNNEL CHAKORE RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	0.62	3.18
6-15	1.44	7.38
16-20	2.47	12.67
21-30	3.26	16.72
31-35	3.99	20.46
36-45	3.75	19.23
46-50	2.53	12.97
51-70	1.15	5.90
71-90	0.29	1.49
Total	19.50	100.00

LEGEND

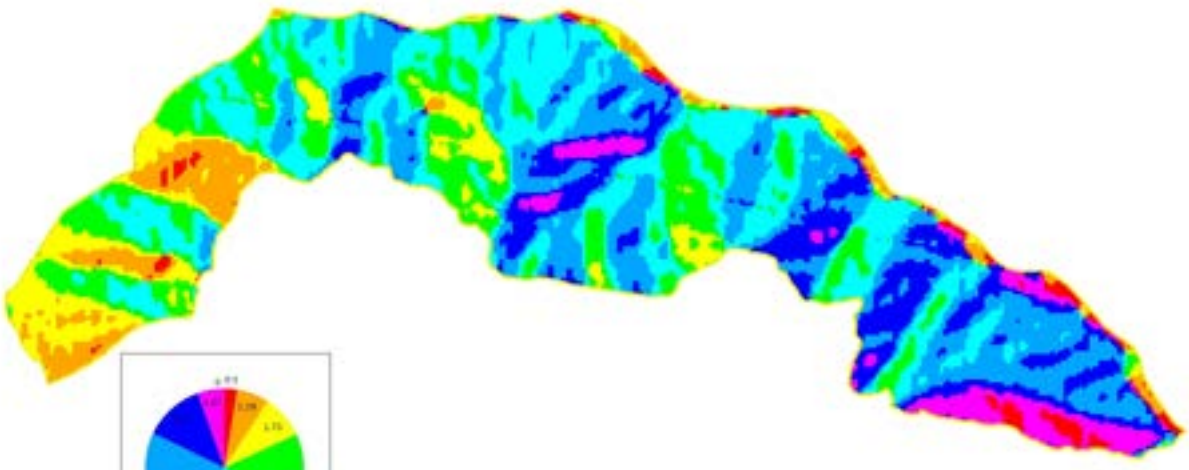
Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Jawahar Tunnel Chakore Reserve

1: 39,000

0 1 2 4 Km

ASPECT MAP OF JAWAHAR TUNNEL CHAKORE RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

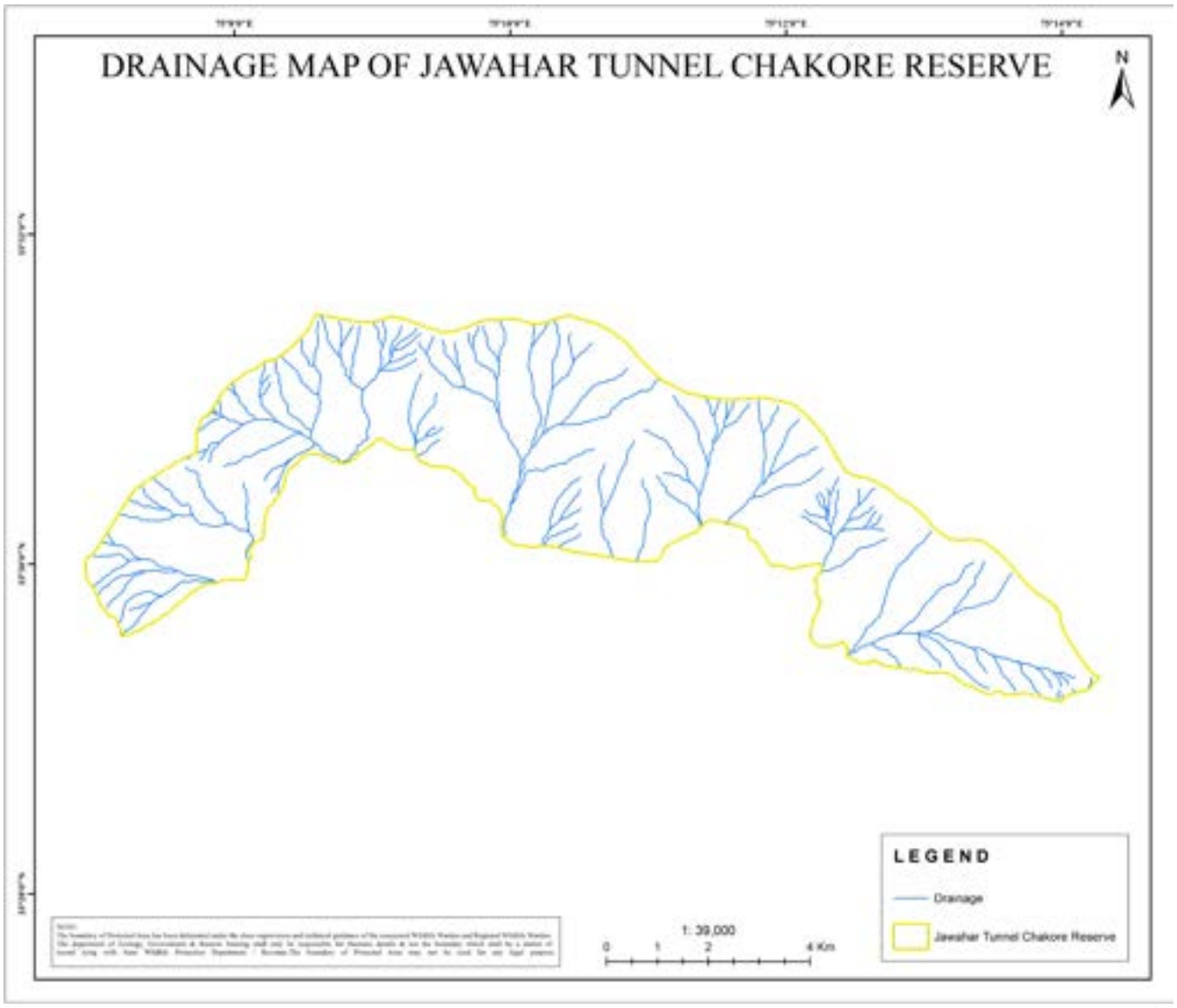
Aspect Class	Area (Sq Kms)	Percentage
Flat	0	0.00
North	0.5	2.56
Northeast	1.29	6.62
East	1.73	8.87
Southeast	3.47	17.79
South	4.66	23.90
Southwest	4.38	22.46
West	2.4	12.31
Northwest	1.07	5.49
Total	19.50	100.00

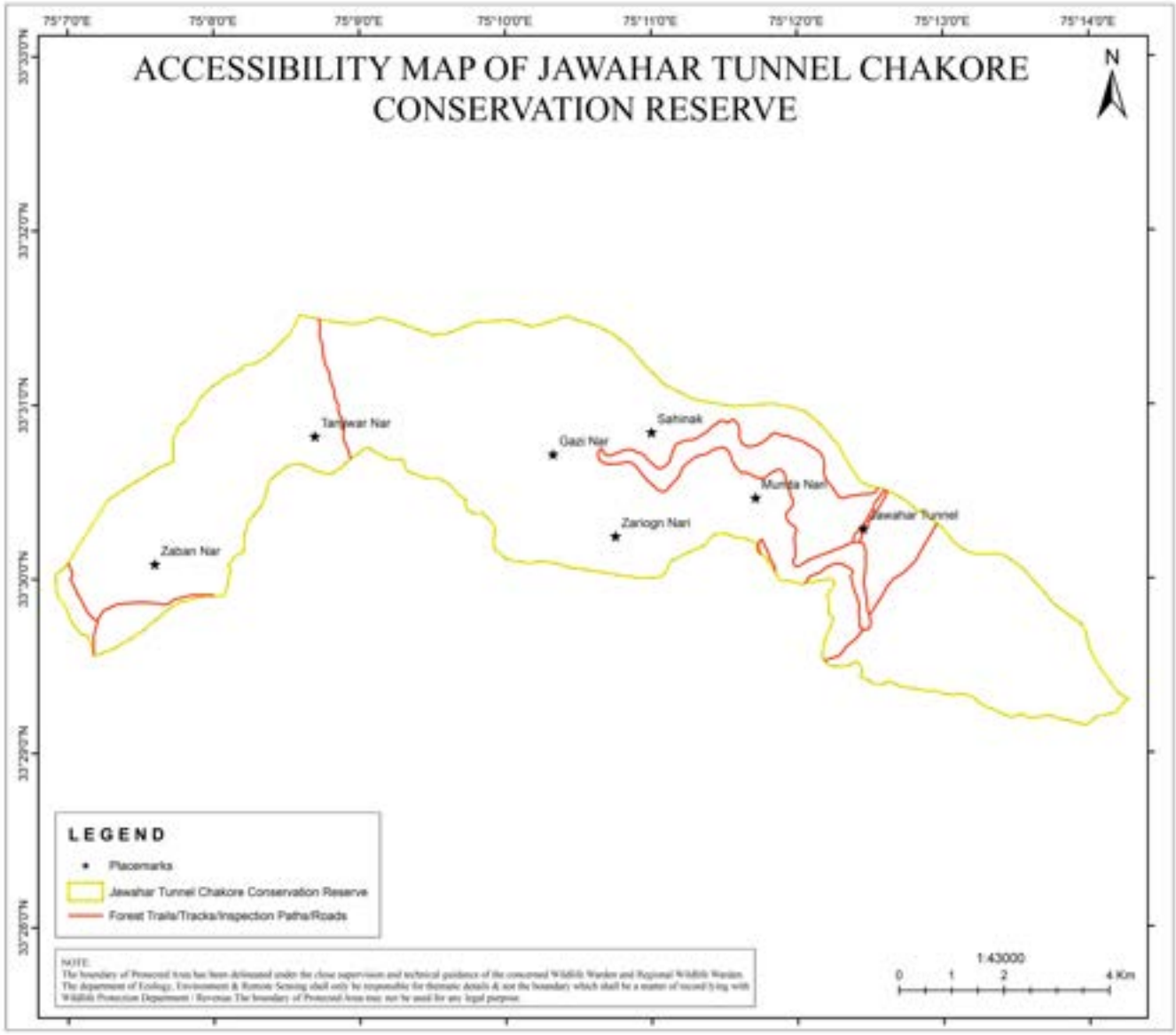
LEGEND

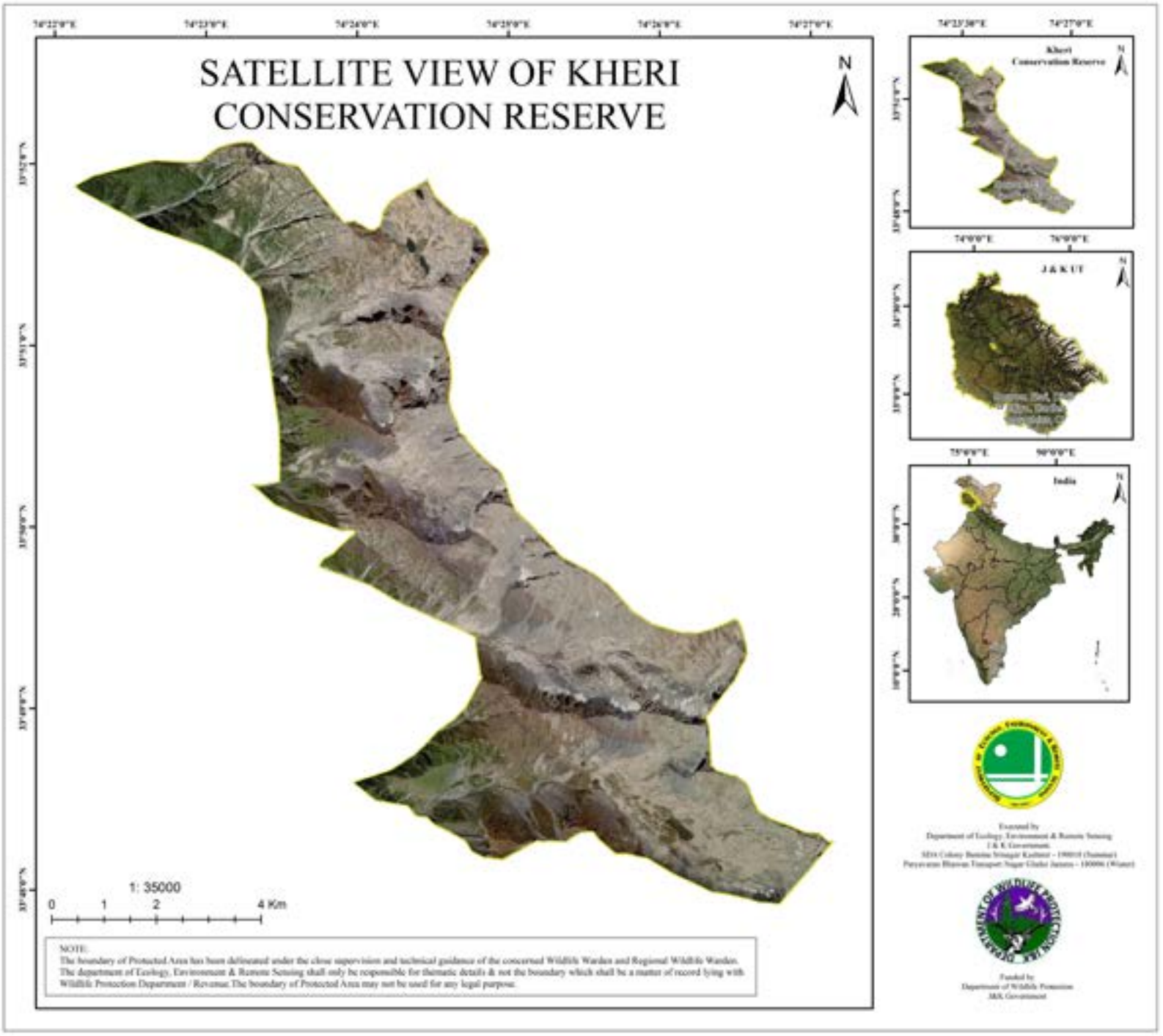
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Jawahar Tunnel Chakore Reserve

1: 39,000

0 1 2 4 Km


DRAINAGE MAP OF JAWAHAR TUNNEL CHAKORE RESERVE
N
LEGEND
Drainage
Jawahar Tunnel Chakore Reserve
1: 39,000
0 1 2 4 Km


ACCESSIBILITY MAP OF JAWAHAR TUNNEL CHAKORE CONSERVATION RESERVE
N
Tanawar Nar
Gazi Nar
Sahinak
Mumta Nari
Jawahar Tunnel
Zariogn Nari
Zabian Nar
LEGEND
Placemarks
Jawahar Tunnel Chakore Conservation Reserve
Forest Trails/Tracks/Inspection Paths/Roads
1:43000
0 1 2 4 Km



KHERI CONSERVATION RESERVE

The Kheri Conservation Reserve is situated in district Poonch of Jammu & Kashmir. The area was handed over to Wildlife Protection Department in the year 2011 with the sole intention of wildlife conservation and to reduce man animal conflict. It is located above Domal in Nandi Chhual Katha about 2 kms in the Northern side and above Pathri in the Chhapran nallah on the southern side. Mostly the area is covered by grassland.

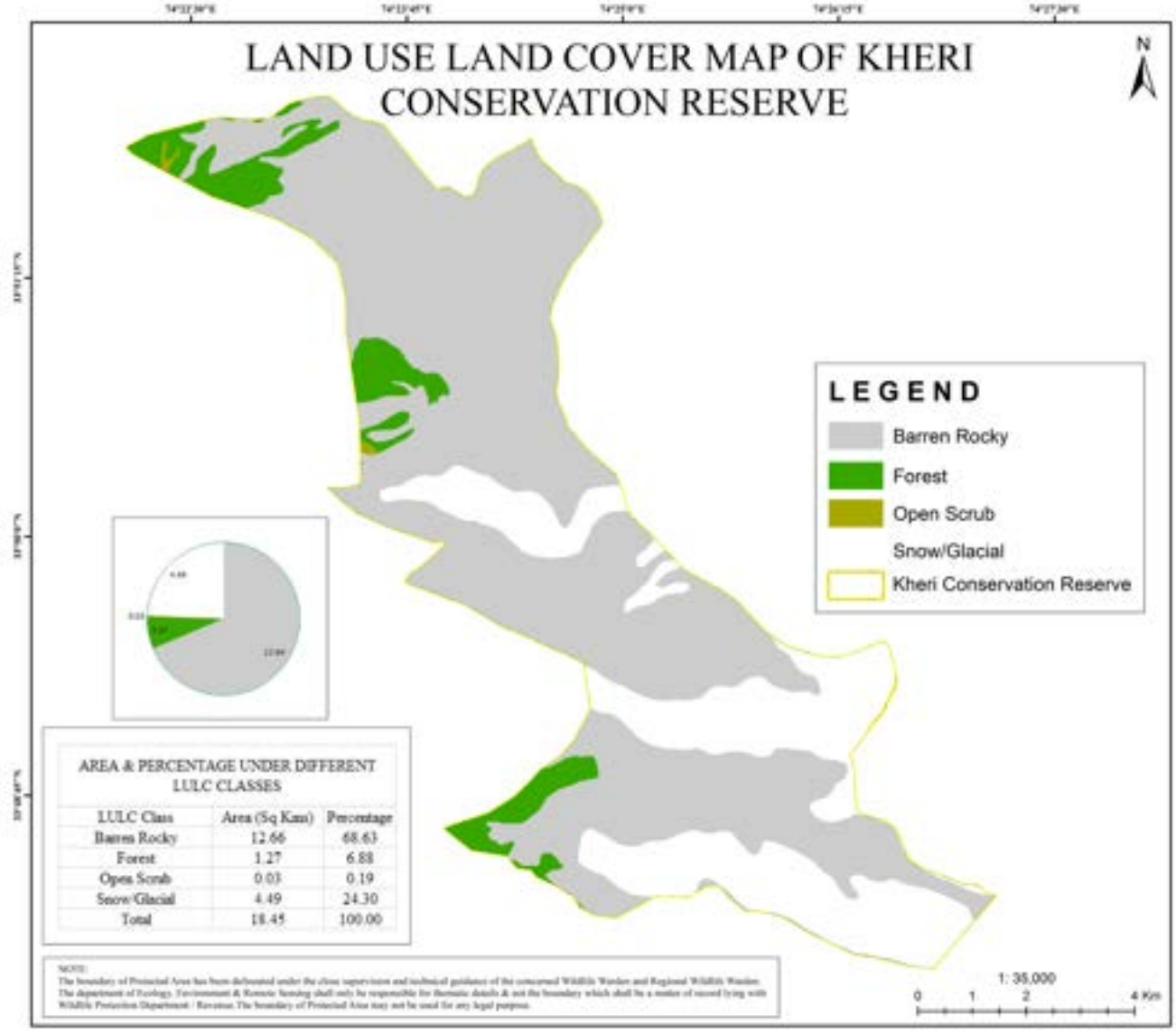
SRO/NOTIFICATION NO: Taken over as per J&K Game Preservation Act 1998 (1942 AD)
NOTIFIED AREA (KM2): 18.45 **GIS AREA** (KM2): 18.45
PERIMETER (KMS): 30.16
ALTITUDE RANGE (M): 3002 – 4425
GEO - COORDINATES:
33° 47.941′ N - 33° 52.134′ N, 74° 22.133′ E - 74° 27.187′ E

MAJOR FAUNA: Himalayan goral (*Nemorhaedus goral*), Common Leopard (*Panthera pardus*), Himalayan Brown Bear (*Ursus arctos*), , Himalayan Black Bear (*Ursus thibetanus*), Indian Jackal (*Canis aureus*), Hog deer (*Axis porcinus*), Indian Porcupine (*Hystrix indica*), Indian Hare (*Lepus nigricollis*), Rhesus Monkey (*Macaca mulatta*), Red Fox (*Vulpus Vulpus*). .

MAJOR AVI FAUNA: Baya or Weaver bird (*Ploceus philippinus*), Booted eagle (*Hieraaetus pennatus*), Golden eagle (*Aquila chrysaetos*), Griffon Vulture (*Gyps fulvus*), Himalayan Snowcock (*Tetraogallus himalayans*), Western tragopan (*Tragopan melanocephalus*), Grey francolin (*Francolinus pondicerianus*), Eagle owl (*Bubo bubo*), Talor Bird (*Stigmatopelia chinensis*), Blue Rock Pigeon (*Columba livia*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Veined-Leaf Viburnum (*Viburnum nervosum*), Deadly nightshade (*Atropa* bella-donna), Himalayan Mayapple (*Podophyllum hexandrum*), Peacock Flower (*Caesalpinia pulcherrim*), Native bryony or striped cucumber (*Diplocyclos palmatus*), Blue sage (*Eranthemum pulchellum*).

LAND USE LAND COVER MAP OF KHERI CONSERVATION RESERVE

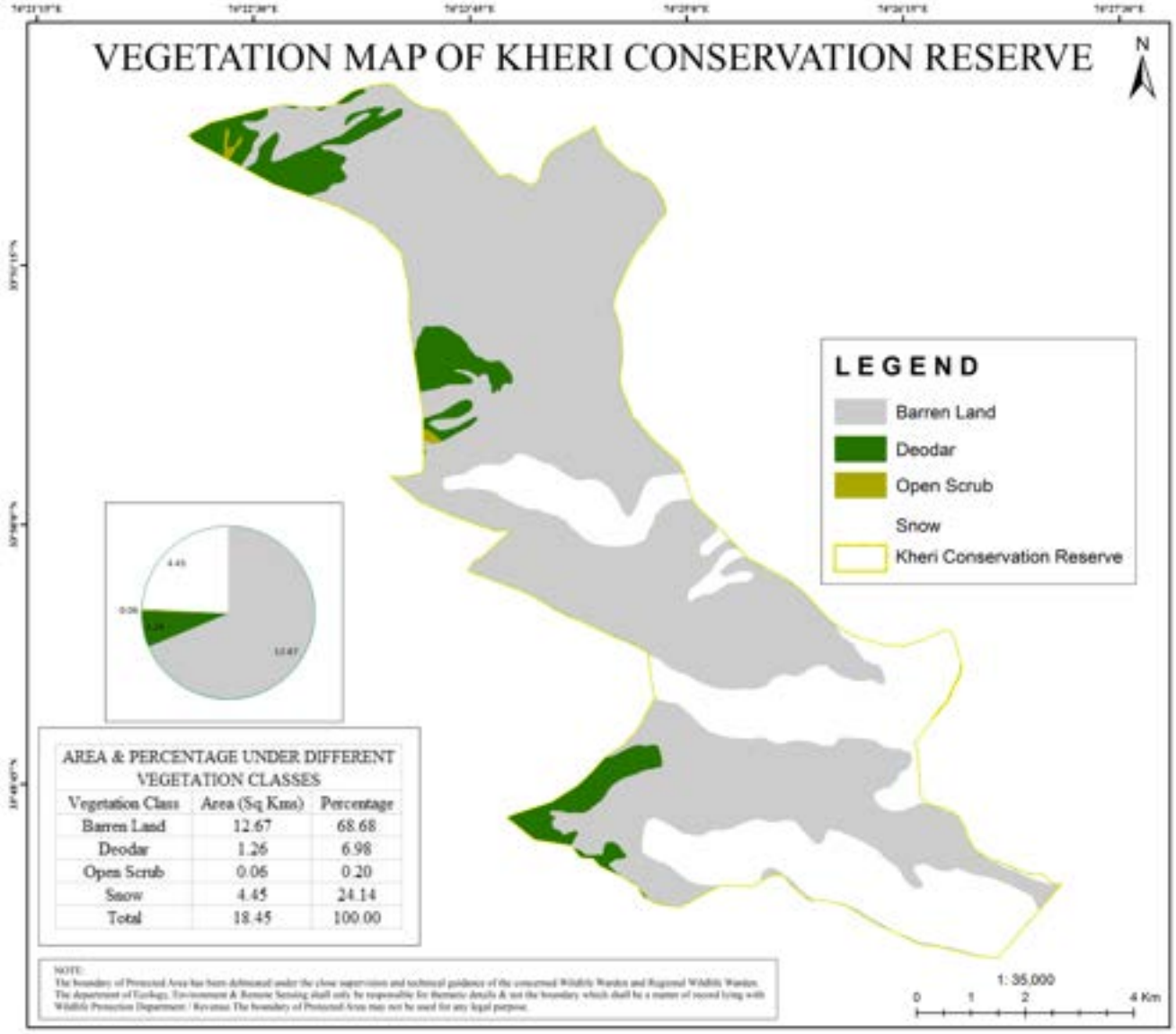


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Barren Rocky	12.66	68.63
Forest	1.27	6.88
Open Scrub	0.03	0.19
Snow/Glacial	4.49	24.30
Total	18.45	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF KHERI CONSERVATION RESERVE

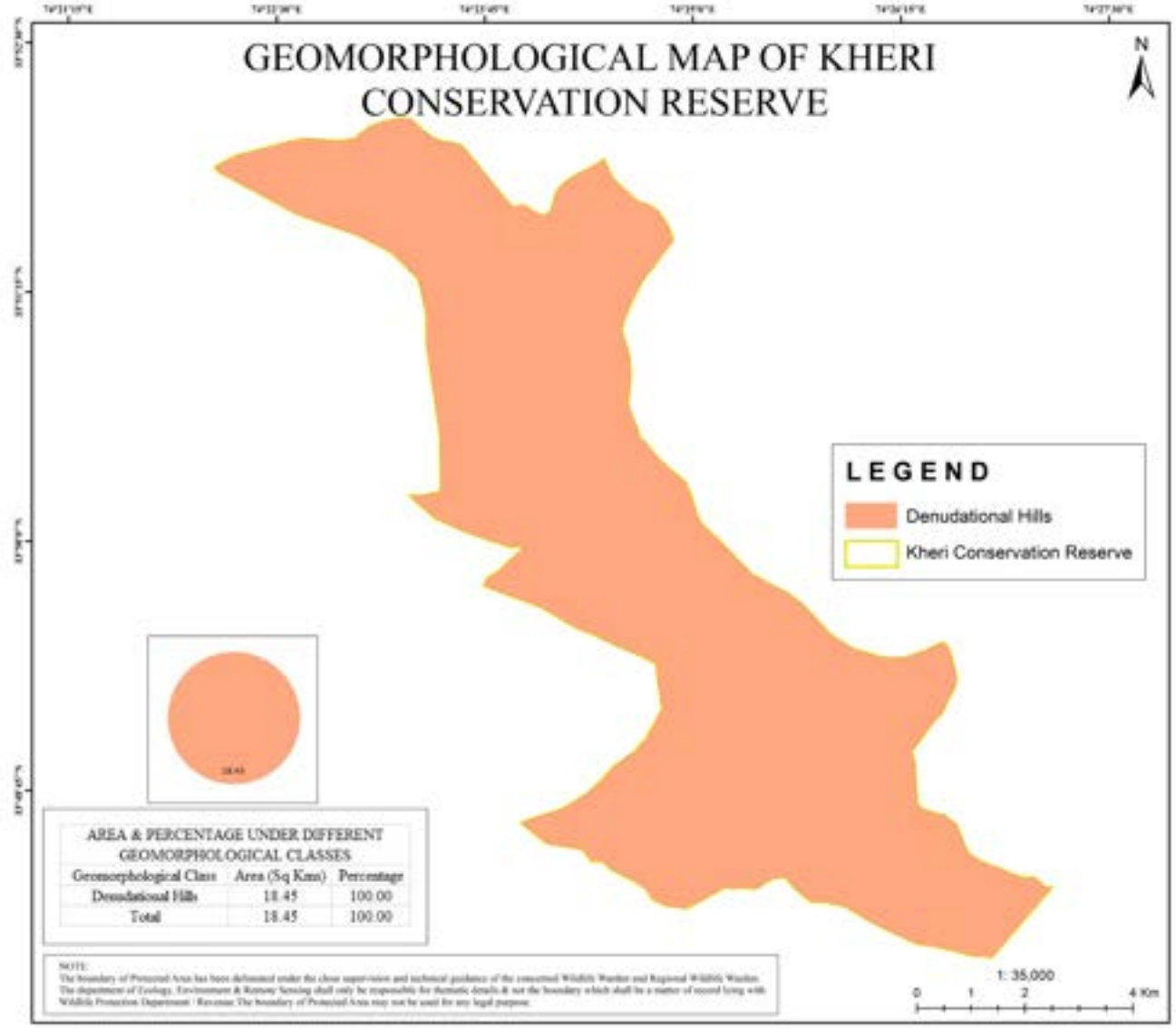


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	12.67	68.68
Deodar	1.26	6.98
Open Scrub	0.06	0.20
Snow	4.45	24.14
Total	18.45	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF KHERI CONSERVATION RESERVE

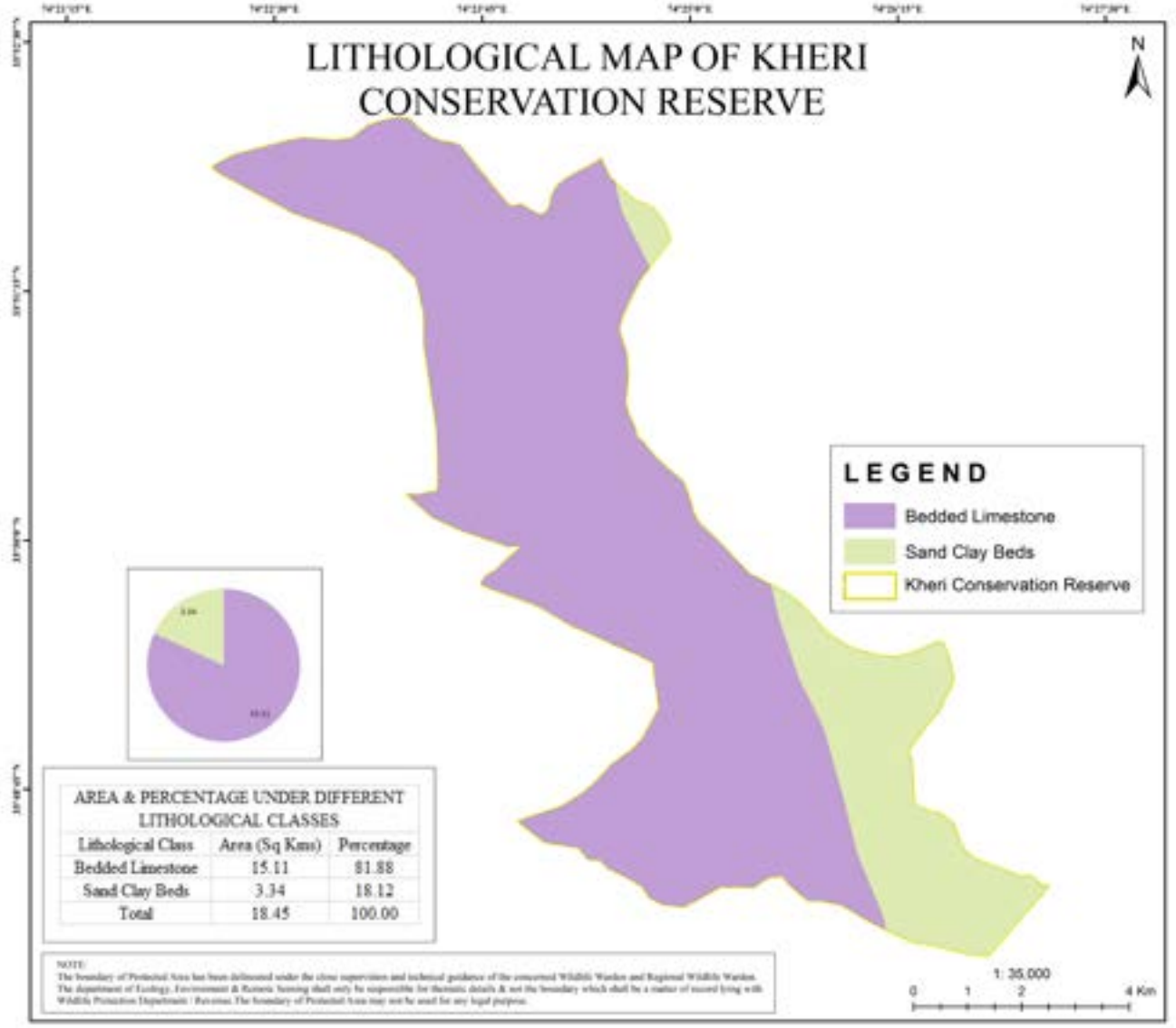


AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	18.45	100.00
Total	18.45	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LITHOLOGICAL MAP OF KHERI CONSERVATION RESERVE

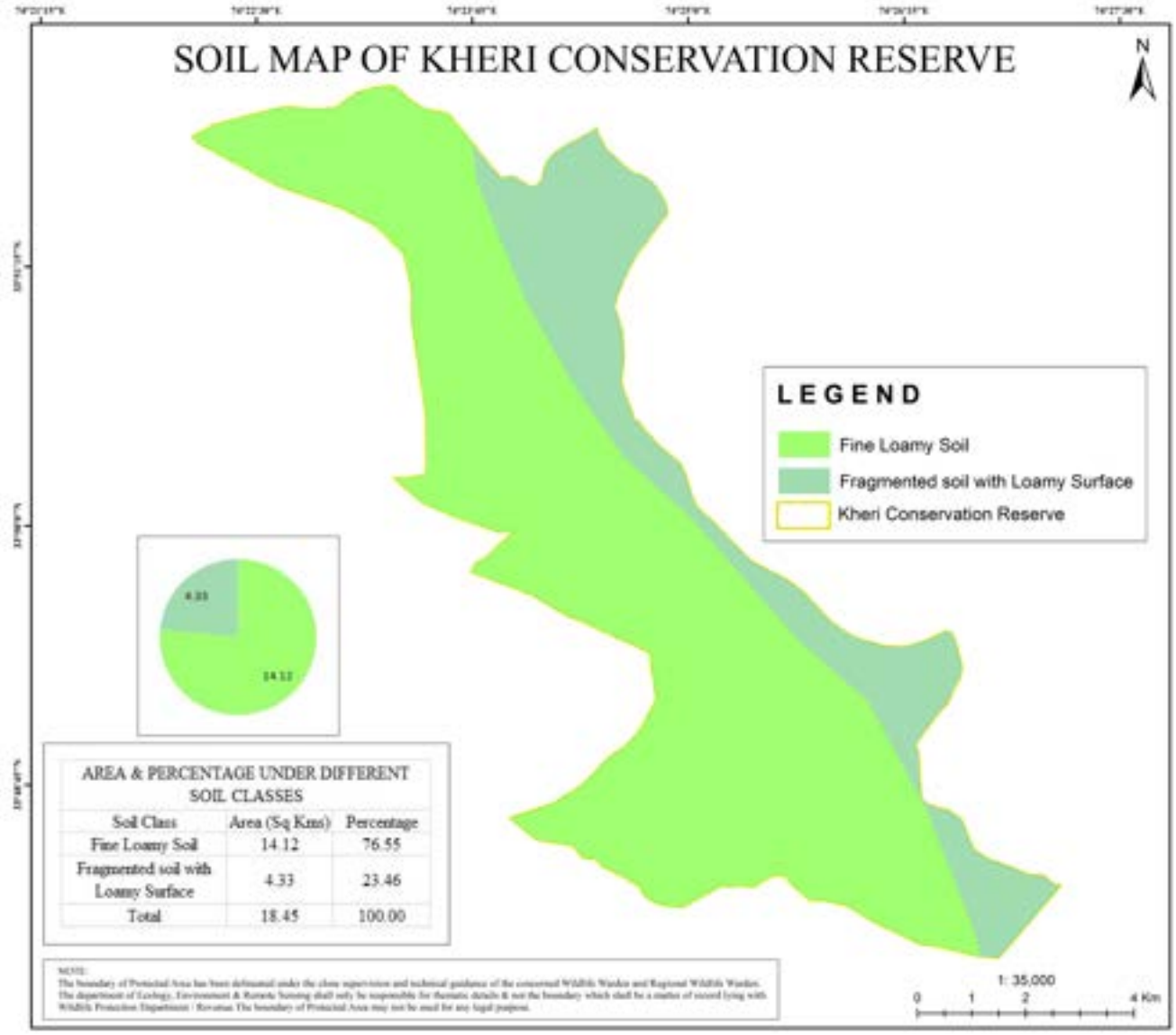


AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	15.11	81.88
Sand Clay Beds	3.34	18.12
Total	18.45	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

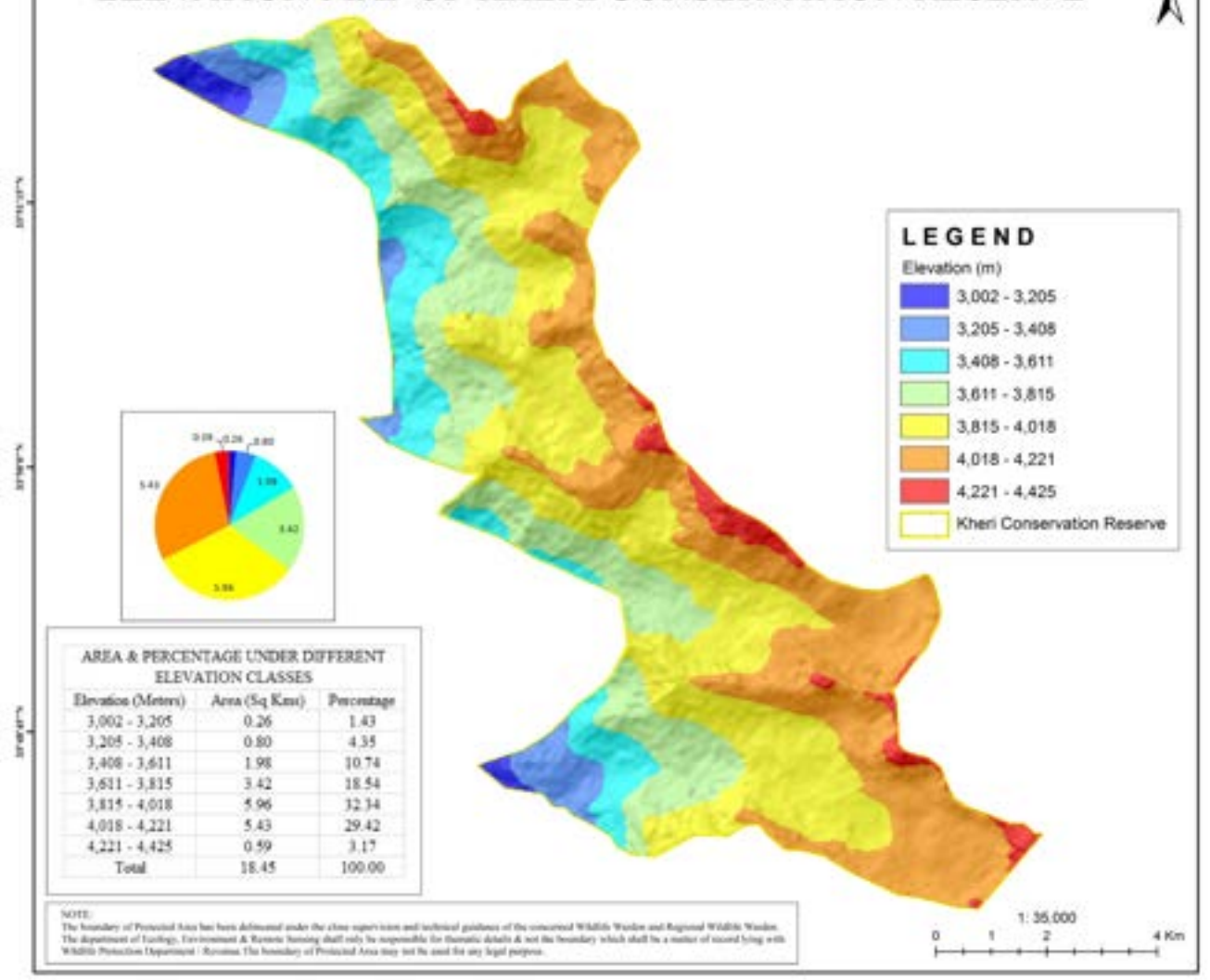
SOIL MAP OF KHERI CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	14.12	76.55
Fragmented soil with Loamy Surface	4.33	23.46
Total	18.45	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

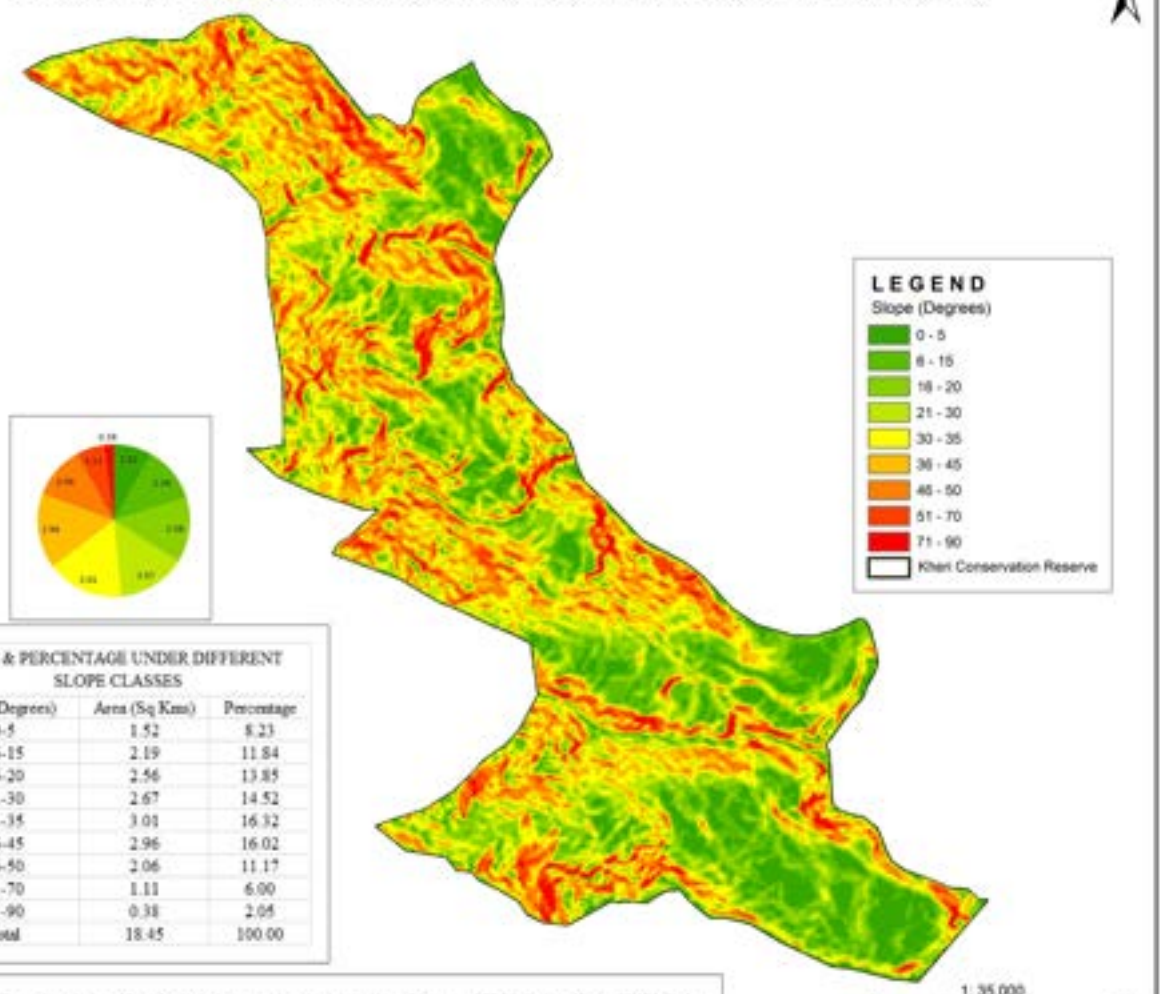
ELEVATION MAP OF KHERI CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES		
Elevation (Meters)	Area (Sq Kms)	Percentage
3,002 - 3,205	0.26	1.43
3,205 - 3,408	0.80	4.35
3,408 - 3,611	1.98	10.74
3,611 - 3,815	3.42	18.54
3,815 - 4,018	5.96	32.34
4,018 - 4,221	5.43	29.42
4,221 - 4,425	0.59	3.17
Total	18.45	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SLOPE MAP OF KHERI CONSERVATION RESERVE

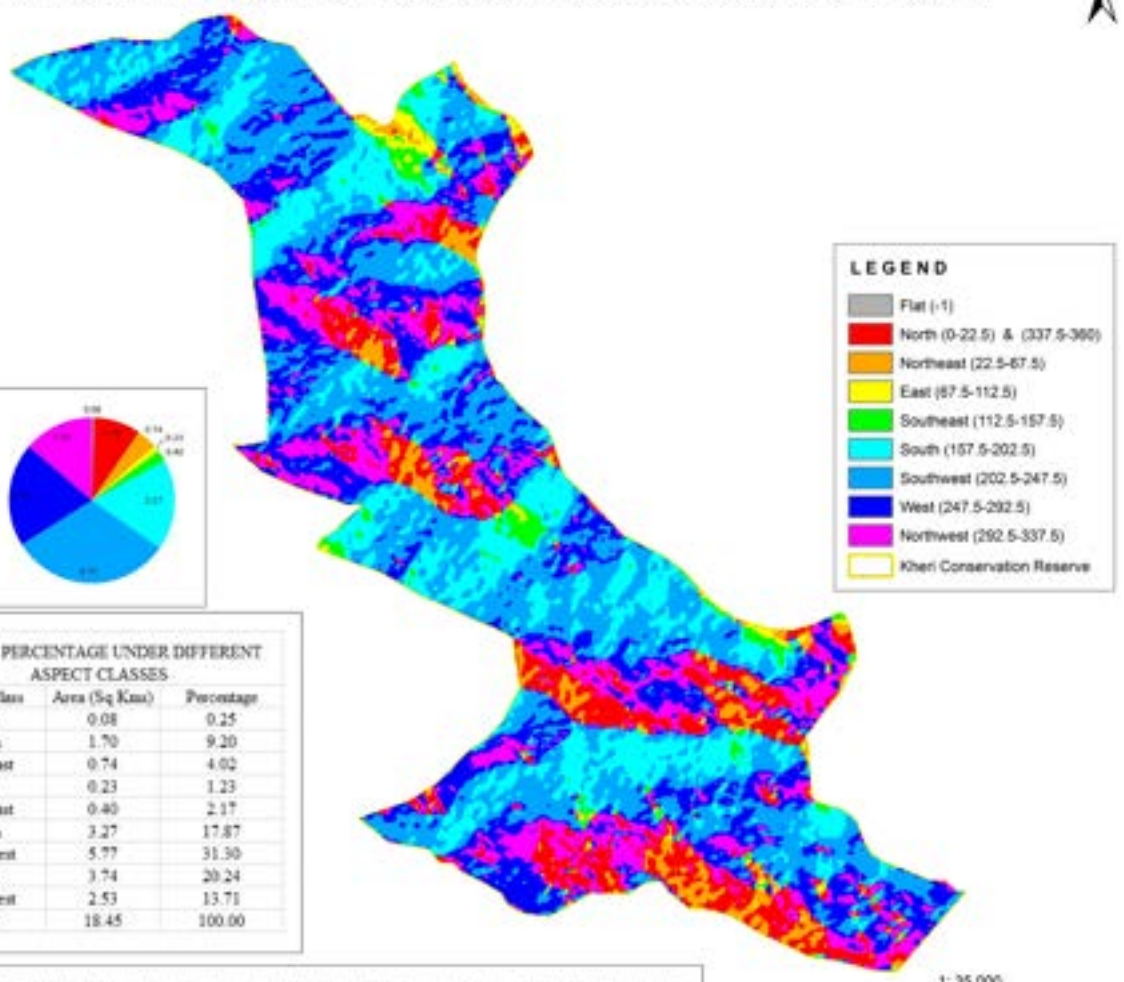


AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	1.52	8.23
6-15	2.19	11.84
16-20	2.56	13.85
21-30	2.67	14.52
31-35	3.01	16.32
36-45	2.96	16.02
46-50	2.06	11.17
51-70	1.11	6.00
71-90	0.38	2.05
Total	18.45	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

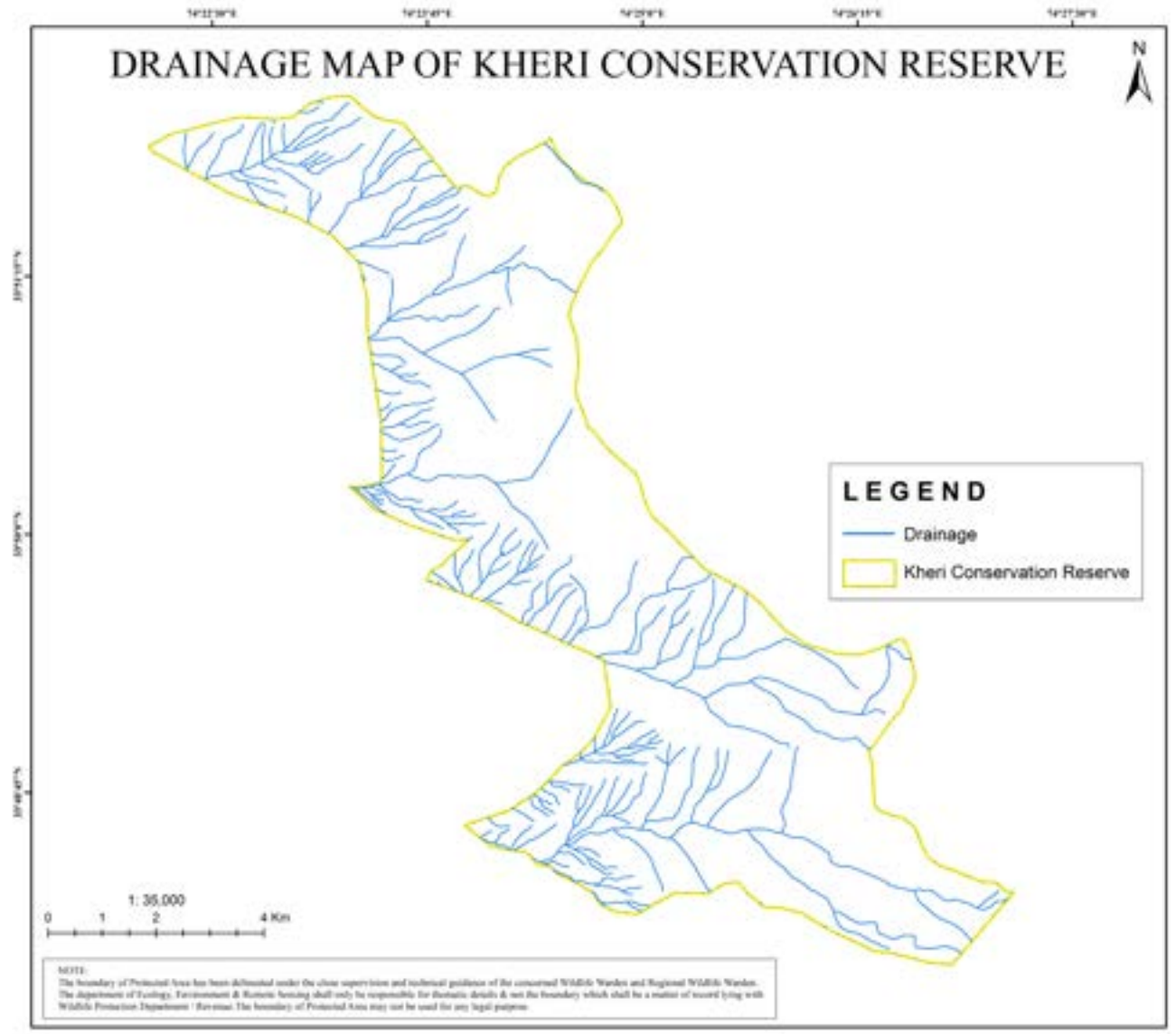
ASPECT MAP OF KHERI CONSERVATION RESERVE

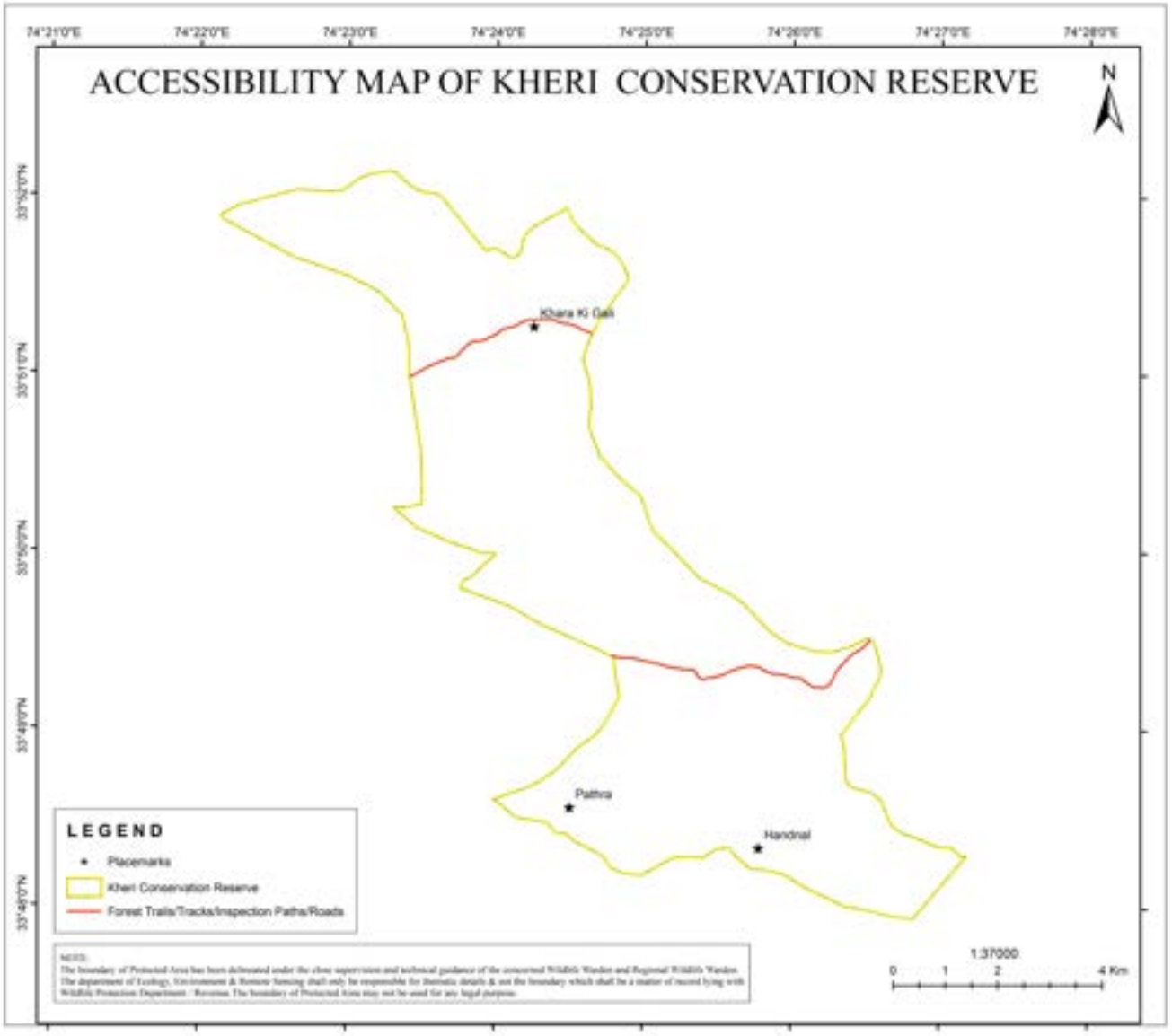


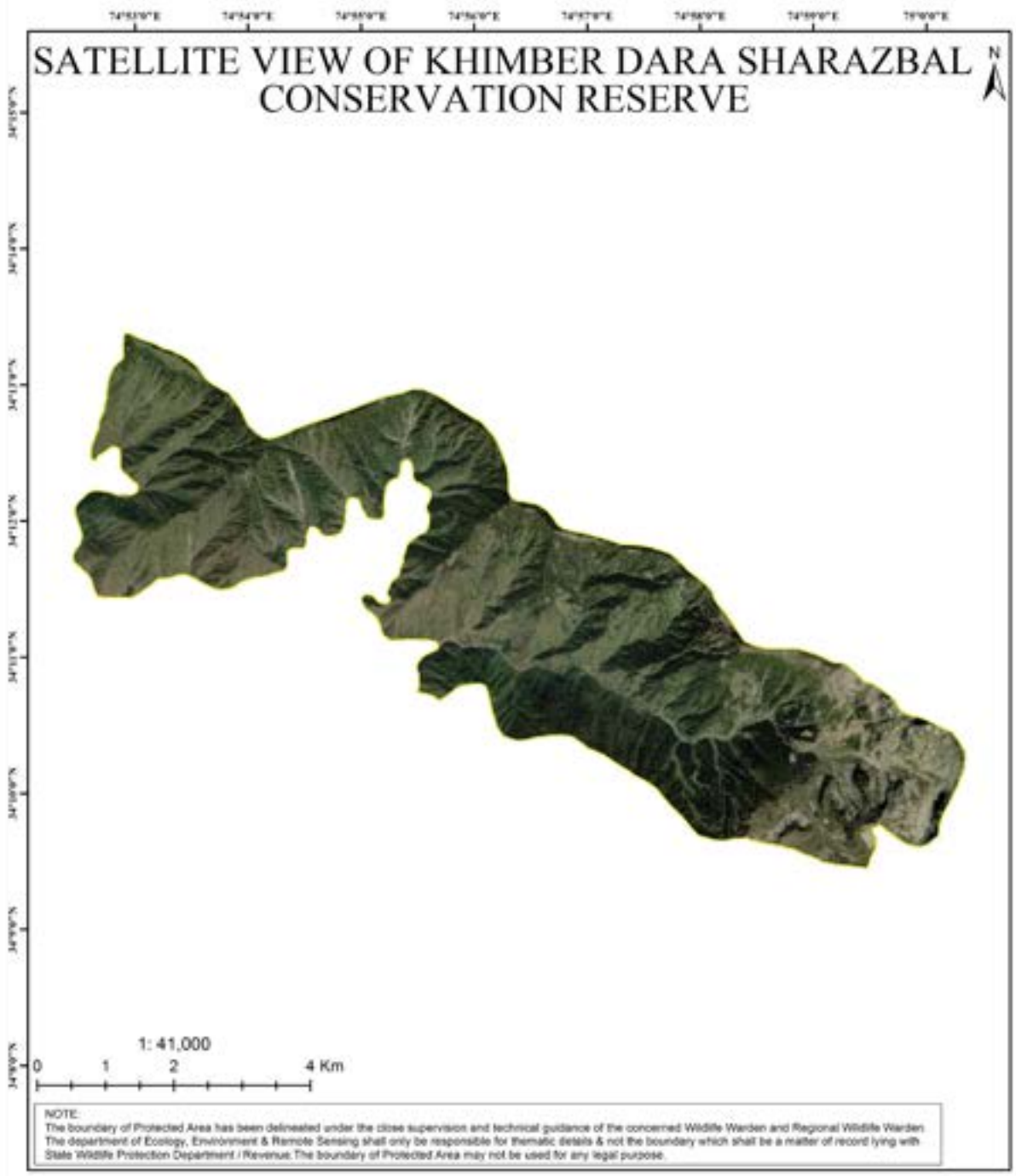
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.08	0.25
North	1.70	9.20
Northeast	0.74	4.02
East	0.23	1.23
Southeast	0.40	2.17
South	3.27	17.87
Southwest	5.77	31.30
West	3.74	20.24
Northwest	2.53	13.71
Total	18.45	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF KHERI CONSERVATION RESERVE
N
LEGEND
Drainage
Kheri Conservation Reserve
1: 35,000
0 1 2 4 Km


ACCESSIBILITY MAP OF KHERI CONSERVATION RESERVE
N
Khara Ki Gali
Pathra
Handnal
LEGEND
Placemarks
Kheri Conservation Reserve
Forest Trails/Tracks/Inspection Paths/Roads
1:37000
0 1 2 4 Km



KHIMBER DARA SHARAZBAL

CONSERVATION RESERVE

The Khimber Dara Conservation Reserve is located in Srinagar district of UT of Jammu & Kashmir, the reserve is named after the village Khimber. It is about 22 Kms away from the heart of Srinagar city. In order to conserve the rich floral and faunal biodiversity of the protected area and being an important part of Hangul landscape, it was notified in the year 1945. The reserve shares boundary with Dachigam National Park in South East direction .

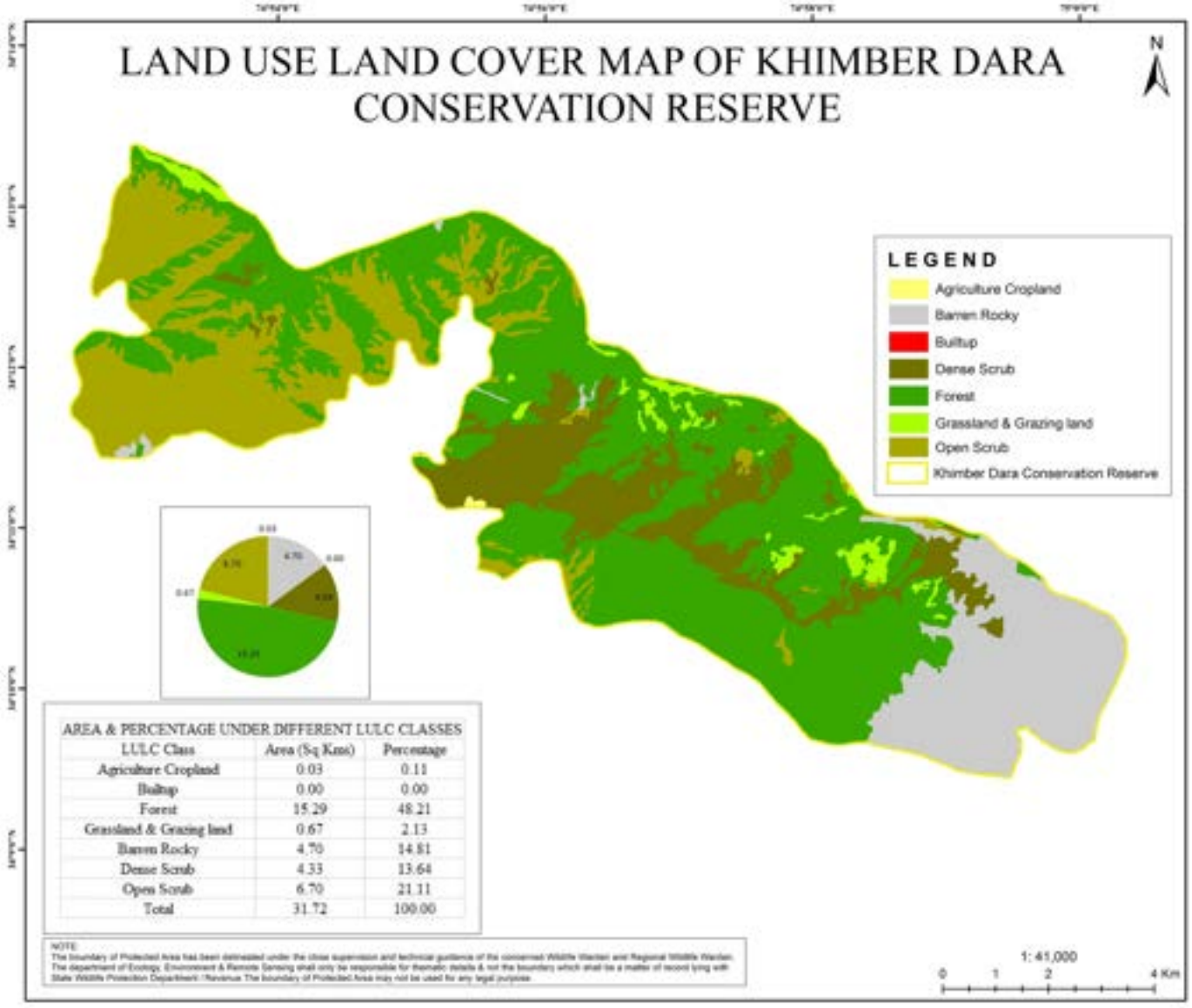
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 34.00 **GIS AREA** (KM2): 31.72
PERIMETER (KMS): 40.81
ALTITUDE RANGE (M): 1875 – 3970
GEO - COORDINATES:
34° 9.450′ N - 34° 13.387′ N, 74° 52.453′ E - 75° 0.345′ E

MAJOR FAUNA: Asiatic Black Bear (*Ursus thibetanus*), Kashmir Stag/Hangul (*Cervus hanglu*), Himalayan Serow (*Capricornis thar*), Common Leopard (*Panthera pardus*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*), Kashmir Grey Langur (*Semnopithecus Ajax*), Indian Jackal (*Canis aureus*).

MAJOR AVI FAUNA: Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Himalayan Griffon Vulture (*Gyps himalayensis*), Black Eared kite (*Milvus migrans*), The pied Woodpecker (*Drybates himalayensis*), Indian Myna (*Acridotheres tristis*), White Cheeked Bulbul (*Pycnonotus leucogenys*), , house sparrow (*Passer domesticus*)

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan elm (*Ulmus wallichiana*), Parrotia (*Parrotiopsis jacquemontiana*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lycium*), Himalayan rhubarb (*Rheum webbianum*), Indian Atees *(Aconitum heterophyllum)*.

LAND USE LAND COVER MAP OF KHIMBER DARA CONSERVATION RESERVE

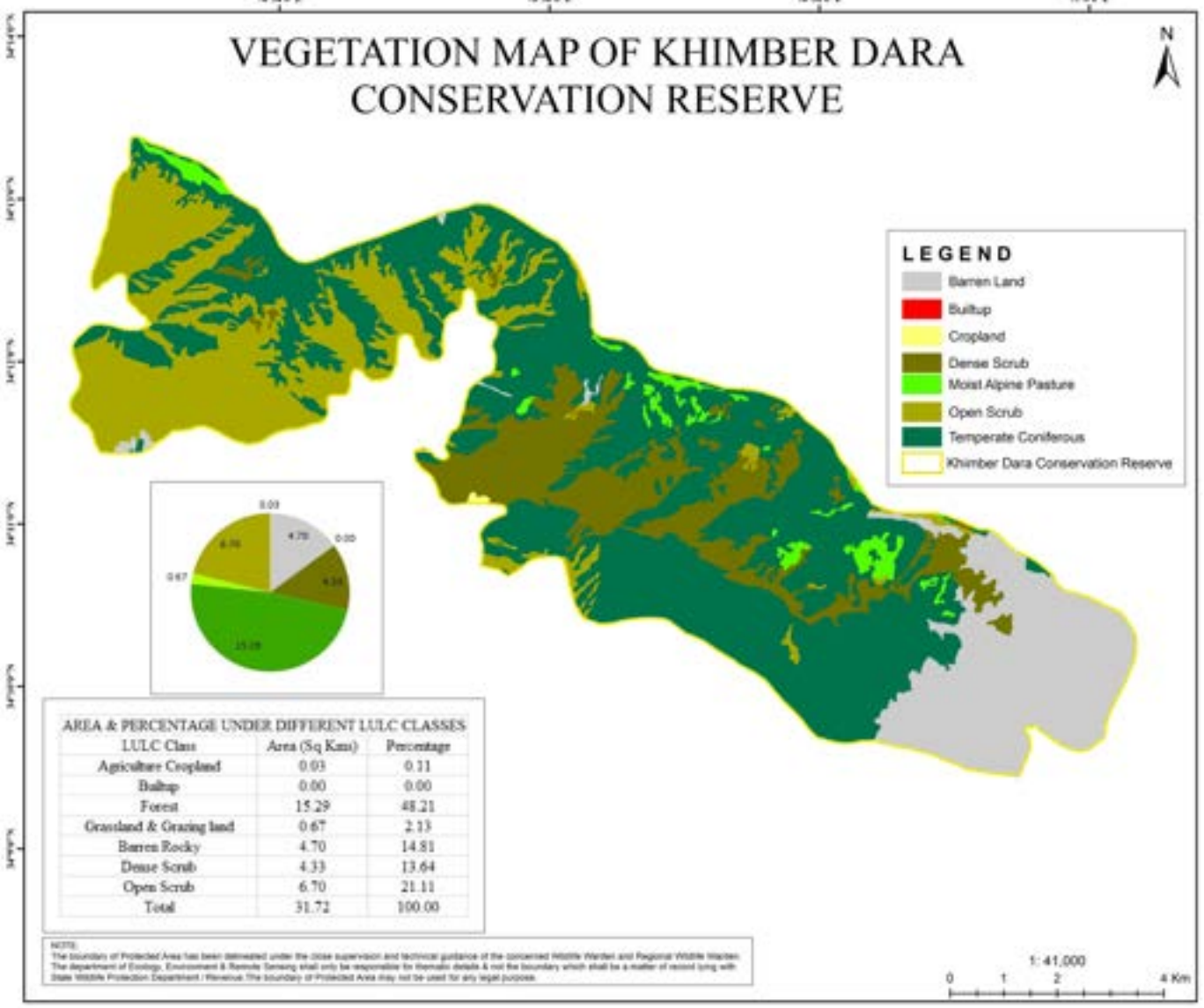


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.03	0.11
Builtup	0.00	0.00
Forest	15.29	48.21
Grassland & Grazing land	0.67	2.13
Barren Rocky	4.70	14.81
Dense Scrub	4.33	13.64
Open Scrub	6.70	21.11
Total	31.72	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF KHIMBER DARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
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Builtup	0.00	0.00
Forest	15.29	48.21
Grassland & Grazing land	0.67	2.13
Barren Rocky	4.70	14.81
Dense Scrub	4.33	13.64
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NOTE:
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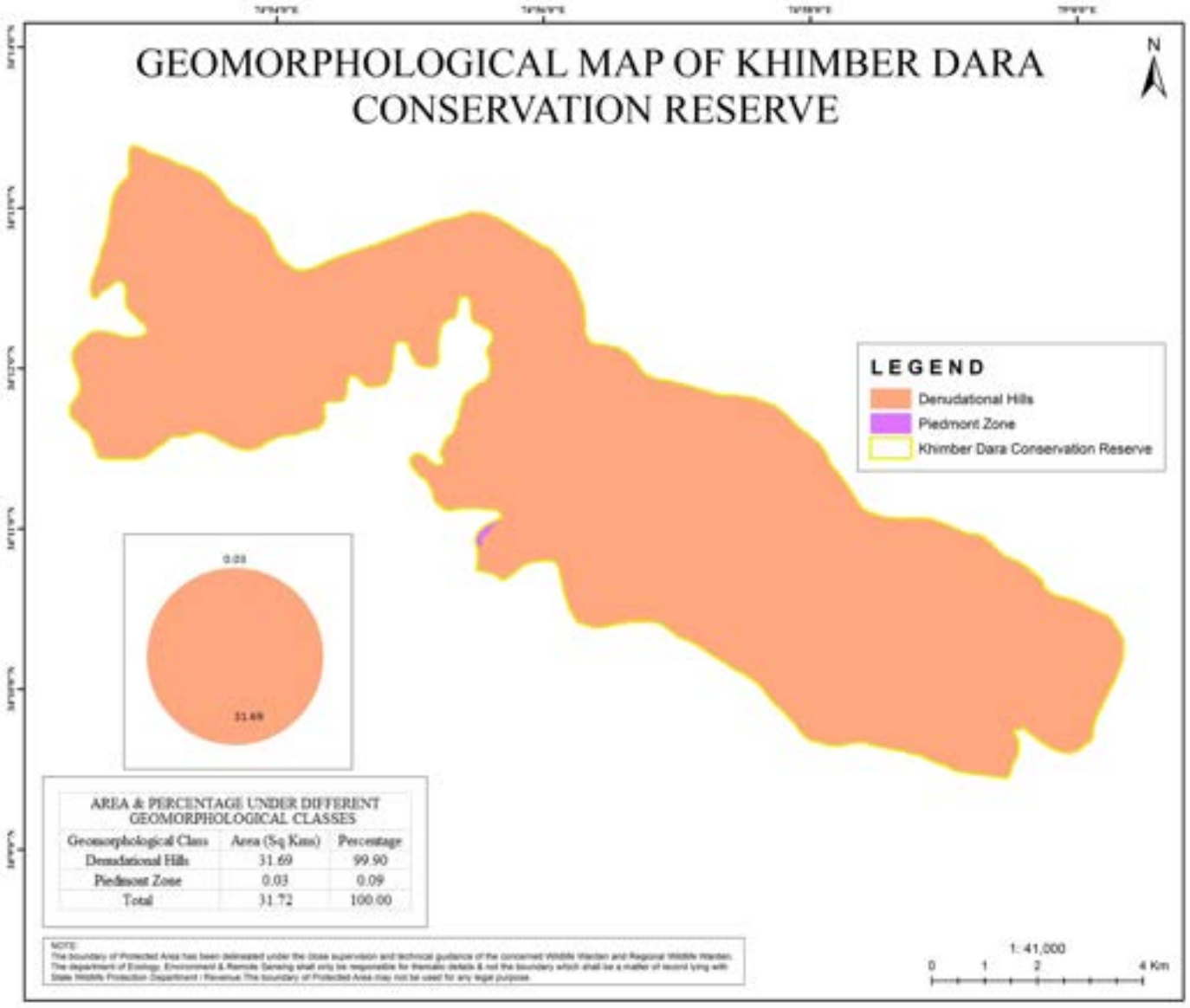
GEOMORPHOLOGICAL MAP OF KHIMBER DARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	31.69	99.90
Piedmont Zone	0.03	0.09
Total	31.72	100.00

NOTE:
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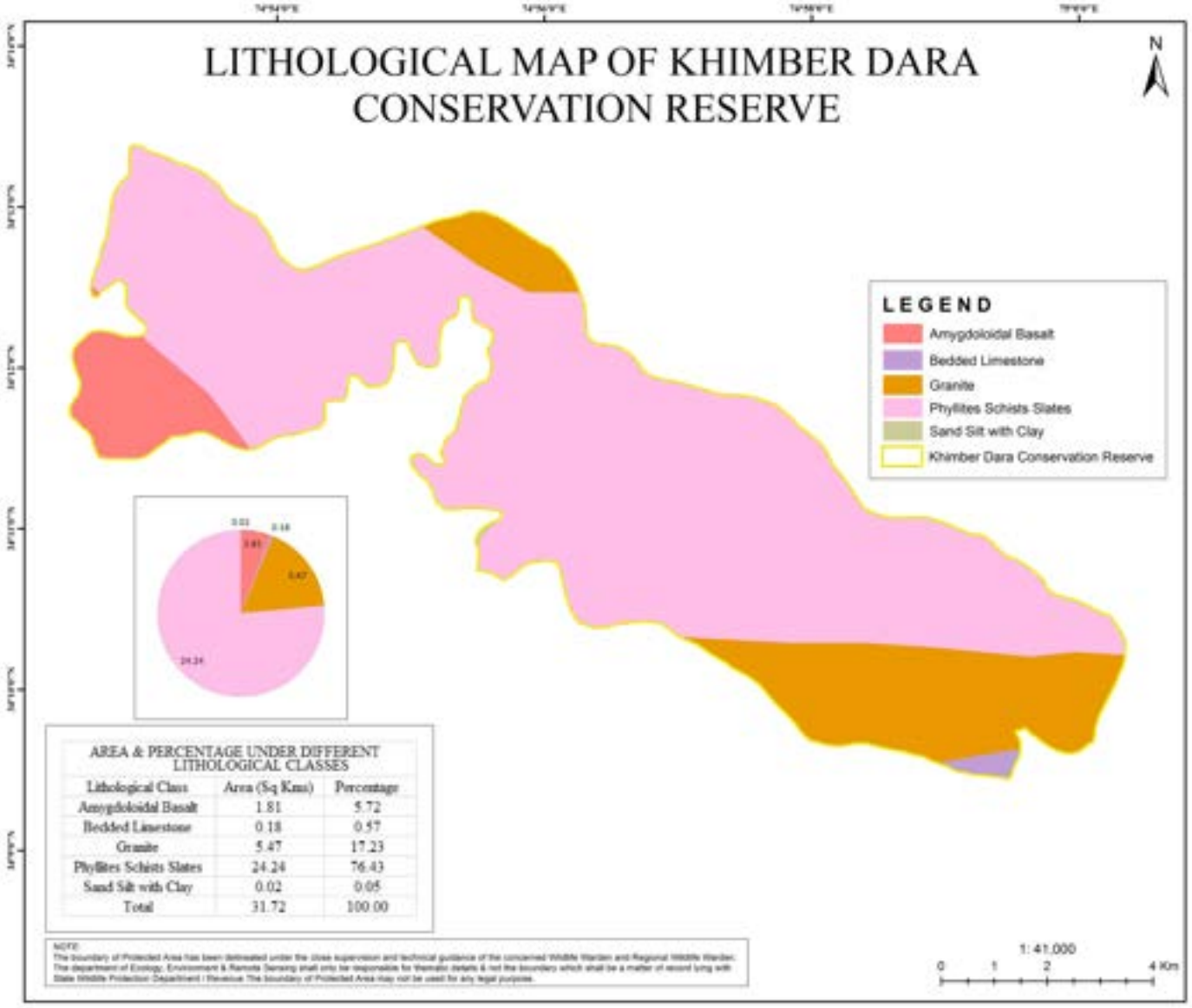
LITHOLOGICAL MAP OF KHIMBER DARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Amygdoloidal Basalt	1.81	5.72
Bedded Limestone	0.18	0.57
Granite	5.47	17.23
Phyllites Schists Slates	24.24	76.43
Sand Silt with Clay	0.02	0.05
Total	31.72	100.00

NOTE:
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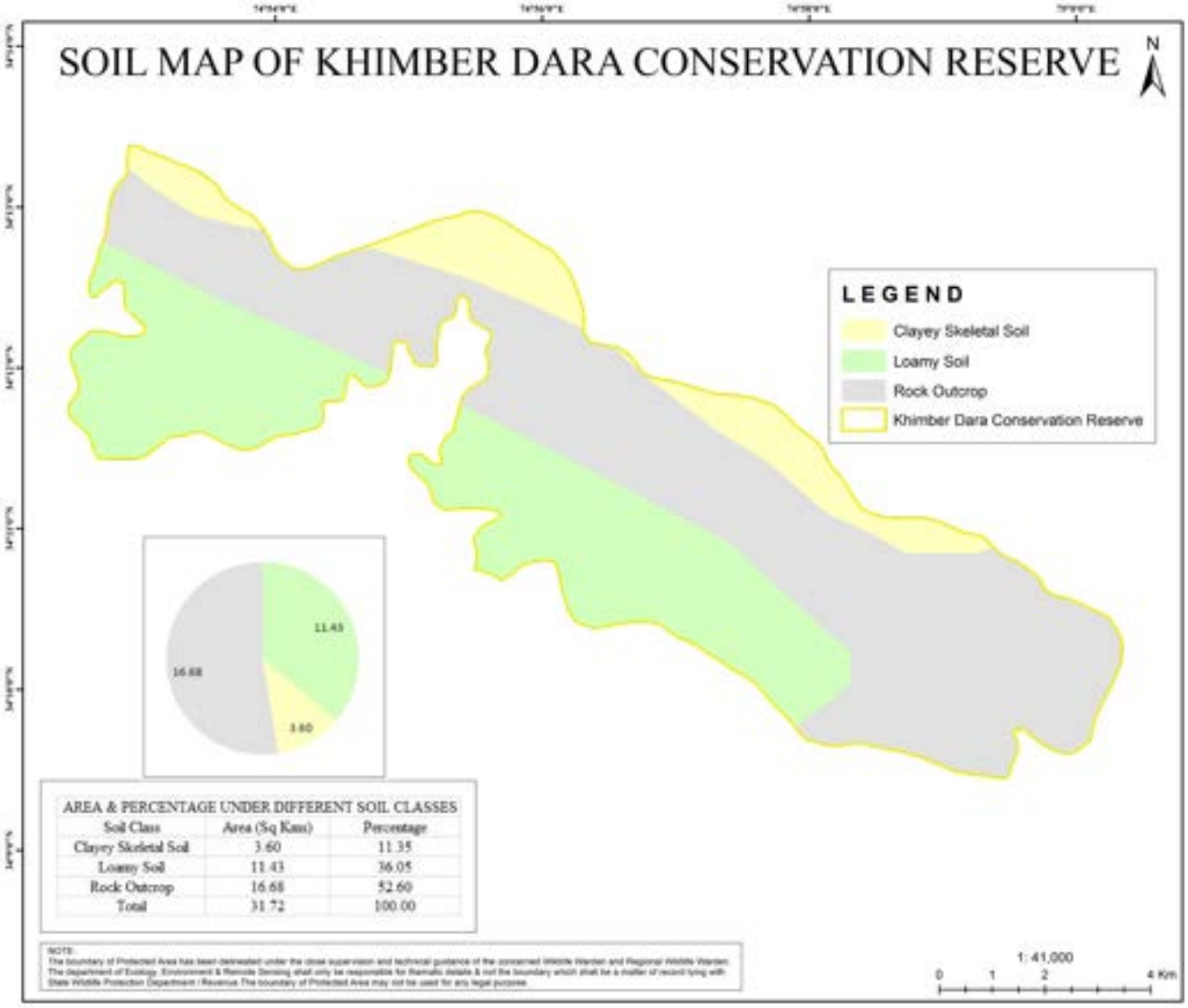
SOIL MAP OF KHIMBER DARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Clayey Skeletal Soil	3.60	11.35
Loamy Soil	11.43	36.05
Rock Outcrop	16.68	52.60
Total	31.72	100.00

NOTE:
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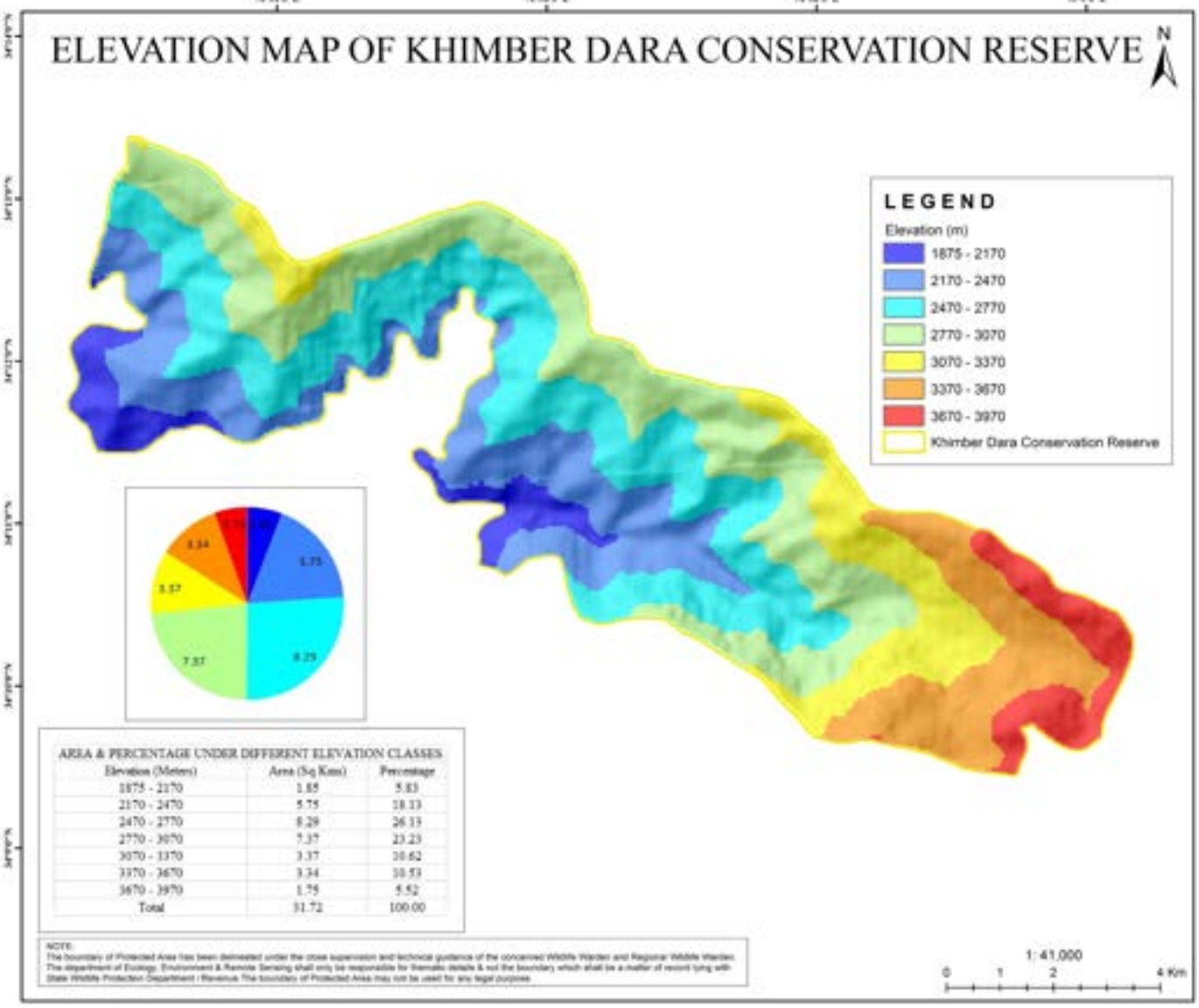
ELEVATION MAP OF KHIMBER DARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1875 - 2170	1.85	5.83
2170 - 2470	5.75	18.13
2470 - 2770	8.29	26.13
2770 - 3070	7.37	23.23
3070 - 3370	3.37	10.62
3370 - 3670	3.34	10.53
3670 - 3970	1.75	5.52
Total	31.72	100.00

NOTE:
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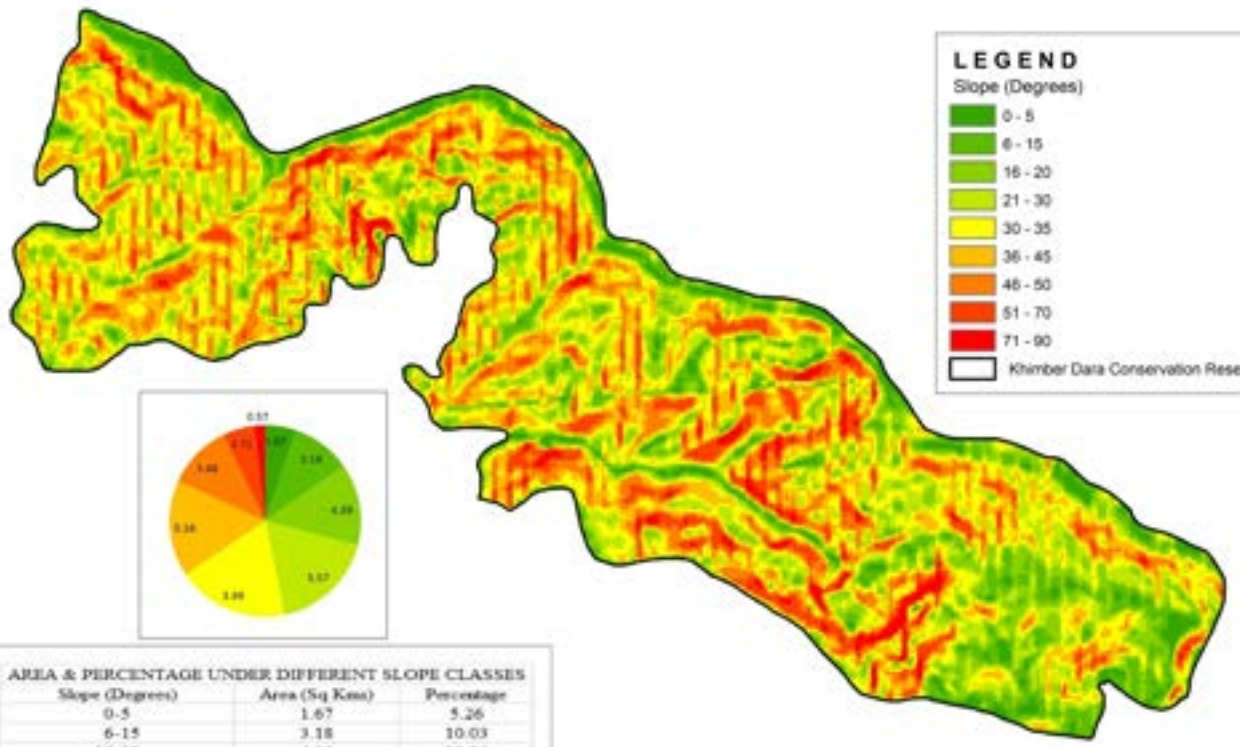
SLOPE MAP OF KHIMBER DARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	1.67	5.26
6-15	3.18	10.03
16-20	4.39	13.84
21-30	5.57	17.56
31-35	5.99	18.88
36-45	5.16	16.27
46-50	3.48	10.97
51-70	1.71	5.39
71-90	0.57	1.80
Total	31.72	100.00

NOTE:
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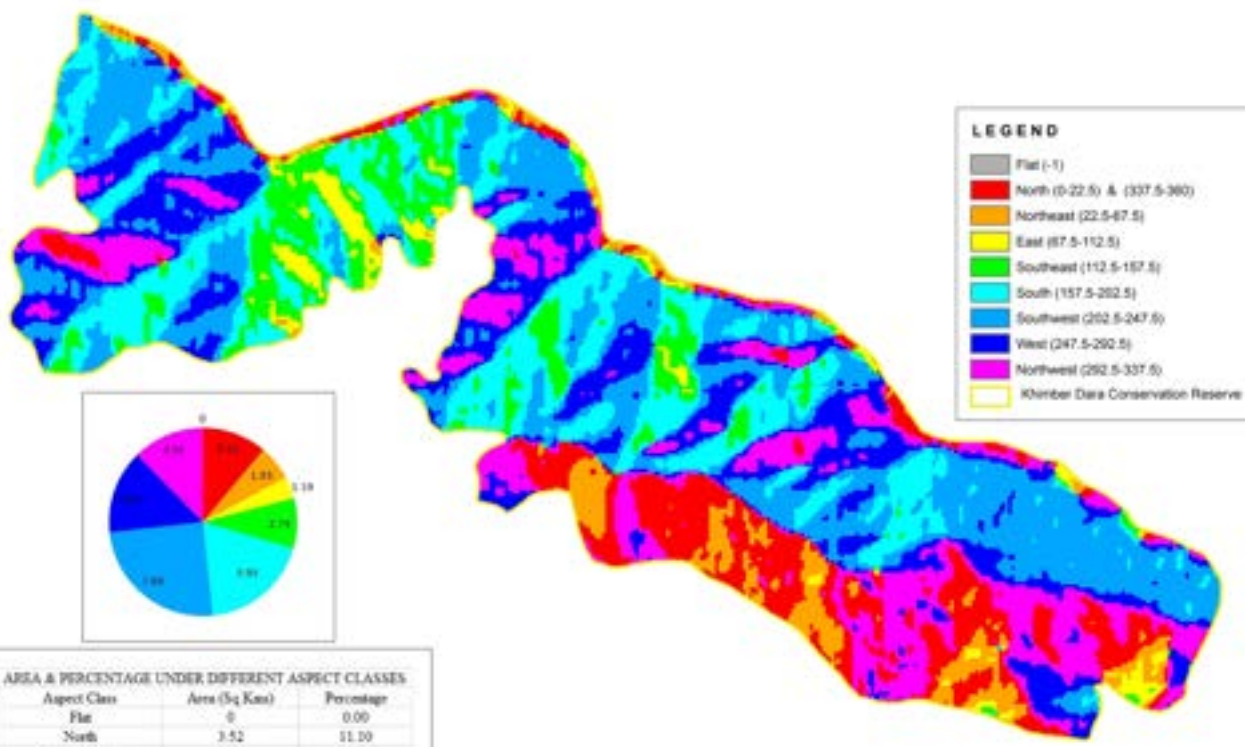
1: 41,000
0 1 2 4 Km

ASPECT MAP OF KHIMBER DARA CONSERVATION RESERVE



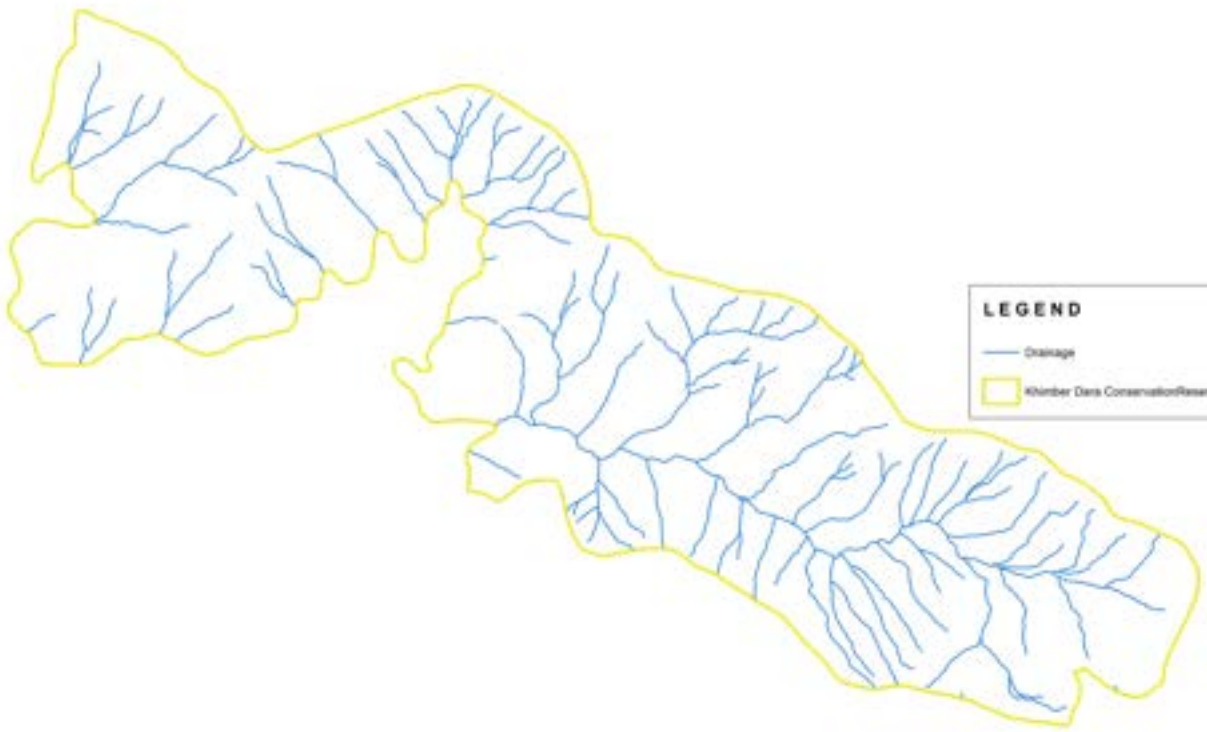
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0	0.00
North	3.52	11.10
Northeast	1.93	6.08
East	1.19	3.75
Southeast	2.74	8.64
South	5.95	18.76
Southwest	7.89	24.87
West	4.59	14.47
Northwest	3.91	12.33
Total	31.72	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

1: 41,000
0 1 2 4 Km

DRAINAGE MAP OF KHIMBER DARA CONSERVATION RESERVE



NOTE:
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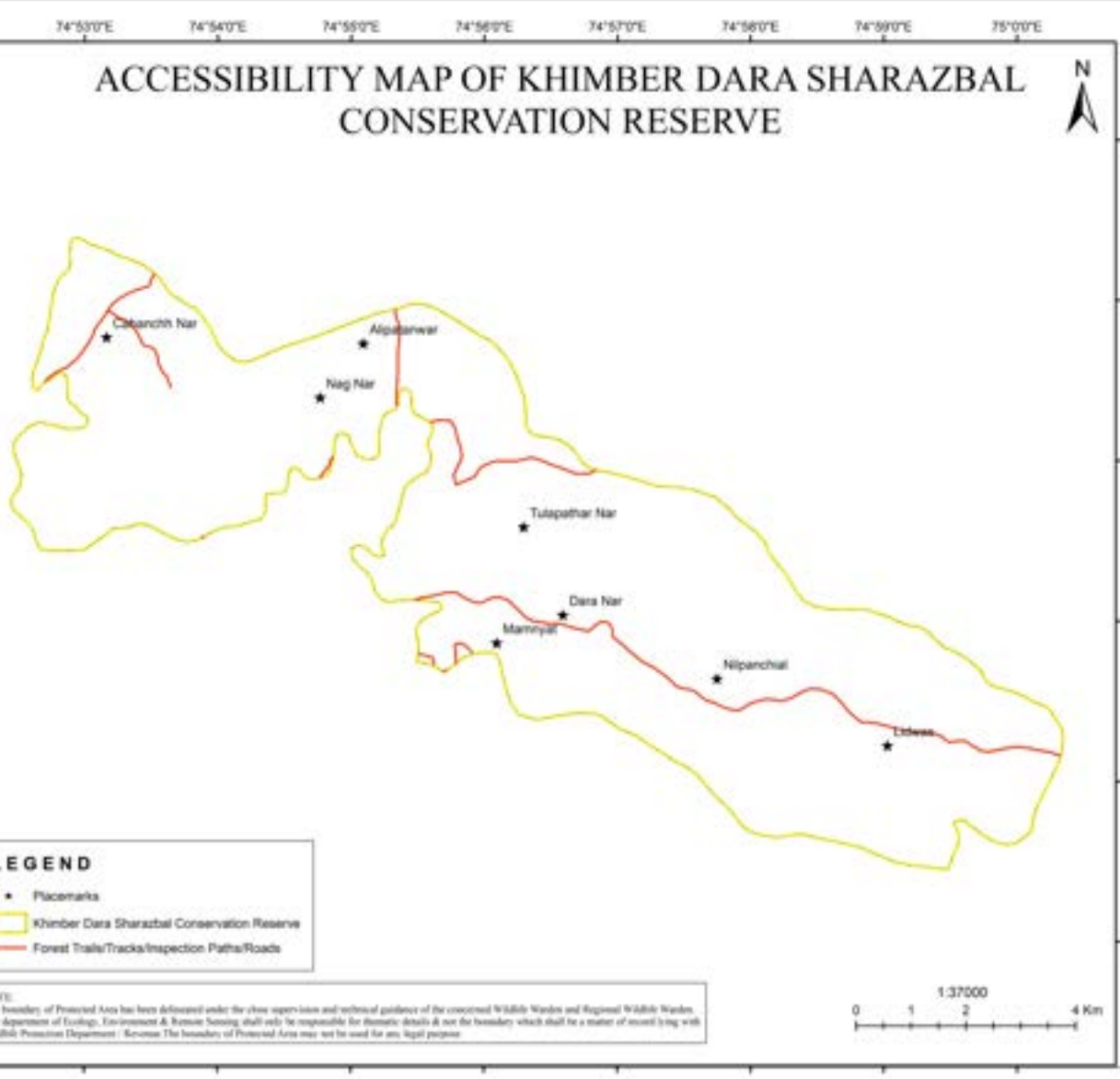
ACCESSIBILITY MAP OF KHIMBER DARA SHARAZBAL CONSERVATION RESERVE



NOTE:
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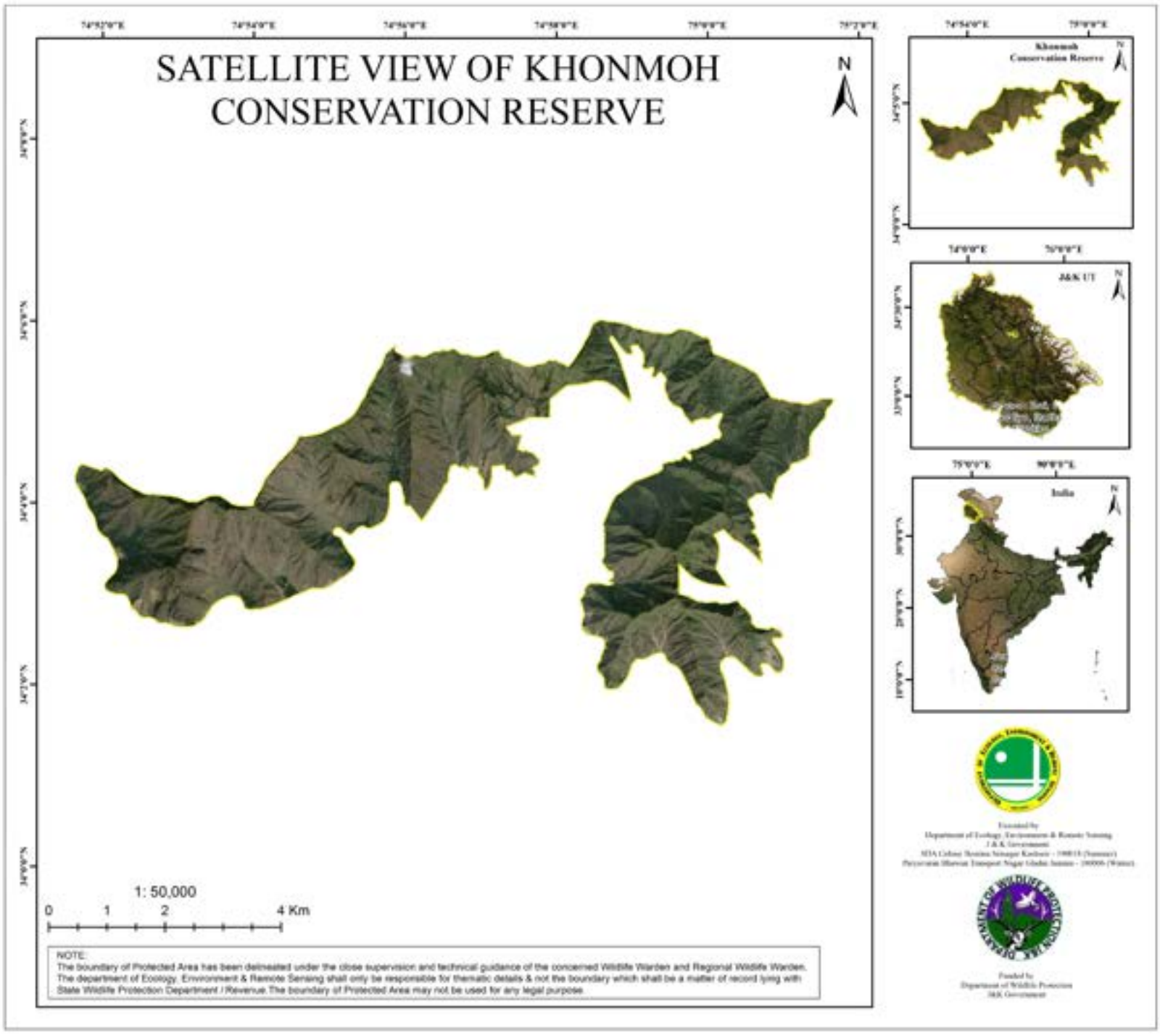


KHONMOH CONSERVATION RESERVE

The Khonmoh Conservation Reserve was notified in the year 1945 in order to conserve the rich biodiversity of the area. The Reserve supports wide variety of fauna and flora and is a part of Hungul Lanscape. The Protected Area shares boundary with Dachigam National Park in the north, in North West with Brein Nishat Conservation reserve and with Khrew Conservation reserve in the east.

SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 67.00 **GIS AREA** (KM2): 44.05
PERIMETER (KMS): 74.51
ALTITUDE RANGE (M): 1584 - 2924
GEO - COORDINATES:
34° 1.550′ N - 34° 6.018′ N, 74° 51.636′ E - 75° 1.675′ E

MAJOR FAUNA: Common Leopard (*Panthera pardus*), Kashmir Stag/Hangul (*Cervus hanglu*), Asiatic Black Bear (*Ursus thibetanus*), Himalayan Serow (*Capricornis thar*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*), Kashmir Grey Langur (*Semnopithecus Ajax*), Indian Jackal (*Canis aureus*).

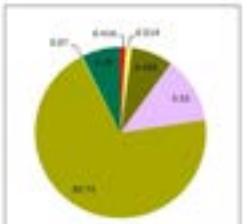
MAJOR AVI FAUNA: Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Himalayan Griffon Vulture (*Gyps himalayensis*), Black Eared kite (*Milvus migrans*), Kashmir Woodpecker (*Drybates himalayensis*), Indian Myna (*Acridotheres tristis*), White Cheeked Bulbul (*Pycnonotus leucogenys*), , house sparrow (*Passer domesticus*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan elm (*Ulmus wallichiana*), Parrotia (*Parrotiopsis jacquemontiana*),Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lyceum*), Himalayan rhubarb (*Rheum webbianum*), Indian Atees *(Aconitum heterophyllum)*.

VEGETATION MAP OF KHONMOH CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Builtup	0.42	0.94
Cropland	0.51	1.17
Dense Scrub	3.48	7.91
Juniper	5.55	12.61
Open Scrub	30.73	69.77
Plantation	0.07	0.17
Temperate Coniferous	3.28	7.44
Total	44.05	100.00



NOTE
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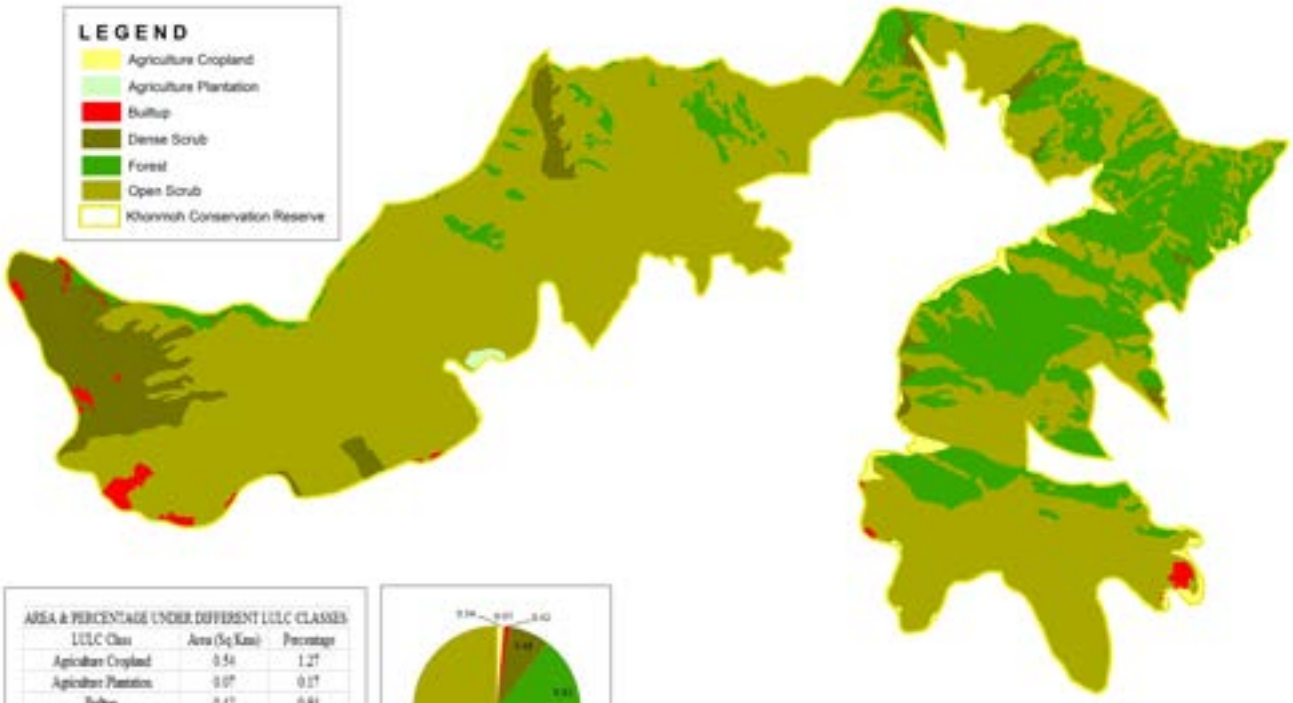
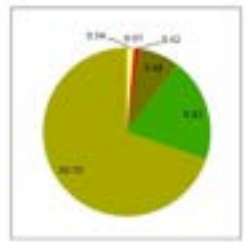
1: 50,000
0 1 2 4 Km

LAND USE LAND COVER MAP OF KHONMOH CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.54	1.27
Agriculture Plantation	0.07	0.17
Builtup	0.42	0.94
Forest	8.82	20.02
Dense Scrub	3.48	7.90
Open Scrub	30.70	69.70
Total	44.04	100.00



NOTE
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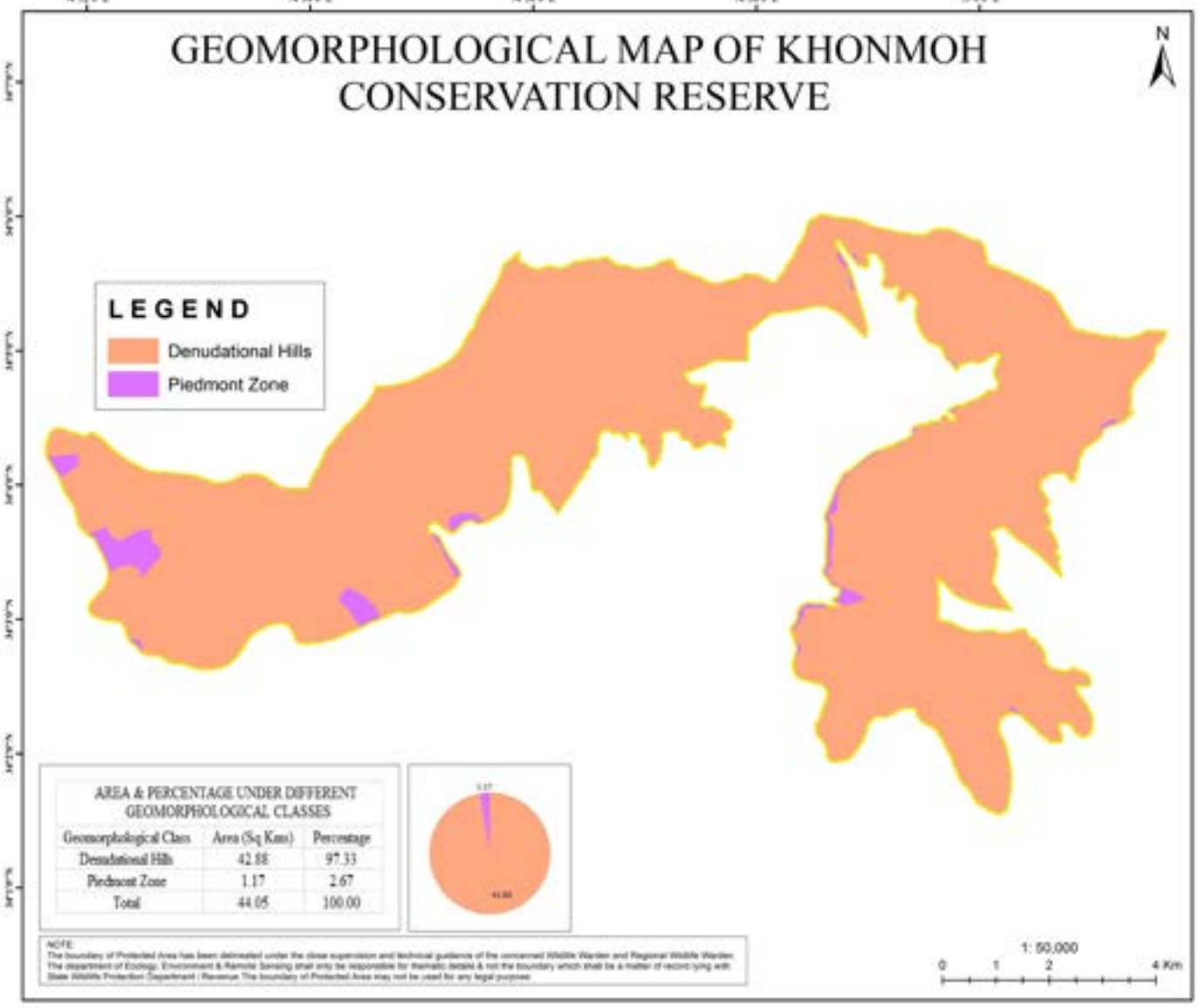
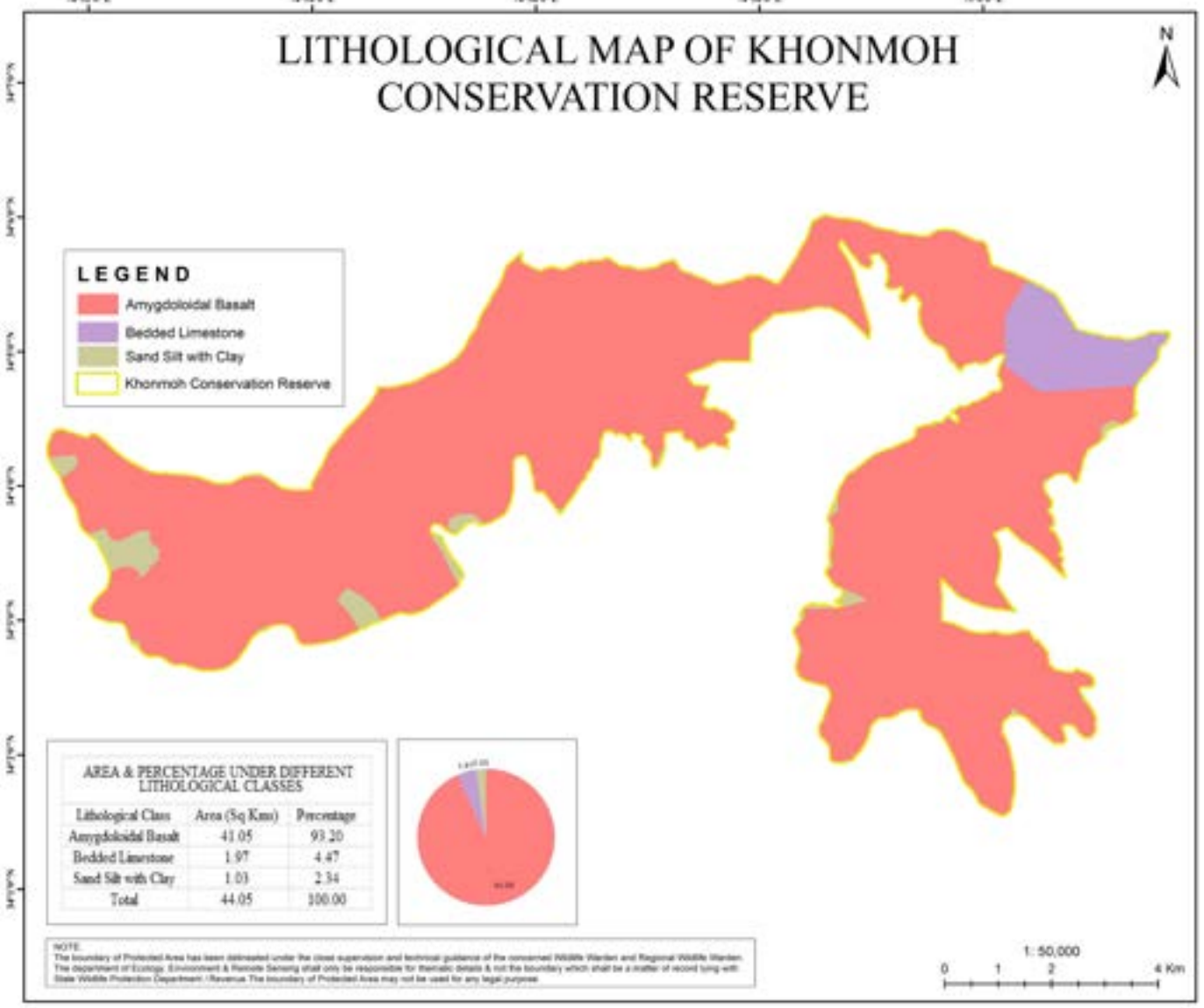
1: 50,000
0 1 2 4 Km

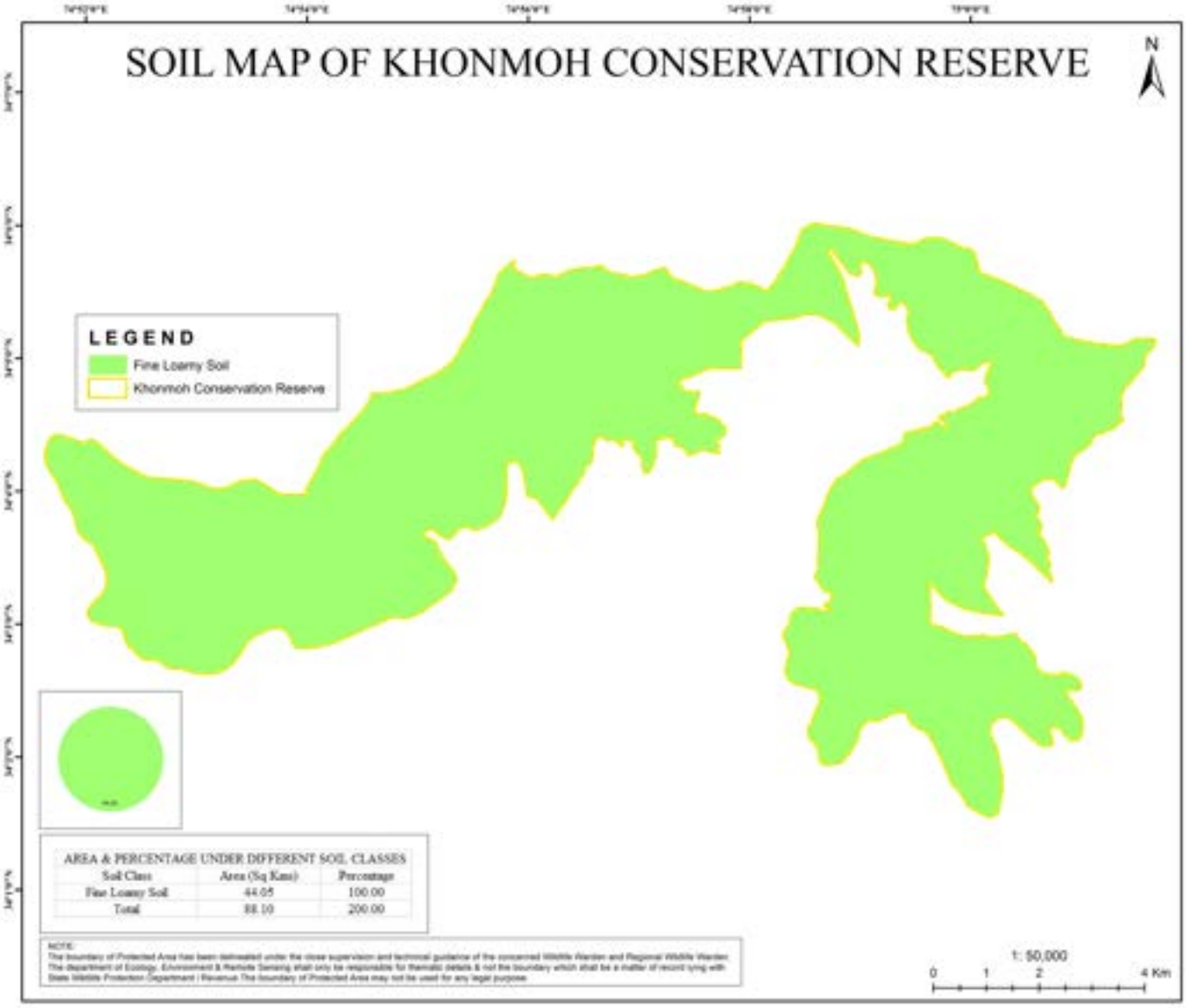
GEOMORPHOLOGICAL MAP OF KHONMOH CONSERVATION RESERVE



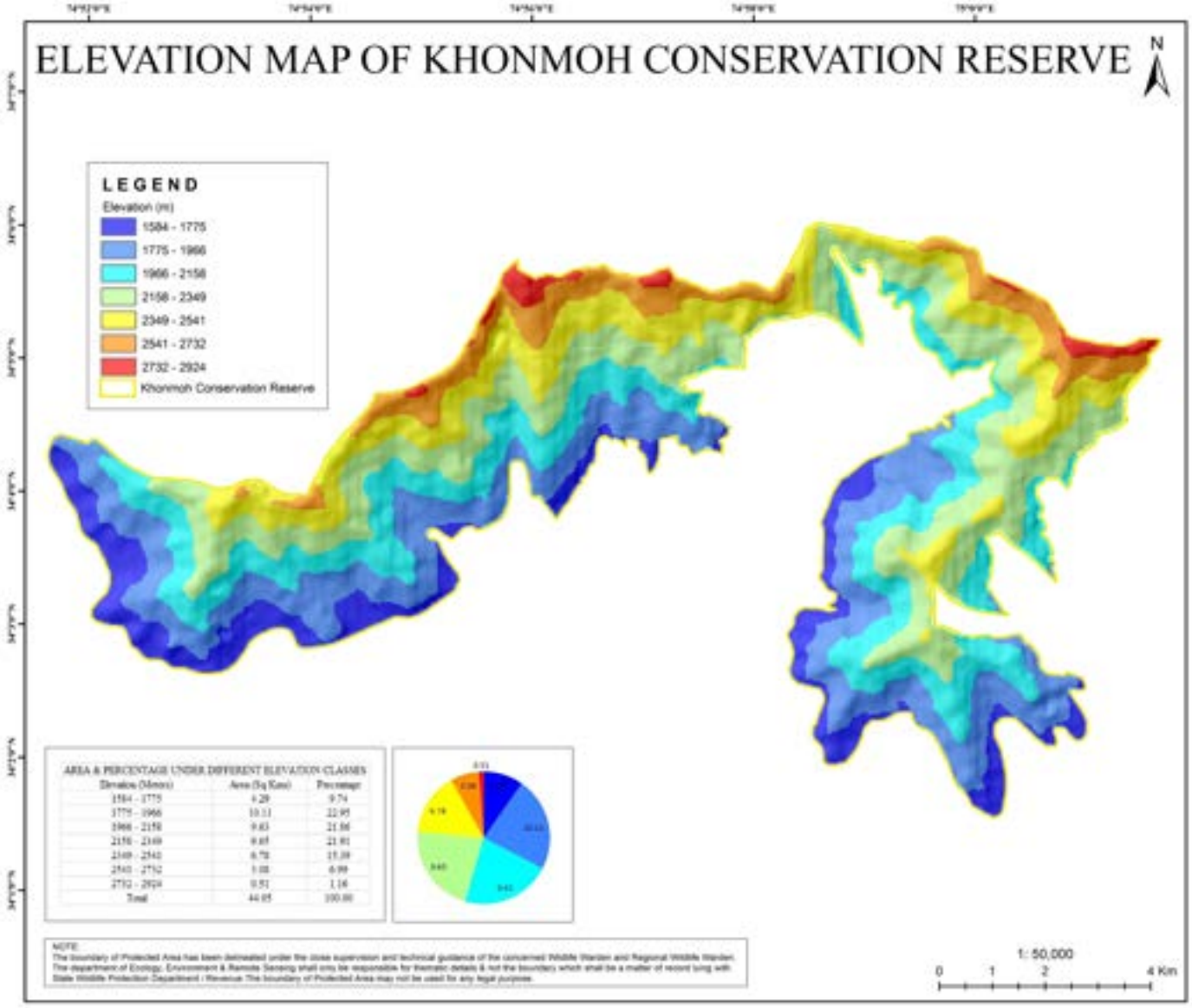
LITHOLOGICAL MAP OF KHONMOH CONSERVATION RESERVE



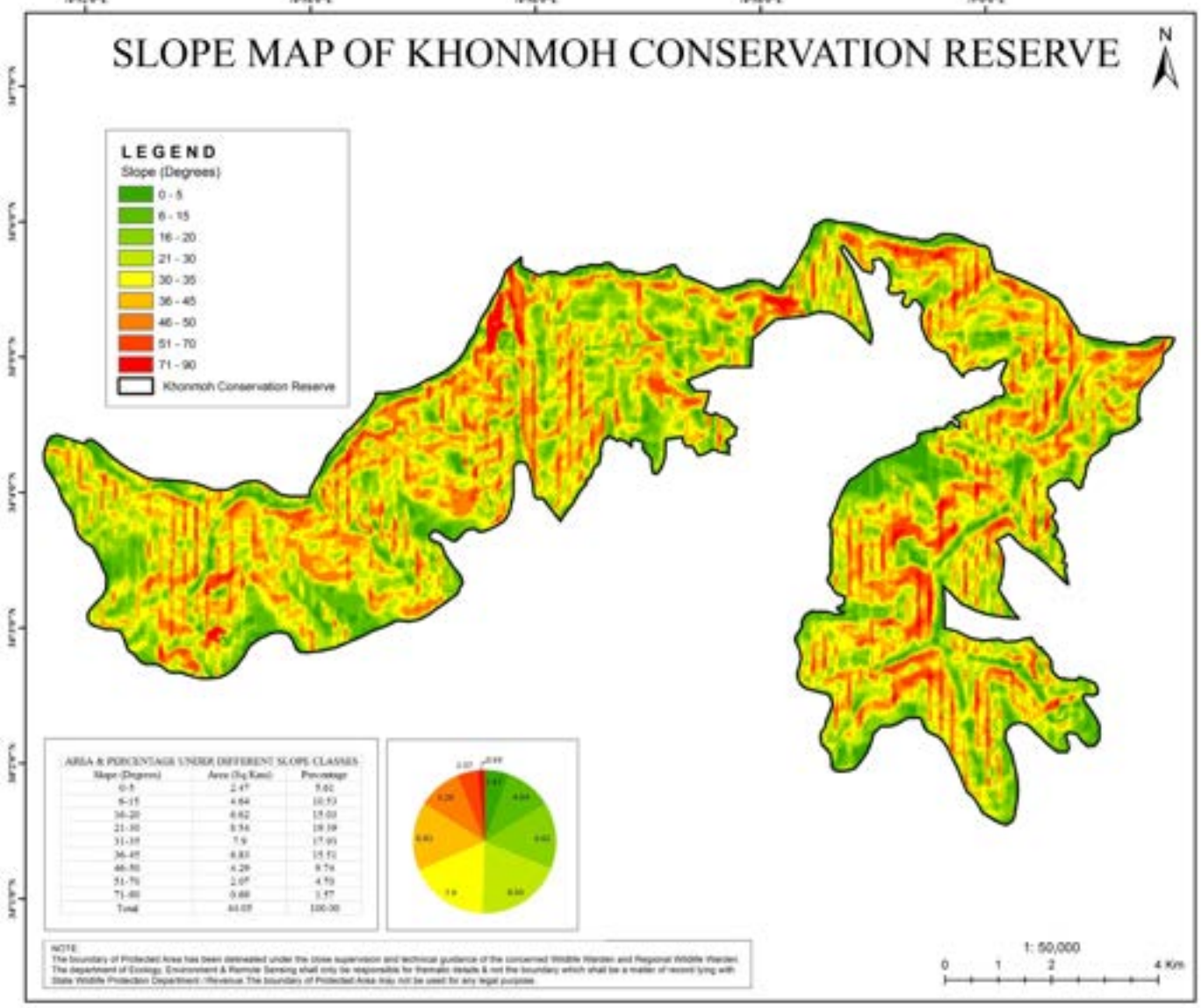
SOIL MAP OF KHONMOH CONSERVATION RESERVE



ELEVATION MAP OF KHONMOH CONSERVATION RESERVE



SLOPE MAP OF KHONMOH CONSERVATION RESERVE

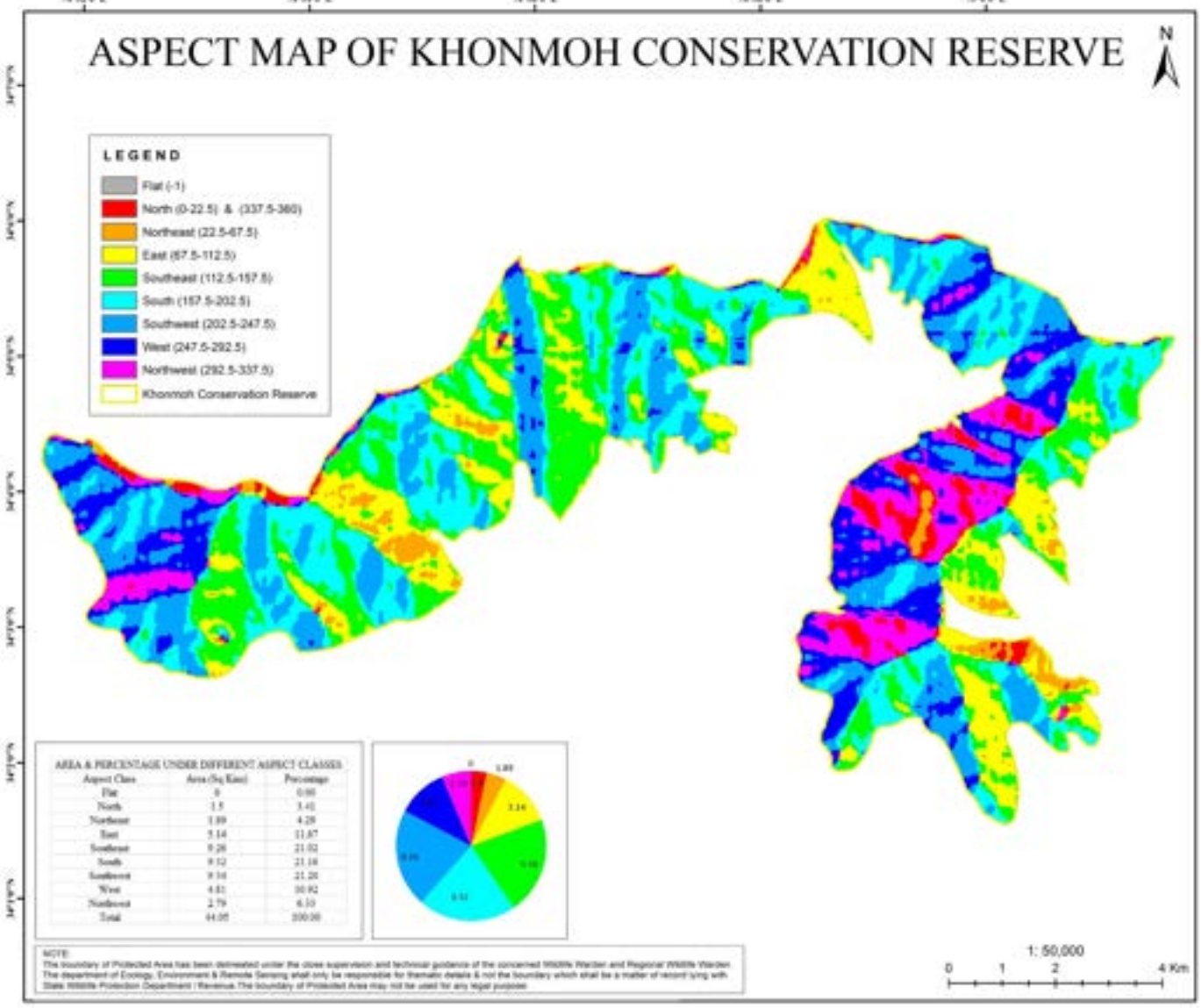


AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq.Kms)	Percentage
0-5	2.47	5.61
6-15	4.64	10.53
16-20	6.62	15.03
21-30	8.54	19.39
31-35	7.5	17.03
36-45	6.83	15.51
46-50	4.29	9.74
51-70	2.07	4.70
71-90	0.68	1.57
Total	44.05	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

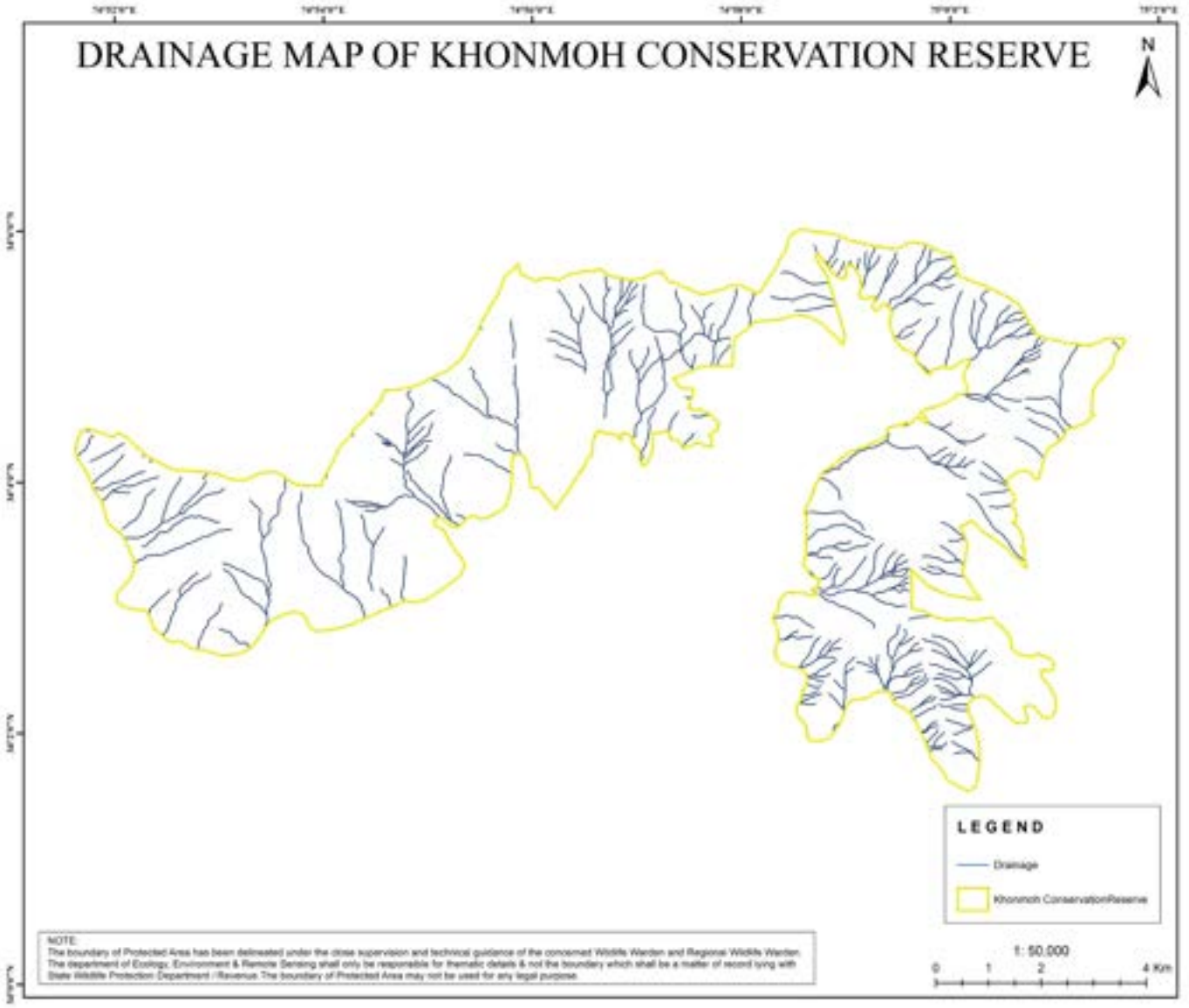
ASPECT MAP OF KHONMOH CONSERVATION RESERVE

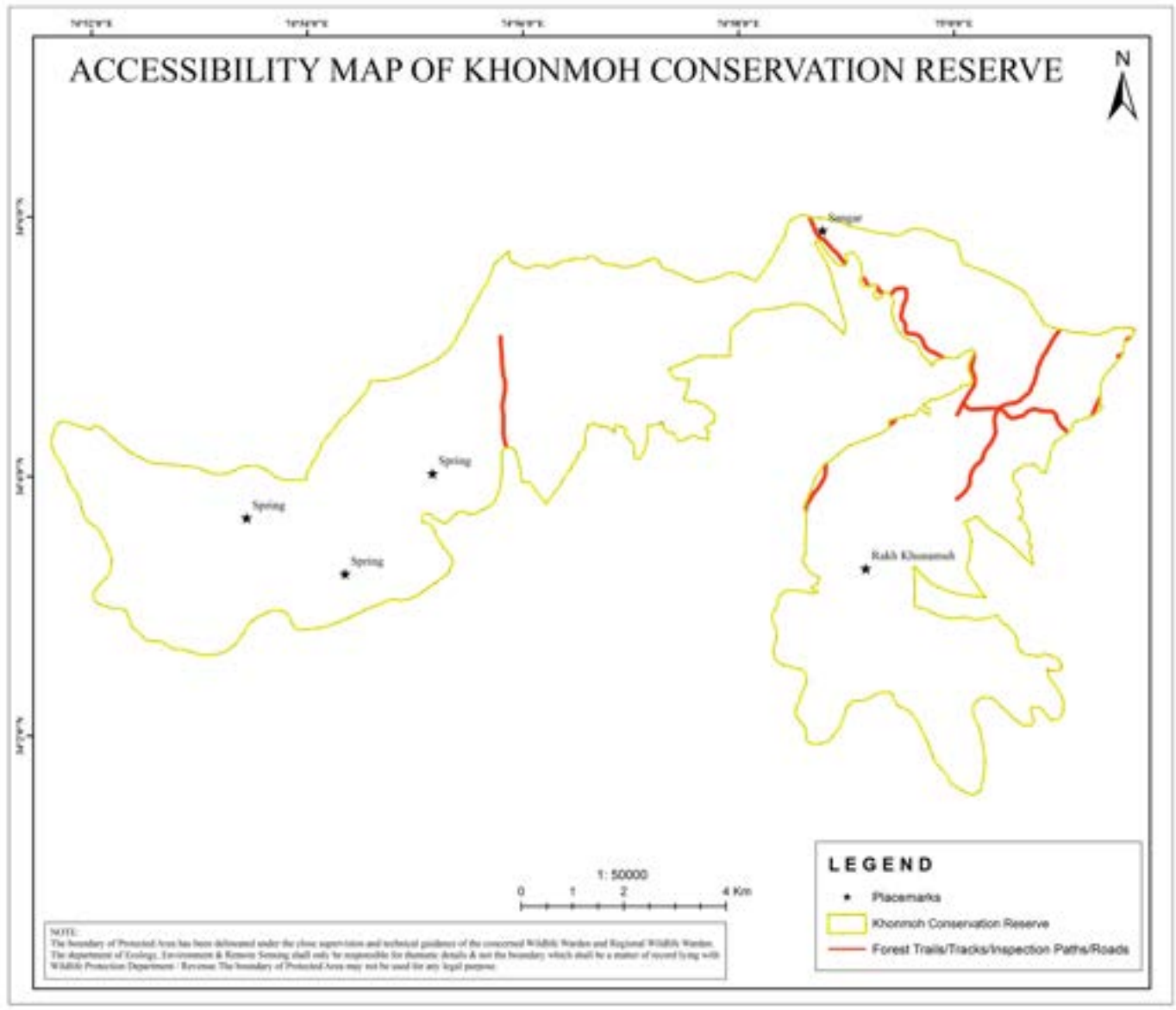


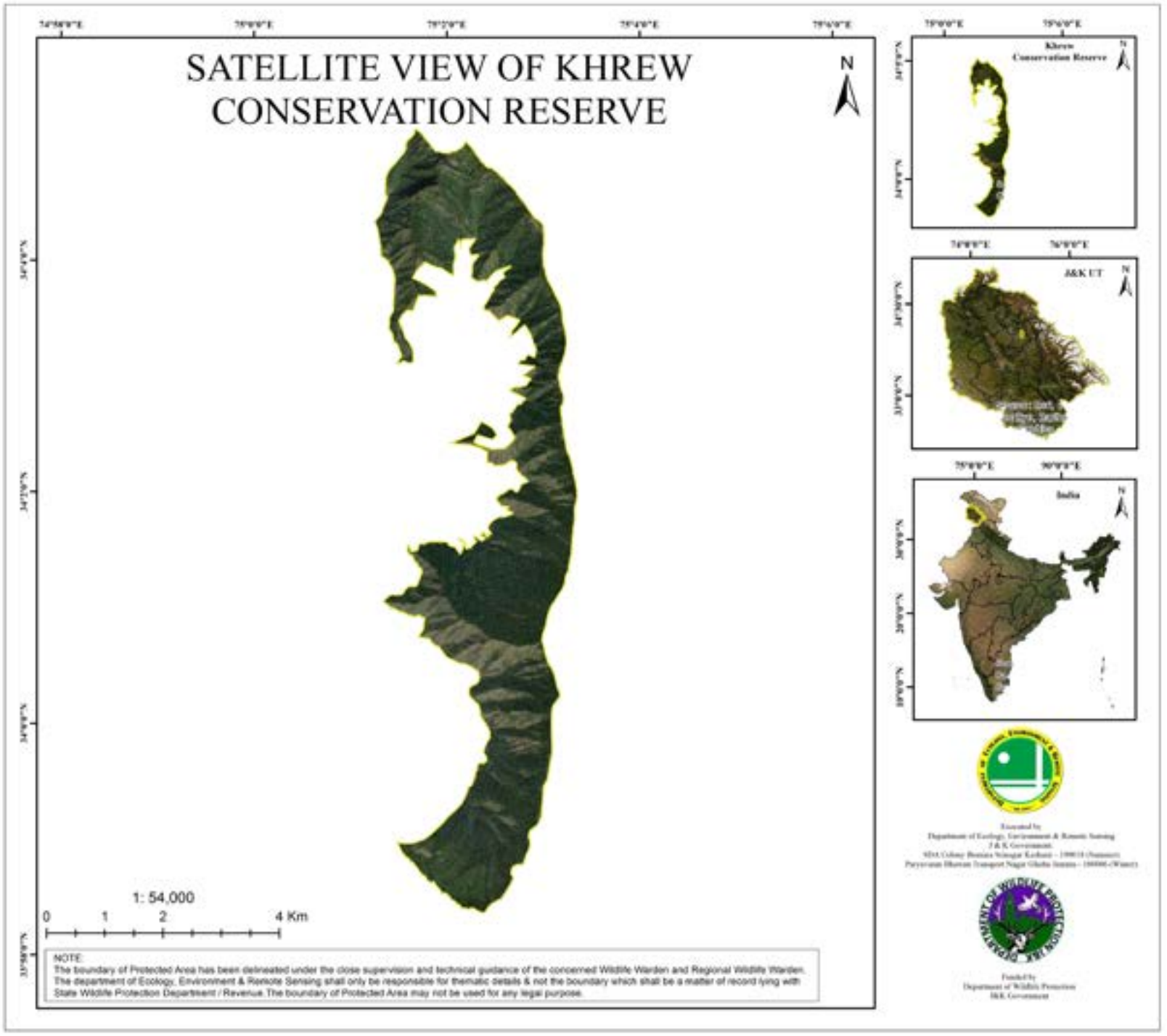
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq.Kms)	Percentage
Flat	0	0.00
North	1.5	3.41
Northeast	1.89	4.29
East	5.14	11.67
Southeast	9.26	21.02
South	9.12	21.14
Southwest	9.16	21.20
West	4.81	10.92
Northwest	2.79	6.33
Total	44.05	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF KHONMOH CONSERVATION RESERVE
N
LEGEND
Drainage
Khonmoh ConservationReserve
NOTE:
1: 50,000
0 1 2 4 Km


ACCESSIBILITY MAP OF KHONMOH CONSERVATION RESERVE
N
Spring
Spring
Spring
Rakh Khonmoh
1: 50000
0 1 2 4 Km
LEGEND
Placemarks
Khonmoh Conservation Reserve
Forest Trails/Tracks/Inspection Paths/Roads



KHREW CONSERVATION RESERVE

Khrew Conservation Reserve was notified in the year 1945 due to the presence of rich flora and fauna. In the east it shares boundary with Tral wildlife sanctuary, in the north with Dachigam national Park and in North West it shares boundary with Khonmoh Conservation Reserve. It is also part of Hangul landscape.

SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 50.25 **GIS AREA** (KM2): 18.21
PERIMETER (KMS): 47.93
ALTITUDE RANGE (M): 1656 – 3110
GEO - COORDINATES:
33° 58.358′ N - 34° 5.140′ N, 75° 1.334′ E - 75° 3.354′ E

MAJOR FAUNA: Common Leopard (*Panthera pardus*), Kashmir Stag/Hangul (*Cervus hanglu*), Asiatic Black Bear (*Ursus thibetanus*), Himalayan Serow (*Capricornis thar*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*), Kashmir Grey Langur (*Semnopithecus Ajax*), Indian Jackal (*Canis aureus*).

MAJOR AVI FAUNA: Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Himalayan Griffon Vulture (*Gyps himalayensis*), Black Eared kite (*Milvus migrans*), The pied Woodpecker (*Drybates himalayensis*), Indian Myna (*Acridotheres tristis*), White Cheeked Bulbul (*Pycnonotus leucogenys*), house sparrow (*Passer domesticus*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan elm (*Ulmus wallichiana*), Parrotia (*Parrotiopsis jacquemontiana*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lyceum*), Himalayan rhubarb (*Rheum webbianum*), Indian Atees *(Aconitum heterophyllum)*.

LAND USE LAND COVER MAP OF KHREW CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.15	0.85
Agriculture Plantation	0.01	0.05
Barren Rocky	0.80	4.37
Builtup	0.00	0.05
Forest	13.21	72.47
Dense Scrub	0.13	0.74
Grassland & Grazing land	0.07	0.39
Open Scrub	3.83	21.08
Total	18.21	100.00

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Agriculture Cropland
- Agriculture Plantation
- Barren Rocky
- Builtup
- Dense Scrub
- Forest
- Grassland & Grazing land
- Open Scrub
- Khrew Conservation Reserve

1: 54,000
0 1 2 4 Km

VEGETATION MAP OF KHREW CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Cropland	0.15	0.85
Plantation	0.01	0.05
Barren Land	0.80	4.37
Builtup	0.00	0.05
Juniper	13.21	72.47
Dense Scrub	0.13	0.74
Moist Alpine Pasture	0.07	0.39
Open Scrub	3.83	21.08
Total	18.21	100.00

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Barren Land
- Builtup
- Cropland
- Dense Scrub
- Open Scrub
- Juniper
- Moist Alpine Pasture
- Plantation
- Khrew Conservation Reserve

1: 54,000
0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF KHREW CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	18.08	99.29
Piedmont Zone	0.13	0.71
Total	18.21	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department /Revenue.The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Denudational Hills
- Piedmont Zone
- Khrew Conservation Reserve

1: 54,000
0 1 2 4 Km

LITHOLOGICAL MAP OF KHREW CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Amygdoloidal Basalt	2.16	11.80
Bedded Limestone	10.66	58.62
Phyllites Schists Slates	5.32	29.21
Sand Silt with Clay	0.07	0.37
Total	18.21	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department /Revenue.The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Amygdoloidal Basalt
- Bedded Limestone
- Phyllites Schists Slates
- Sand Silt with Clay
- Khrew Conservation Reserve

1: 54,000
0 1 2 4 Km

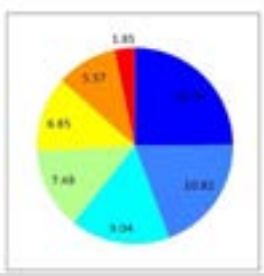
SOIL MAP OF KHREW CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	18.21	100.00
Total	18.21	100.00

LEGEND
- Fine Loamy Soil
- Khrew Conservation Reserve

1: 54,000
0 1 2 4 Km

ELEVATION MAP OF KHREW CONSERVATION RESERVE

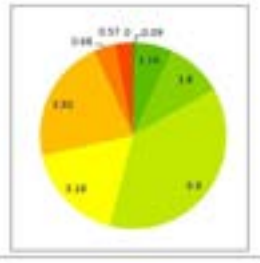


AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES		
Elevation (Meters)	Area (Sq Kms)	Percentage
1656 - 1863	1.31	7.19
1863 -2071	3.92	21.53
2071 - 2279	5.65	31.03
2279 - 2486	4.98	27.35
2486 - 2694	1.86	10.21
2694 - 2902	0.4	2.20
2902 - 3110	0.09	0.49
Total	18.21	100.00

LEGEND
Elevation (m)
- 1656 - 1863
- 1863 -2071
- 2071 - 2279
- 2279 - 2486
- 2486 - 2694
- 2694 - 2902
- 2902 - 3110
- Khrew Conservation Reserve

1: 54,000
0 1 2 4 Km

SLOPE MAP OF KHREW CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	0.09	0.49
6-15	1.16	6.37
16-20	1.8	9.88
21-30	6.8	37.34
31-35	3.18	17.46
36-45	3.93	21.58
46-50	0.68	3.73
51-70	0.57	3.13
71-90	0	0.00
Total	18.21	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
Slope (Degrees)
- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Khrew Conservation Reserve

1: 54,000
0 1 2 4 Km

ASPECT MAP OF KHREW CONSERVATION RESERVE

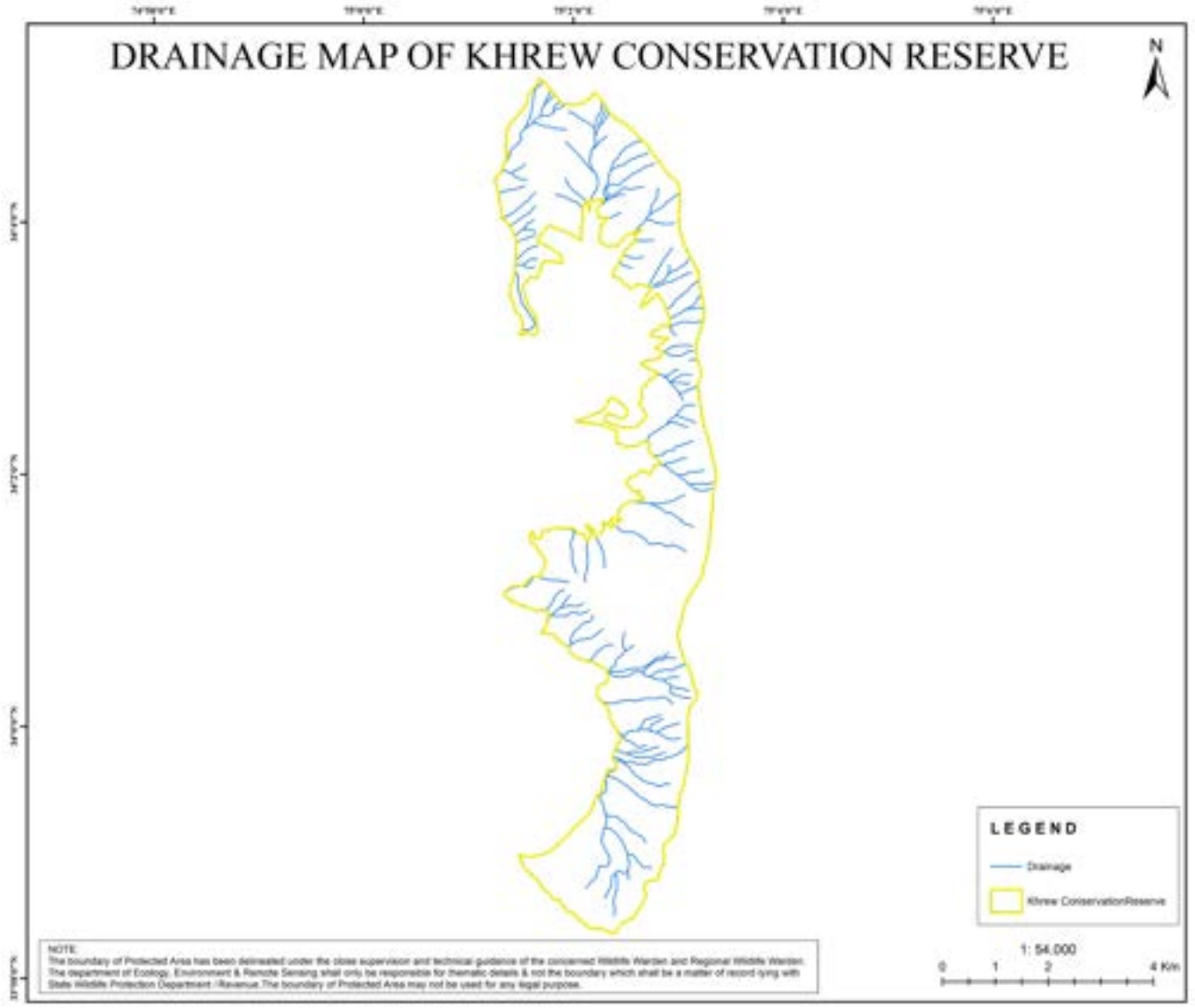
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

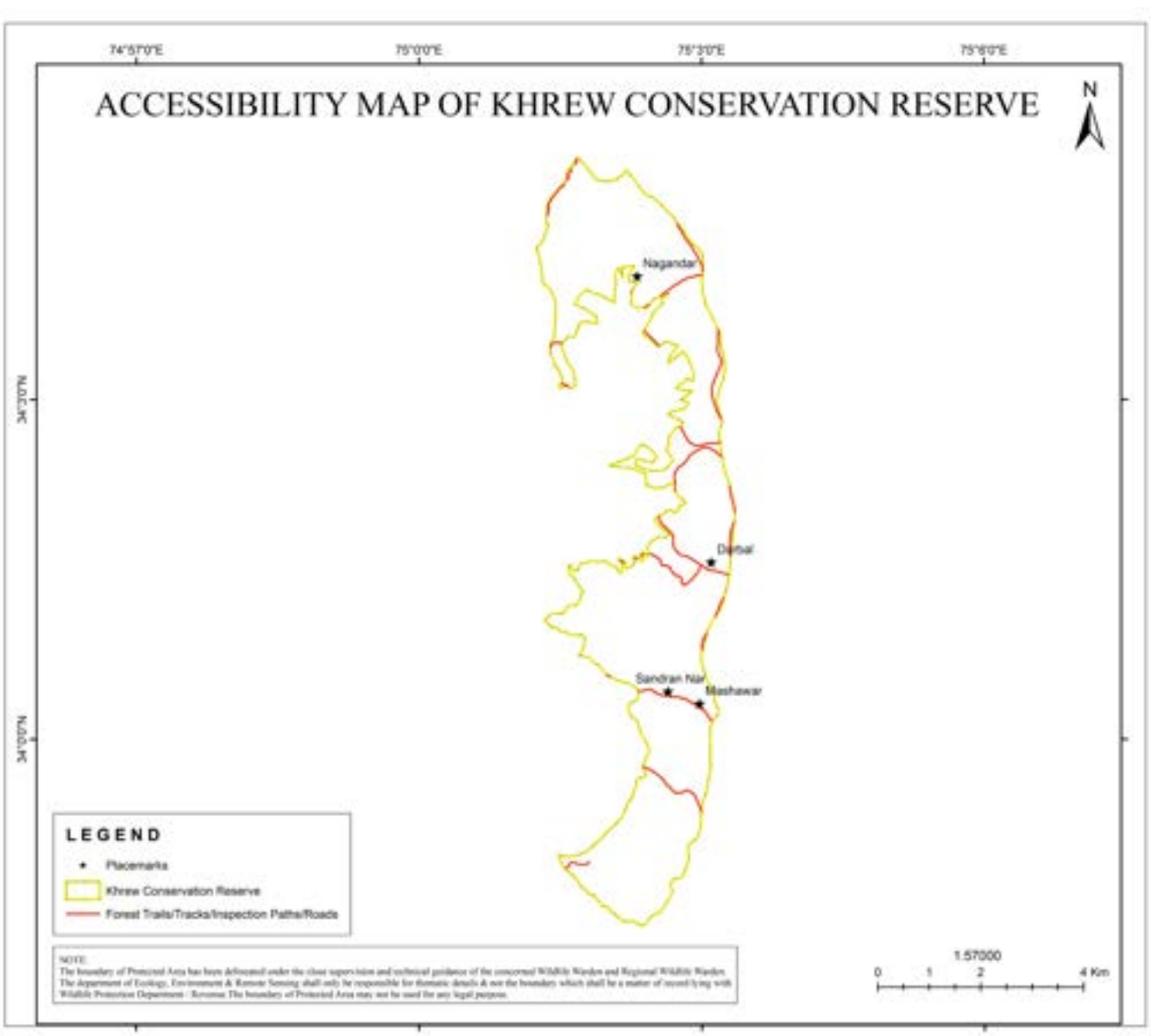
Aspect Class	Area (Sq Kms)	Percentage
Flat	0	0.00
North	2.49	13.67
Northeast	0.7	3.84
East	0.43	2.36
Southeast	0.69	3.79
South	1.77	9.72
Southwest	3.78	20.76
West	5.06	27.79
Northwest	3.29	18.07
Total	18.21	100.00

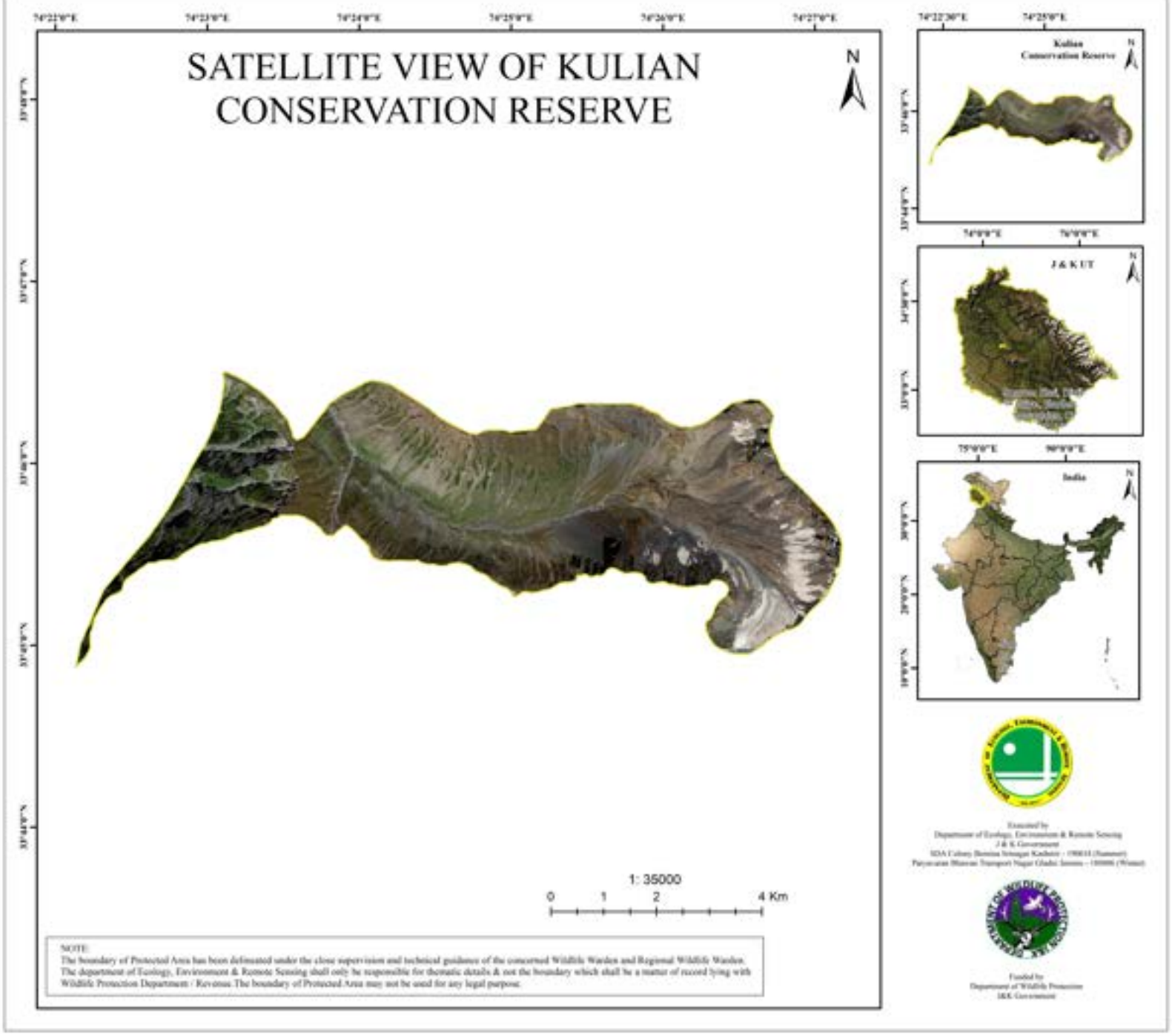
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Khrew Conservation Reserve

1: 54,000
0 1 2 4 Km


DRAINAGE MAP OF KHREW CONSERVATION RESERVE
N
LEGEND
Drainage
Khrew ConservationReserve
NOTE
1: 54,000
0 1 2 4 K/m


ACCESSIBILITY MAP OF KHREW CONSERVATION RESERVE
N
Nagandar
Dansal
Sandran Nar
Mashawar
LEGEND
Placemarks
Khrew Conservation Reserve
Forest Trails/Tracks/Inspection Paths/Roads
1:57000
0 1 2 4 Km



KULIAN CONSERVATION RESERVE

The Kulian Conservation Reserve is Located in Pounch district of Jammu & Kashmir and is named after the village Kullian. It was notified in 2011. The area harbors rich biodiversity and shall be managed for protection, preservation and improvement of the same.

SRO/NOTIFICATION NO: Taken over as per J&K Game Preservation Act 1998 (1942 AD)
NOTIFIED AREA (KM2): 10.29 **GIS AREA** (KM2): 10.82
PERIMETER (KMS): 22.31
ALTITUDE RANGE (M): 2778 – 4583
GEO - COORDINATES: 33° 44.878′ N - 33° 46.510′ N, 74° 22.157′ E - 74° 27.199′ E

MAJOR FAUNA: Indian Porcupine (*Hystrix indica*), Indian Hare (*Lepus nigricollis*), Rhesus Monkey (*Macaca mulatta*), Red Fox (*Vulpus Vulpus*). Himalayan goral (*Nemorhaedus goral*), Markhor (*Capra falconeri*), Common Leopard (*Panthera pardus*), Himalayan Brown Bear (*Ursus artos*), Himalayan Black Bear (*Ursus thibetanus*), Indian Jackal (*Canis aureus*).

MAJOR AVI FAUNA: Baya or Weaver bird (*Ploceus philippinus*), Booted eagle (*Hieraaetus pennatus*), Golden eagle (*Aquila chrysaetos*), Griffon Vulture (*Gyps fulvus*), Himalayan Snowcock (*Tetraogallus himalayans*), Western tragopan (*Tragopan melanocephalus*), Grey francolin (*Francolinus pondicerianus*), Eagle owl (*Bubo bubo*), Talor Bird (*Stigmatopelia chinensis*), Blue Rock Pigeon (*Columba livia*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Veined-Leaf Viburnum (*Viburnum nervosum*), Deadly nightshade (*Atropa*), Himalayan Mayapple (*Podophyllum hexandrum*), Peacock Flower (*Caesalpinia pulcherrima*), Native bryony or striped cucumber (*Diplocyclos palmatus*), Blue sage (*Eranthemum pulchellum*).

LAND USE LAND COVE MAP OF KULIAN CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Barren Rocky	4.63	42.80
Forest	1.50	13.82
Snow/Glacial	4.69	43.39
Total	10.82	100.00

1: 35,000
0 1 2 4 Km

LEGEND
- Barren Rocky
- Forest
- Snow/Glacial
- Kulian Conservation Reserve

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF KULIAN CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

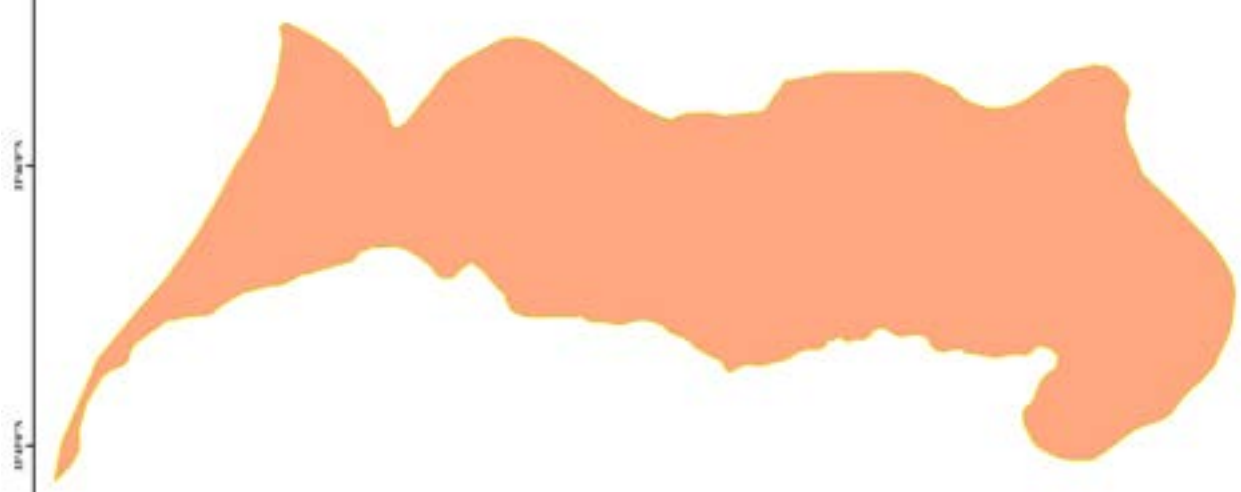
Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	4.63	42.84
Deodar	1.49	13.75
Snow	4.70	43.41
Total	10.82	100.00

1: 35,000
0 1 2 4 Km

LEGEND
- Barren Land
- Deodar
- Snow
- Kulian Conservation Reserve

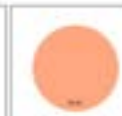
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF KULIAN CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	10.82	100.00
Total	10.82	100.00

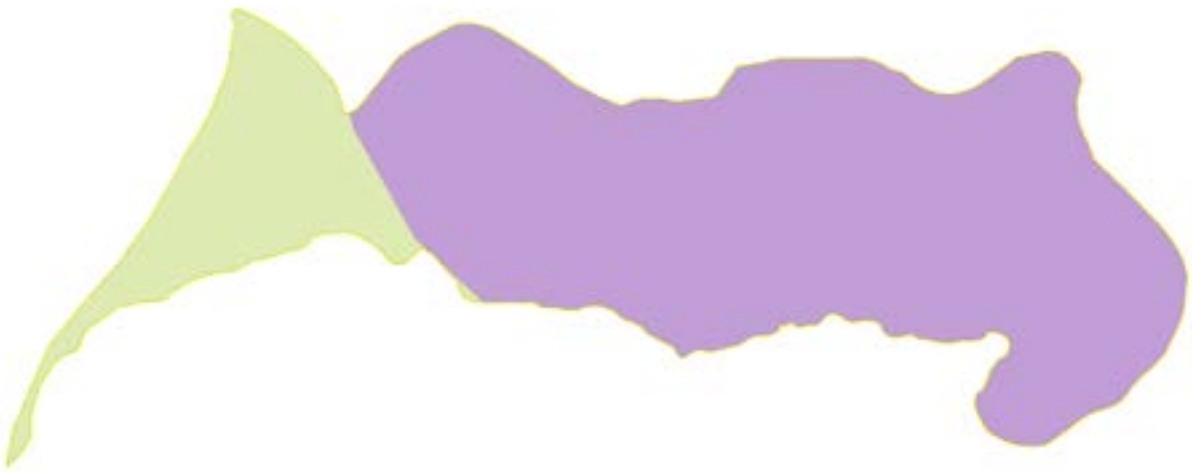


1: 35,000
0 1 2 4 Km

LEGEND
- Denudational Hills
- Kulian Conservation Reserve

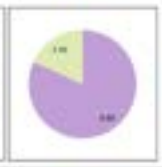
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

LITHOLOGICAL MAP OF KULIAN CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	8.86	81.84
Sand Clay Beds	1.96	18.16
Total	10.82	100.00

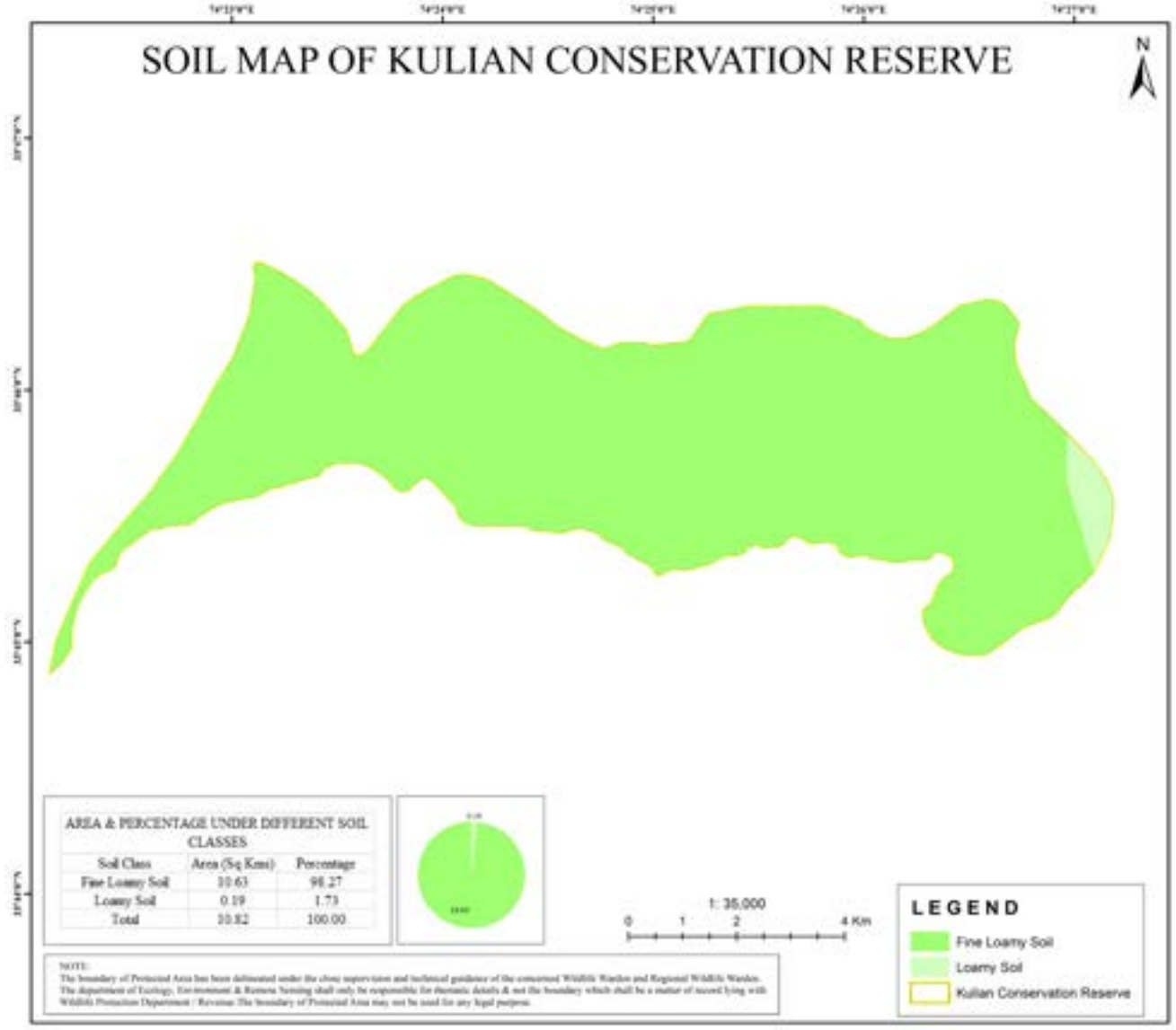


1: 35,000
0 1 2 4 Km

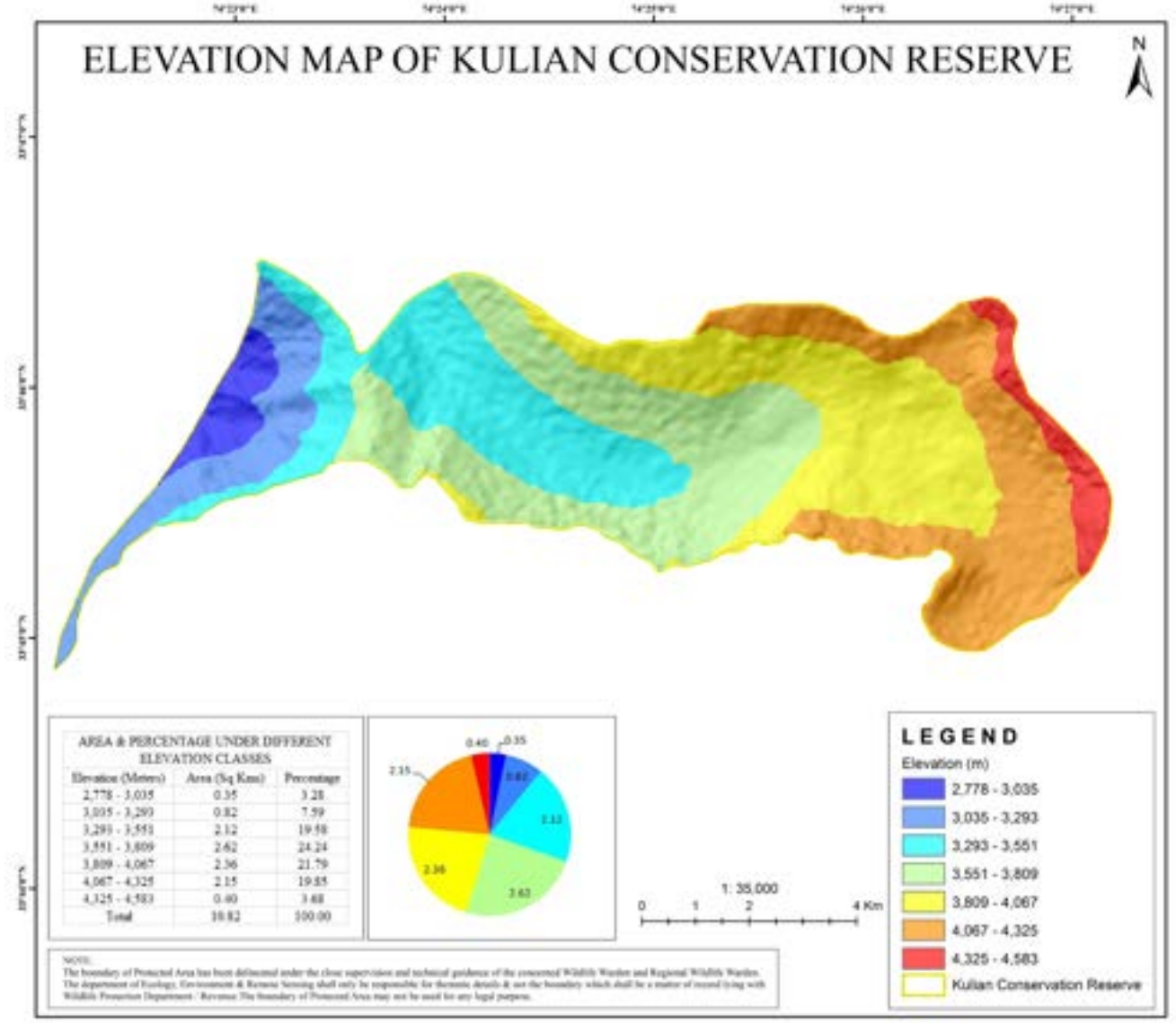
LEGEND
- Bedded Limestone
- Sand Clay Beds
- Kulian Conservation Reserve

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

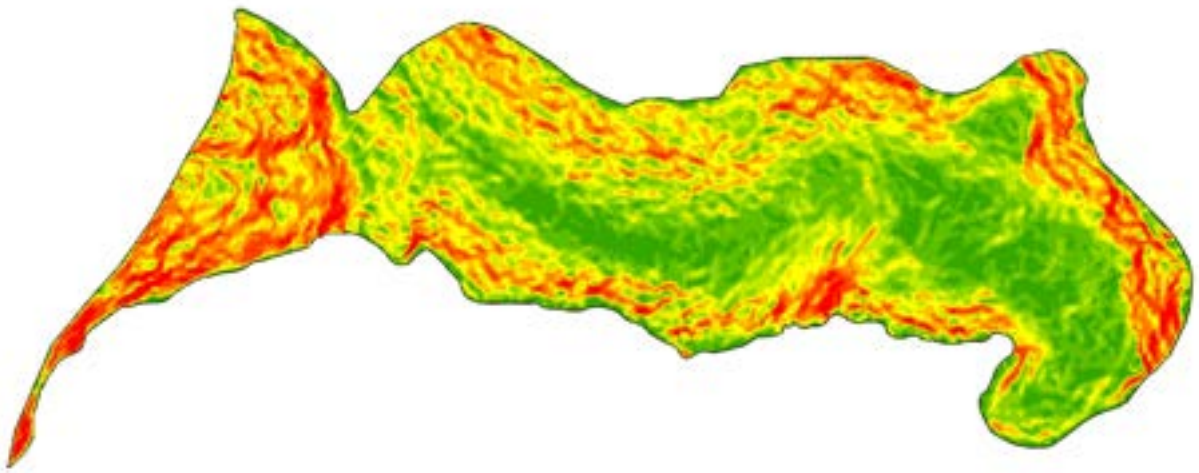
SOIL MAP OF KULIAN CONSERVATION RESERVE



ELEVATION MAP OF KULIAN CONSERVATION RESERVE

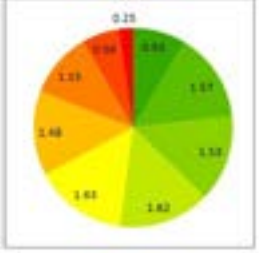


SLOPE MAP OF KULIAN CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	0.95	8.83
6-15	1.57	14.52
16-20	1.53	14.19
21-30	1.62	14.96
30-35	1.63	15.03
36-45	1.48	13.70
46-50	1.15	10.65
51-70	0.66	6.07
71-90	0.25	2.34
Total	10.82	100.00

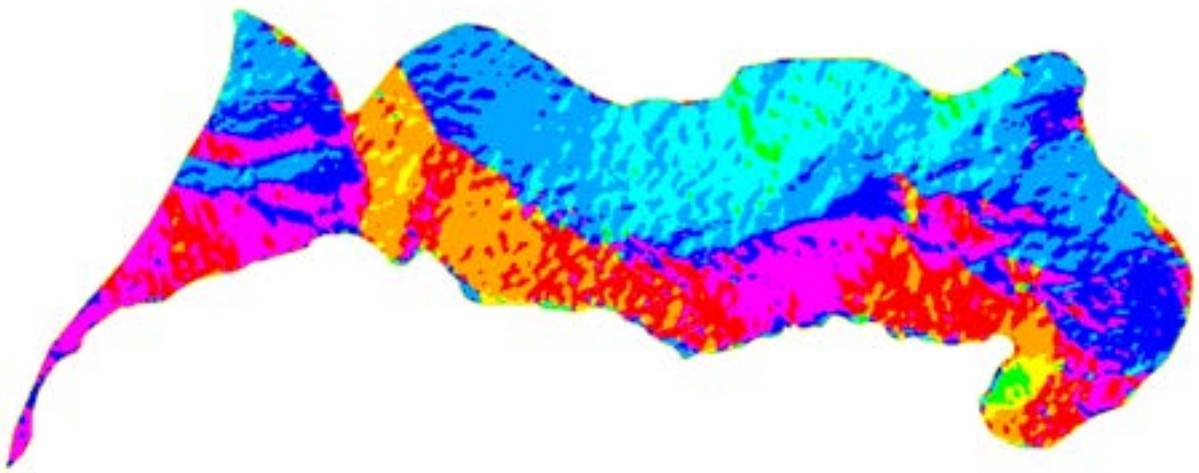


1: 35,000
0 1 2 4 Km

LEGEND
Slope (Degrees)
- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Kulian Conservation Reserve

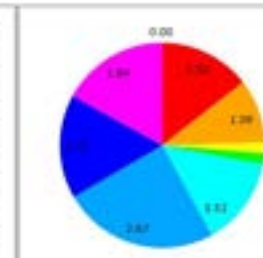
NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ASPECT MAP OF KULIAN CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

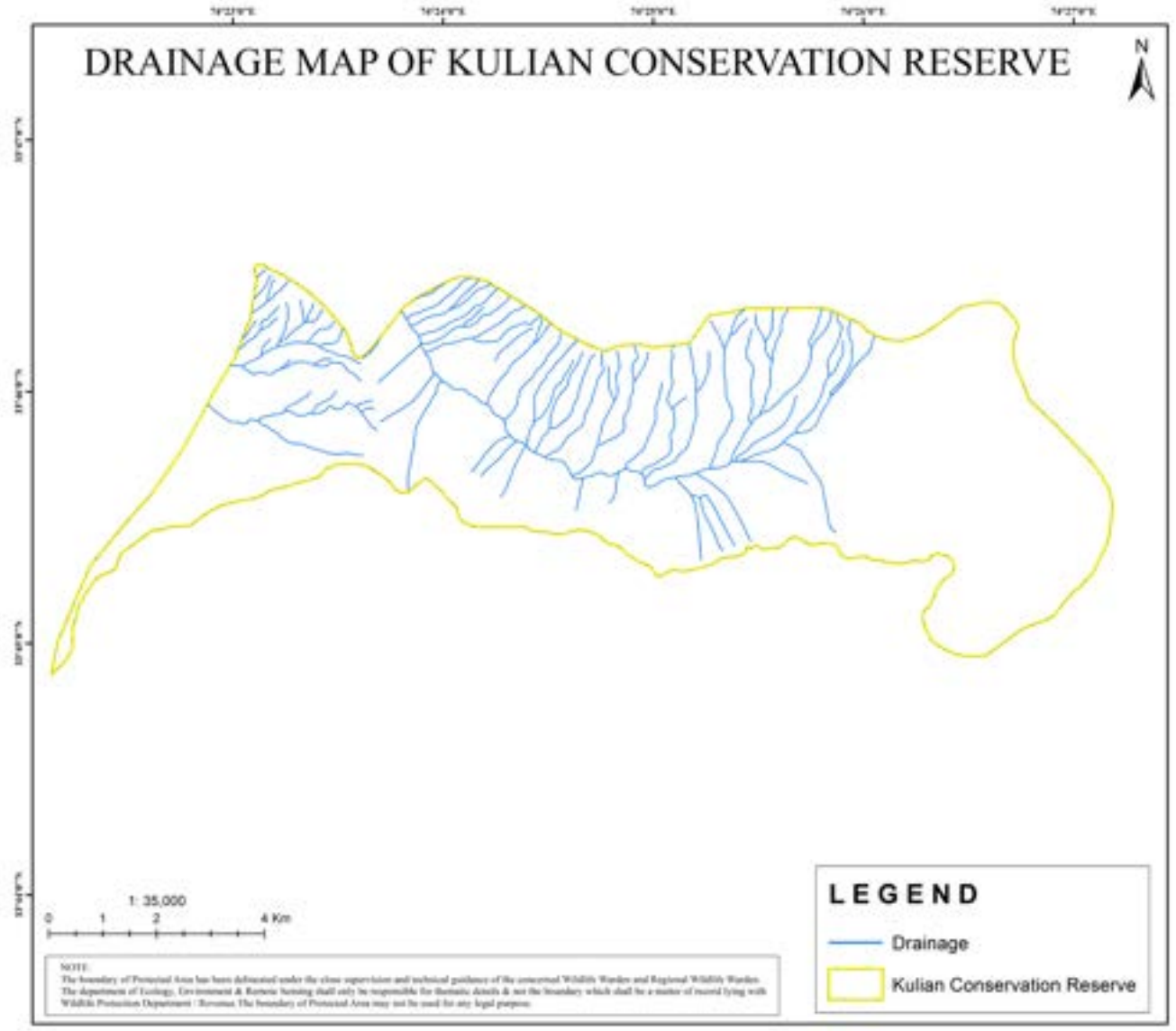
Aspect Class	Area (Sq Kms)	Percentage
Flat	0.00	0.01
North	1.56	14.42
Northeast	1.09	10.11
East	0.19	1.75
Southeast	0.18	1.69
South	1.52	14.01
Southwest	2.67	24.64
West	1.77	16.39
Northwest	1.84	17.00
Total	10.82	100.00

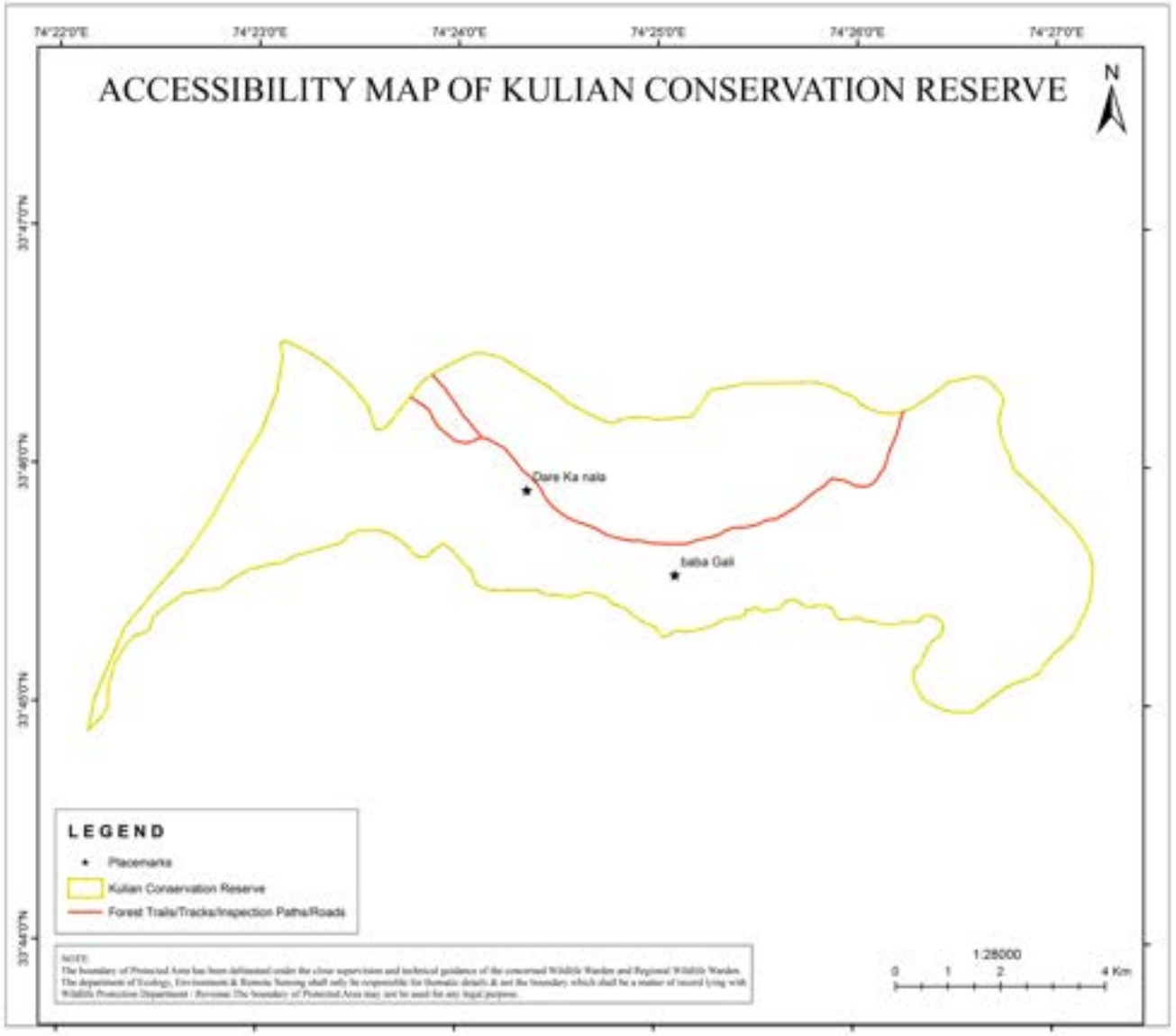


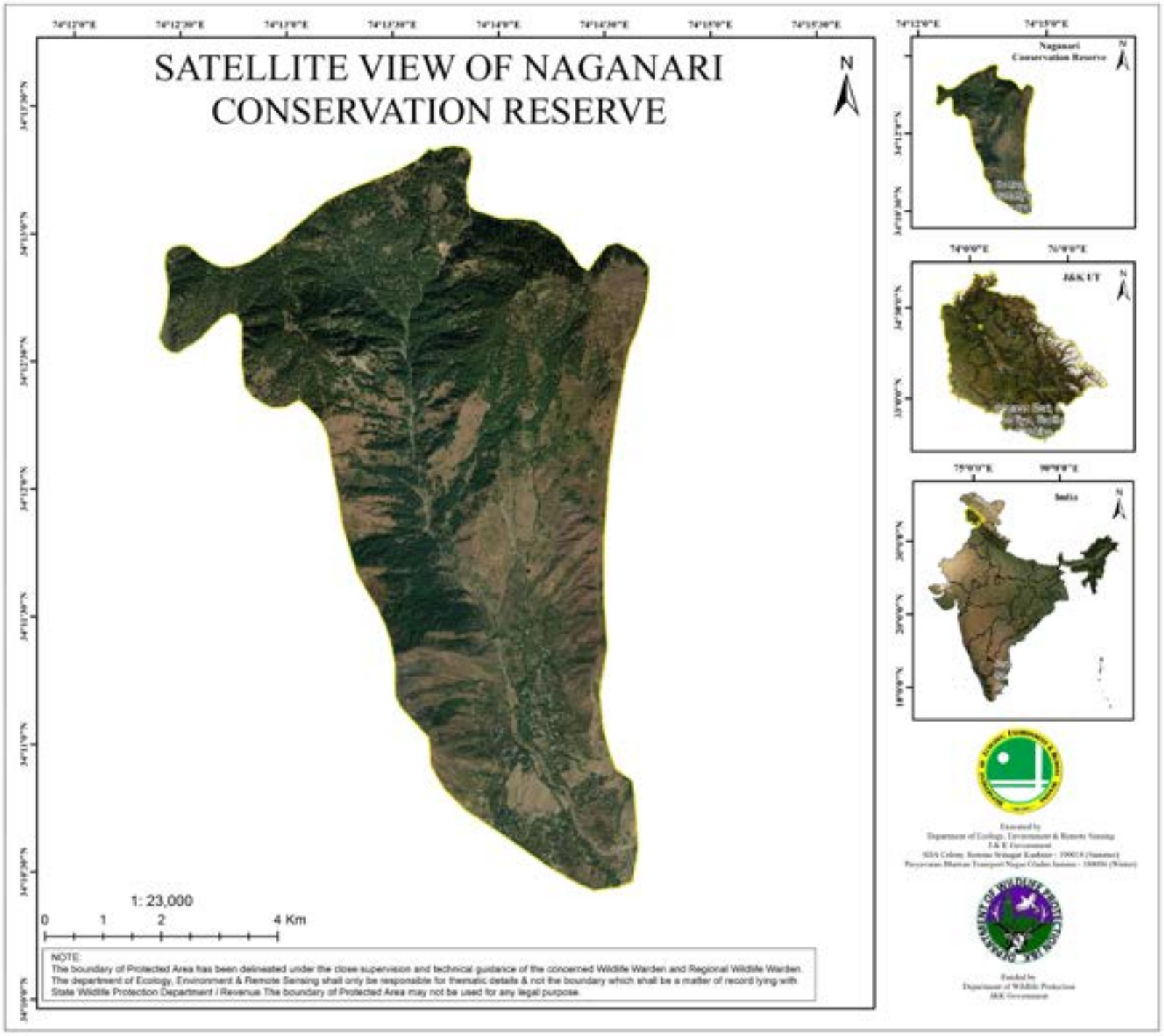
1: 35,000
0 1 2 4 Km

LEGEND
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Kulian Conservation Reserve

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF KULIAN CONSERVATION RESERVE
N
1: 35,000
0 1 2 4 Km
LEGEND
Drainage
Kulian Conservation Reserve


ACCESSIBILITY MAP OF KULIAN CONSERVATION RESERVE
N
Dare Ka nala
baba Gali
LEGEND
Placemarks
Kulian Conservation Reserve
Forest Trails/Tracks/Inspection Paths/Roads
1:28000
0 1 2 4 Km



NAGANARI CONSERVATION RESERVE

The Naganari Conservation Reserve area lies to the east of Limber Wildlife sanctuary. It was notified in 1987. The Reserve is home to a big population wild animals and different types of vegetations. The area consists of steep to moderate slopes broken by rocky cliffs at many places.

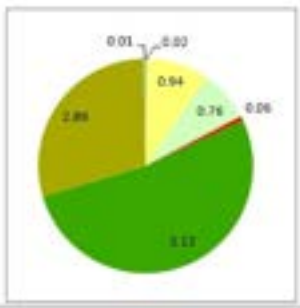
SRO/NOTIFICATION NO: Government order No.128-FST of 1991 13.05.1991
NOTIFIED AREA (KM2): 21.75 **GIS AREA** (KM2): 9.77
PERIMETER (KMS): 16.21
ALTITUDE RANGE (M): 1500 - 3000
GEO - COORDINATES:
34° 10.442′ N - 34° 13.362′ N, 74° 12.406′ E - 74° 14.721′ E

MAJOR FAUNA: Markhor (*Capra falconeri*), Common Leopard (*Panthera pardus*), Yellow Throated Martin (*Martes flavigula*), Long Tailed Marmot (*Marmota caudata*), Kashmir Musk Deer (*Moschus cupreus*), Himalayan Brown Bear (*Ursus artos*), , Himalayan Black Bear (*Ursus thibetanus*), Small Kashmir Flying Squirrel (*Eoglaucomys fimbriatus*).

MAJOR AVI FAUNA: The yellow-billed blue magpie (*Urocissa flavirostris*), Cuckoo (*Cuculus canorus*), Western Tragopan (*Tragopan melanocephalus*), Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Golden Eagle (*Aquila chrysaetos*), Sparow Hawk (*Accipiter nisus melaschistos*), Snow Pigeon (*Columba leuconota*), Lesser pied kingfisher (*Ceryle rudis*), Nutcracker (*Nucifraga Caryocatactes*) .

MAJOR FLORA: Deodar (*Cedrus deodara*), Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Parrotia (*Parrotiopsis jacquemontiana*), Cranberry bush (*Viburnum grandiflorum*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lycium*), Himalayan rhubarb (*Rheum webbianum*).

LAND USE LAND COVER MAP OF NAGANARI CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.94	9.62
Agriculture Plantation	0.76	7.74
Builtup	0.06	0.61
Forest	5.12	52.40
Snow/Glacial	0.01	0.14
Open Scrub	2.86	29.32
Waterbody	0.02	0.17
Total	9.77	100.00

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Agriculture Cropland
- Agriculture Plantation
- Builtup
- Forest
- Open Scrub
- Snow/Glacial
- Waterbody
- Naganari Conservation Reserve

1: 23,000
0 1 2 4 Km

VEGETATION MAP OF NAGANARI CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Builtup	0.06	0.61
Cropland	0.94	9.62
Juniper	5.02	51.36
Open Scrub	2.86	29.32
Plantation	0.76	7.74
Snow	0.01	0.14
Temperate Coniferous	0.10	1.04
Water	0.02	0.17
Total	9.77	100.00

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Builtup
- Cropland
- Juniper
- Open Scrub
- Plantation
- Snow
- Temperate Coniferous
- Water
- Naganari Conservation Reserve

1: 23,000
0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF NAGANARI CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	7.85	80.35
Piedmont Zone	1.62	16.58
Structural Hills	0.28	2.91
Waterbody	0.02	0.17
Total	9.77	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Denudational Hills
- Piedmont Zone
- Structural Hills
- Waterbody
- Naganari Conservation Reserve

1: 23,000
0 1 2 4 Km

LITHOLOGICAL MAP OF NAGANARI CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Bedded Limestone	4.16	42.53
Sand Clay Beds	5.59	57.30
Waterbody	0.02	0.17
Total	9.77	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Bedded Limestone
- Sand Clay Beds
- Waterbody
- Naganari Conservation Reserve

1: 23,000
0 1 2 4 Km

SOIL MAP OF NAGANARI CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	3.48	35.66
Loamy Skeletal Soil	6.30	64.40
Total	9.78	100.06

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Fine Loamy Soil
- Loamy Skeletal Soil
- Naganari Conservation Reserve

1: 23,000
0 1 2 4 Km

ELEVATION MAP OF NAGANARI CONSERVATION RESERVE

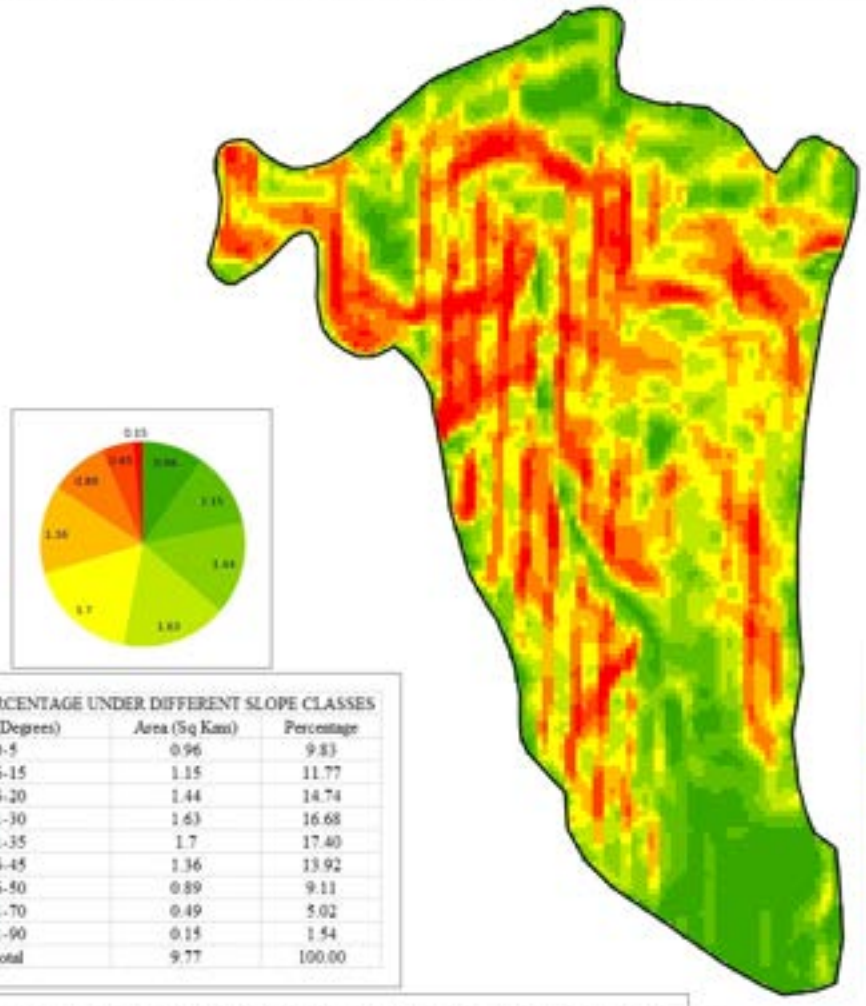
AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES		
Elevation (Meters)	Area (Sq Kms)	Percentage
1500 - 1800	1.53	15.66
1800 - 2000	1.38	14.12
2000 - 2200	1.42	14.53
2200 - 2400	1.25	12.79
2400 - 2600	1.41	14.43
2600 - 2800	2.05	20.98
2800 - 3000	0.73	7.47
Total	9.77	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
Elevation (m)
- 1500 - 1800
- 1800 - 2000
- 2000 - 2200
- 2200 - 2400
- 2400 - 2600
- 2600 - 2800
- 2800 - 3000
- Naganari Conservation Reserve

1: 23,000
0 1 2 4 Km

SLOPE MAP OF NAGANARI CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	0.96	9.83
6-15	1.15	11.77
16-20	1.44	14.74
21-30	1.63	16.68
31-35	1.7	17.40
36-45	1.36	13.92
46-50	0.89	9.11
51-70	0.49	5.02
71-90	0.15	1.54
Total	9.77	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND

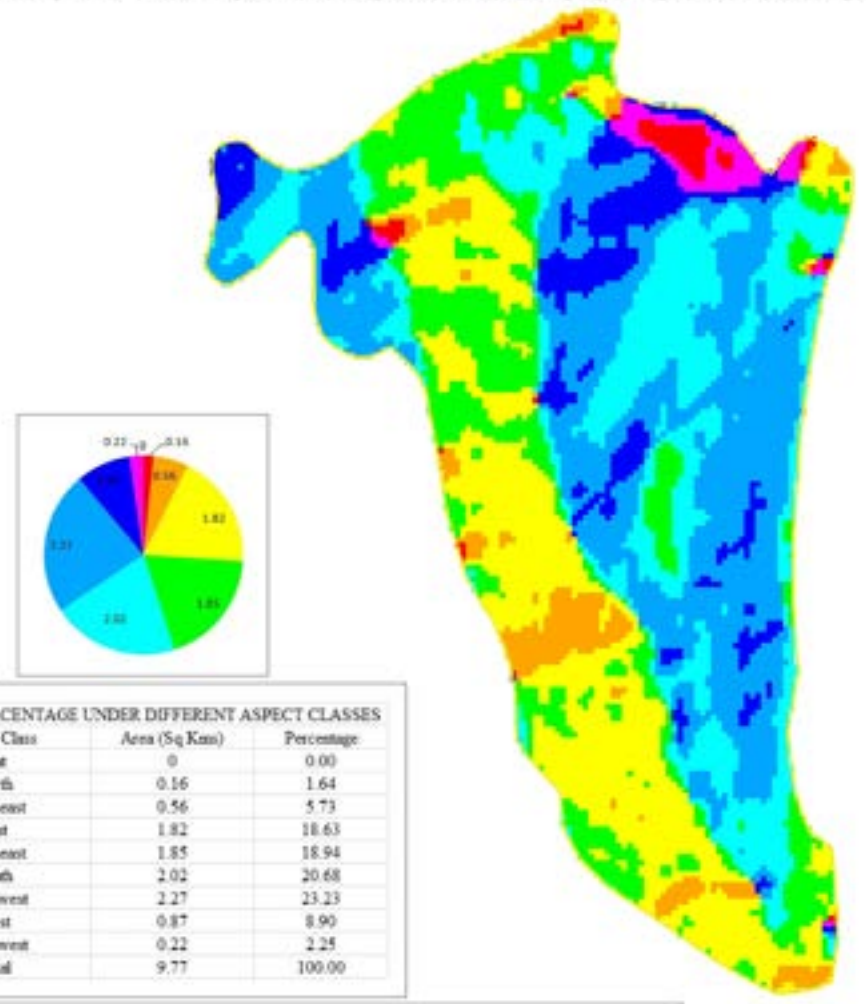
Slope (Degrees)

- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Naganari Conservation Reserve

1: 23,000

0 1 2 4 Km

ASPECT MAP OF NAGANARI CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0	0.00
North	0.16	1.64
Northeast	0.56	5.73
East	1.82	18.63
Southeast	1.85	18.94
South	2.02	20.68
Southwest	2.27	23.23
West	0.87	8.90
Northwest	0.22	2.25
Total	9.77	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

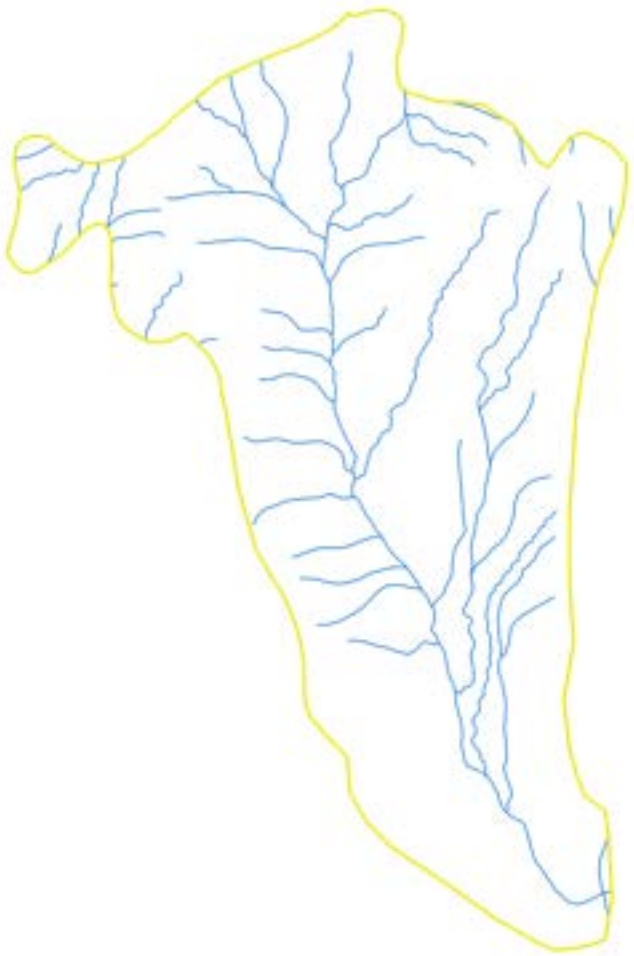
LEGEND

- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Naganari Conservation Reserve

1: 23,000

0 1 2 4 Km

DRAINAGE MAP OF NAGANARI CONSERVATION RESERVE



LEGEND

Drainage

Naganari ConservationReserve

1: 23,000

0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

ACCESSIBILITY MAP OF NAGANARI CONSERVATION RESERVE

LEGEND

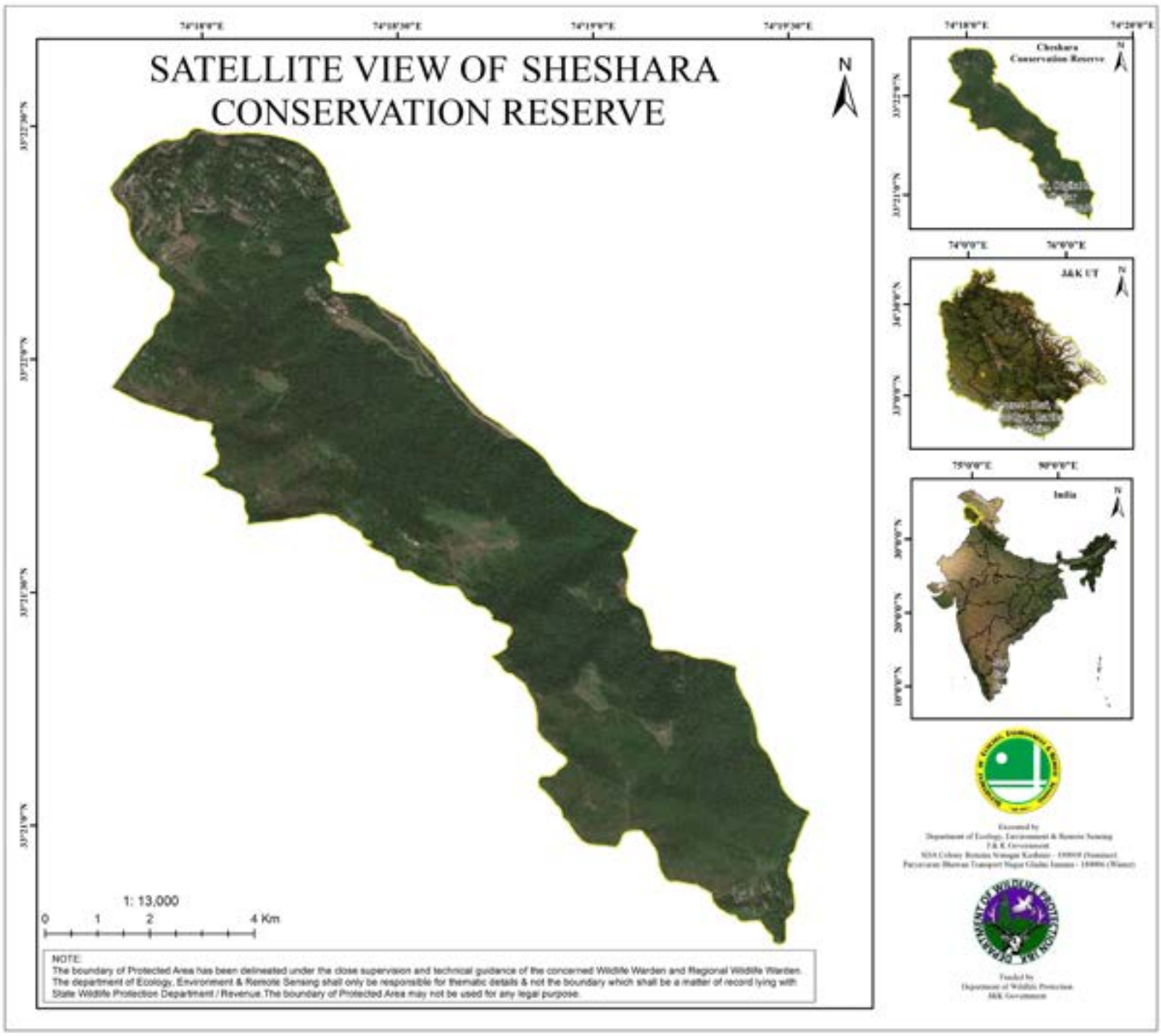
Placemarks

Naganari Conservation Reserve

Forest Trails/Tracks/Inspection Paths/Roads

1:23000

0 1 2 4 Km



SHESHARA CONSERVATION RESERVE

The Sheshara conservation reserve was notified wide cabnet order 710 of 1945 dated 25-06-1945. The wildlife protected area is located near Rajouri town. The Poonch- Jammu National Highway passes along the Eastern site of the Wildlife Conservation Reserve. A treasure house of rich faunal and floral assemblage this wildlife protected area is specially valued for the presence of two species of fowls (Red jungle Fowl and Peafowl) and one species of goat antelope (Himalayan goral) .

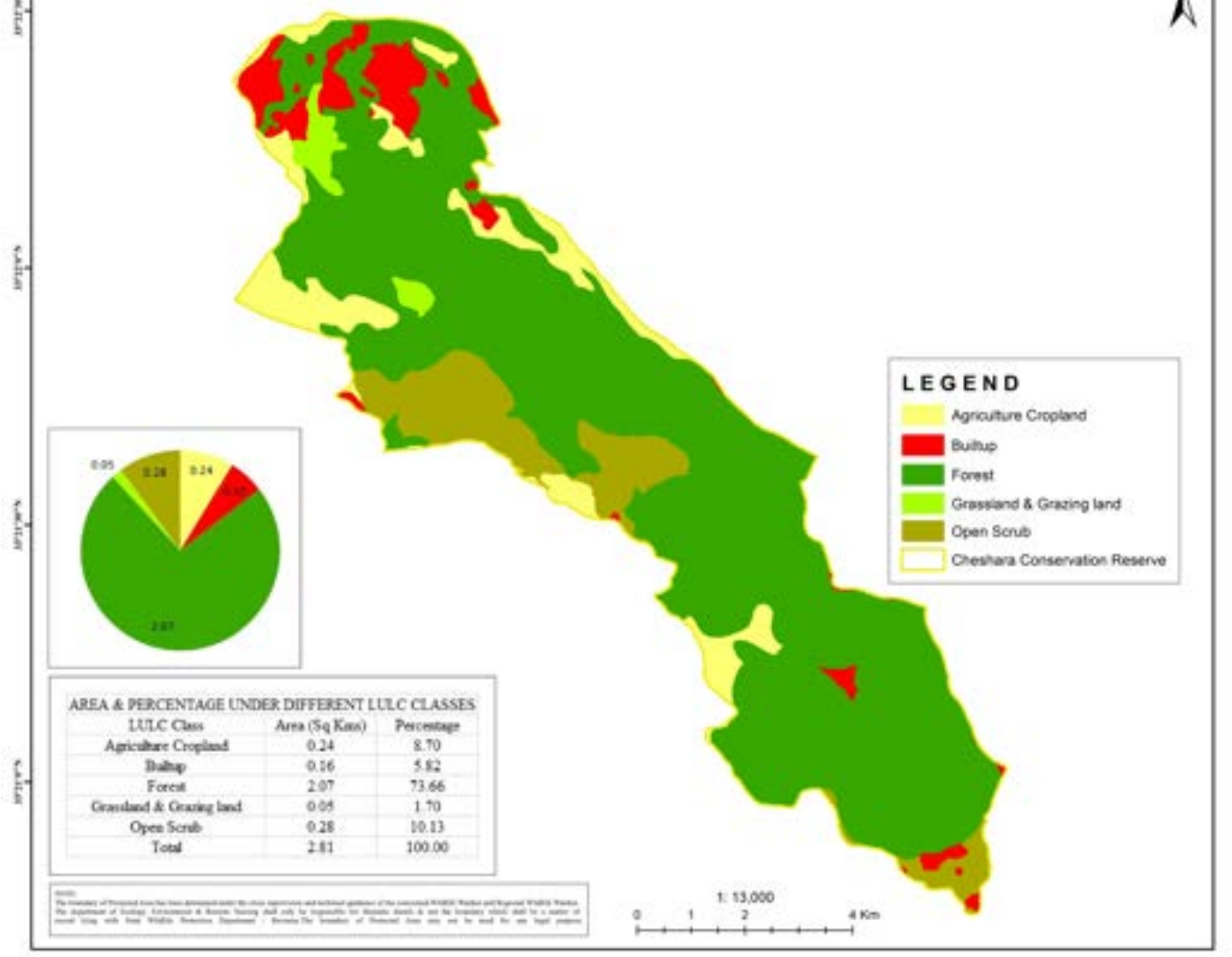
SRO/NOTIFICATION NO: Taken over as per J&K Game Preservation Act 1998 (1942 AD)
NOTIFIED AREA (KM2): 1.43 **GIS AREA** (KM2): 2.81
PERIMETER (KMS): 10.87
ALTITUDE RANGE (M): 816 – 1113
GEO - COORDINATES:
33° 20.755′ N - 33° 22.499′ N, 74° 17.766′ E - 74° 19.570′ E

MAJOR FAUNA: Genetically threatened Red jungle fowl (*Gallus gallus*), peafowl (Pavo critatus), Himalayan goral (*Nemorhaedus goral*), Himalayan Brown Bear (*Ursus artos*), , Himalayan Black Bear (*Ursus thibetanus*), Indian Jackal (*Canis aureus*), Rhesus Monkey (*Macaca mulatta*), Red Fox (*Vulpus Vulpus*).

MAJOR AVI FAUNA: Booted eagle (*Hieraaetus pennatus*), Golden eagle (*Aquila chrysaetos*), Griffon Vulture (*Gyps fulvus*), Himalayan Snowcock (*Tetraogallus himalayansis*), Western tragopan (*Tragopan melanocephalus*), Grey francolin (*Francolinus pondicerianus*), Blue Rock Pigeon (*Columba livia*).

MAJOR FLORA: Deodar (*Cedrus deodara*), Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Deadly nightshade (*Atropa*), Himalayan Mayapple (*Podophyllum hexandrum*).

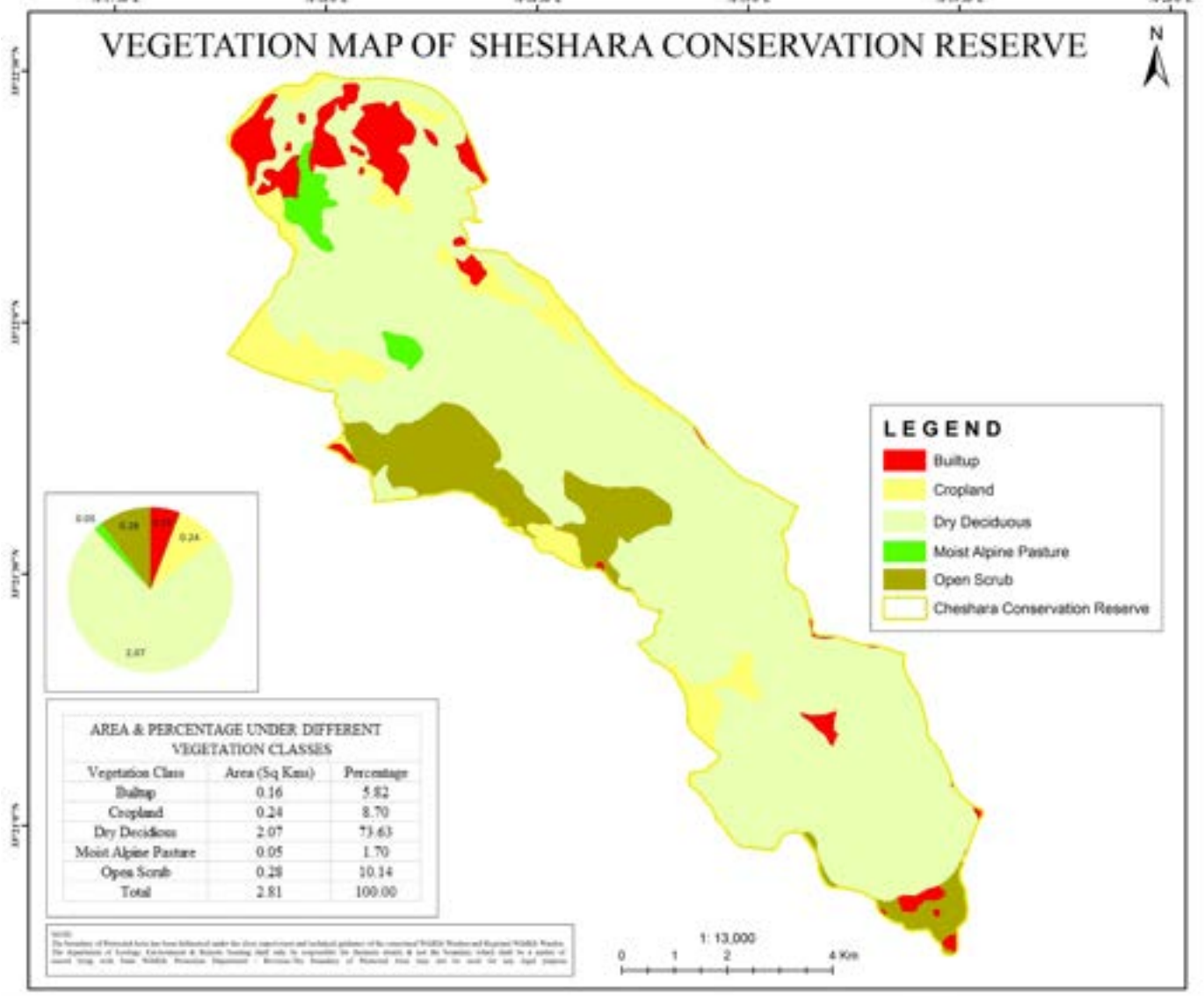
LAND USE LAND COVER MAP OF SHESHARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.24	8.70
Builtup	0.16	5.82
Forest	2.07	73.66
Grassland & Grazing land	0.05	1.70
Open Scrub	0.28	10.13
Total	2.81	100.00

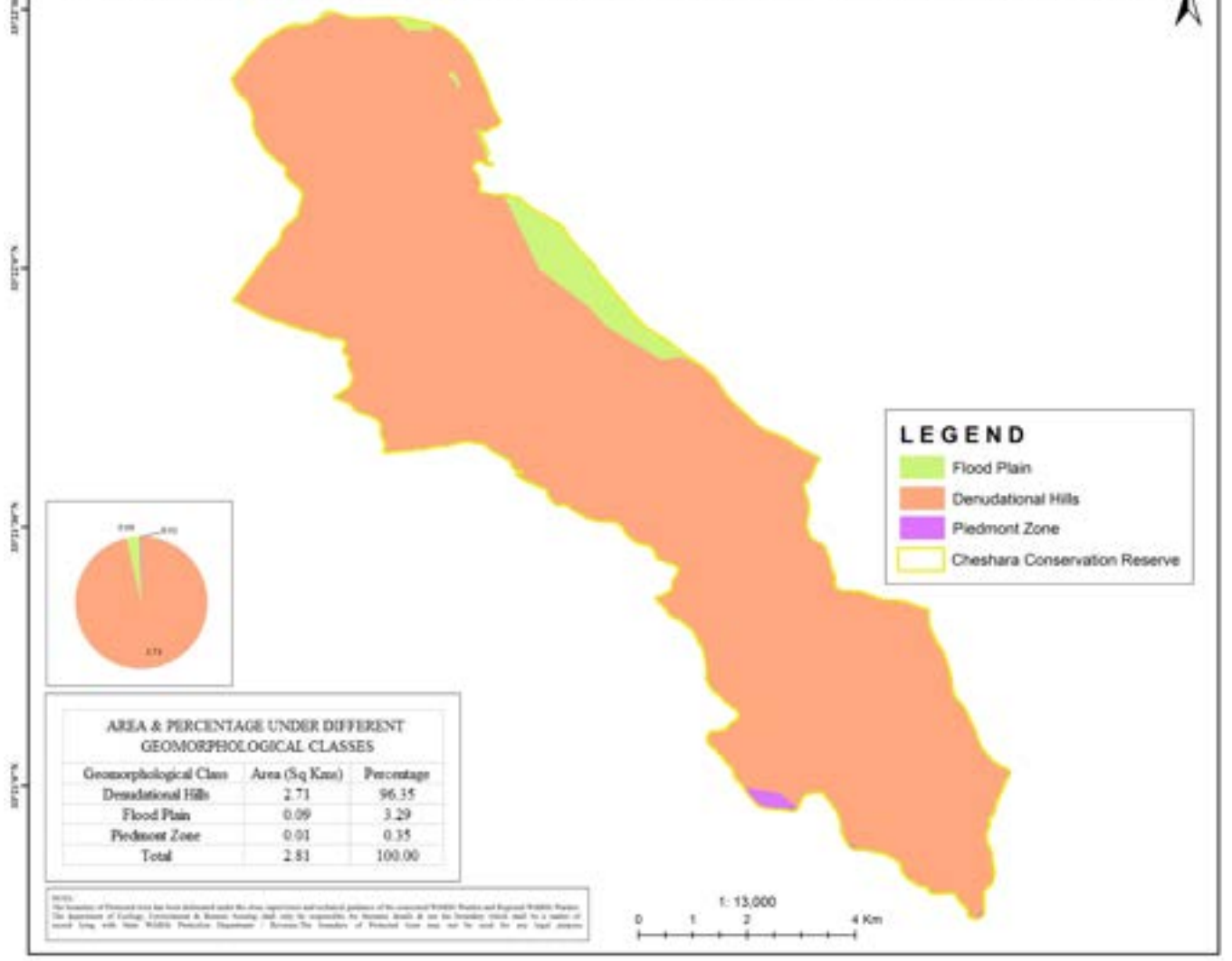
VEGETATION MAP OF SHESHARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Builtup	0.16	5.82
Cropland	0.24	8.70
Dry Deciduous	2.07	73.63
Moist Alpine Pasture	0.05	1.70
Open Scrub	0.28	10.14
Total	2.81	100.00

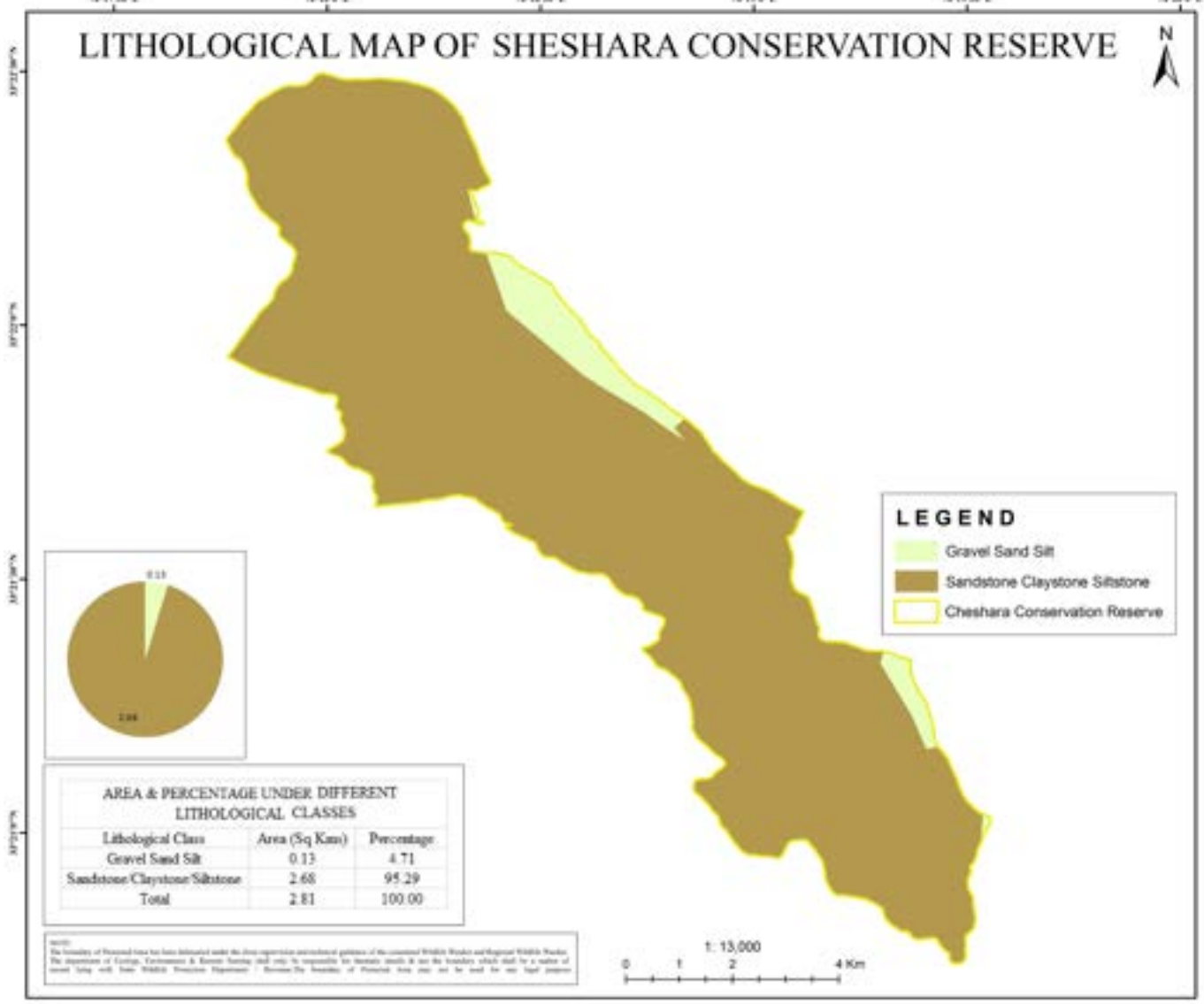
GEOMORPHOLOGICAL MAP OF SHESHARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	2.71	96.35
Flood Plain	0.09	3.29
Piedmont Zone	0.01	0.35
Total	2.81	100.00

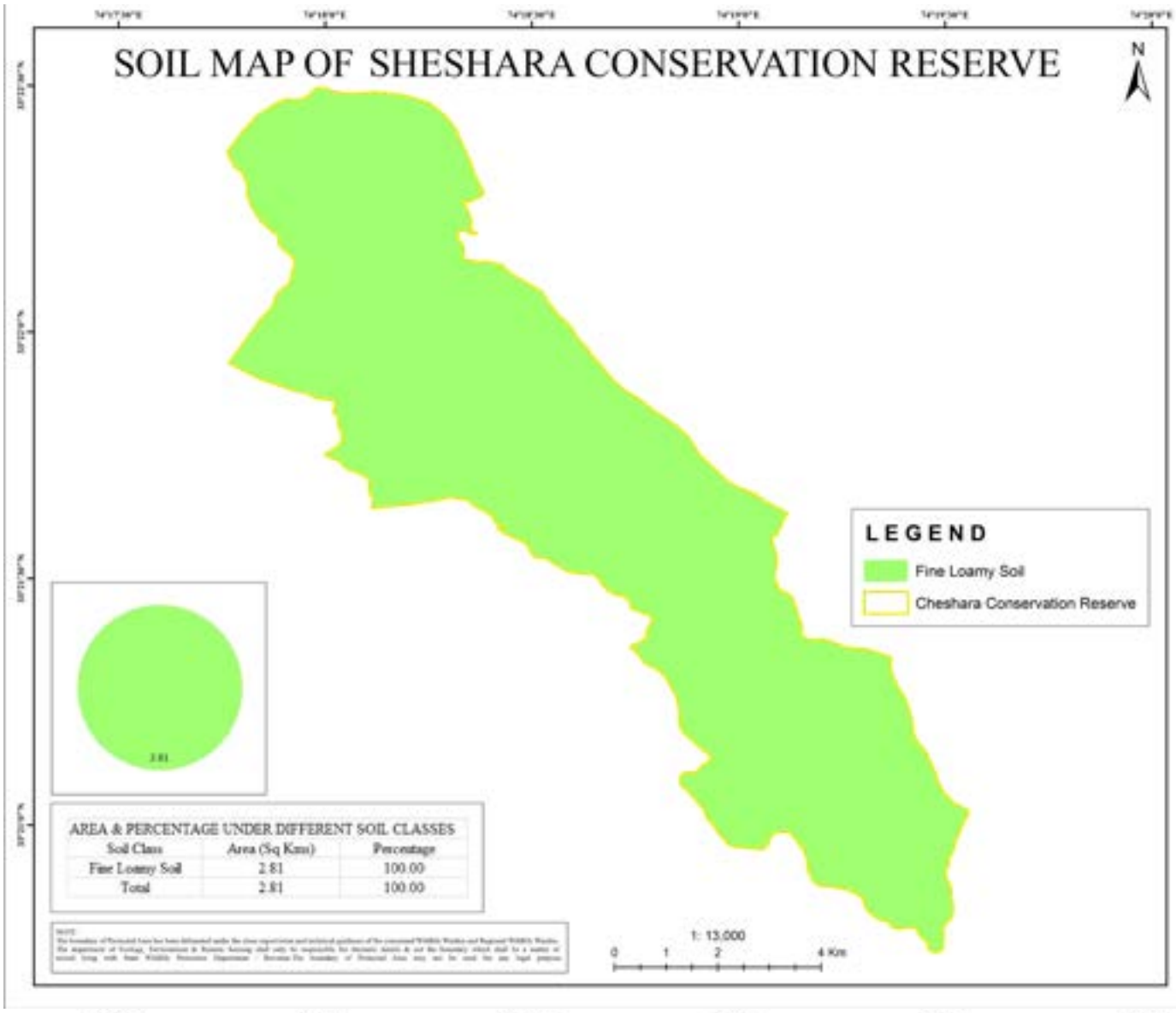
LITHOLOGICAL MAP OF SHESHARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Gravel Sand Silt	0.13	4.71
Sandstone/Claystone/Siltstone	2.68	95.29
Total	2.81	100.00

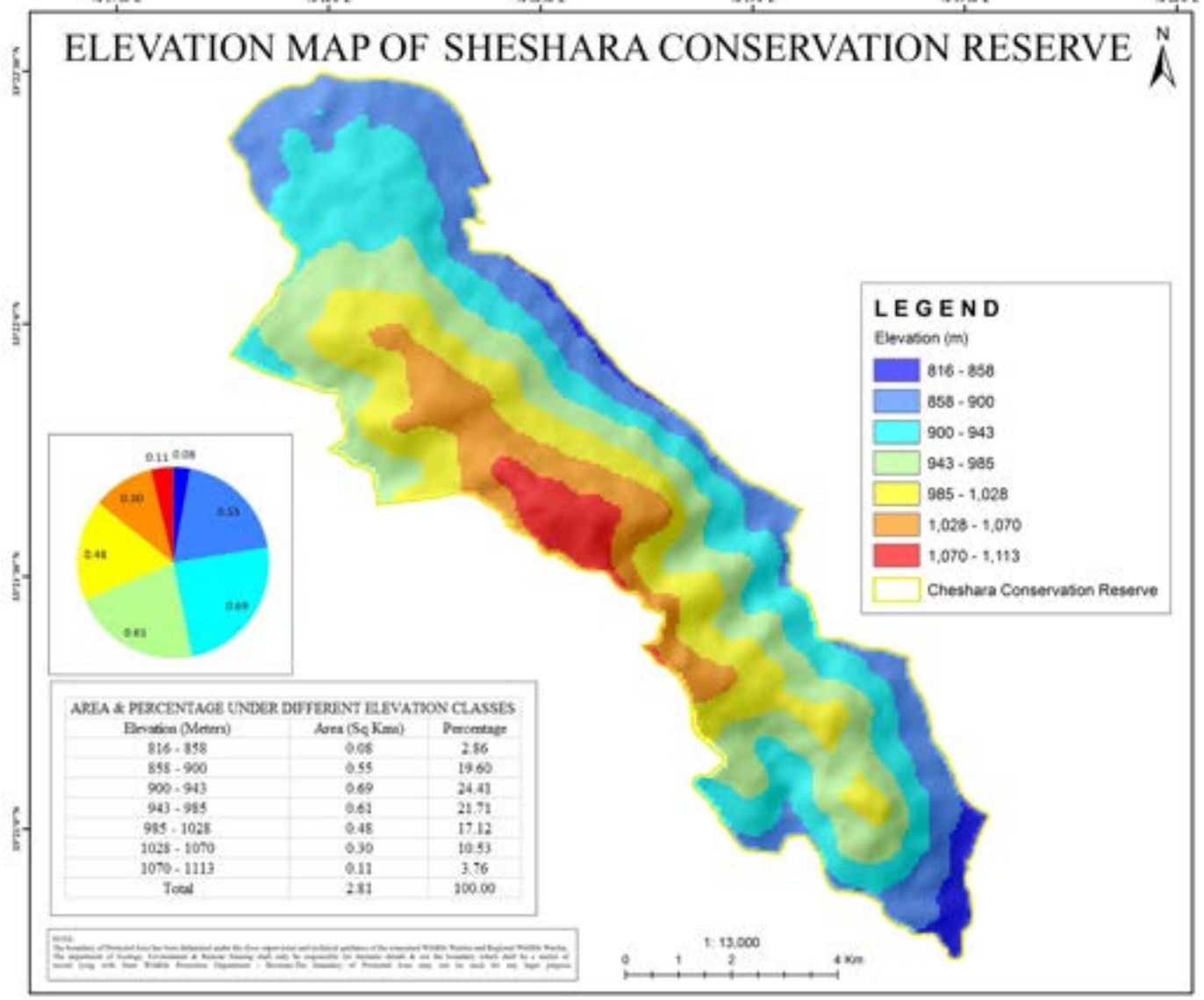
SOIL MAP OF SHESHARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	2.81	100.00
Total	2.81	100.00

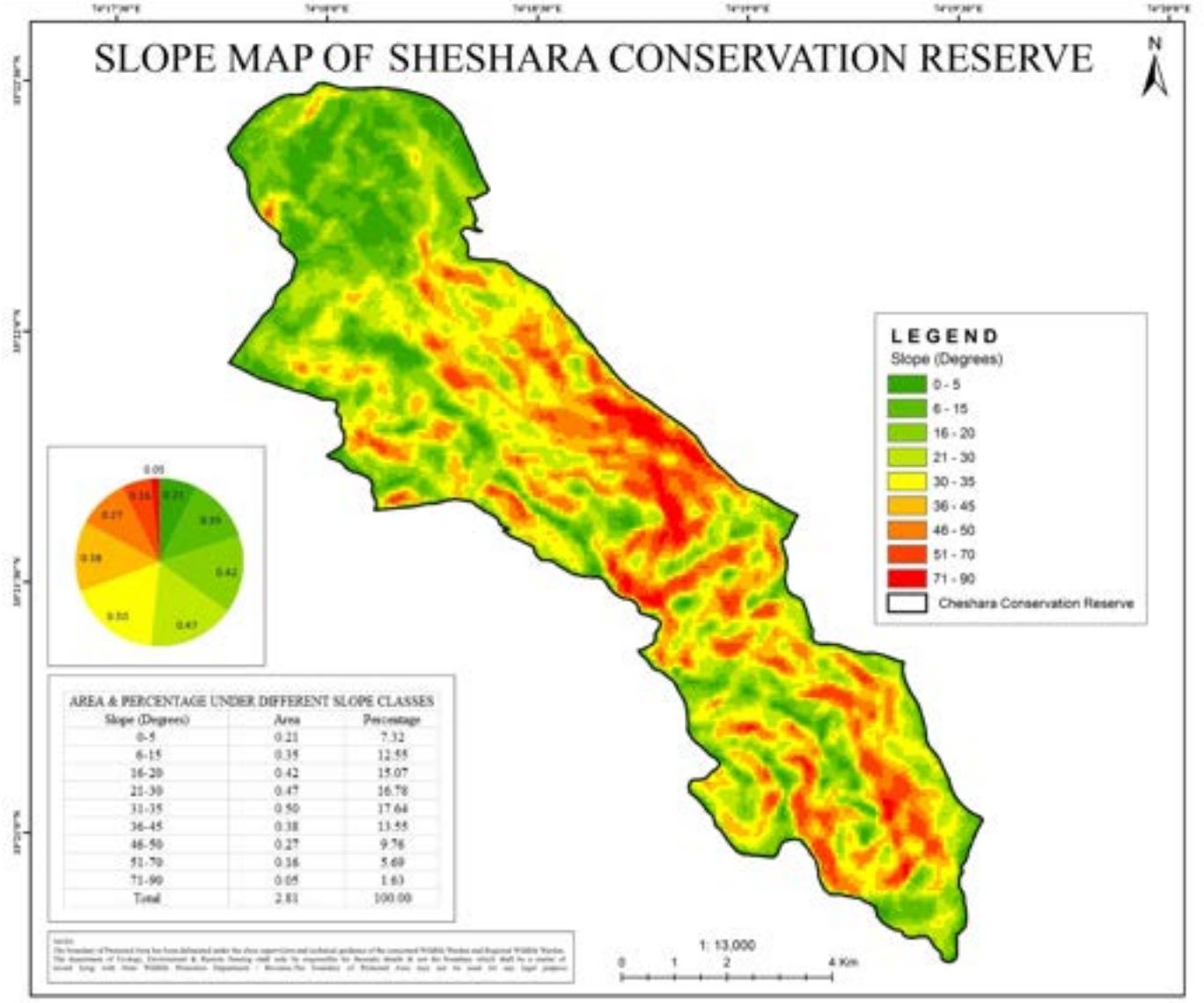
ELEVATION MAP OF SHESHARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
816 - 858	0.08	2.86
858 - 900	0.55	19.60
900 - 943	0.69	24.41
943 - 985	0.61	21.71
985 - 1028	0.48	17.12
1028 - 1070	0.30	10.53
1070 - 1113	0.11	3.76
Total	2.81	100.00

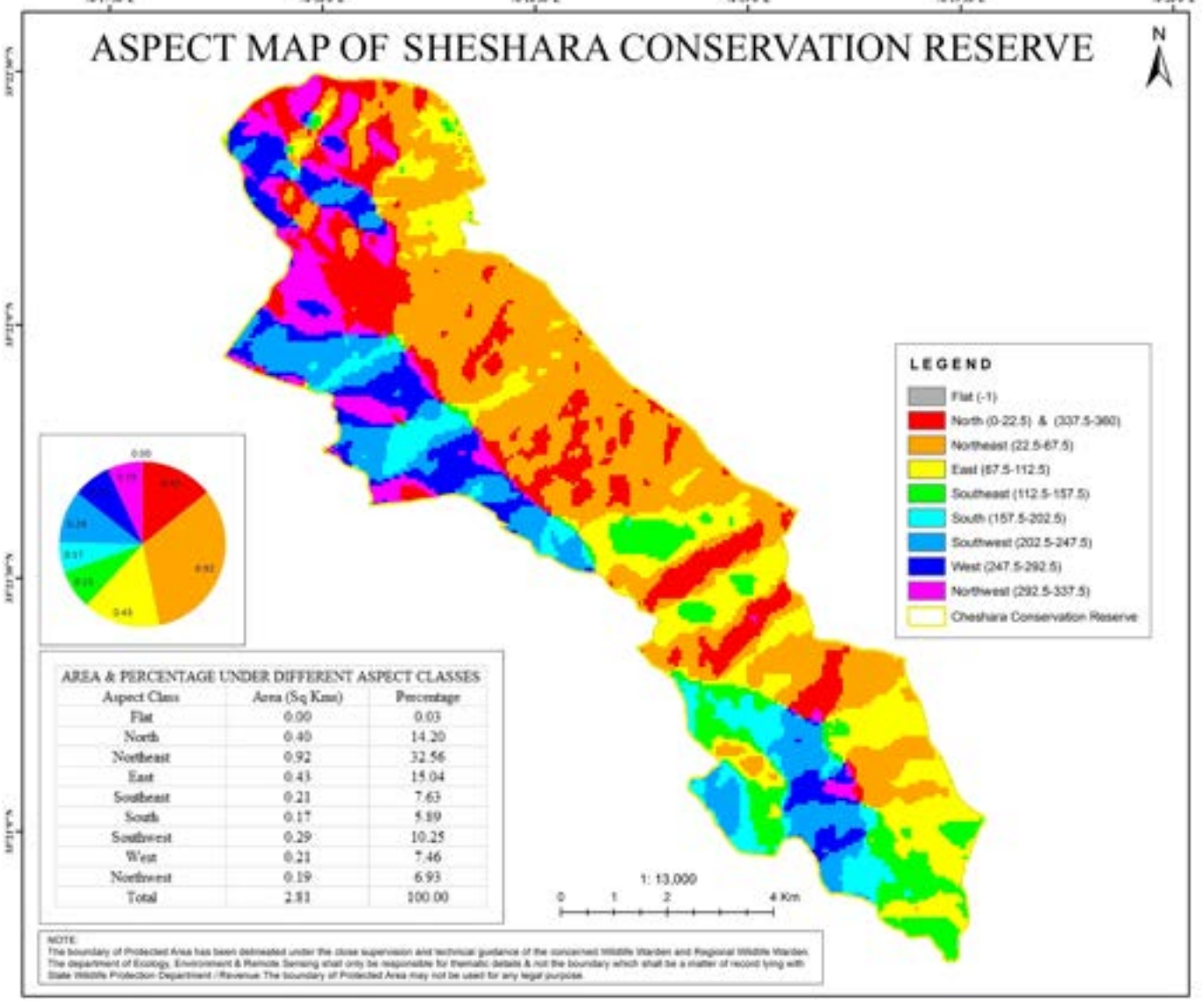
SLOPE MAP OF SHESHARA CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area	Percentage
0-5	0.21	7.32
6-15	0.35	12.55
16-20	0.42	15.07
21-30	0.47	16.78
31-35	0.50	17.64
36-45	0.38	13.55
46-50	0.27	9.76
51-70	0.16	5.69
71-90	0.05	1.63
Total	2.81	100.00

ASPECT MAP OF SHESHARA CONSERVATION RESERVE

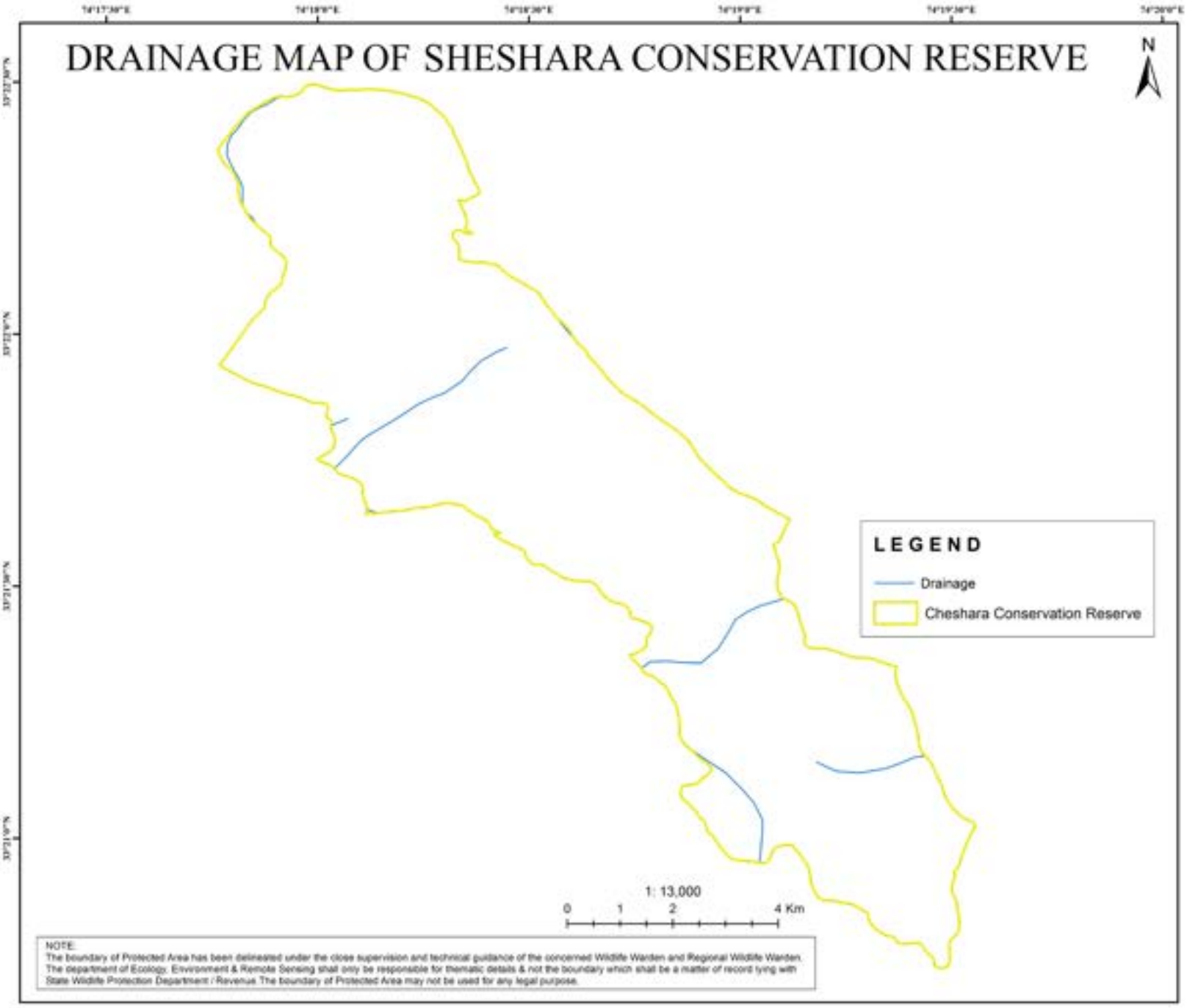


AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.00	0.03
North	0.40	14.20
Northeast	0.92	32.56
East	0.43	15.04
Southeast	0.21	7.63
South	0.17	5.89
Southwest	0.29	10.25
West	0.21	7.46
Northwest	0.19	6.93
Total	2.81	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

DRAINAGE MAP OF SHESHARA CONSERVATION RESERVE



NOTE:
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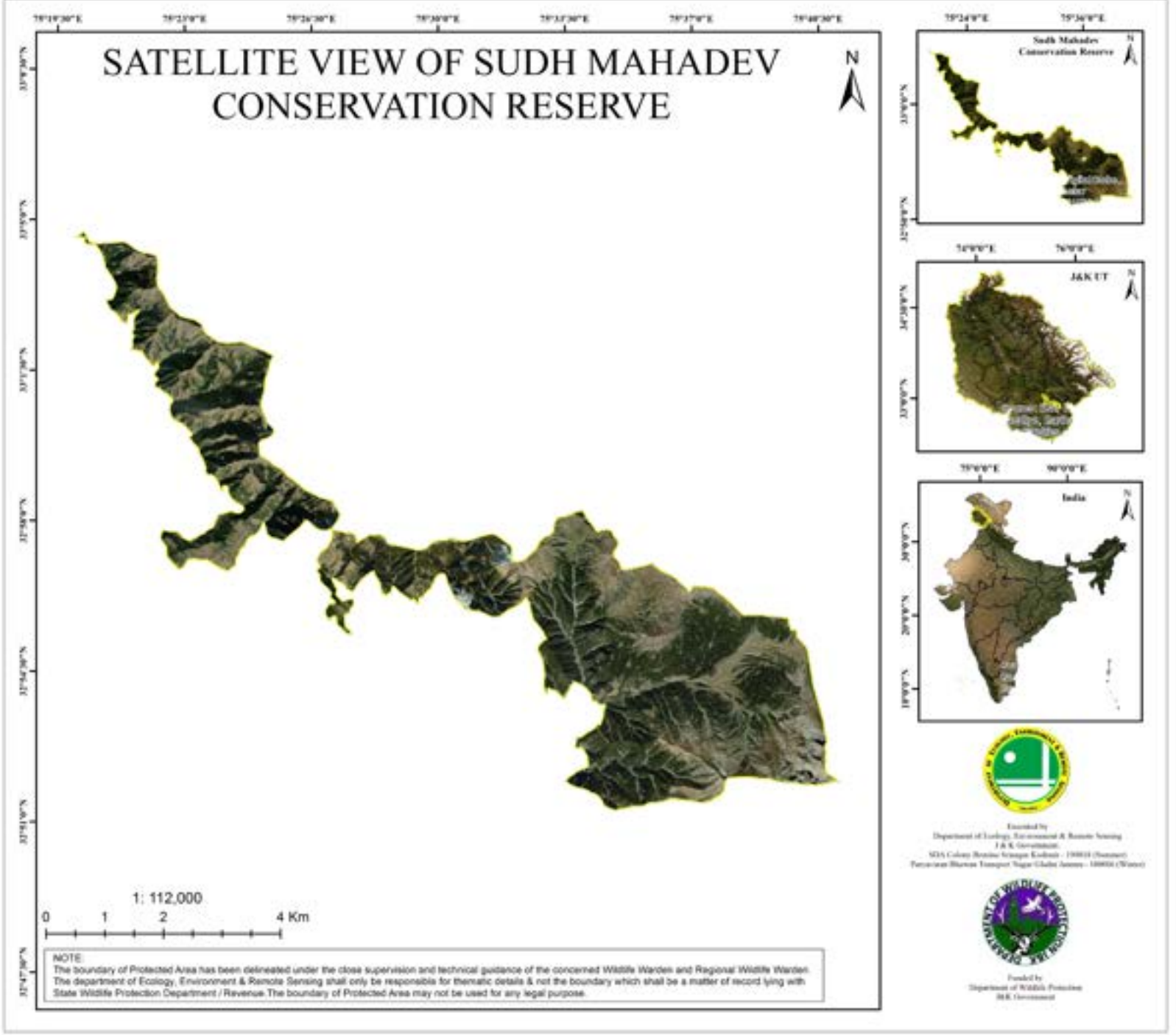


SUDHMAHADEV
CONSERVATION RESERVE

The Sudhmahdev Conservation Reserve lies in the heart of Shivalik Range of the Himalayan Mountains and outer/lesser Himalayas, southern flanks of the Pir Panjal just adjacent to Shivalik.The conservation reserve is named after the Sudhmahdev Temple, which is believed to be more than two millenia old. that it has been made during 17th century. The area was notified as conservation reserve in the year 1981.

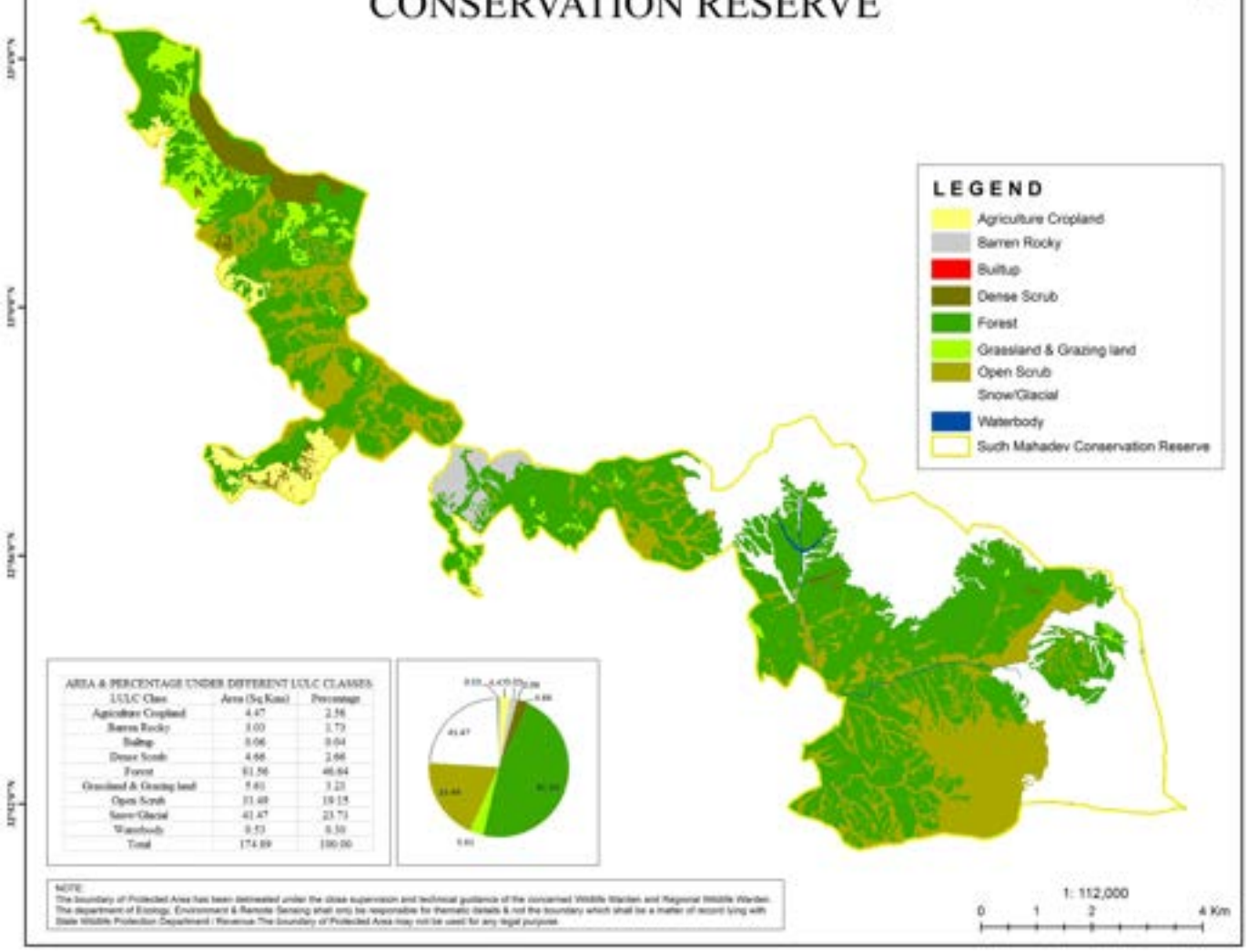
SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981
NOTIFIED AREA (KM2): 142.25 **GIS AREA** (KM2): 174.89
PERIMETER (KMS): 137.72
ALTITUDE RANGE (M): 1255 – 4294
GEO - COORDINATES:
32° 51.197′ N - 33° 4.735′ N, 75° 19.940′ E - 75° 41.011′ E

MAJOR FAUNA: Common Leopard (*Panthera pardus*), Himalayan goral (*Nemorrhaedus goral*), Black Bear (*Ursus thibetanus*), Gray Langur (*Semnopithecus entellus*), Indian Jackal (*Canis aureus*), Wolf (*Canis lupus*), Himalayan Musk deer (*Moschus leucogaster*).

MAJOR AVI FAUNA: Monal pheasant (*Lophorus impejnus*), Baya/ Weaver bird (*Pioceus philippinus*), Black & Yellow grosbeak (*Mycerobas icterioides*), Blue Rock Pigeon (*Columba livia*), Common Kingfisher (*Alcedo atthis*), Common Myna (*Acridotheres tristis*), Eagle Owl (*Bubo bubo*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundoo*), Griffon Vulture (*Gyps fulvus*).

MAJOR FLORA: Deodar (*Cedrus deodara*), Fir (*Abies pindrow*),Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*),chir pine (*Pinus roxburghii* Sarg.), Indian barberry (*Berberis aristata*)

LAND USE LAND COVER MAP OF SUDH MAHADEV CONSERVATION RESERVE

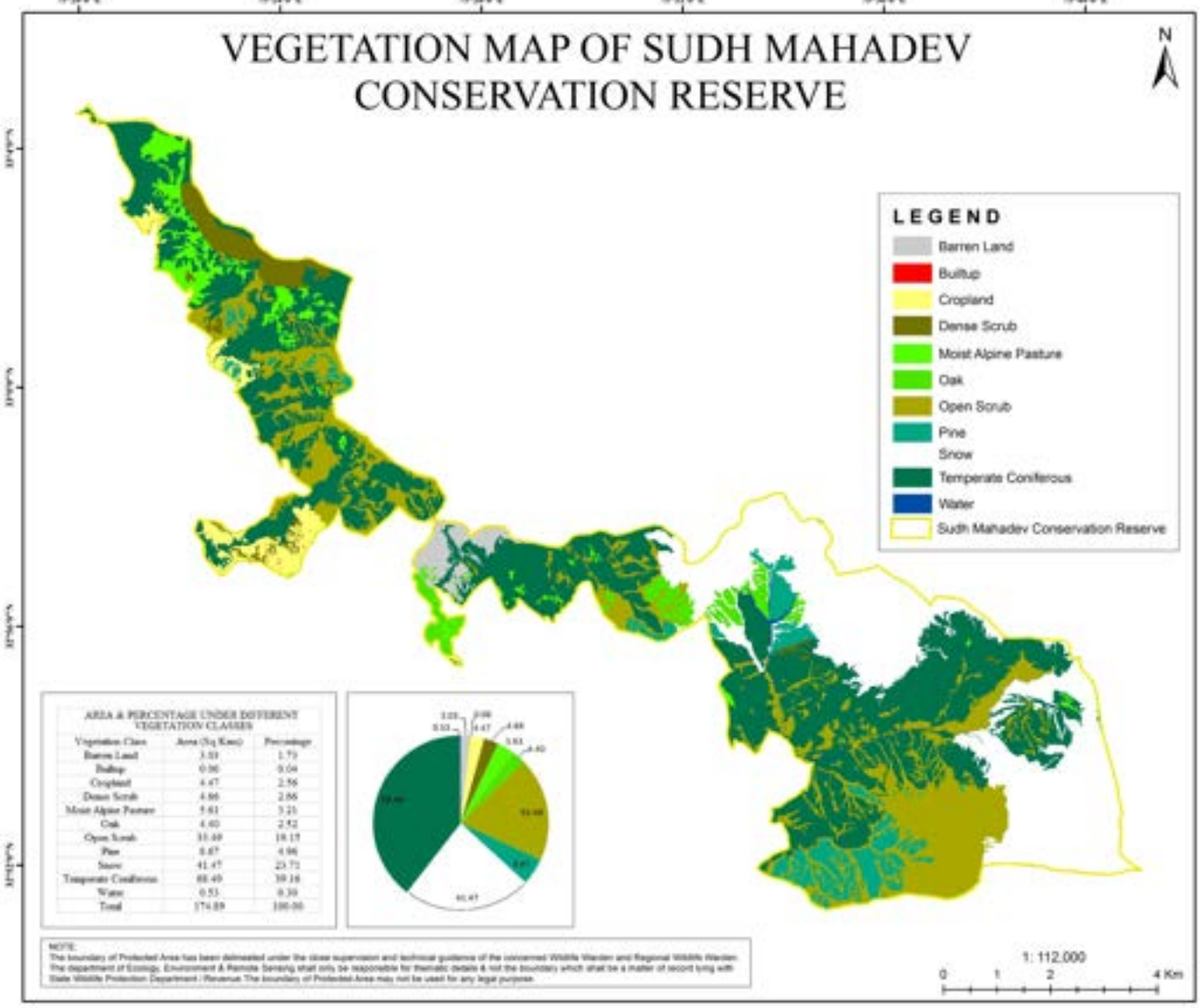


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	4.47	2.56
Barren Rocky	3.03	1.73
Builtup	0.06	0.04
Dense Scrub	4.66	2.66
Forest	81.56	46.64
Grassland & Grazing land	5.61	3.21
Open Scrub	33.49	19.15
Snow/Glacial	41.47	23.71
Waterbody	0.53	0.30
Total	174.89	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF SUDH MAHADEV CONSERVATION RESERVE

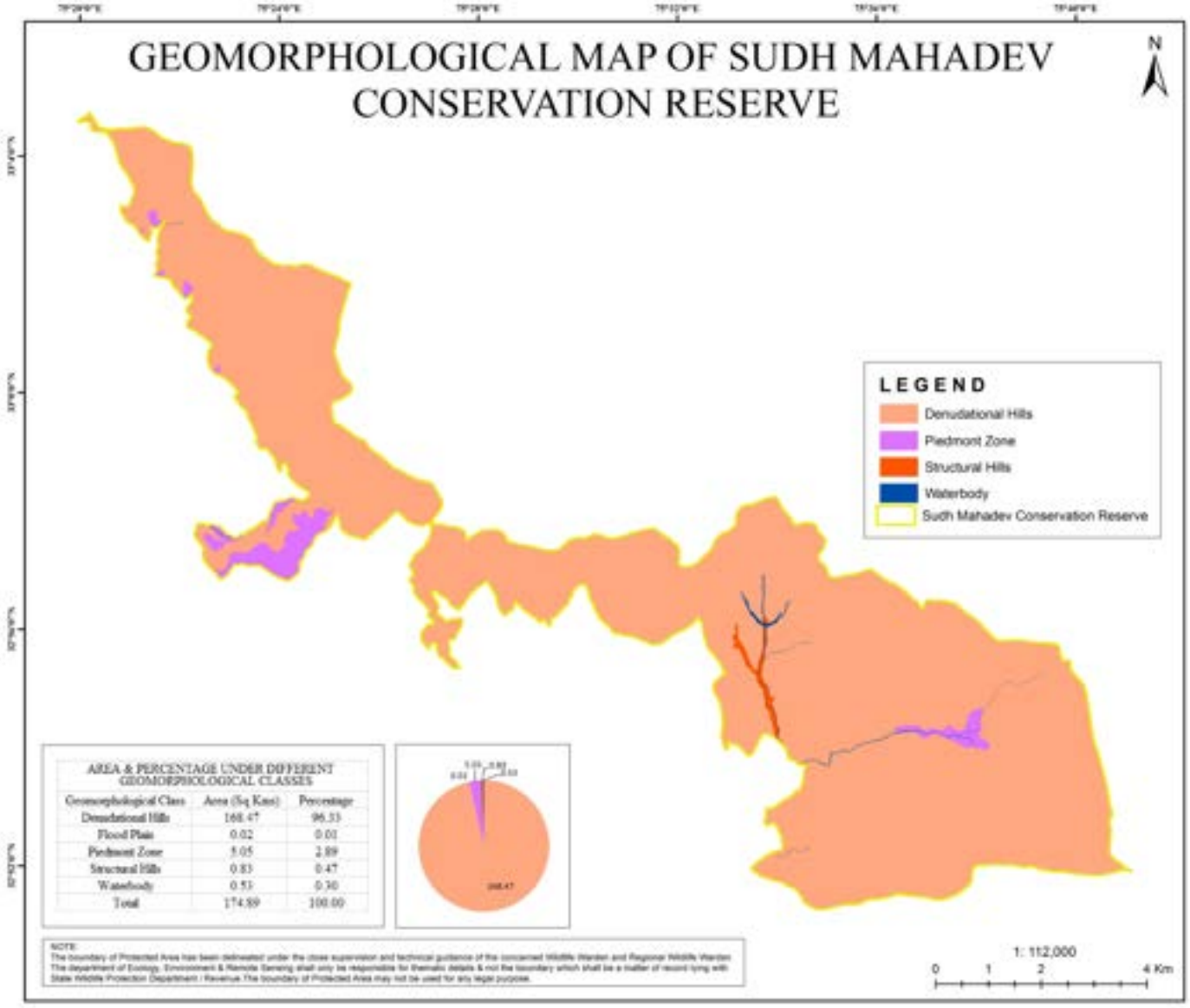


AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Barren Land	3.03	1.73
Builtup	0.06	0.04
Cropland	4.47	2.56
Dense Scrub	4.66	2.66
Moist Alpine Pasture	5.61	3.21
Oak	4.40	2.52
Open Scrub	33.49	19.15
Pine	0.87	4.96
Snow	41.47	23.71
Temperate Coniferous	68.49	39.16
Water	0.53	0.30
Total	174.89	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF SUDH MAHADEV CONSERVATION RESERVE

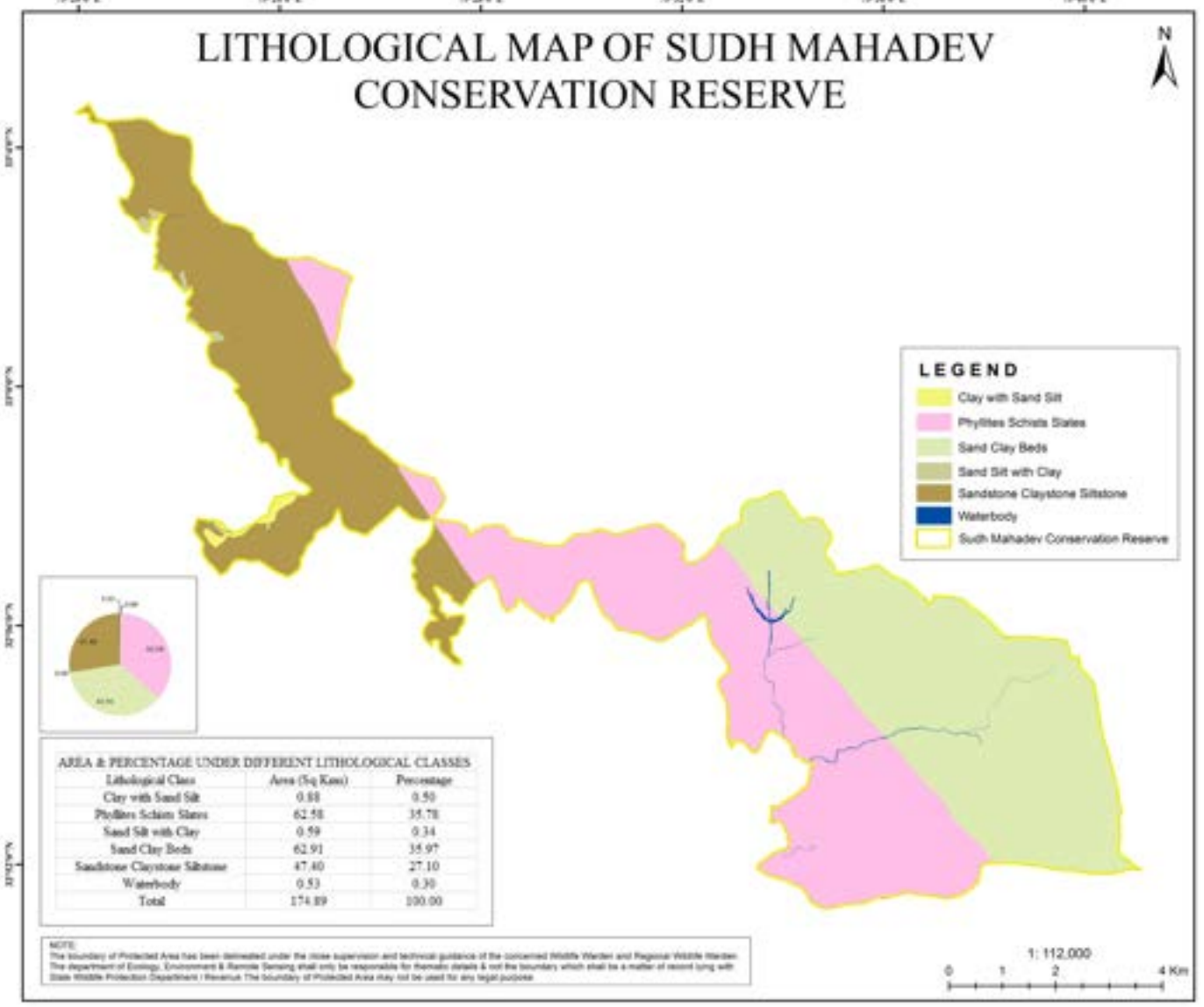


AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	168.47	96.33
Flood Plain	0.02	0.01
Piedmont Zone	5.05	2.89
Structural Hills	0.83	0.47
Waterbody	0.53	0.30
Total	174.89	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LITHOLOGICAL MAP OF SUDH MAHADEV CONSERVATION RESERVE

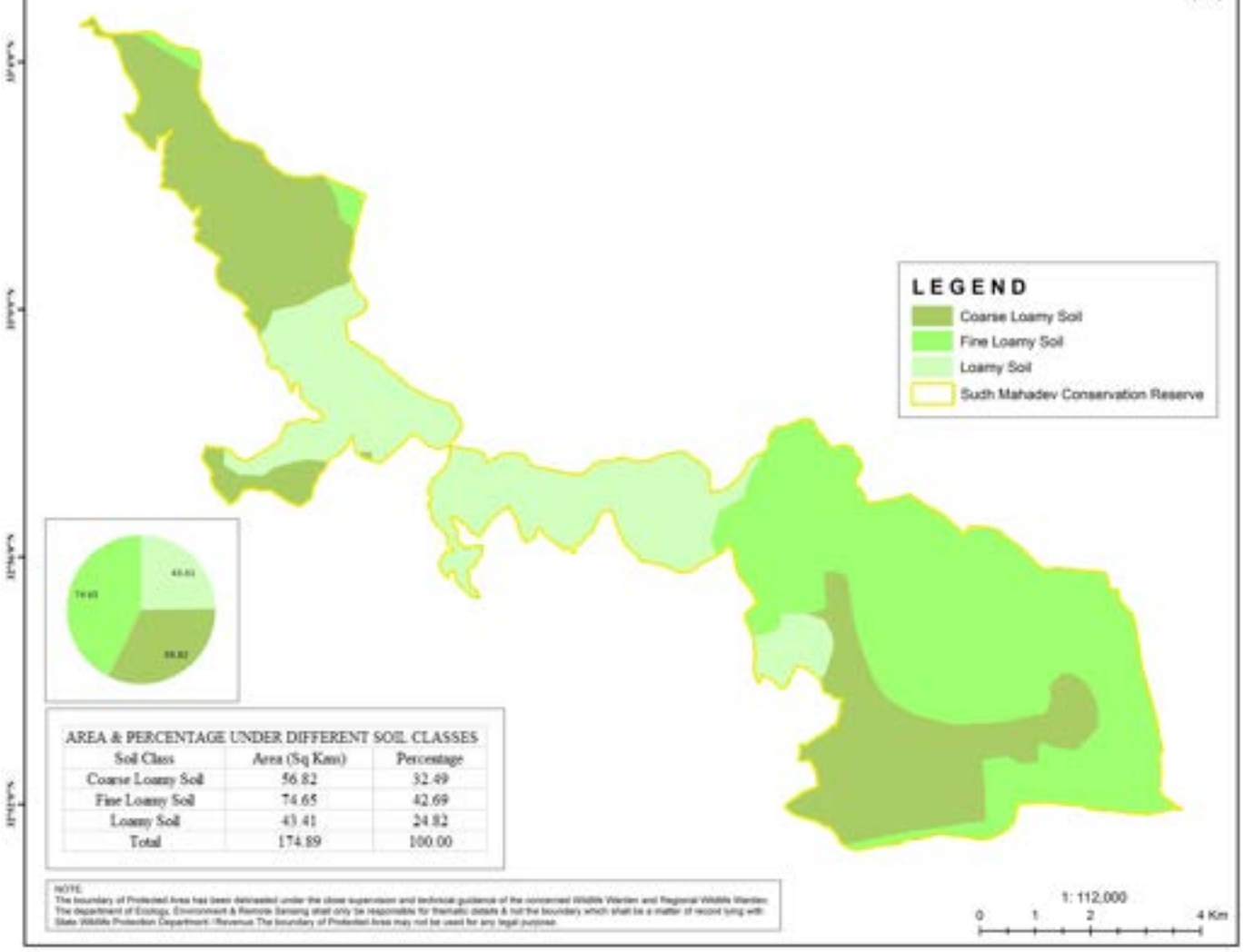


AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Clay with Sand Silt	0.88	0.50
Phyllites Schists Slates	62.58	35.78
Sand Silt with Clay	0.59	0.34
Sand Clay Beds	62.91	35.97
Sandstone Claystone Siltstone	47.40	27.10
Waterbody	0.53	0.30
Total	174.89	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF SUDH MAHADEV CONSERVATION RESERVE

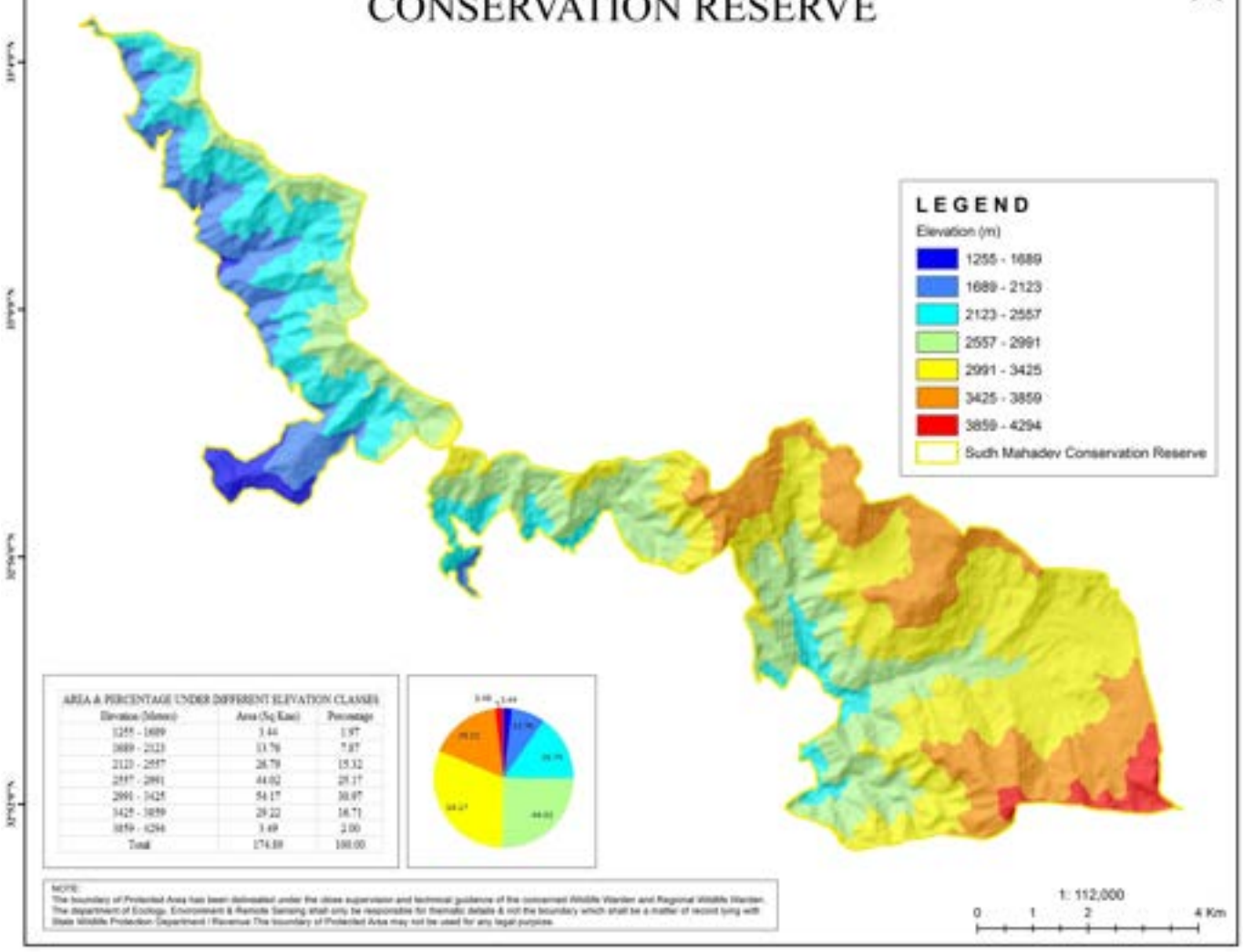


AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	56.82	32.49
Fine Loamy Soil	74.65	42.69
Loamy Soil	43.41	24.82
Total	174.89	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

ELEVATION MAP OF SUDH MAHADEV CONSERVATION RESERVE

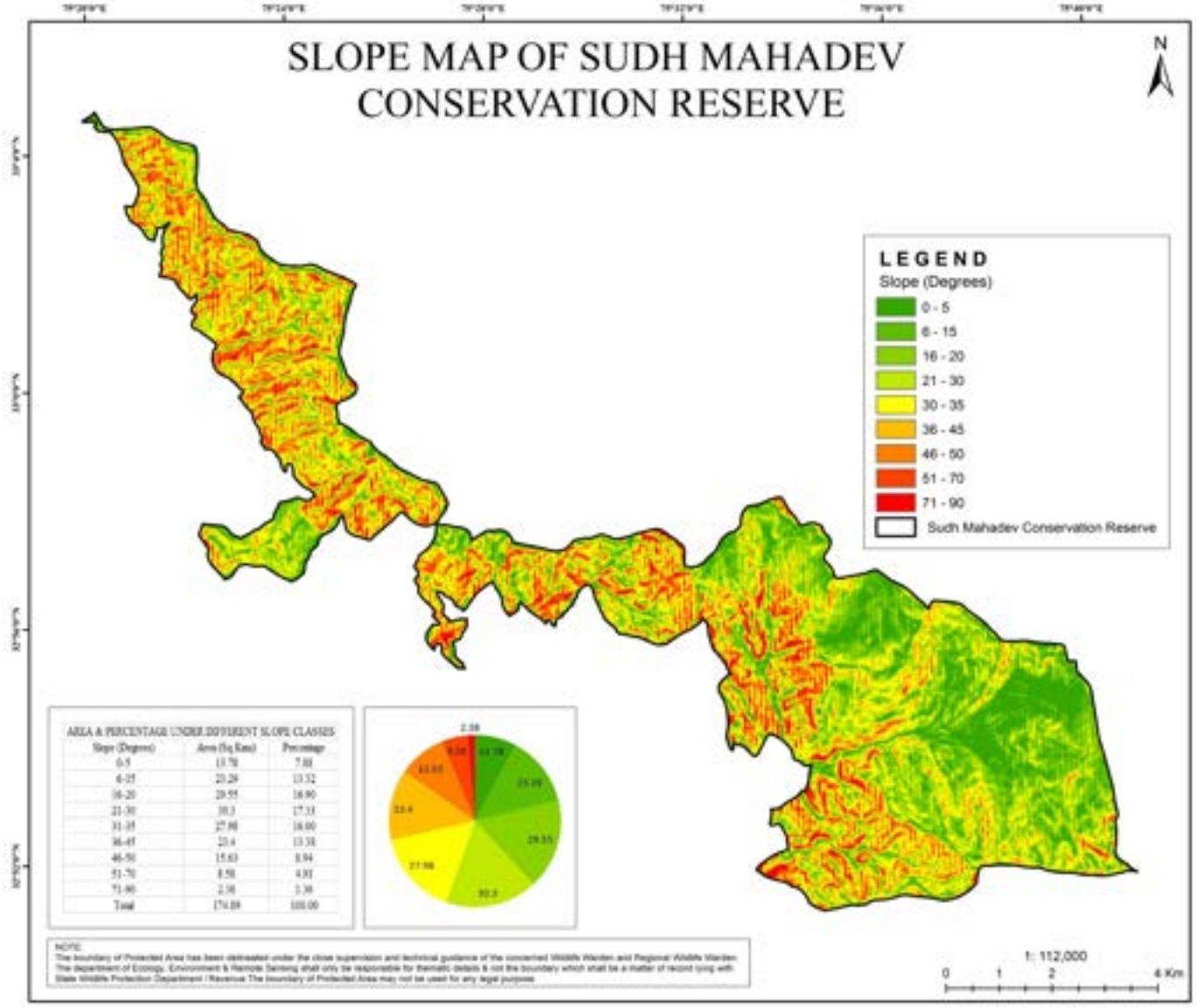


AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1255 - 1689	3.44	1.97
1689 - 2123	13.76	7.87
2123 - 2557	26.79	15.32
2557 - 2991	44.02	25.17
2991 - 3425	54.17	30.97
3425 - 3859	29.22	16.71
3859 - 4294	3.49	2.00
Total	174.89	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SLOPE MAP OF SUDH MAHADEV CONSERVATION RESERVE

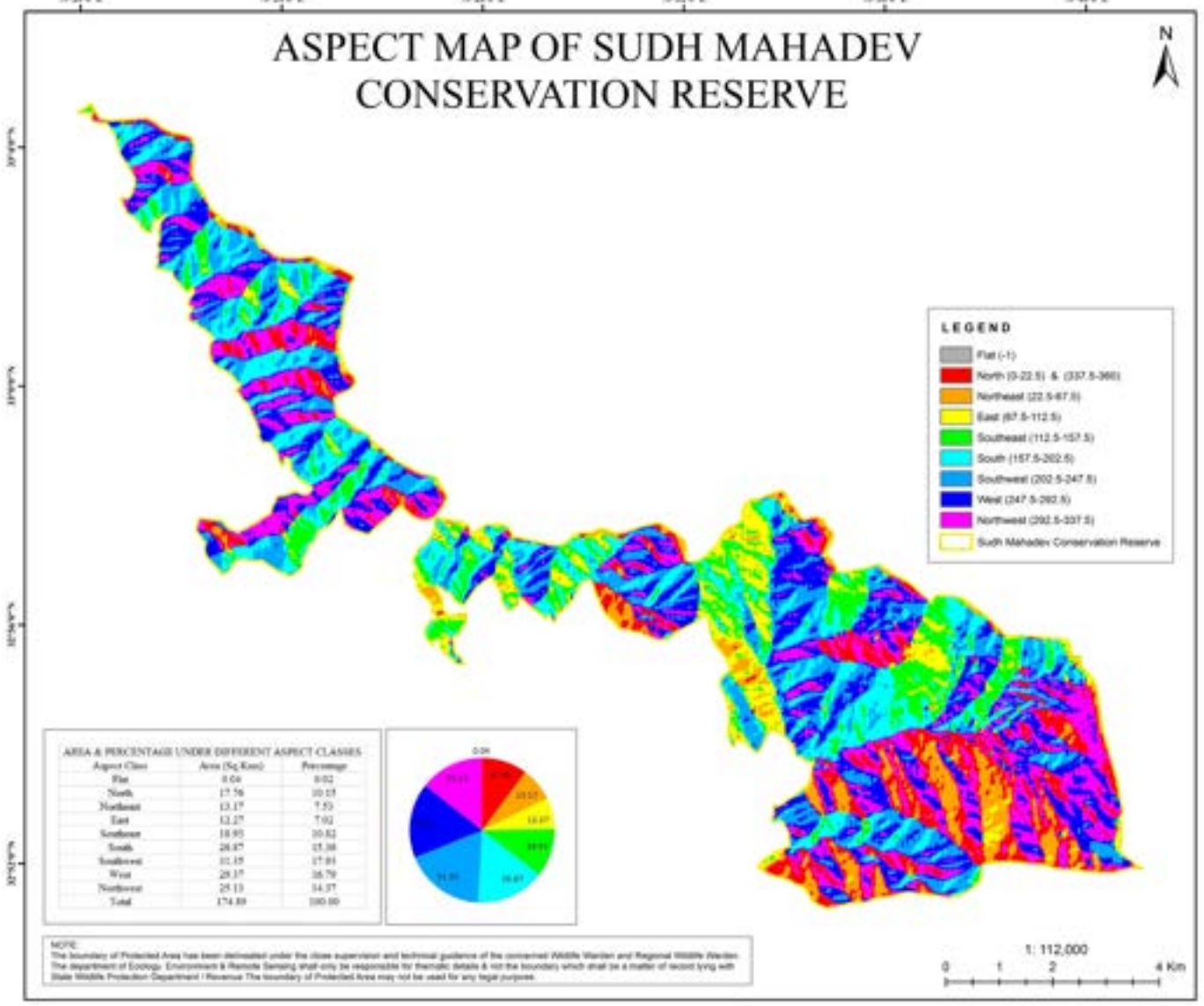


AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	13.78	7.88
6-15	23.28	13.32
16-20	29.55	16.90
21-30	30.3	17.33
31-35	27.98	16.00
36-45	23.4	13.38
46-50	15.63	8.94
51-70	8.58	4.91
71-90	2.38	1.36
Total	174.89	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue The boundary of Protected Area may not be used for any legal purpose.

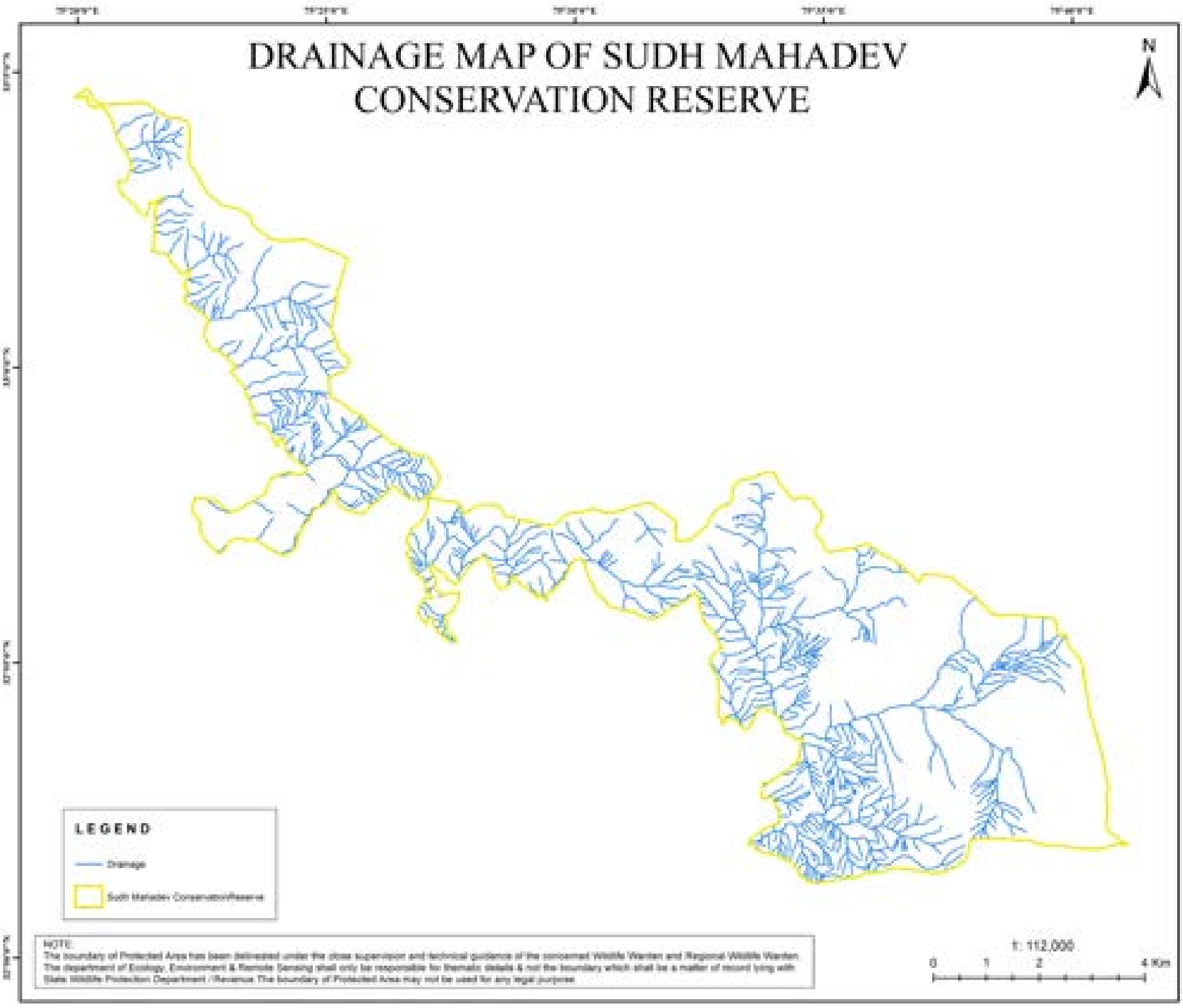
ASPECT MAP OF SUDH MAHADEV CONSERVATION RESERVE

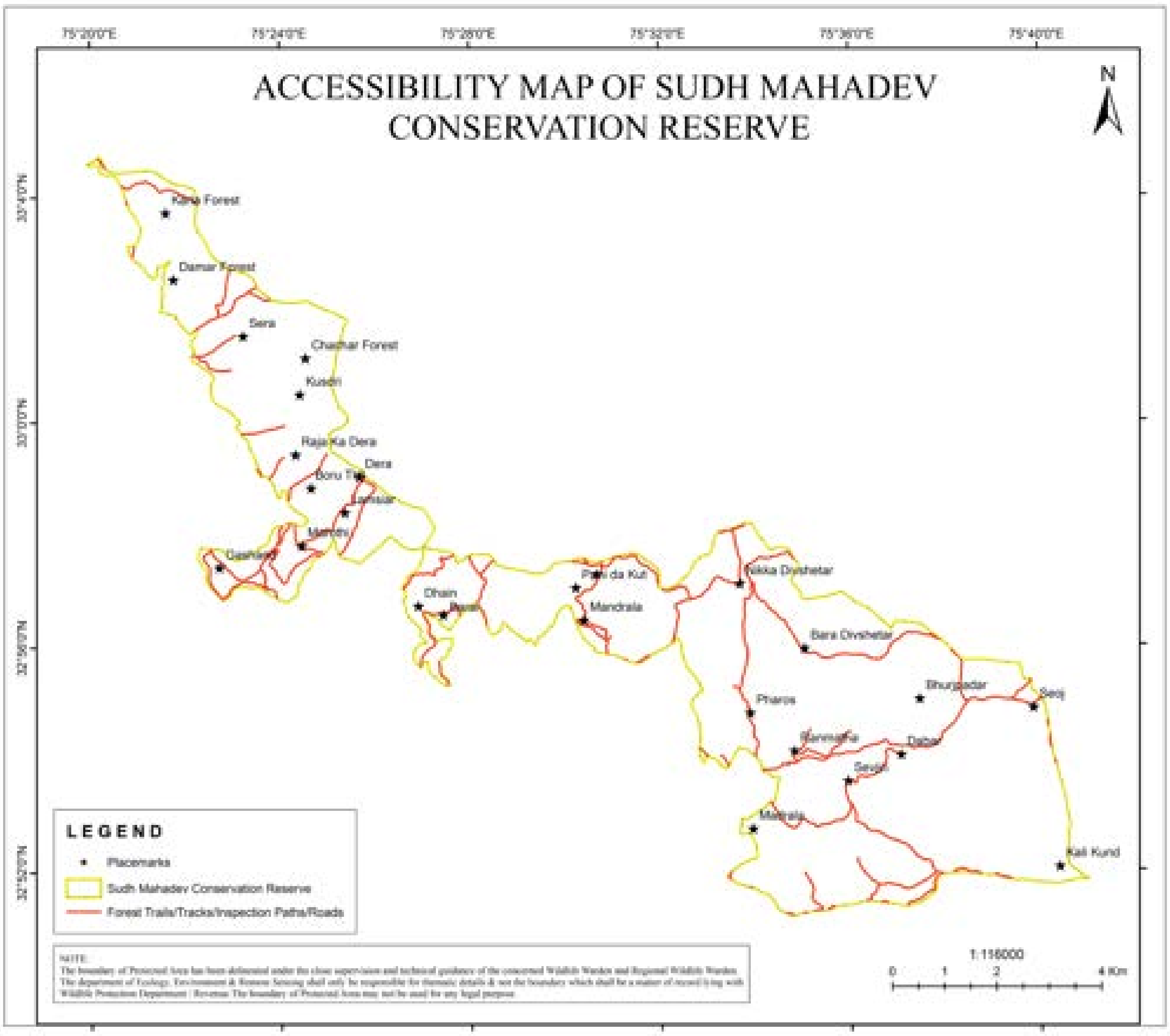


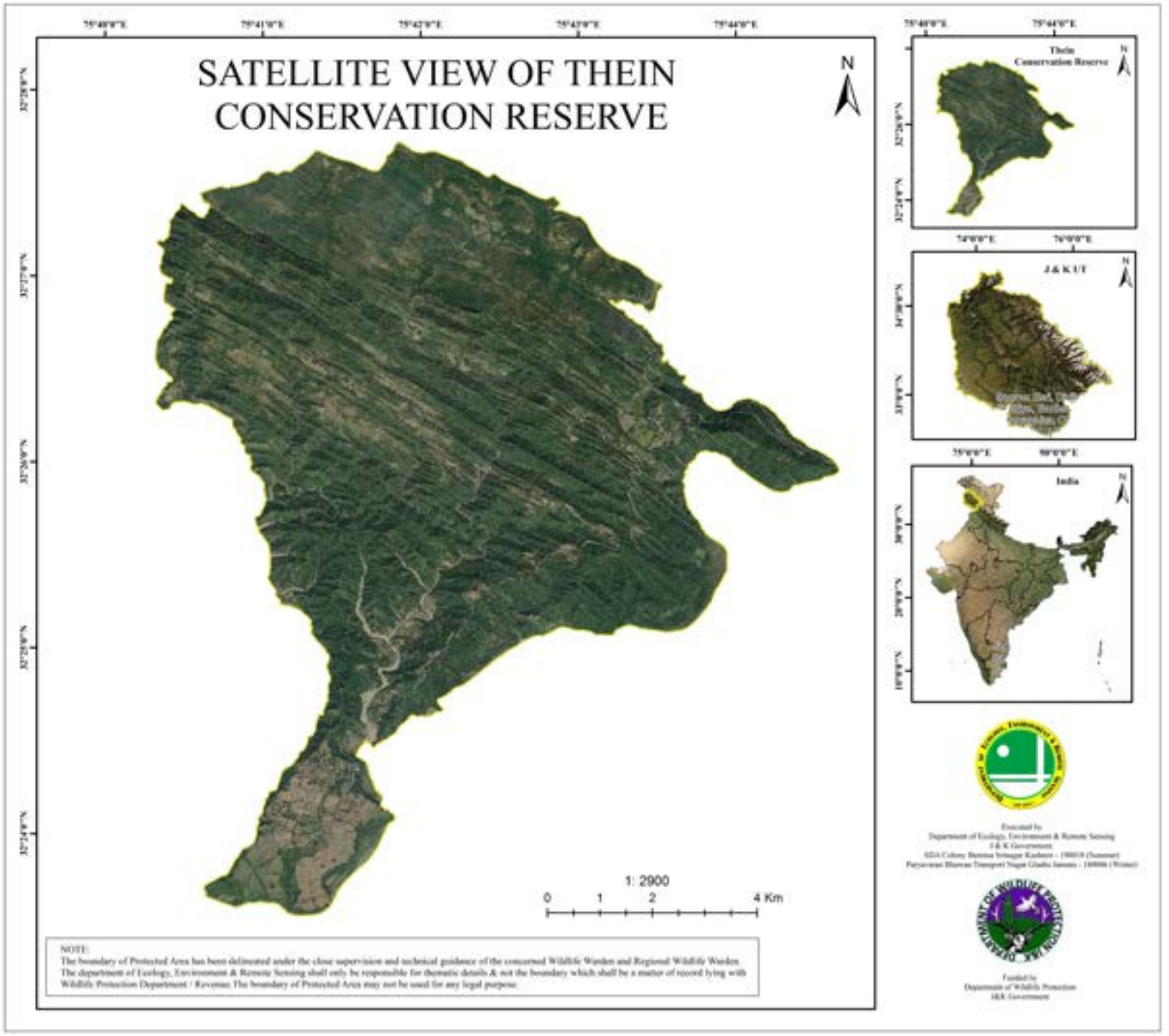
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.04	0.02
North	17.76	10.15
Northeast	13.17	7.53
East	12.27	7.02
Southeast	18.93	10.82
South	26.87	15.36
Southwest	31.35	17.93
West	29.37	16.79
Northwest	25.13	14.37
Total	174.89	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF SUDH MAHADEV
CONSERVATION RESERVE
N
LEGEND
Drainage
Sudh Mahadev ConservationReserve
1: 112,000
0
1
2
4 Km


75°20'0"E
75°24'0"E
75°28'0"E
75°32'0"E
75°36'0"E
75°40'0"E
ACCESSIBILITY MAP OF SUDH MAHADEV
CONSERVATION RESERVE
N
33°4'0"N
33°0'0"N
32°56'0"N
32°52'0"N
Chachar Forest
Sera
Dera
Dhain
Mandrala
Nikka Divshetar
Bara Divshetar
Pharos
Kali Kund
LEGEND
Placemarks
Sudh Mahadev Conservation Reserve
Forest Trails/Tracks/Inspection Paths/Roads
1:116000
0
1
2
4 Km



THEIN CONSERVATION RESERVE

The Thein Conservation Reserve was notified in the year 1981. The Protected area is located along the Ranjit Sagar dam, which provides a beautiful backdrop to the area. The Protected area is rich and diverse in faunal species . The Sarus Crane (Grus antigone) reportedly visits the adjoining areas of the Thein conservation reserve

SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981
NOTIFIED AREA (KM2): 18.90 **GIS AREA** (KM2): 24.65
PERIMETER (KMS): 30.88
ALTITUDE RANGE (M): 329 – 855
GEO - COORDINATES:
32° 23.547′ N - 32° 27.710′ N, 75° 40.299′ E - 75° 44.639′ E

MAJOR FAUNA: Nilgai (*Boselaphus tragocamelus*), Barking Deer (*Muntiacus muntjak*), Chital (*Axis axis*), Porcupine (*Hystrix indica*), Himalayan goral (*Nemorrhaedus goral*), Grey Langur (*Semnopithecus entellus*), Indian Crested Porcupine (*Hystrix indica*), Common Leopard (*Panthera pardus*), Indian Jackal (*Canis aureus*), jungle Cat (*Felis chaus*).

MAJOR AVI FAUNA: Common peafowl (*Pavo cristatus*), Red jungle fowl (*Gallus gallus*), Alexandrine Parakeet (*Psittacula eupatria*), Black kite (*Milvus migrans*), Blue Rock Pigeon (*Columba livia*), Common Kingfisher (*Alcedo atthis*), Common Myna (*Acridotheres tristis*), Golden Eagle (*Aquila chrysaetos*), Golden Oriole (*Oriolus kundoo*), Griffon Vulture (*Gyps fulvus*).

MAJOR FLORA: Cutch tree (*Senegalia catechu*), Fig (*Ficus carica*), Wood Apple (*Aegle marmelos*), Chir pine (*Pinus roxburghii*), Siris tree (*Albizia lebbeck*), Indian jujube (*Ziziphus jujuba*), Neem tree (*Azadirachta indica*), Indian thorny bamboo (*Bambusa bambos*), Carrisse (*Carissa spinarum*), Hopseed bush (*Dodonaea viscosa*).

LAND USE LAND COVER MAP OF THEIN CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	3.24	13.14
Builtup	0.29	1.17
Forest	20.20	81.94
Dense Scrub	0.08	0.32
Open Scrub	0.57	2.32
Waterbody	0.27	1.11
Total	24.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

VEGETATION MAP OF THEIN CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Builtup	0.29	1.17
Cropland	3.24	13.14
Dense Scrub	0.08	0.32
Dry Deciduous	20.20	81.94
Open Scrub	0.57	2.32
Water	0.27	1.11
Total	24.65	100.00

NOTE:
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GEOMORPHOLOGICAL MAP OF THEIN CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	21.55	87.41
Piedmont Zone	2.29	9.28
Structural Hills	0.54	2.19
Waterbody	0.27	1.11
Total	24.65	100.00

1: 35,000
0 1 2 4 Km

LEGEND
- Denudational Hills
- Piedmont Zone
- Structural Hills
- Waterbody
- Thein Conservation Reserve

NOTE:
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LITHOLOGICAL MAP OF THEIN CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sandstone and Conglomerate	24.38	98.89
Waterbody	0.27	1.11
Total	24.65	100.00

1: 35,000
0 1 2 4 Km

LEGEND
- Sandstone & Conglomerate
- Waterbody
- Thein Conservation Reserve

NOTE:
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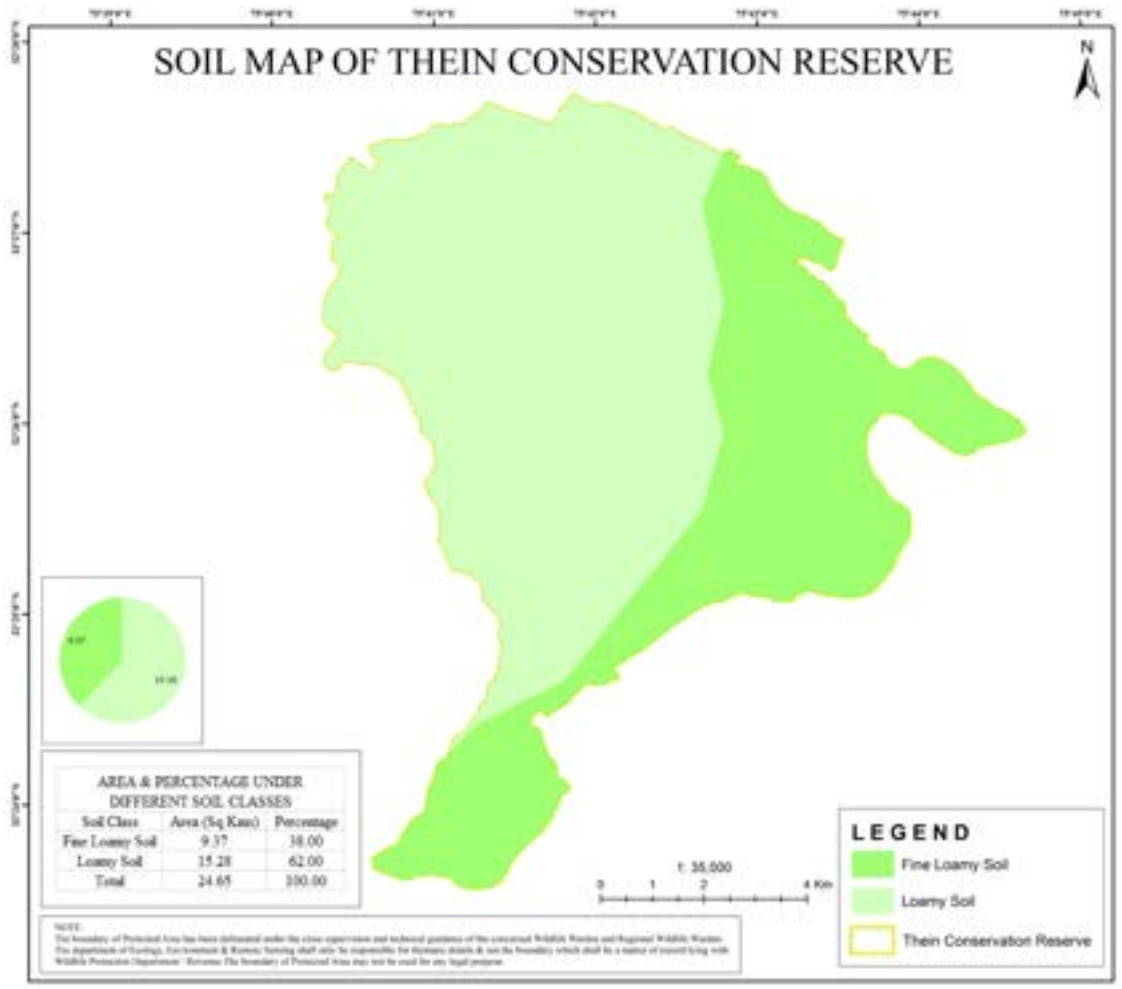
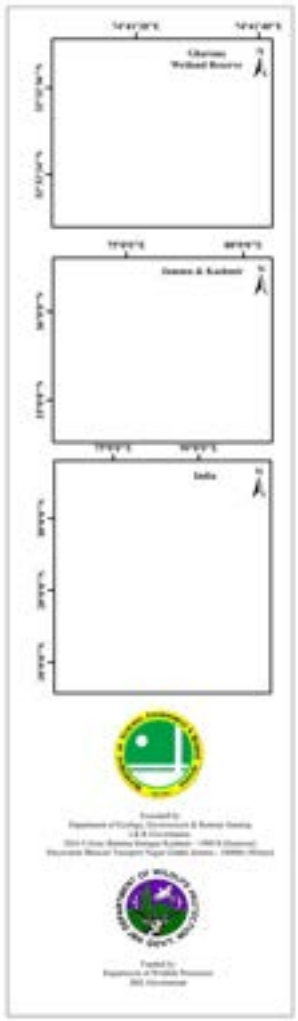
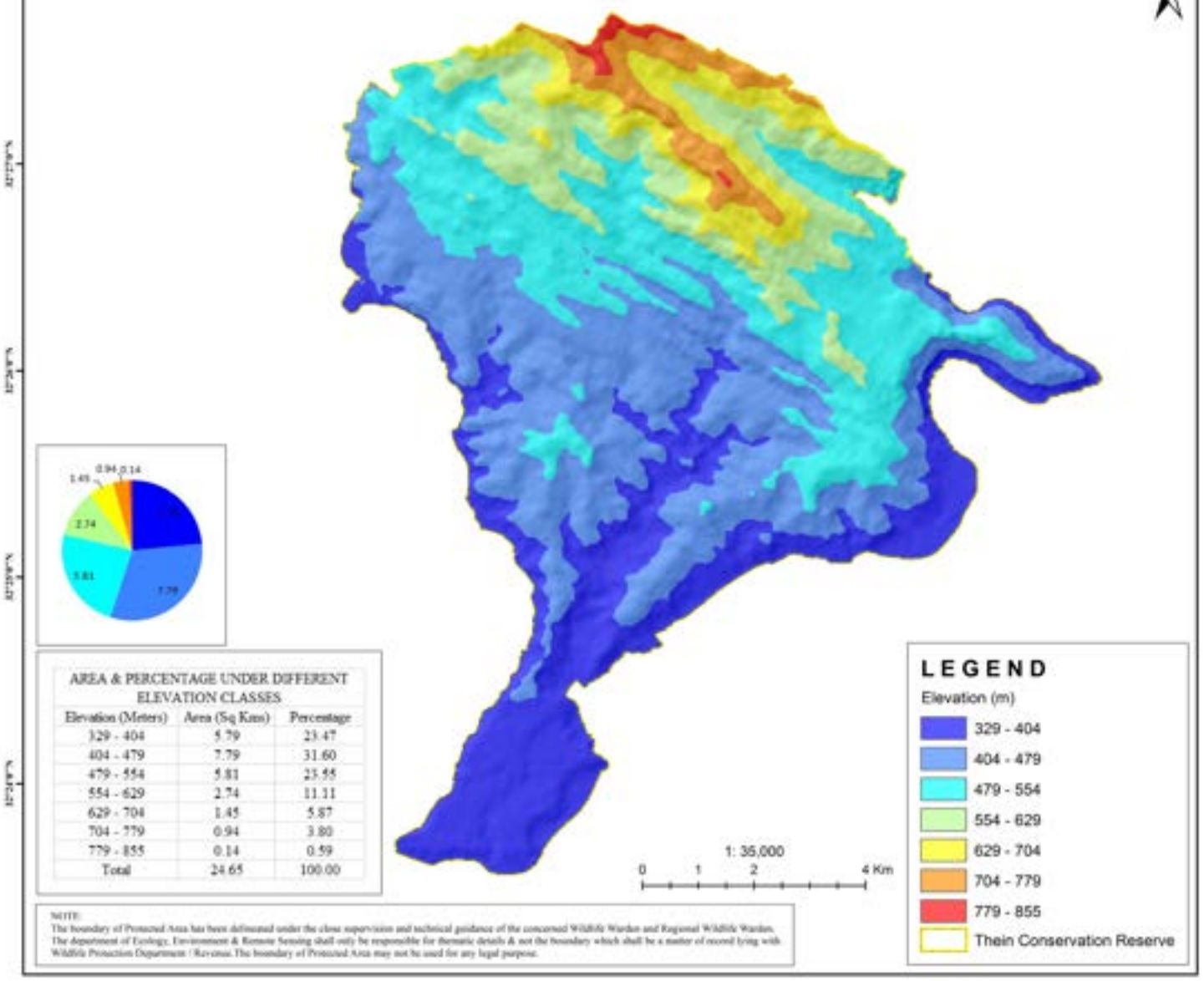
SOIL MAP OF THEIN CONSERVATION RESERVE

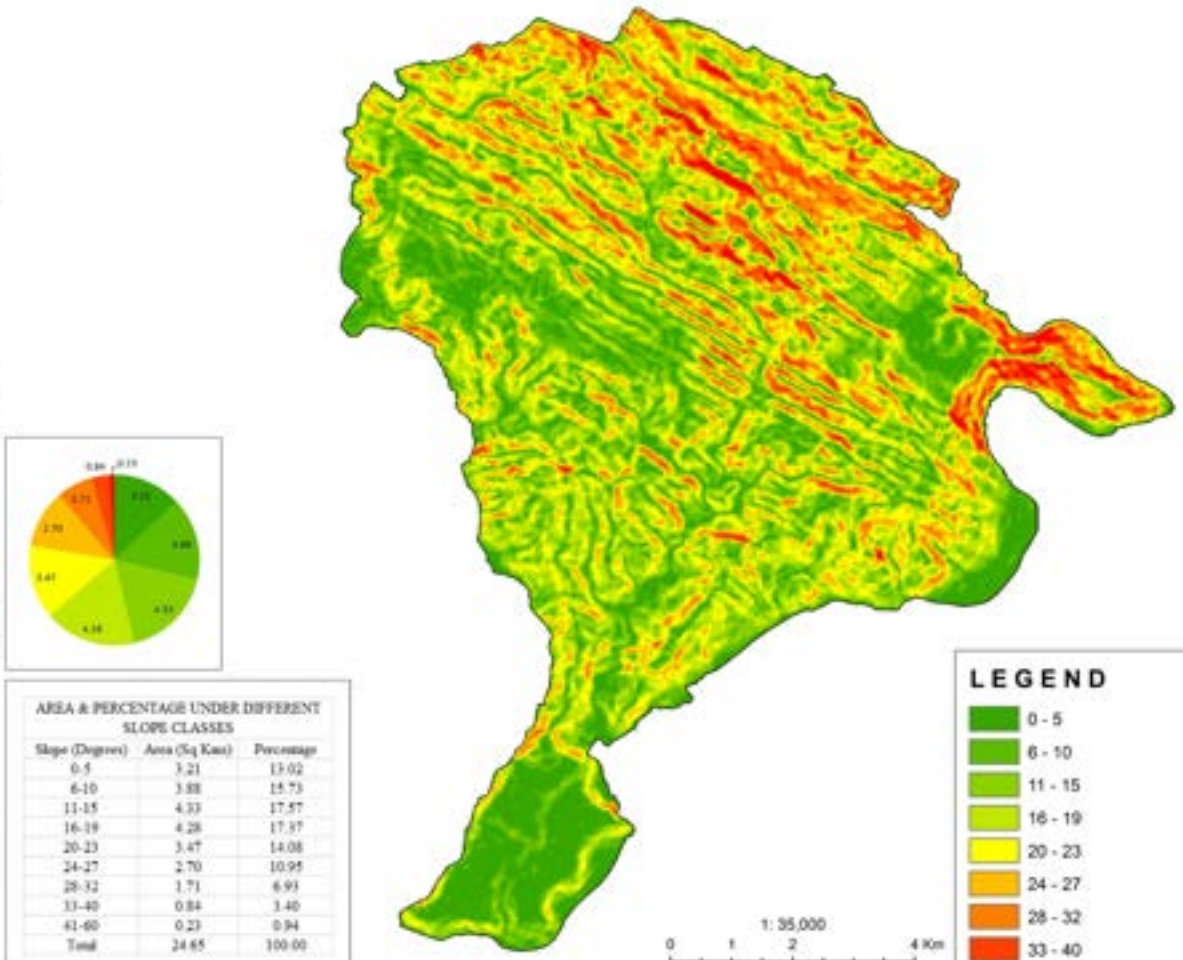




ELEVATION MAP OF THEIN CONSERVATION RESERVE



SLOPE MAP OF THEIN CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	3.21	13.02
6-10	3.88	15.73
11-15	4.33	17.57
16-19	4.28	17.37
20-23	3.47	14.08
24-27	2.70	10.95
28-32	1.71	6.93
33-40	0.84	3.40
41-60	0.23	0.94
Total	24.65	100.00

NOTE:
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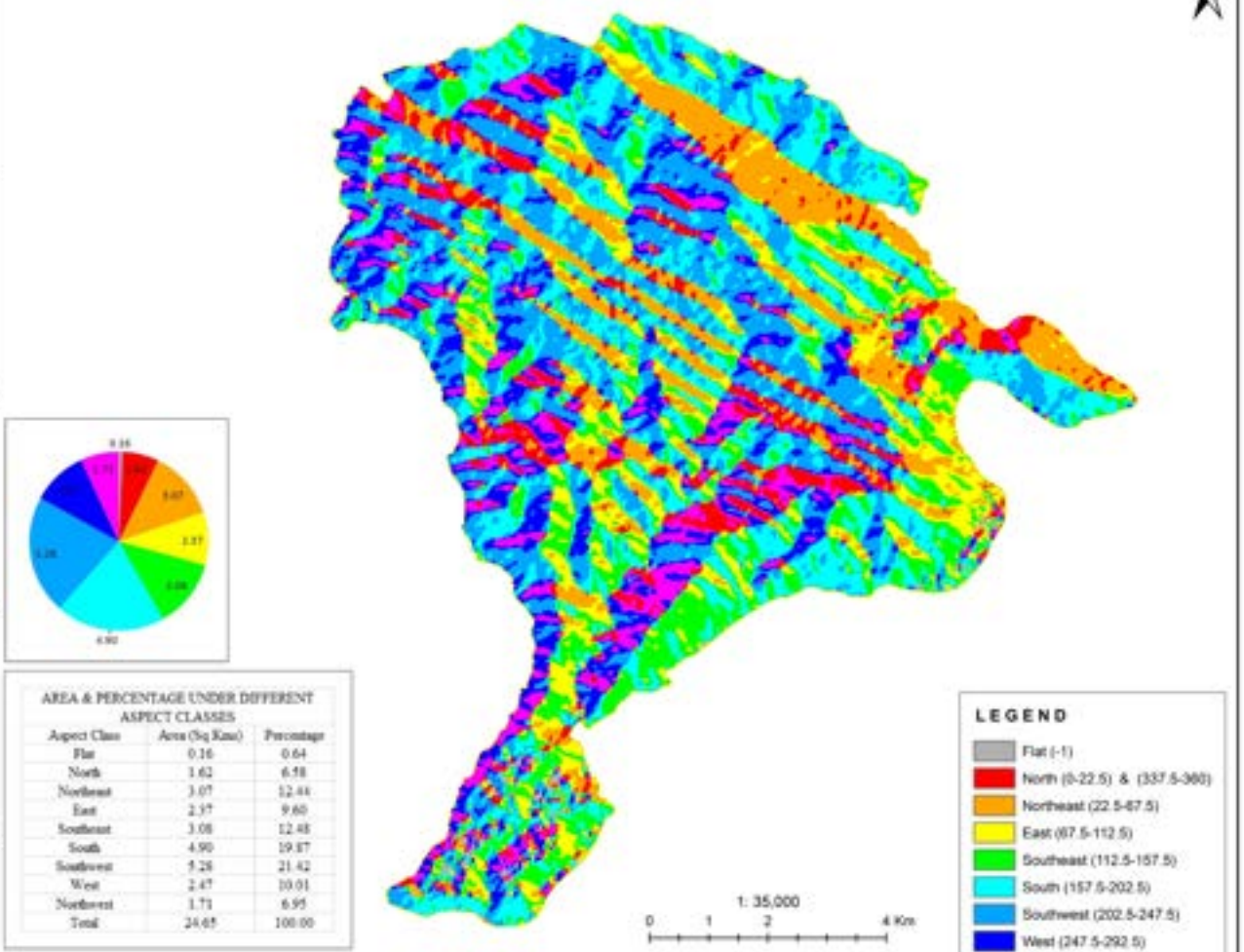
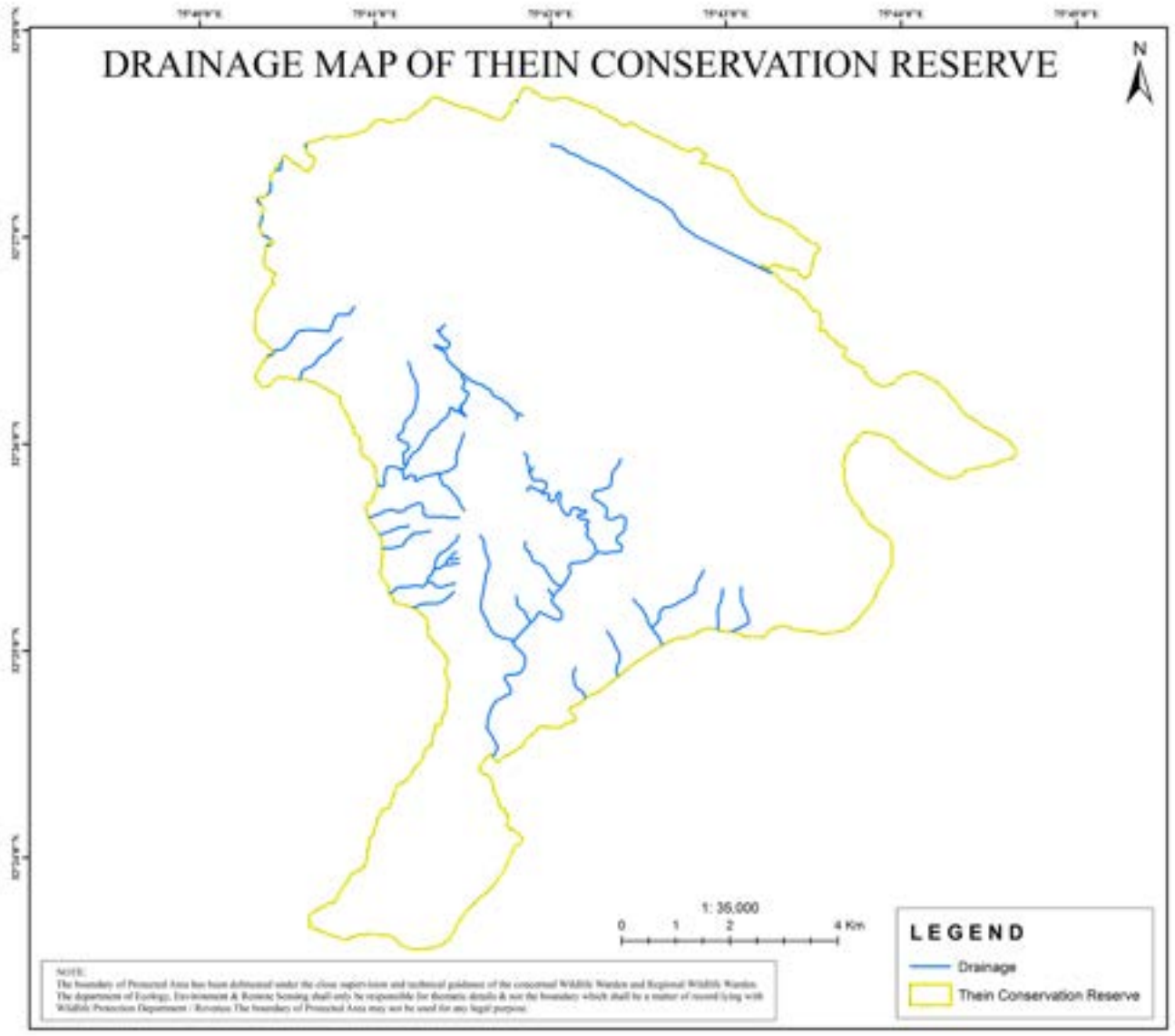
ASPECT MAP OF THEIN CONSERVATION RESERVE

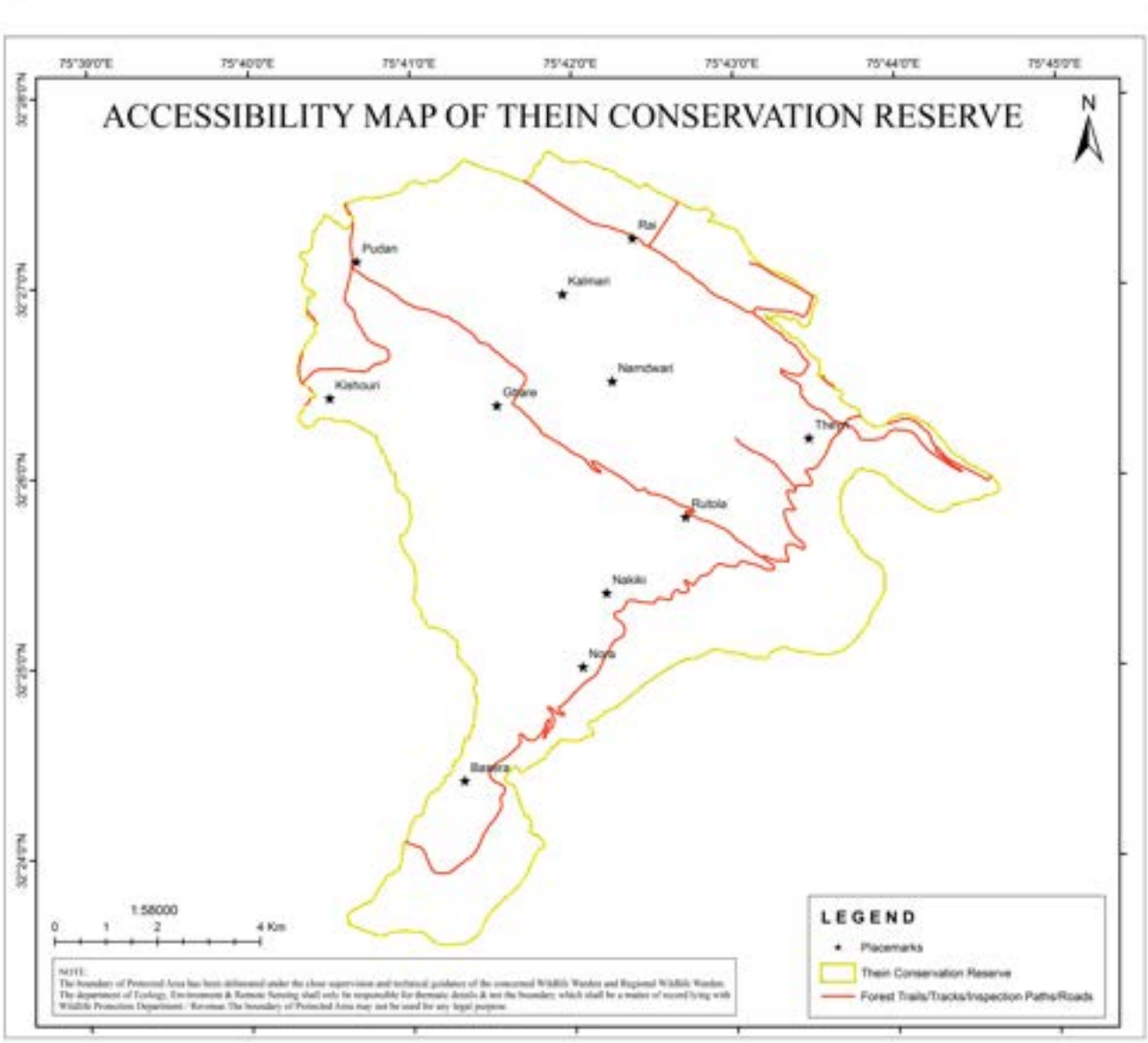


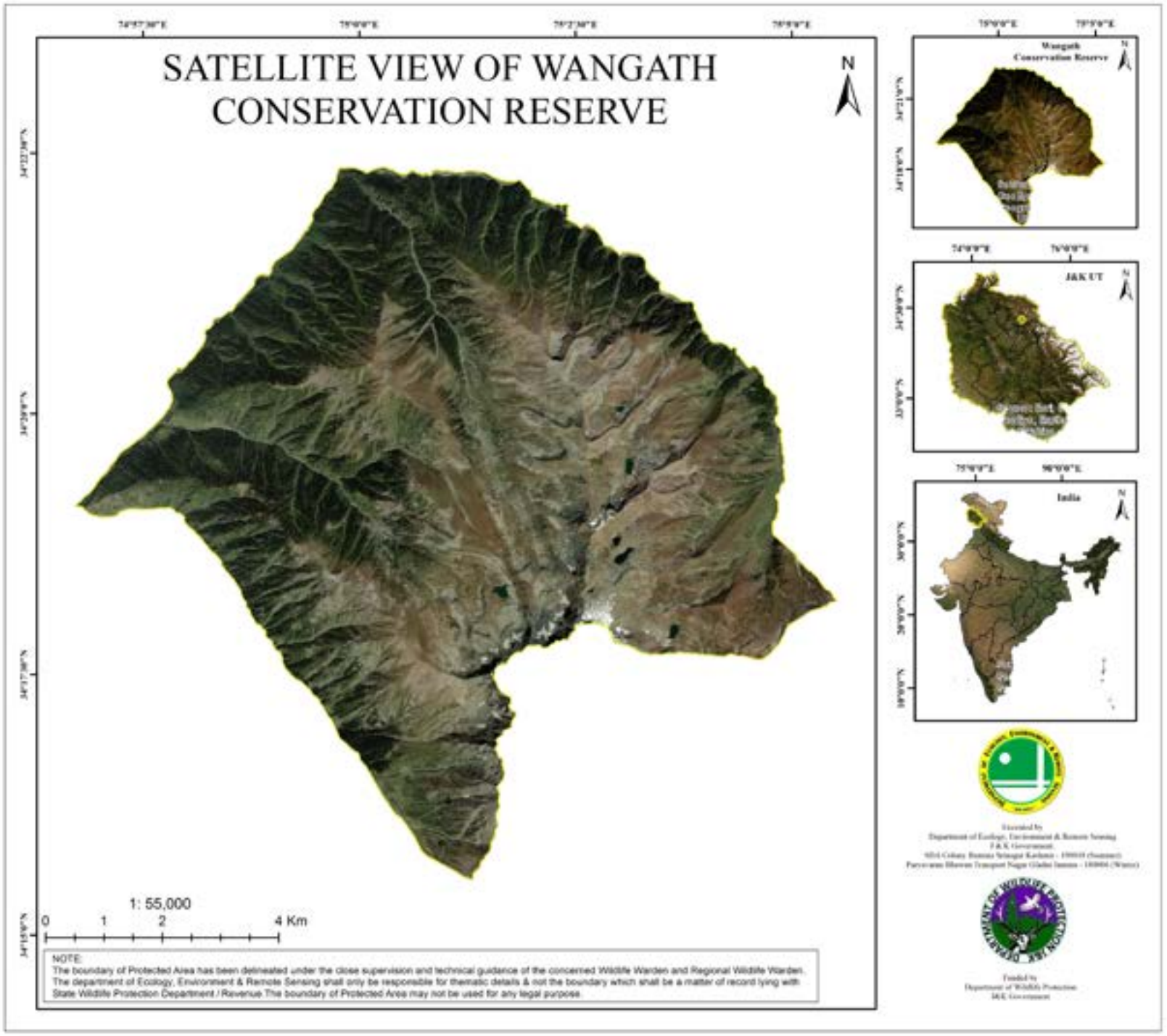
AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.16	0.64
North	1.62	6.58
Northeast	3.07	12.44
East	2.37	9.60
Southeast	3.08	12.48
South	4.90	19.87
Southwest	5.28	21.42
West	2.47	10.01
Northwest	1.71	6.95
Total	24.65	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.


DRAINAGE MAP OF THEIN CONSERVATION RESERVE
N
1: 35,000
0 1 2 4 Km
LEGEND
Drainage
Thein Conservation Reserve


ACCESSIBILITY MAP OF THEIN CONSERVATION RESERVE
N
Pudan
Rai
Kalmari
Namdwari
Kishouri
Gojare
Thein
Rutola
Nakiki
Nora
Basera
1:58000
0 1 2 4 Km
LEGEND
Placemarks
Thein Conservation Reserve
Forest Trails/Tracks/Inspection Paths/Roads



WANGATH CONSERVATION RESERVE

The Wangath Conservation Reserve shows evidences of presence of Hangul and other fauna as result of that the area was notified as Conservation Reserve in the year 1945. Recently herd of Hanjul was sighted in this conservation reserve.

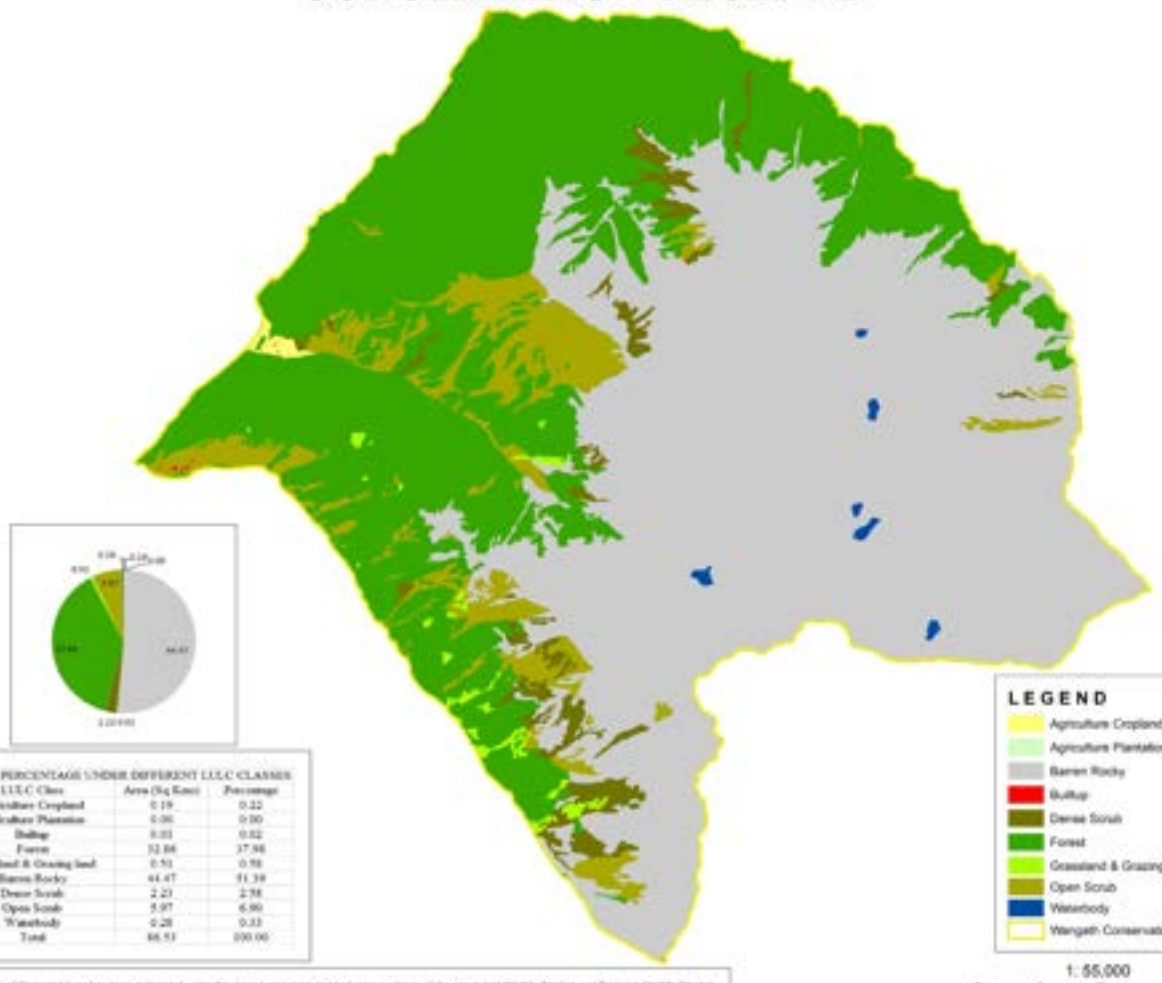
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 12.00 **GIS AREA** (KM2): 86.53
PERIMETER (KMS): 45.72
ALTITUDE RANGE (M): 1988 – 4467
GEO - COORDINATES:
34° 19.107′ N - 34° 22.365′ N, 75° 1.320′ E - 75° 5.522′ E

MAJOR FAUNA: Kashmir Stag/Hangul (*Cervus hanglu*), Asiatic Black Bear (*Ursus thibetanus*), Himalayan Serow (*Capricornis thar*), Common Leopard (*Panthera pardus*), Himalayan Brown Bear (*Ursus arctos*), Long tailed Marmot (*Marmota caudata*), Himalayan Weasel (*Mustela sibirica*), Yellow Throated Marten (*Martes flavigula*), Levantine viper (Microvipera labetina), Kashmir Grey Langur (*Semnopithecus Ajax*), Indian Jackal (*Canis aureus*).

MAJOR AVI FAUNA: Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant (*Pucrasia macrolopha*), Himalayan Griffon Vulture (*Gyps himalayensis*), Black Eared kite (*Milvus migrans*), Kashmir Woodpecker (Drybates himalayansis), Indian Myna (*Acridotheres tristis*), White Cheeked Bulbul (*Pycnonotus leucogenys*), , house sparrow (*Passer domesticus*).

MAJOR FLORA: Fir (*Abies pindrow*), Spruce (*Picea smithiana*), Himalayan Blue Pine (*Pinus wallichiana*), Himalayan horse chestnut (*Aesculus indica*), Himalayan elm (*Ulmus wallichiana*), Parrotia (*Parrotiopsis jacquemontiana*), Wax tree (*Toxicodendron succedaneum*), Dioscorea (*Dioscorea deltoidea*), Indian barberry (*Berberis lyceum*), Himalayan rhubarb (*Rheum webbianum*), Indian Atees *(Aconitum heterophyllum)*.

LAND USE LAND COVER MAP OF WANGATH CONSERVATION RESERVE

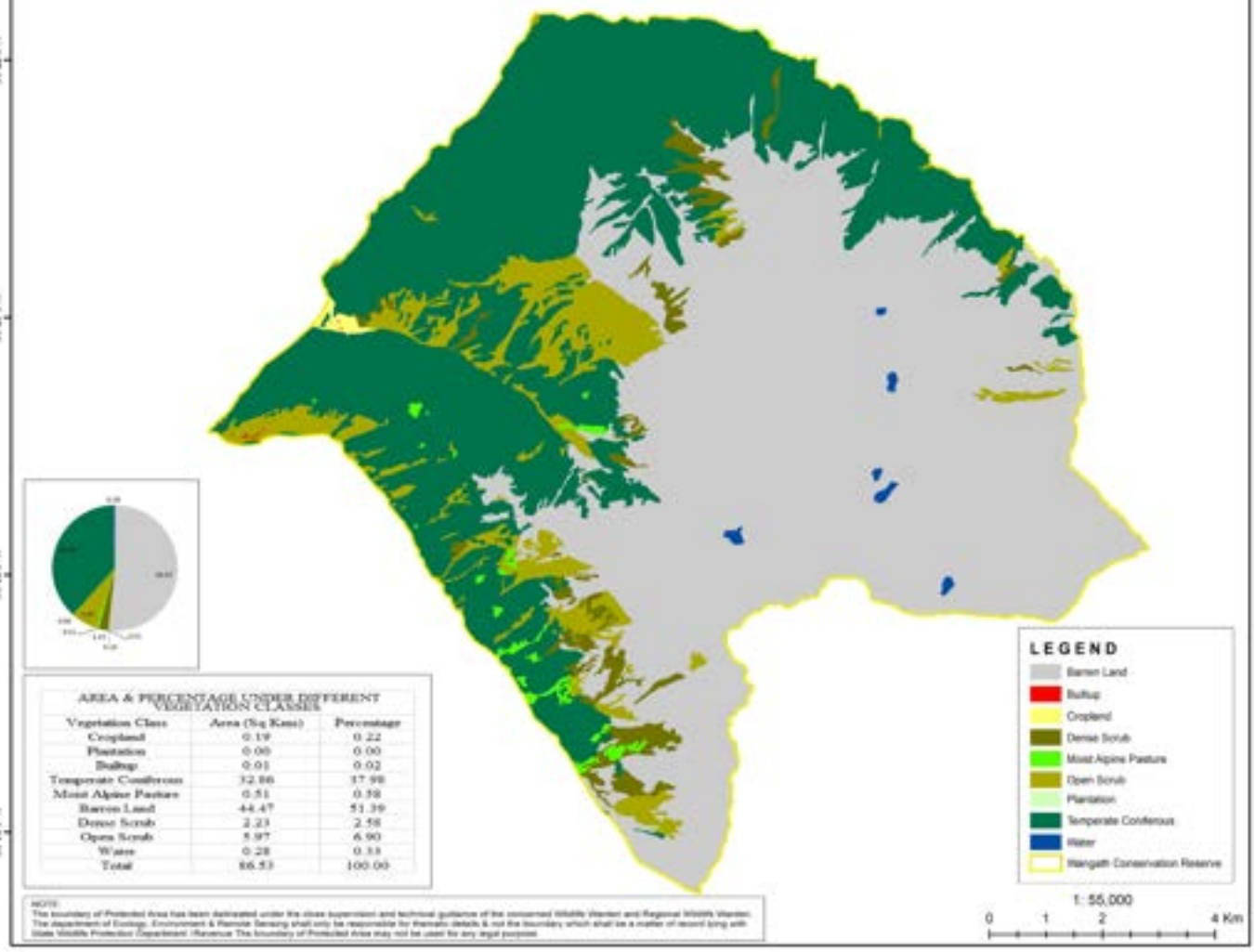


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.19	0.22
Agriculture Plantation	0.00	0.00
Builtup	0.01	0.02
Forest	32.86	37.98
Grassland & Grazing land	0.51	0.58
Barren Rocky	44.47	51.39
Dense Scrub	2.23	2.58
Open Scrub	5.97	6.90
Waterbody	0.28	0.33
Total	86.53	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purposes.

VEGETATION MAP OF WANGATH CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT VEGETATION CLASSES

Vegetation Class	Area (Sq Kms)	Percentage
Cropland	0.19	0.22
Plantation	0.00	0.00
Builtup	0.01	0.02
Temperate Coniferous	32.86	37.98
Moist Alpine Pasture	0.51	0.58
Barren Land	44.47	51.39
Dense Scrub	2.23	2.58
Open Scrub	5.97	6.90
Water	0.28	0.33
Total	86.53	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purposes.

GEOMORPHOLOGICAL MAP OF WANGATH CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Denudational Hills	84.21	97.33
Piedmont Zone	2.03	2.35
Waterbody	0.28	0.33
Total	86.53	100.01

LEGEND
- Denudational Hills
- Piedmont Zone
- Waterbody
- Wangath Conservation Reserve

1: 55,000
0 1 2 4 Km

LITHOLOGICAL MAP OF WANGATH CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Granite	15.71	18.16
Sand Silt with Clay	0.10	0.11
Sandstone Claystone Siltstone	70.44	81.40
Waterbody	0.28	0.33
Total	86.53	100.00

LEGEND
- Granite
- Sand Silt with Clay
- Sandstone Claystone Siltstone
- Waterbody
- Wangath Conservation Reserve

1: 55,000
0 1 2 4 Km

SOIL MAP OF WANGATH CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Loamy Soil	39.57	45.73
Fine Loamy Soil	0.26	0.30
Clayey Skeletal Soil	43.37	50.12
Loamy Sekeltal Soil	3.33	3.84
Total	86.53	100.00

LEGEND

- Loamy Soil
- Clayey Skeletal Soil
- Fine Loamy Soil
- Loamy Skeletal Soil
- Wangath Conservation Reserve

1: 55,000

0 1 2 4 Km

ELEVATION MAP OF WANGATH CONSERVATION RESERVE

AREA & PERCENTAGE UNDER DIFFERENT ELEVATION CLASSES

Elevation (Meters)	Area (Sq Kms)	Percentage
1988 - 2340	2.69	3.11
2340 - 2700	6.34	7.33
2700 - 3050	9.71	11.22
3050 - 3400	15.82	18.28
3400 - 3760	23.98	27.71
3760 - 4110	23.23	26.85
4110 - 4467	4.76	5.50
Total	86.53	100.00

LEGEND

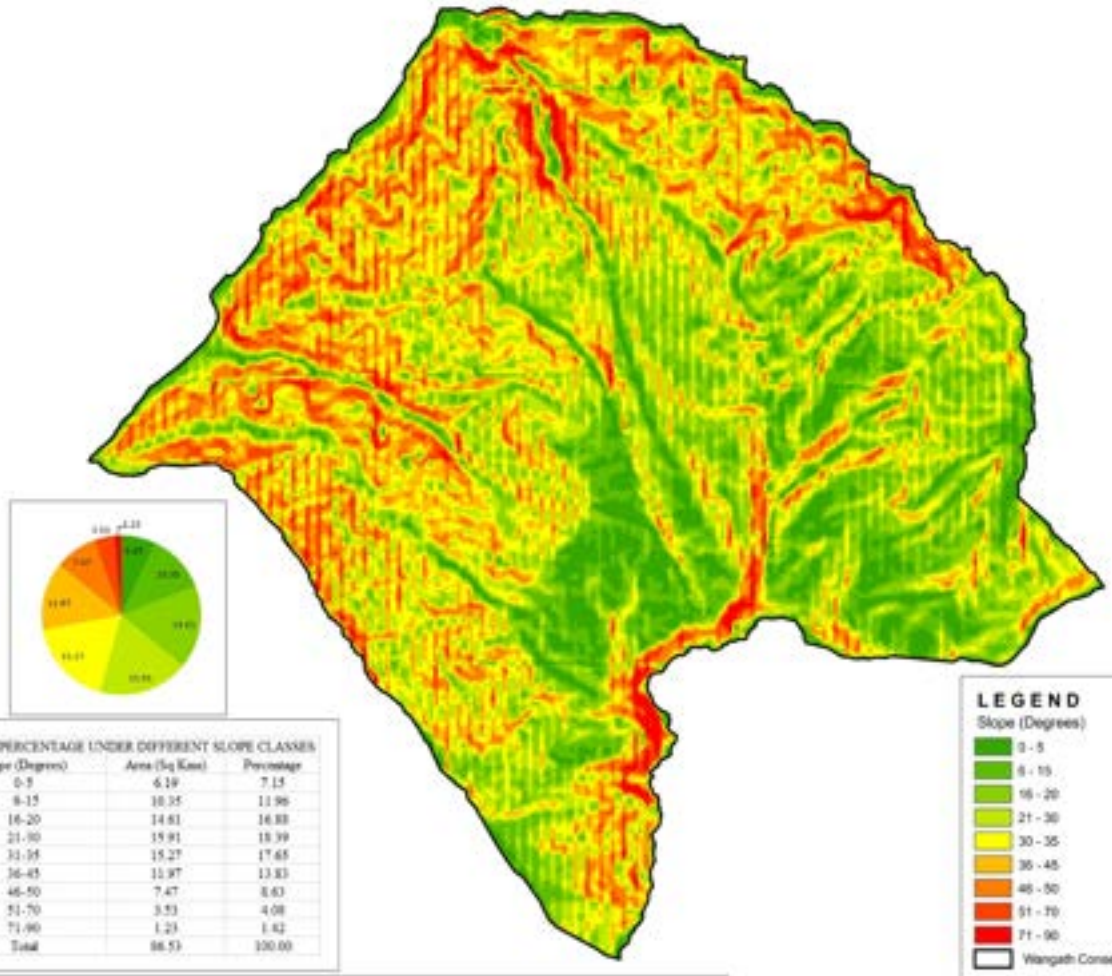
Elevation (m)

- 1988 - 2340
- 2340 - 2700
- 2700 - 3050
- 3050 - 3400
- 3400 - 3760
- 3760 - 4110
- 4110 - 4467
- Wangath Conservation Reserve

1: 55,000

0 1 2 4 Km

SLOPE MAP OF WANGATH CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SLOPE CLASSES

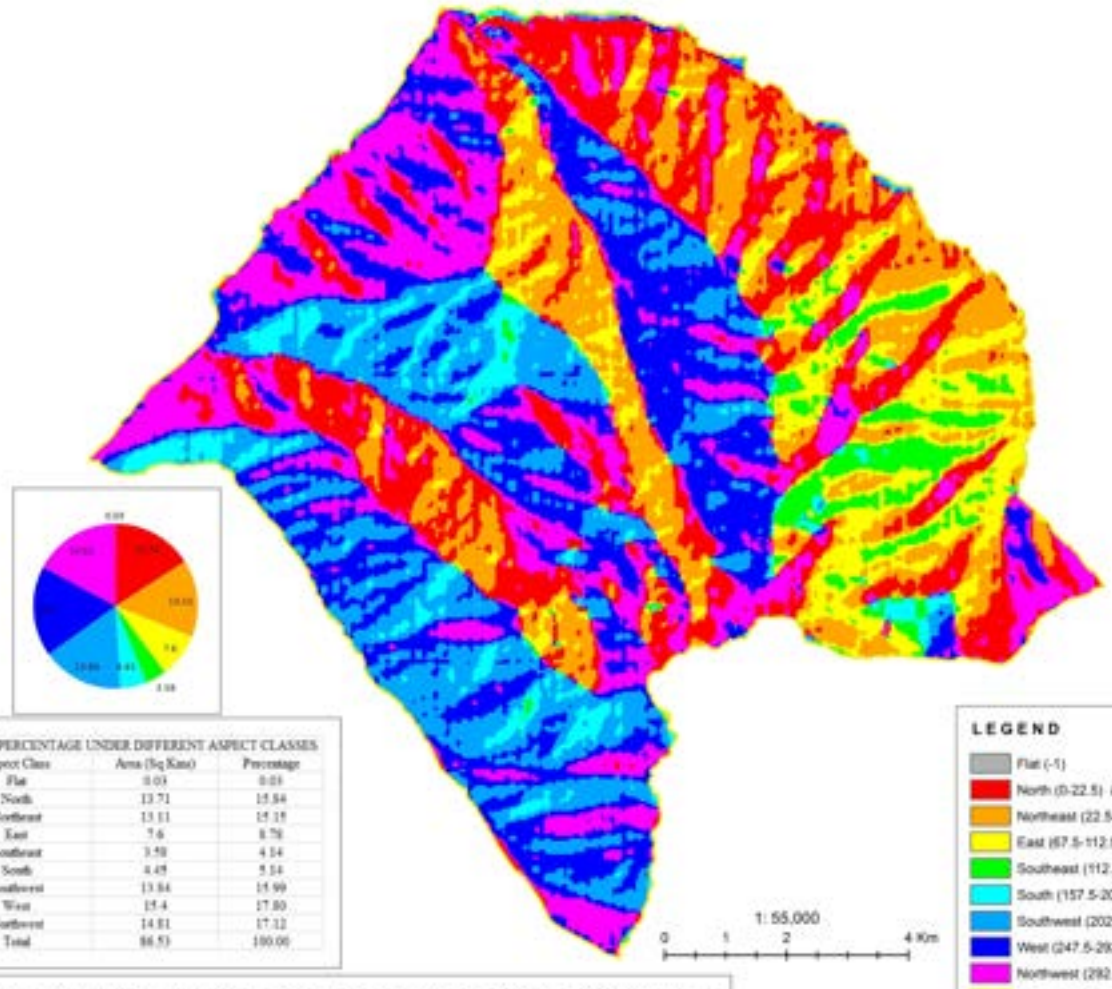
Slope (Degrees)	Area (Sq Kms)	Percentage
0-5	6.19	7.15
6-15	10.35	11.96
16-20	14.61	16.88
21-30	15.91	18.39
31-35	15.27	17.65
36-45	11.97	13.83
46-50	7.47	8.63
51-70	3.53	4.08
71-90	1.23	1.42
Total	86.53	100.00

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LEGEND
Slope (Degrees)
- 0 - 5
- 6 - 15
- 16 - 20
- 21 - 30
- 30 - 35
- 36 - 45
- 46 - 50
- 51 - 70
- 71 - 90
- Wangath Conservation Reserve

1: 55,000
0 1 2 4 Km

ASPECT MAP OF WANGATH CONSERVATION RESERVE



AREA & PERCENTAGE UNDER DIFFERENT ASPECT CLASSES

Aspect Class	Area (Sq Kms)	Percentage
Flat	0.03	0.03
North	13.71	15.84
Northeast	13.11	15.15
East	7.6	8.78
Southeast	3.58	4.14
South	4.45	5.14
Southwest	13.84	15.99
West	15.4	17.80
Northwest	14.81	17.12
Total	86.53	100.00

NOTE
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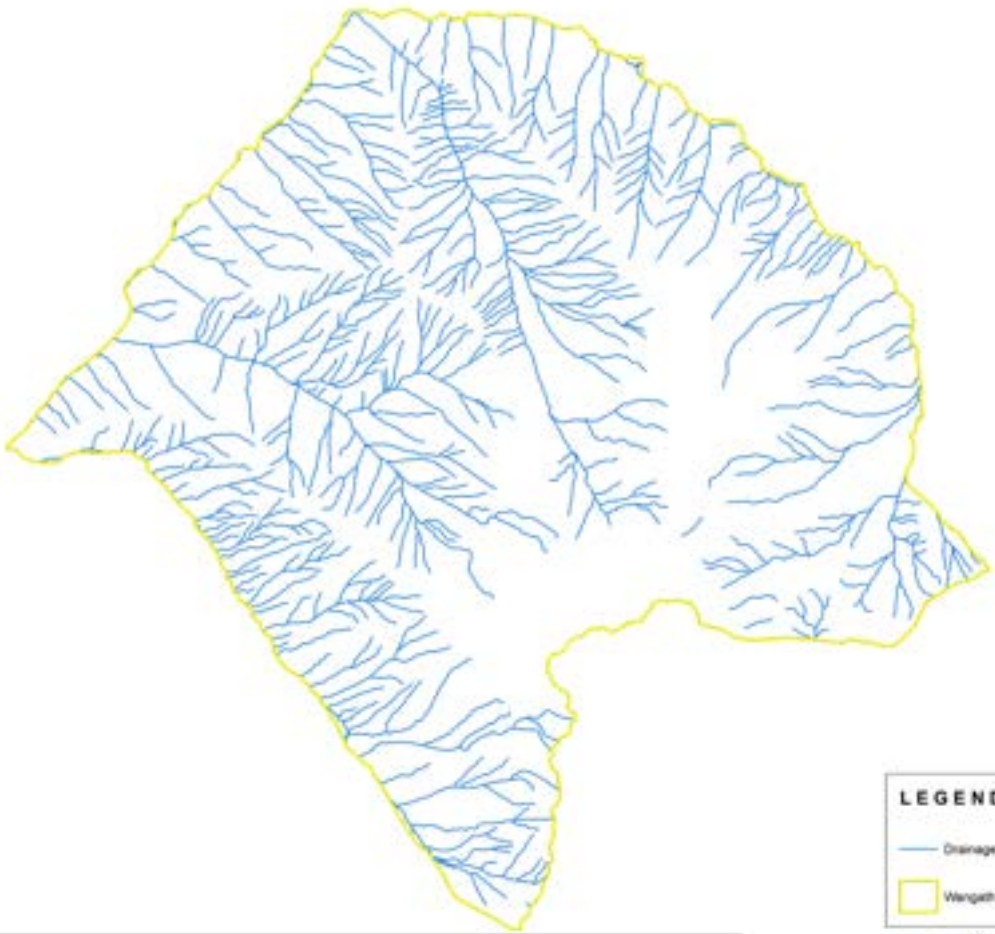
LEGEND
- Flat (-1)
- North (0-22.5) & (337.5-360)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- Wangath Conservation Reserve

1: 55,000
0 1 2 4 Km

DRAINAGE MAP OF WANGATH CONSERVATION RESERVE



LEGEND

Drainage

Wangath ConservationReserve

1: 55,000

0 1 2 4 Km

NOTE:
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ACCESSIBILITY MAP OF WANGATH CONSERVATION RESERVE

LEGEND

Placemarks

Wangath Conservation Reserve

Forest Trails/Tracks/Inspection Paths/Roads

1:58000

0 1 2 4 Km

NOTE:
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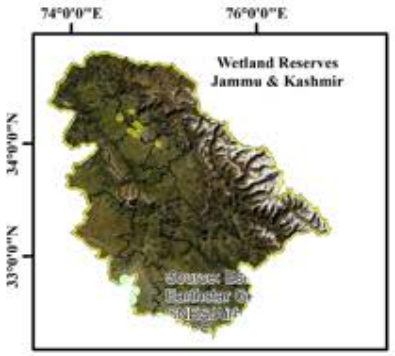
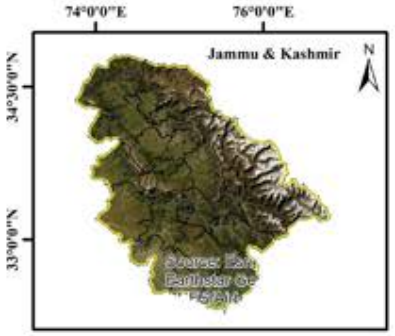
WILDLIFE PROTECTED AREA NETWORK J&K

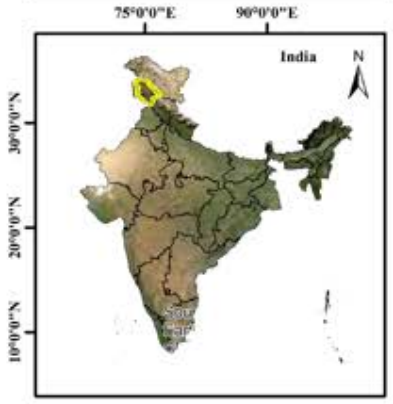
WETLAND CONSERVATION RESERVES

PROTECTED AREAS
(WETLAND CONSERVATION RESERVES)
JAMMU & KASHMIR - UT

1.Chatalum Wetland Reserve
2.Freshkhori Wetland Reserve
3.Gharana Wetland Reserve
4.Haigam Wetland Reserve
5.Hokersar Wetland Reserve
6.Kranchoo Wetland Reserve
7.Kukarian Wetland Reserve
8.Malgoam Wetland Reserve
9.Manibugh Wetland Reserve
10.Mirgund Wetland Reserve
11.Nanga Wetland Reserve
12.Pargwal Wetland Reserve
13.Sangral Asa Chak Wetland Reserve
14.Shalbug Wetland Reserve

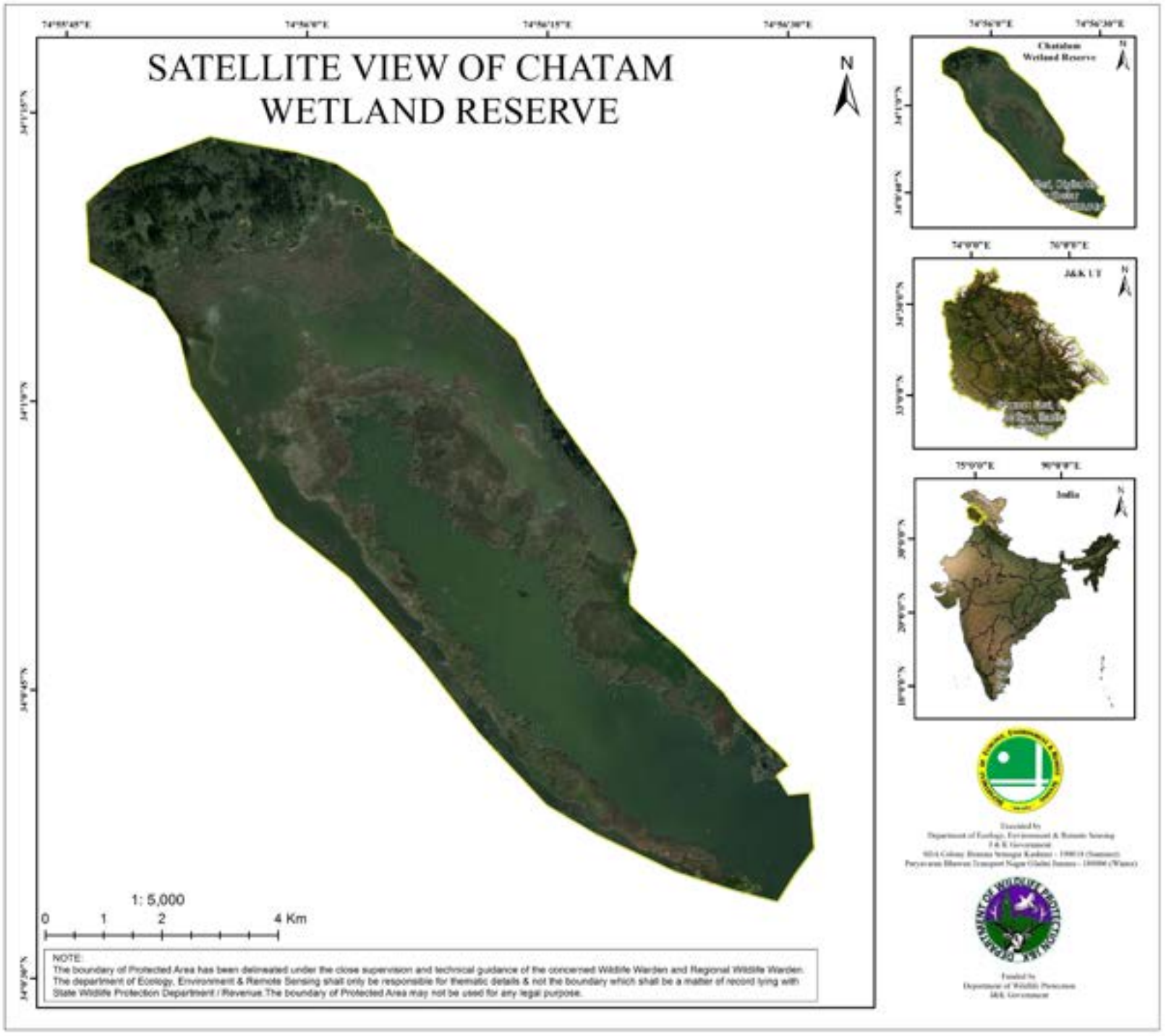






Executed by
Department of Ecology, Environment & Remote Sensing
J & K Government
SDA Colony Bemina Srinagar Kashmir - 190018 (Summer)
Paryavaran Bhawan Transport Nagar Gladni Jammu - 180006 (Winter)

Funded by
Department of Wildlife Protection
J&K Government



CHATLAM WETLAND RESERVE

Chatlam wetland reserve was notified in the year 1970 and supports a rich diversity of migratory birds coming from different parts of world including Siberia and Central Asia during winter. The Chatlam Wetland Reserve is located close to Pampore town in south Kashmir in Pulwama. It is located about 16 Kms from summer capital Srinagar.

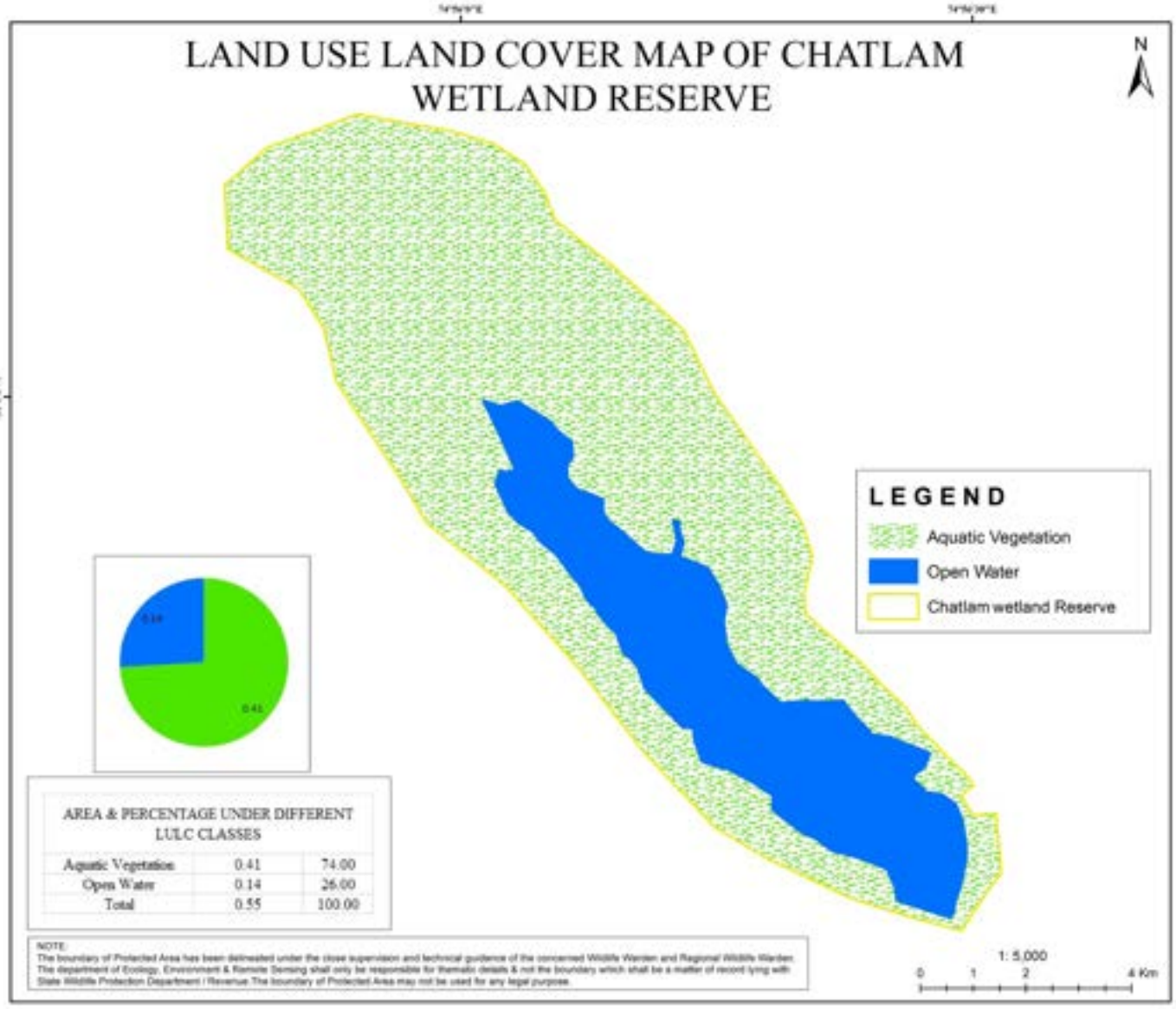
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 8.52 **GIS AREA** (KM2): 0.55
PERIMETER (KMS): 3.64
ALTITUDE (M): 1550
GEO - COORDINATES:
34° 0.566′ N - 34° 1.230′ N, 74° 55.773′ E - 74° 56.523′ E

RESIDENT BIRDS: House sparrow (*Passer domesticus*), Little grebe (*Tachybaptus ruficollis*), Himalayan griffon vulture(*Gyps himalayensis*), Great horned owl (*Bubo bubo*), Common sand piper (*Actitis hypoleucos*), Common Myna (*Acridotheres tristis*), Blue Rock Pigeon (*Columba livia*), White Cheeked bulbul (*Pycnonotus leucogenys*), Common pariah kite (*Milvus migrans*), Blue crowned night heron (*Nycticorax nycticorax*), Eastern grey heron (*Ardea cinerea*), Indian pond heron (*Ardeola grayii*), Central Asian kingfisher (*Alcedo atthis pallasi*) and House crow (*Corvus splendens*).

MIGRATORY BIRDS: Mallard (*Anas platyrhynchos*), Gadwall (*Anas strepera*), Indian oriole (*Oriolus oriolus kundoo*), Slaty headed parakeet (*Psittacula himalayana*) and Greater painted snipe (*Rostratula benghalensis*) Common swallow (*Hirundo rustica*), Rufous backed shrike (*Lanius schach*), Little Bittern (*Ixobrychus minutus*), Common pochard (*Aythya ferina)*, Red crested pochard (*Anas rufina*) and Graylag goose (*Anser anser*).

MAJOR FLORA: Common aquatic vegetation includes *Polygonum amphibium, Juncus articulatus, Typha angustifolia, Phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba, Trapa natans, Lemna.*

LAND USE LAND COVER MAP OF CHATLAM WETLAND RESERVE

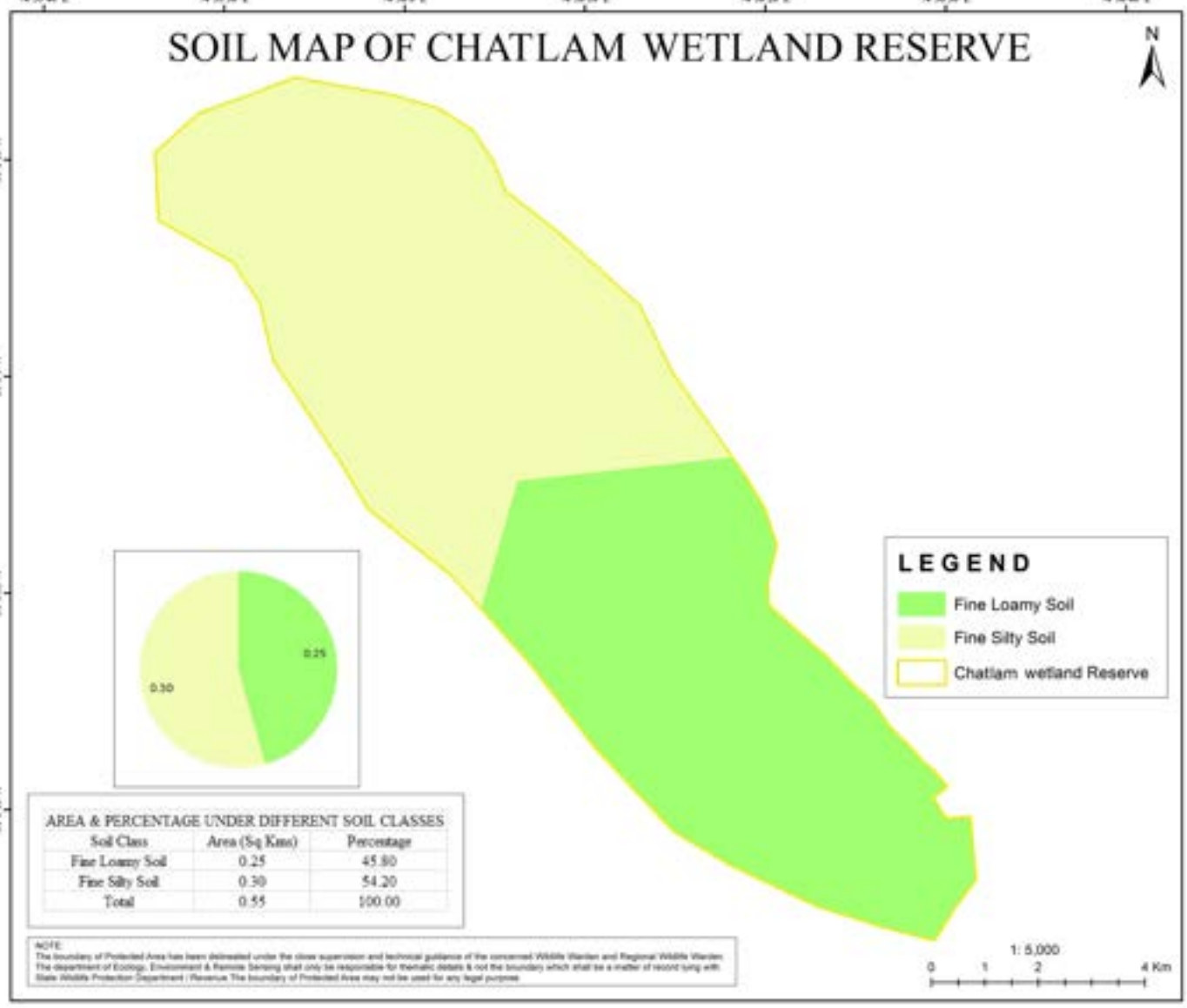


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

Aquatic Vegetation	0.41	74.00
Open Water	0.14	26.00
Total	0.55	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF CHATLAM WETLAND RESERVE

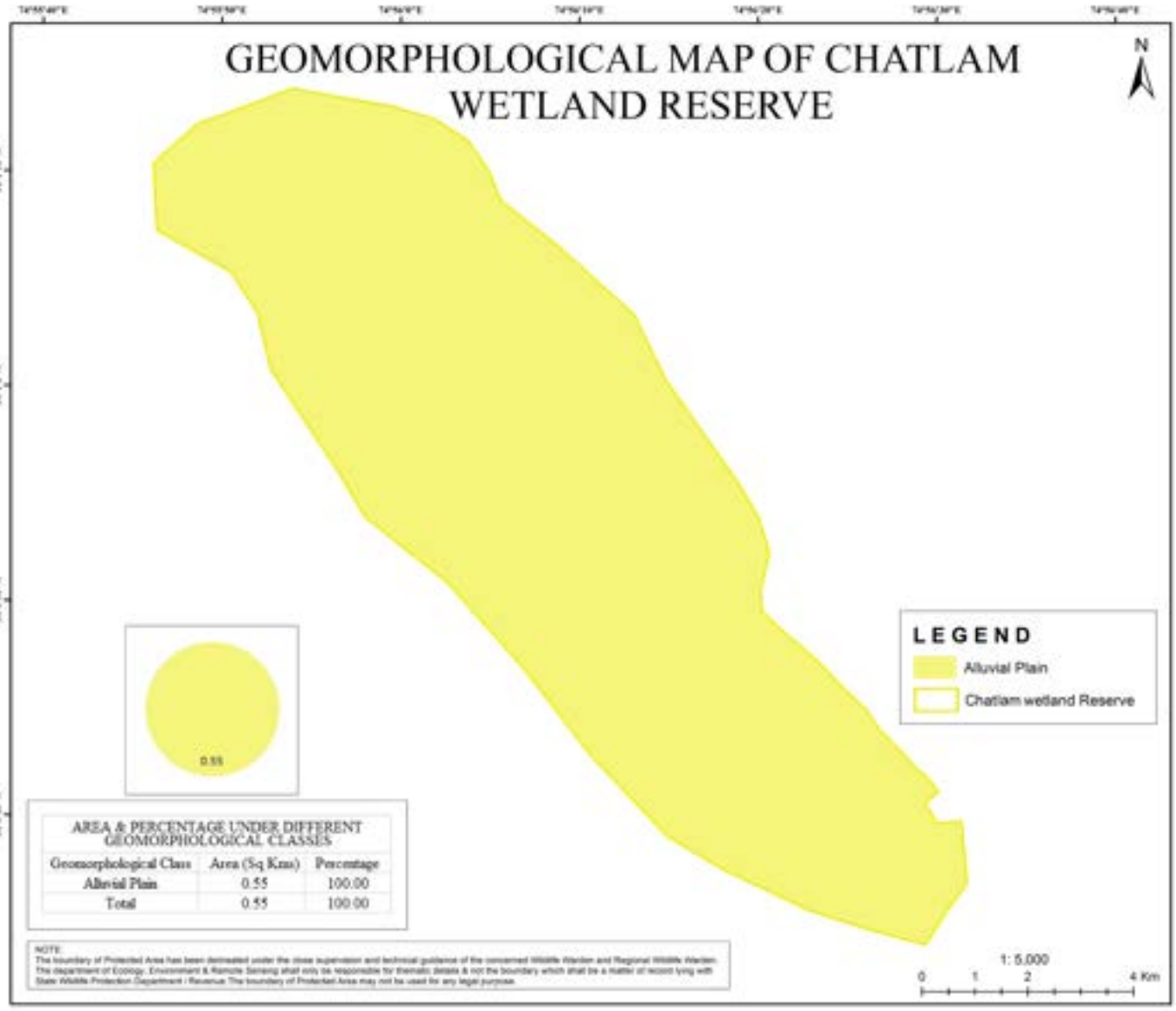


AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	0.25	45.80
Fine Silty Soil	0.30	54.20
Total	0.55	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF CHATLAM WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Alluvial Plain	0.55	100.00
Total	0.55	100.00

NOTE
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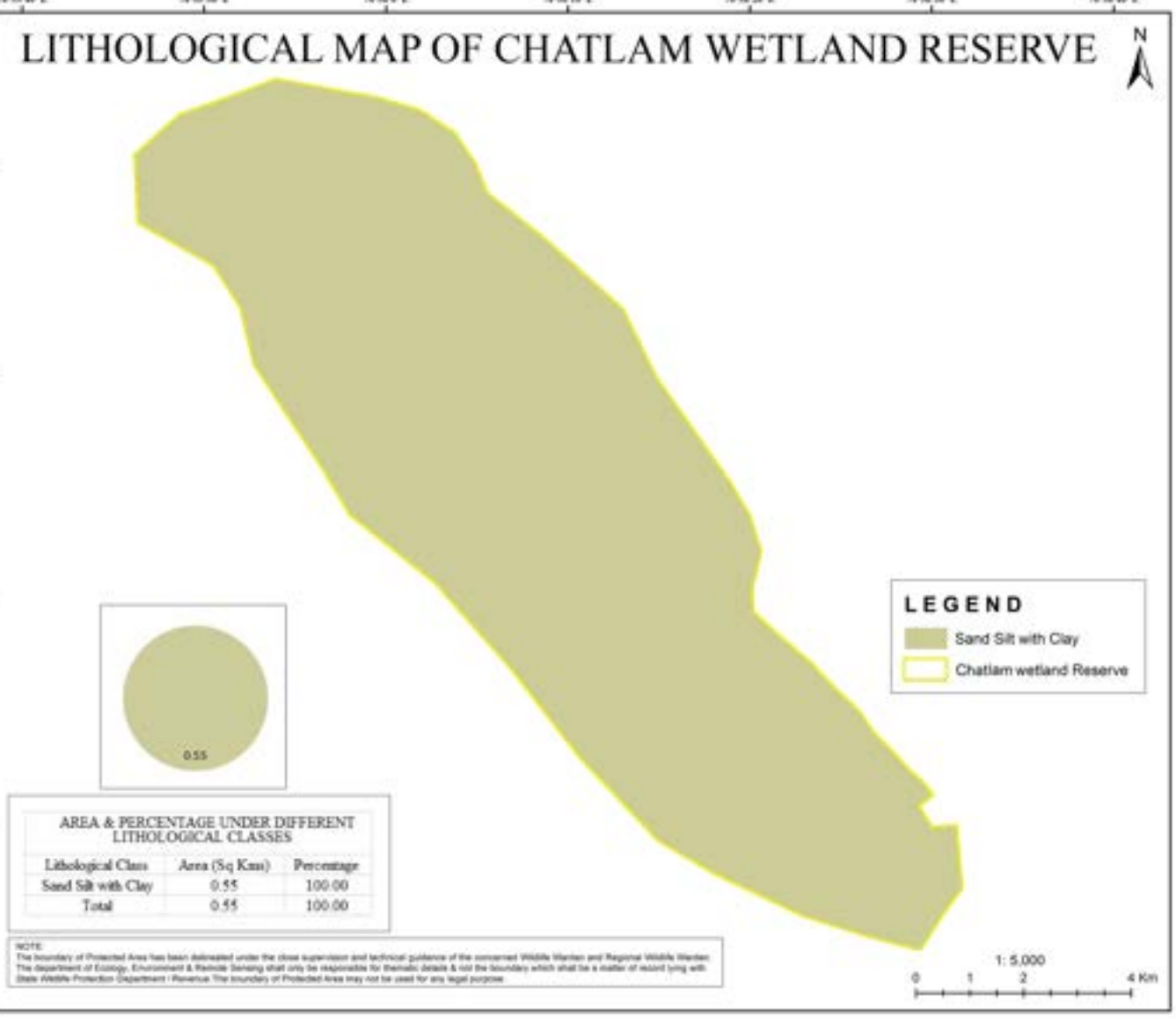
LITHOLOGICAL MAP OF CHATLAM WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Silt with Clay	0.55	100.00
Total	0.55	100.00

NOTE
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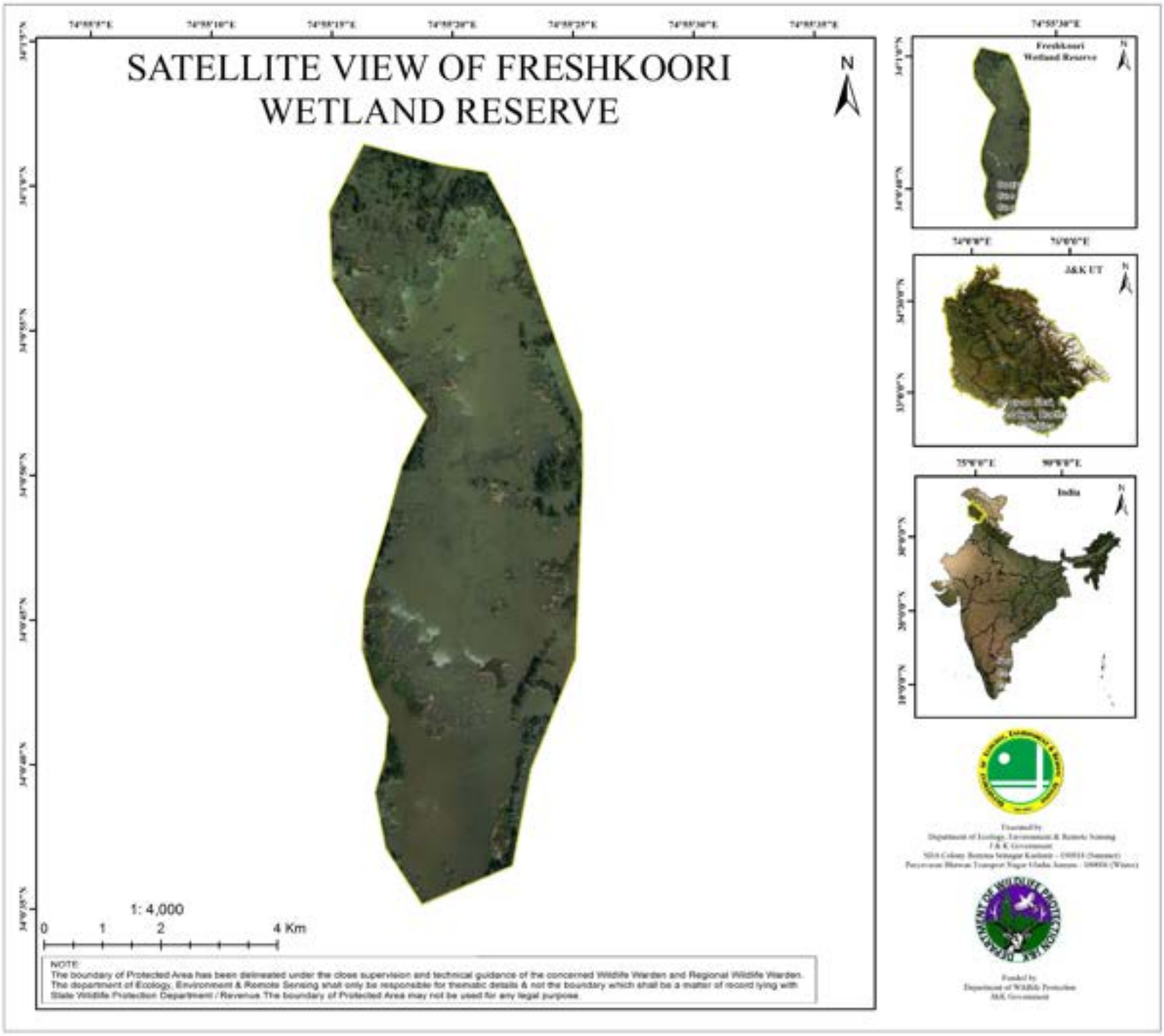


FRESHKOORI WETLAND RESERVE

Freshkoori wetland reserve was notified in the year 1945 and supports a rich diversity of migratory birds coming from different parts of world including Siberia and Central Asia during winter. The Freshkhori Wetland Reserve is located near Pampore town of south Kashmir of Pulwama.

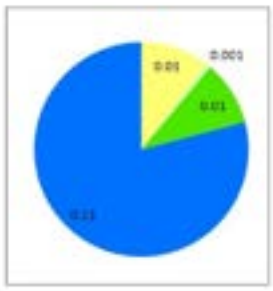
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 3.41 **GIS AREA** (KM2): 0.14
PERIMETER (KMS): 1.89
ALTITUDE (M): 1551
GEO - COORDINATES:
34° 0.586′ N - 34° 1.025′ N, 74° 55.248′ E - 74° 55.424′ E

RESIDENT BIRDS: Common Myna (*Acridotheres tristis*), Blue Rock Pigeon (*Columba livia*), White Cheeked bulbul (*Pycnonotus leucogenys*), Common pariah kite (*Milvus migrans*), Little grebe (*Tachybaptus ruficollis*), Himalayan griffon vulture(*Gyps himalayensis*), Great horned owl (*Bubo bubo*) Common sand piper (*Actitis hypoleucos*), Blue crowned night heron (*Nycticorax nycticorax*), Eastern grey heron (*Ardea cinerea*), Indian pond heron (*Ardeola grayii*), Central Asian kingfisher (*Alcedo atthis pallasi*) and House crow (*Corvus splendens*)

MIGRATORY BIRDS: Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Wigeon (*Anas Penelope*), Gadwall (*Anas strepera*), Mallard (*Anas platyrhynchos*), Common pochard (*Aythya ferina)*, Red crested pochard (*Anas rufina*), Graylag goose (*Anser anser*), Northern shoveler (Anas clypeata), Garganey (Anas querquedula), Indian whiskered tern (chlidonias hybrid indica), Indian Moorhen (*Gallinula chloropus indicus*), Pheasant tailed jacana (*Hydrophasianus chirurgus*), Common swallow (*Hirundo rustica*), Rufous backed shrike (*Lanius schach*) and Little Bittern (*Ixobrychus minutus*) .

MAJOR FLORA: The main species are *Acorus calamus, Lemna major, Lemna minor, Typha angustifolia, salvinia spp, phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba.*

LAND USE LAND COVER MAP OF FRESHKOORI WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES		
Agriculture Cropland	0.01	10.09
Agriculture Plantation	0.001	0.71
Aquatic Vegetation	0.01	9.50
Open Water	0.11	79.71
Total	0.14	100.00

LEGEND

- Agriculture Cropland
- Agriculture Plantation
- Aquatic Vegetation
- Builtup
- Landfill
- Marshy
- Open Water
- Freshkoori Wetland Reserve

1: 4000

0 1 2 4 Km

NOTE:
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SOIL MAP OF FRESHKOORI WETLAND RESERVE

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES		
Soil Class	Area (Sq Kms)	Percentage
Fine Silty Soil	0.14	100.00
Total	0.14	100.00

LEGEND

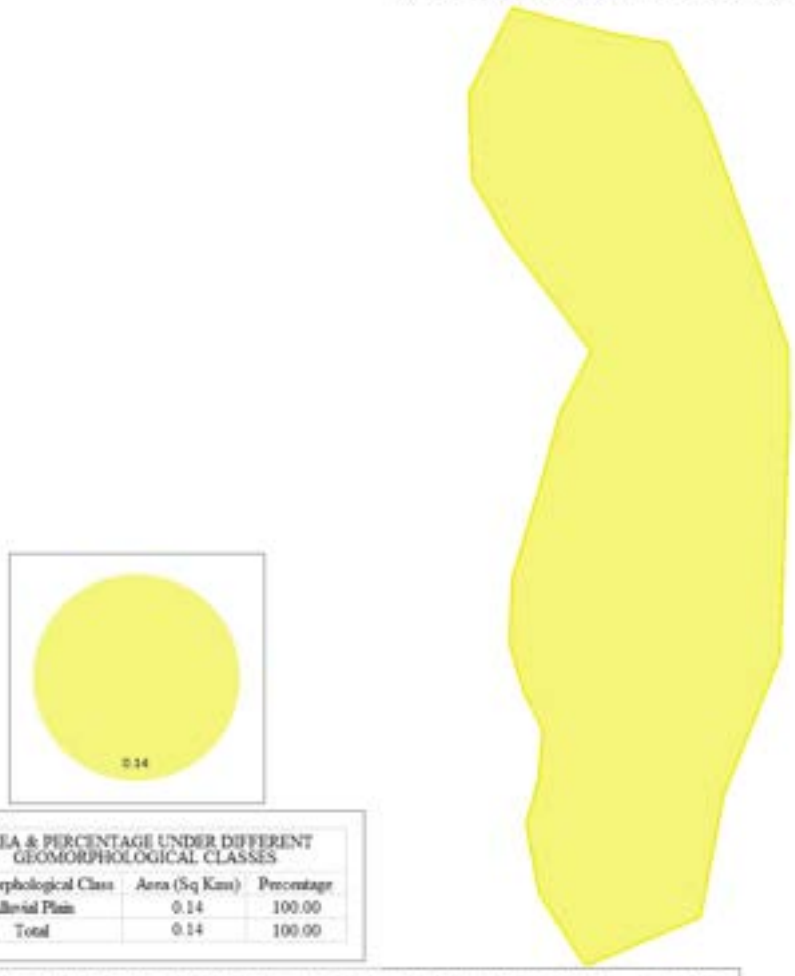
- Fine Silty Soil
- Freshkoori Wetland Reserve

1: 4,000

0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF FRESHKOORI WETLAND RESERVE



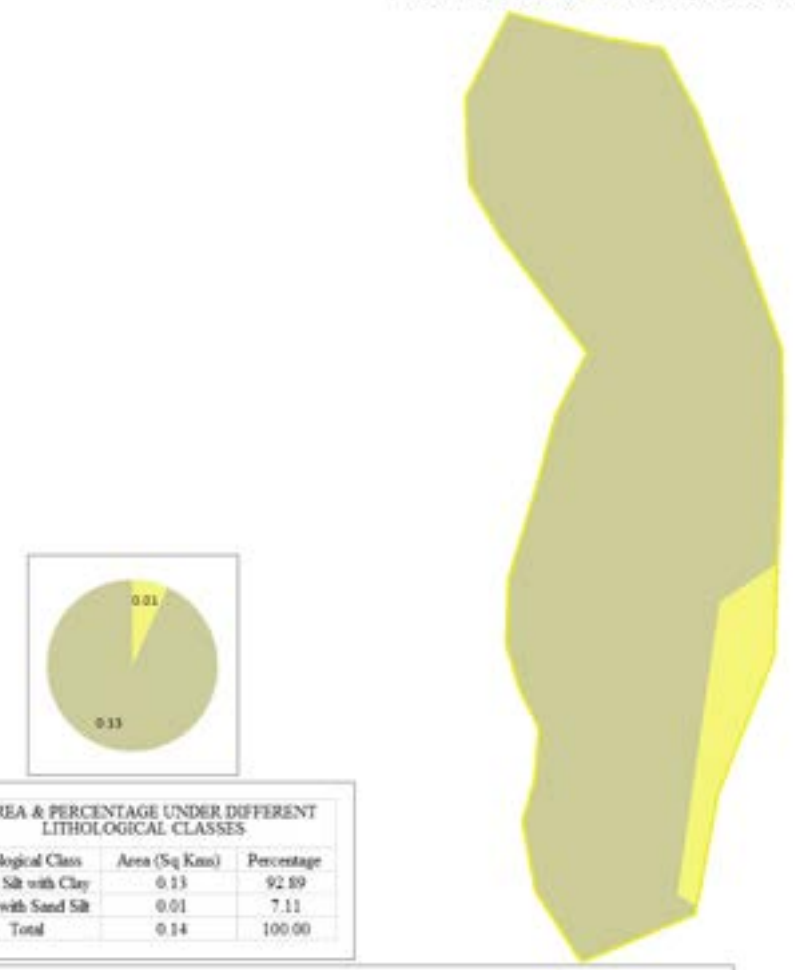
AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Alluvial Plain	0.14	100.00
Total	0.14	100.00

LEGEND
- Alluvial Plain
- Freshkoori Wetland Reserve

1: 4,000
0 1 2 4 Km

LITHOLOGICAL MAP OF FRESHKOORI WETLAND RESERVE

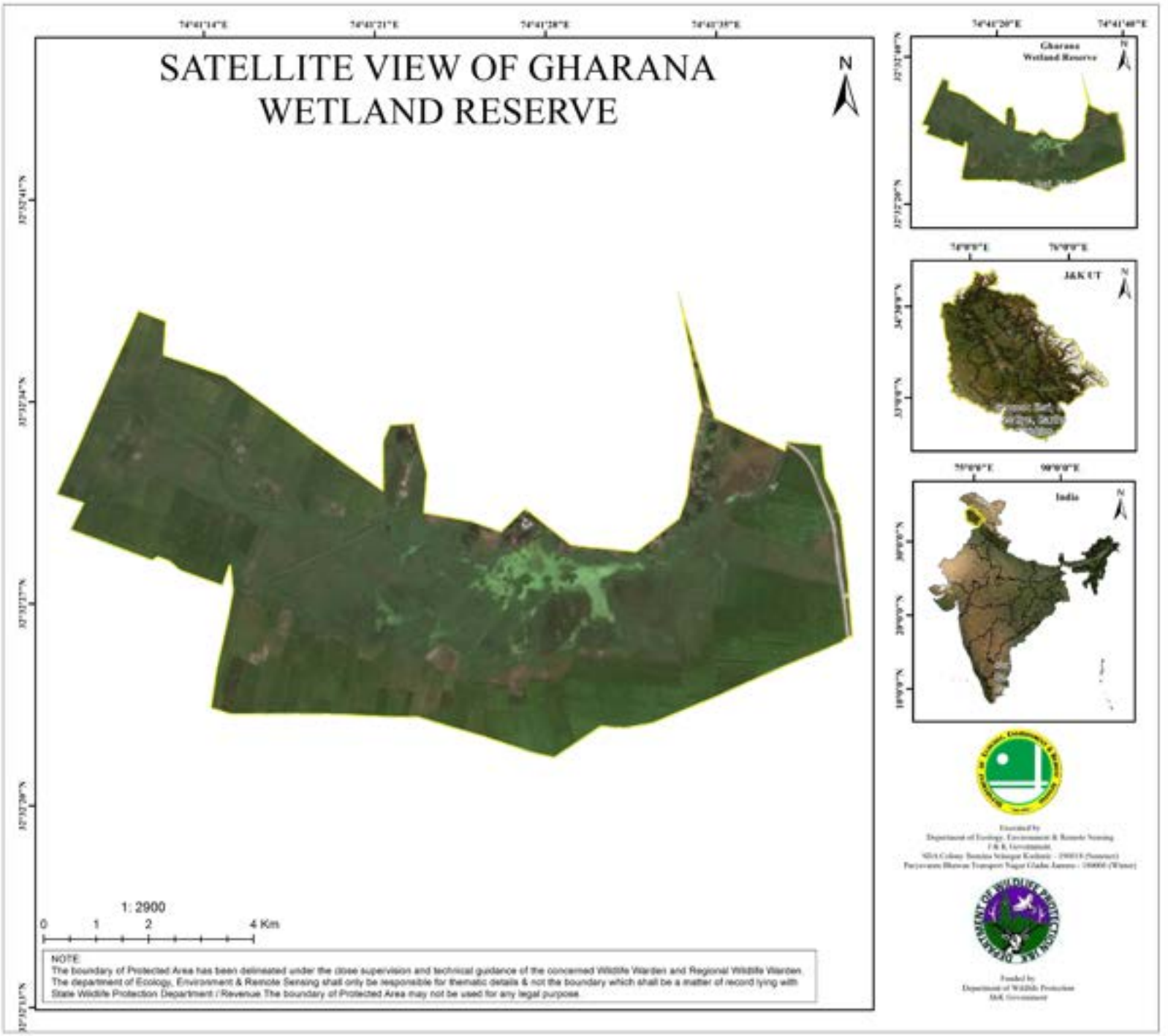


AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Silt with Clay	0.13	92.89
Clay with Sand Silt	0.01	7.11
Total	0.14	100.00

LEGEND
- Clay with Sand Silt
- Sand Silt with Clay
- Freshkoori Wetland Reserve

1: 4,000
0 1 2 4 Km



GHARANA WETLAND RESERVE

The Gharana Wetland Conservation Reserve is located in Jammu region close to Indo-Pak Border at a distance of about 35 kms from Jammu city. The reserve supports a population of 20000 to 25000 of birds of different species during winters. Most of the species are migratory and endangered. This Reserve has also been declared as Important Bird Area (IBA) by Bird Life International (an international agency).

SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981
NOTIFIED AREA (KM2): 0.75 **GIS AREA** (KM2): 0.20
ALTITUDE (M): 213
PERIMETER (KMS): 2.93
GEO - COORDINATES: 32° 32.362′ N - 32° 32.632′ N, 74° 41.134′ E - 74° 41.678′ E

RESIDENT BIRDS: Common Myna (*Acridotheres tristis*), Golden oriole (*Oriolus oriolus*), Red vented Bulbul (*Pycnonotus cafer*), Flower peckers (*Dicaeidae*), Grey tits (Parus afer), Starlings(*Sturnidae*),Babblers (*Timaliidae*), Bee eaters (*Meropidae*), Barbets (*Megalaimidae*), Finches (*Fringillidae*), Fantails (*Rhipidura*), Fly catchers (*Tyrannidae*), Kingfishers (*Alcedinidae*), Thrushes (*Turdidae*), Hoopoes (*Upupidae*) , Wagtails (*Motacilla*), Warblers (*Parulidae*), weaver birds (Ploceidae), Large billed crow (*Corvus macrorhynchos*), Kites (*Accipitridae*), Griffon Vulture (*Gyps fulvus*), Pheasants (*Phasianus colchicus*)

MIGRATORY BIRDS: Bar-headed goose (*Anser indicus*), Ruddy Shelduck (*Tadorna ferruginea*), Eurasian Wigeon (*Anas penelope*), Grey heron (*Ardea cinerea*), Purple heron (*Ardea purpurea*), Greylag goose (*Anser anser*), Gadwall (*Anas strepera*), Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Rock pigeon (*Columba livia*), Eurasian Collared Dove (*Streptopelia decaocto*), Asian Koel (*Eudynamys solopacea*), Greater Coucal (*Centropus sinensis*), Common Kingfisher (*Alcedo atthis*), White throated kingfisher (*Halcyon smyrnensis*), Pied Kingfisher (*Caryle rudis*), Indian Roller (*Coracias benghalensis*),Bay backed Shrike (*Lanius vittatus*), Long tailed Shrike (*Lanius schach*), Little Grebe (*Tachybaptus ruficollis*), Great Comorant (*Phalacrocorax carbo*), Cattle Egret (*Bubulus ibis*), Great egret (*Casmerodius albus*).

MAJOR FLORA: The area is covered with tall grasses such as moonj grass (*Saccharum munja*), *Nitella hyaline, Acacia nilotica, Dalbergia sisso, Terminalia chebula, Najas indica, Carex fedia, Equisetum diffusum, Polygonum barbatum, Alternanthera sessilis, Potamogeton crispus, Vallisneria spiralis, Chara vulgaris, Polygonum barbatum, Polygonum hydropiper, Colocasia esculenta.*

LAND USE LAND COVER MAP OF GHARANA WETLAND RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

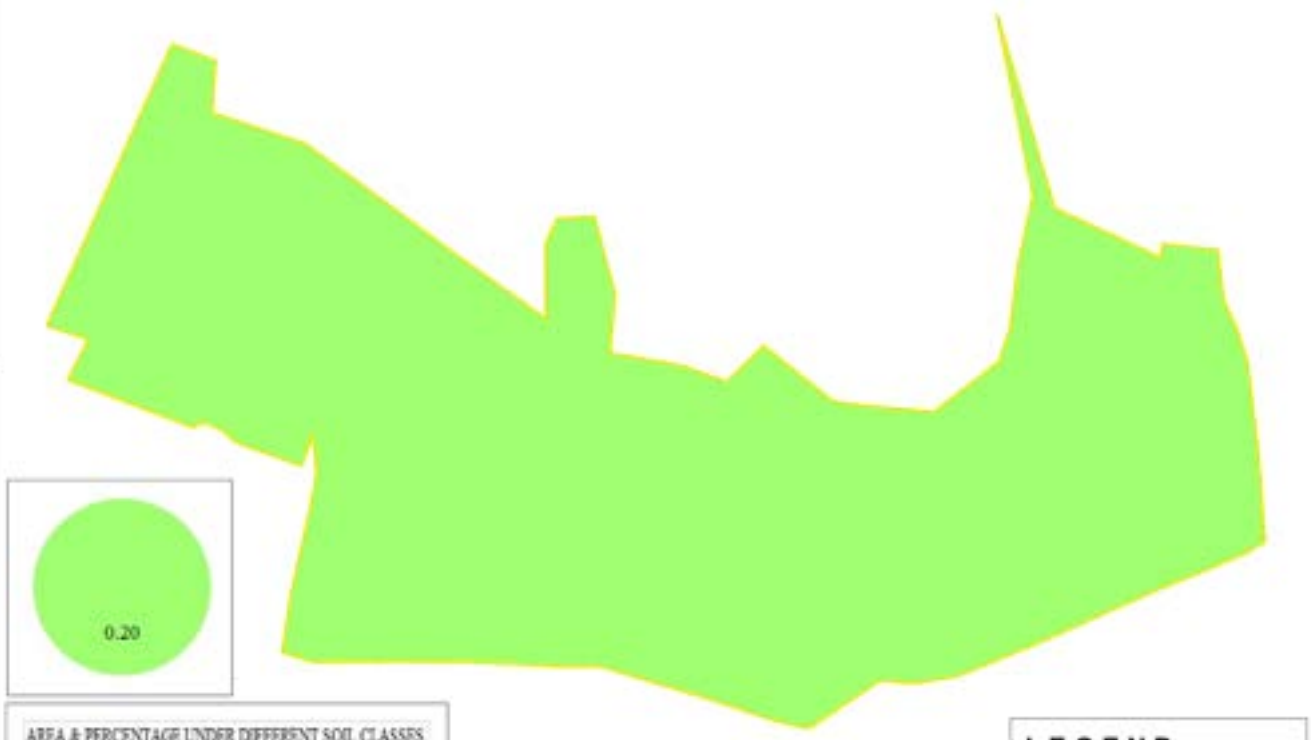
LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.156	8.27
Agriculture Plantation	0.003	4.92
Builtup	0.000	5.62
Road	0.001	9.11
Aquatic Vegetation	0.022	4.08
Open Water	0.021	12.74
Total	0.20	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Agriculture Cropland
- Agriculture Plantation
- Aquatic Vegetation
- Builtup
- Road
- Open Water
- Gharana Wetland Reserve

1: 2900
0 1 2 4 Km

SOIL MAP OF GHARANA WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	0.20	100.00
Total	0.20	100.00

NOTE:
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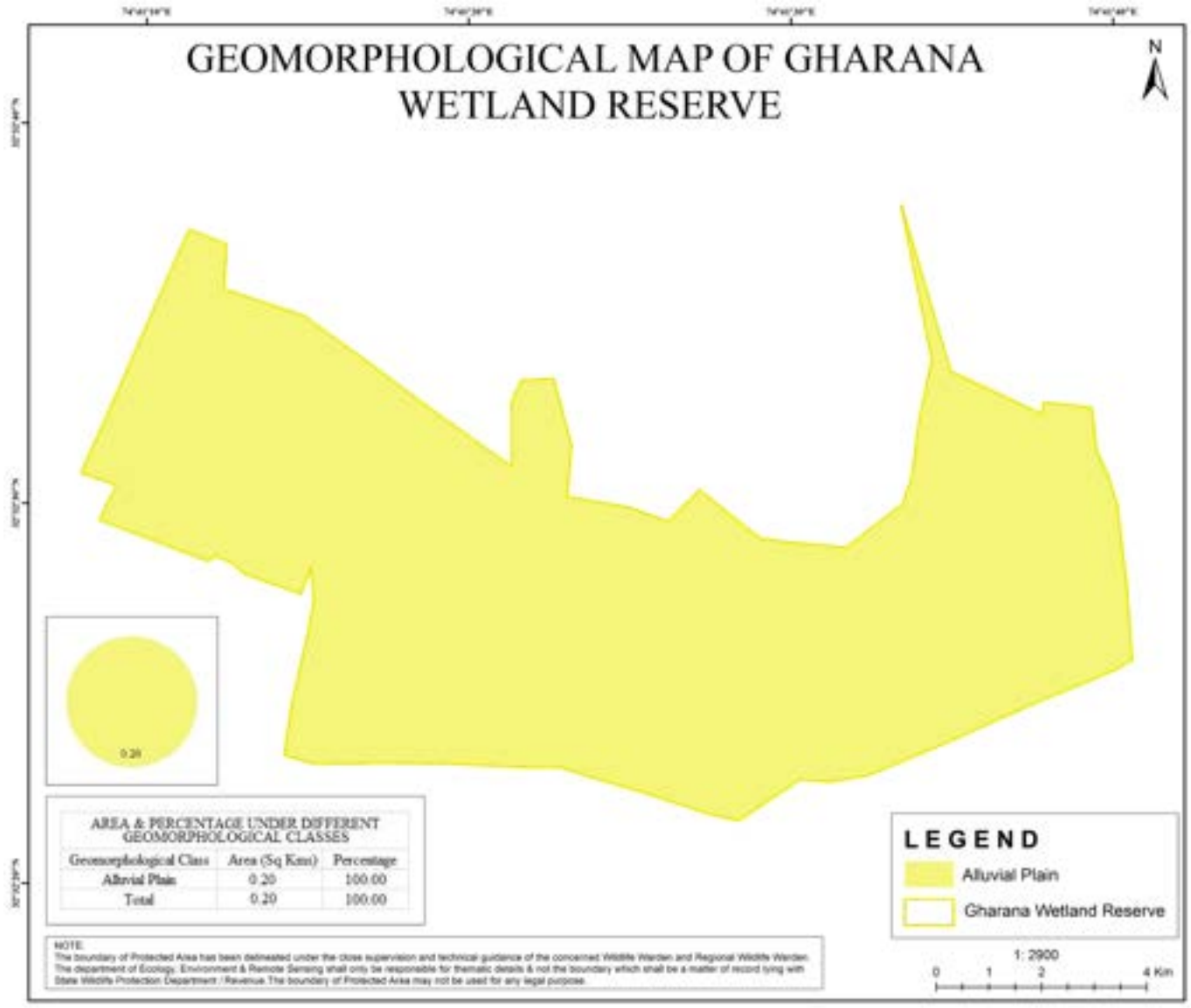
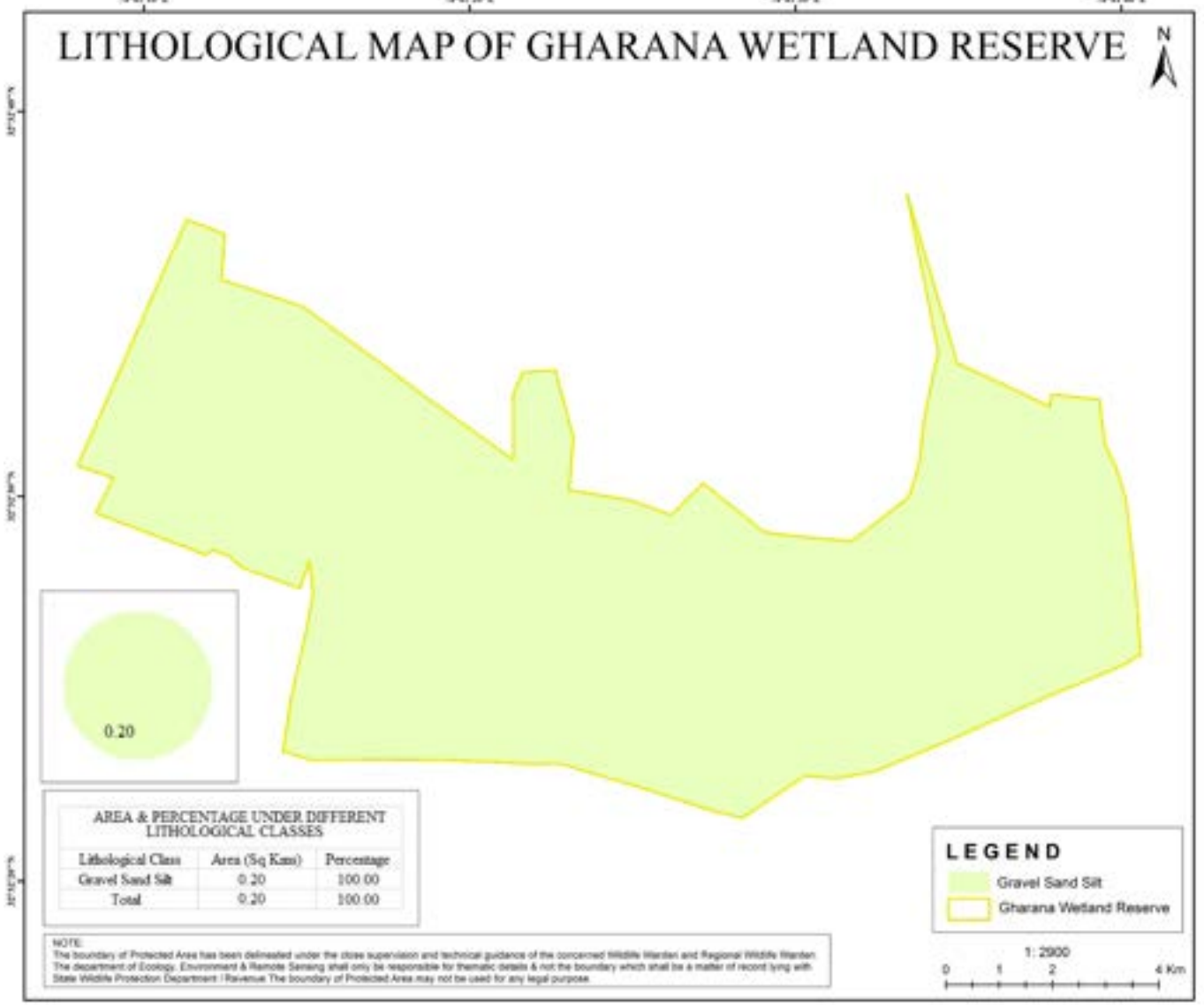
LEGEND
- Coarse Loamy Soil
- Gharana Wetland Reserve

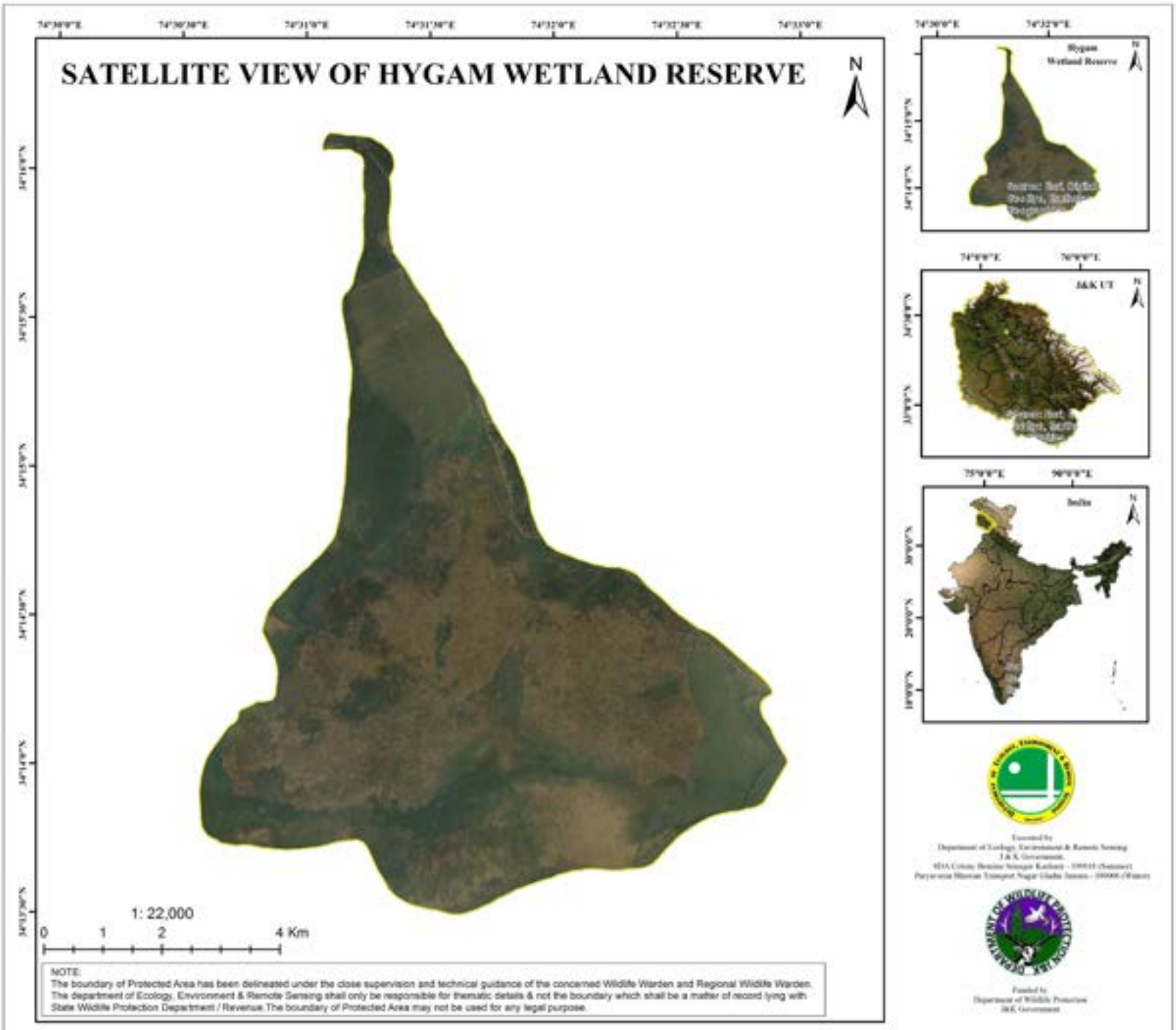
1: 2900
0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF GHARANA WETLAND RESERVE



LITHOLOGICAL MAP OF GHARANA WETLAND RESERVE





HYGAM WETLAND RESERVE

Hygam wetland reserve is a shallow, permanent, freshwater lake on the floodplain of the Jhelum River in the Kashmir Valley. Haigam wetland, which is commonly called as Hygamrakh is located in Baramulla district of Kashmir valley, about 44km northwest of capital city Srinagar. The wetland is recognized as important bird area (IBA) and is one of the waterfowl census areas. Thousands of winter visiting water birds can be found diving and feeding in the pools of the wetland. The wetland provides a scenic view during winter season because of these winter visitors.

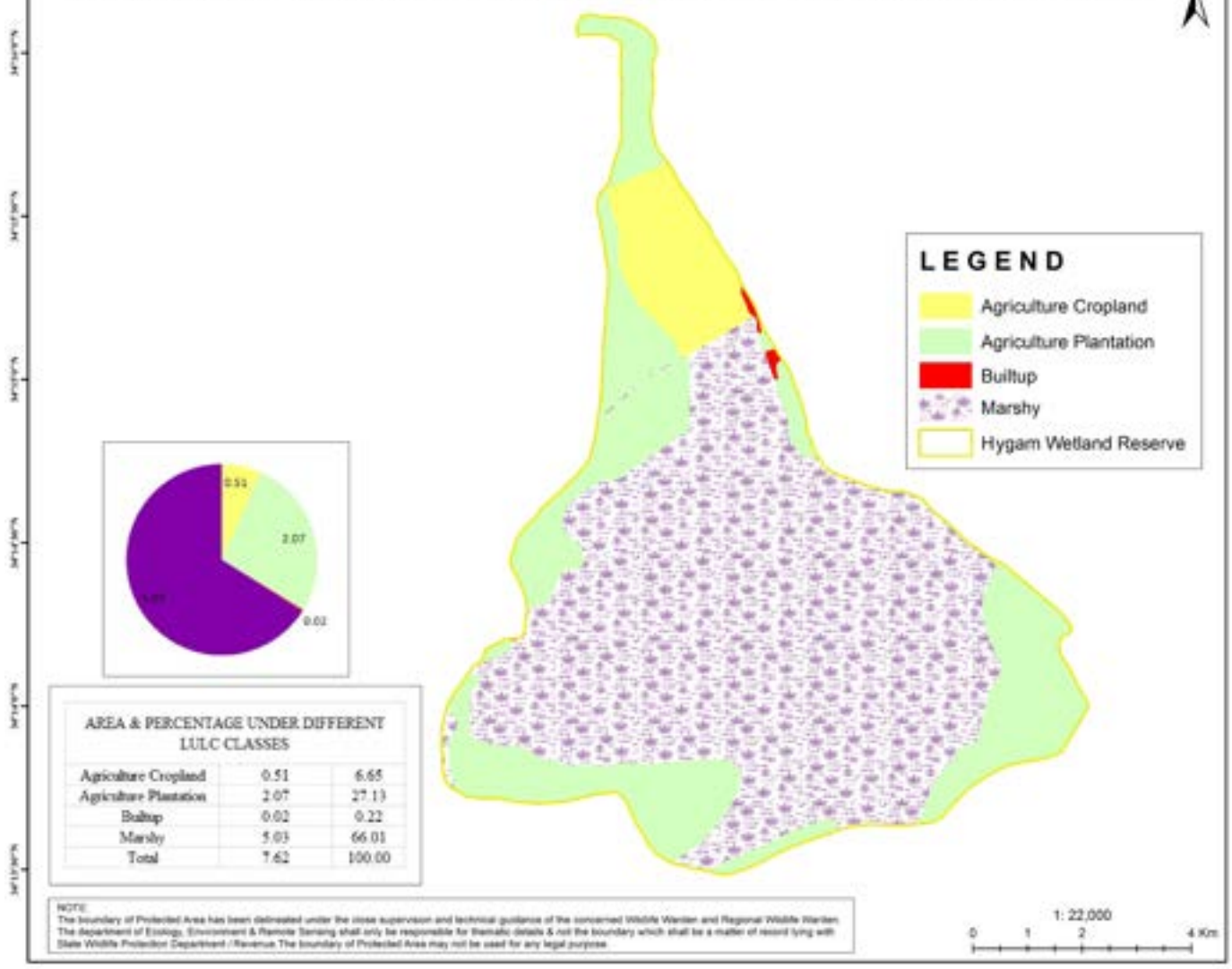
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 7.25 **GIS AREA** (KM2): 7.62
ALTITUDE (M): 1559
PERIMETER (KMS): 14.63
GEO - COORDINATES:
34° 13.495′ N - 34° 16.125′ N, 74° 30.578′ E - 74° 32.962′ E

RESIDENT BIRDS: Central Asian kingfisher (*Alcedo atthis pallasi*), Common sand piper (*Actitis hypoleucos*), Eastern grey heron (*Ardea cinerea*), Indian pond heron (*Ardeola grayii*), House crow (*Corvus splendens*), Common Myna (*Acridotheres tristis*), Blue Rock Pigeon (*Columba livia*) and Blue crowned night heron (*Nycticorax nycticorax*).

MIGRATORY BIRDS: Mallard (*Anas platyrhynchos*), Gadwall (*Anas strepera*), Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Wigeon (*Anas penelope*), Common pochard (*Aythya ferina)*, Indian Moorhen (*Gallinula chloropus indicus*), Pheasant tailed jacana (*Hydrophasianus chirurgus*), Common swallow (*Hirundo rustica*), Rufous backed shrike (*Lanius schach*), Little Bittern (*Ixobrychus minutus*), Indian oriole (*Oriolus oriolus kundoo*), Greater painted snipe (*Rostratula benghalensis*), Slaty headed parakeet (*Psittacula himalayana*), European Hoopoe (*Upupa epops*) .

MAJOR FLORA: The main flora of Hygam wetland reserve includes all types of vegetation from submerged to aquatic grass. The main species are *Acorus calamus, Lemna major, Lemna minor, Typha angustifolia, salvinia spp, phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba.*

LAND USE LAND COVER MAP OF HYGAM WETLAND RESERVE

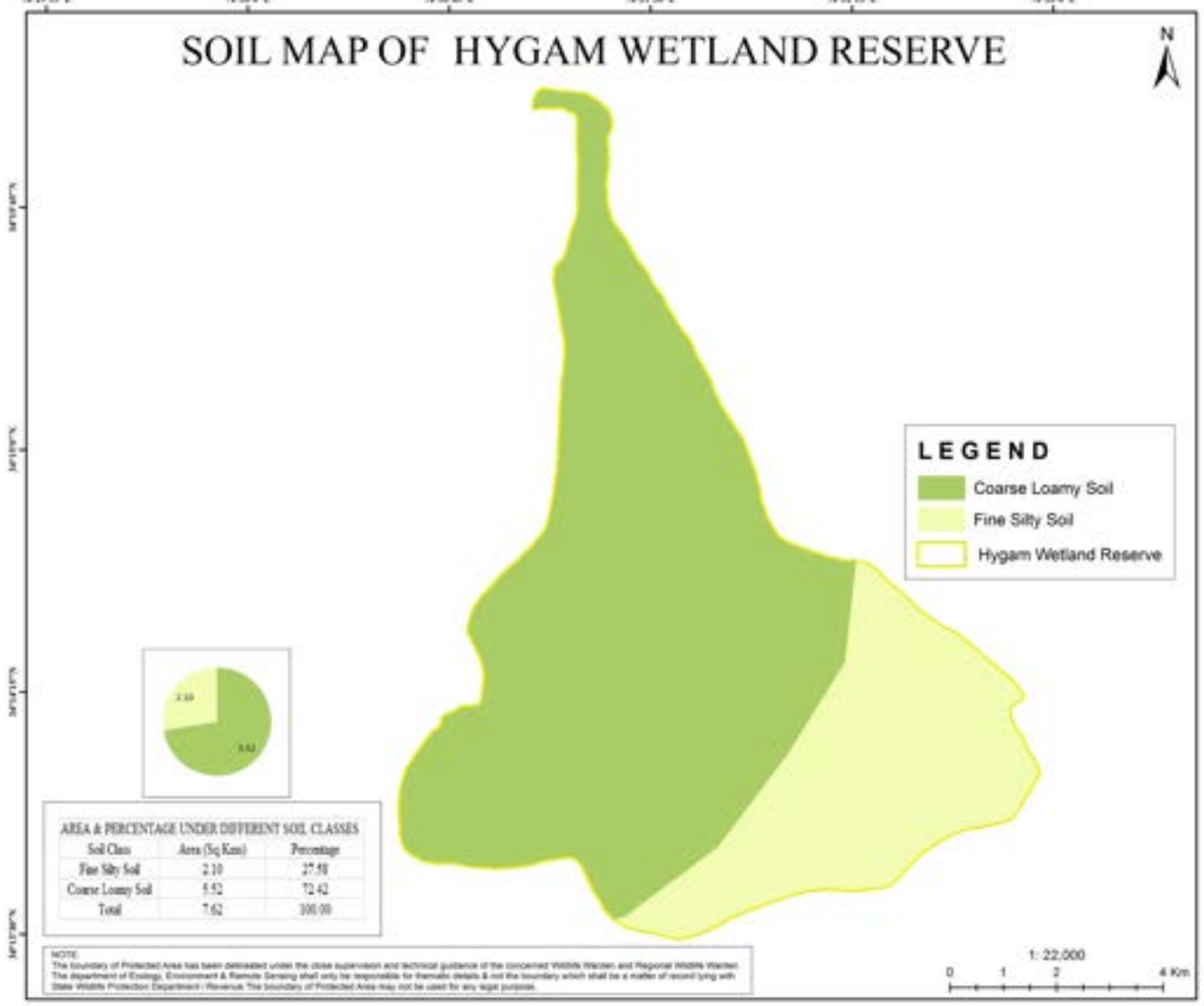


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

Agriculture Cropland	0.51	6.65
Agriculture Plantation	2.07	27.13
Builtup	0.02	0.22
Marshy	5.03	66.01
Total	7.62	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF HYGAM WETLAND RESERVE

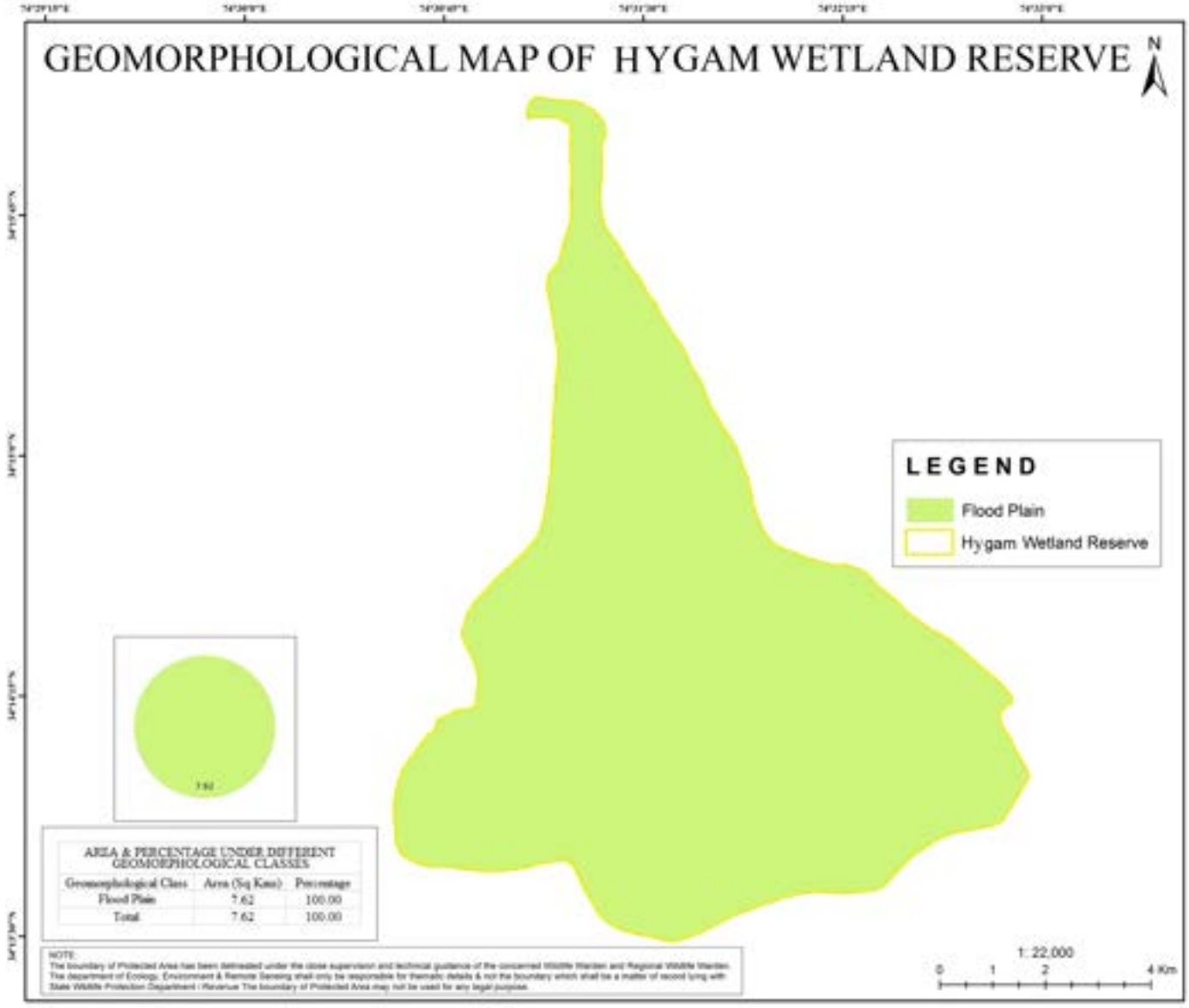


AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Silty Soil	2.10	27.58
Coarse Loamy Soil	5.52	72.42
Total	7.62	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF HYGAM WETLAND RESERVE

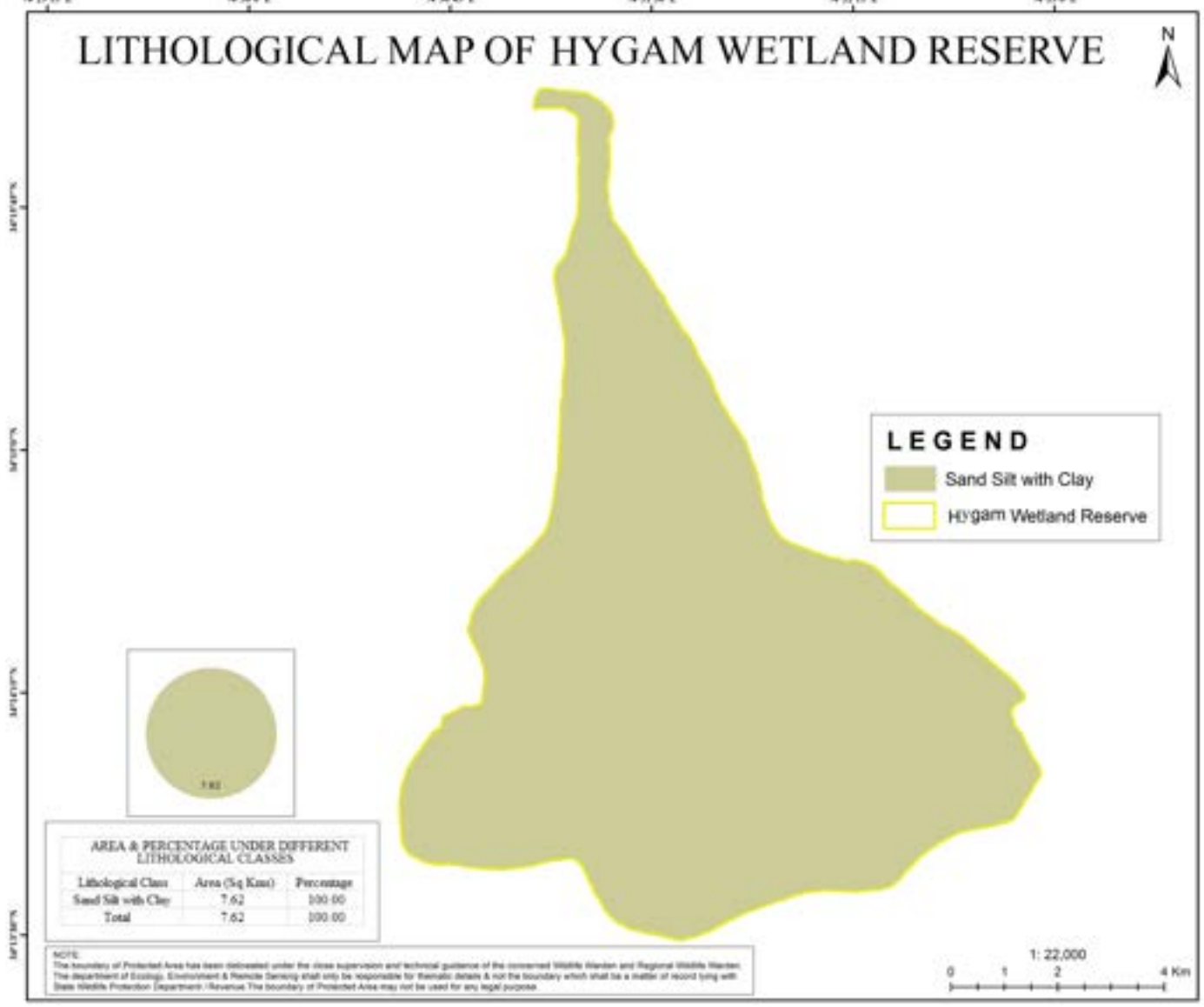


AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Flood Plain	7.62	100.00
Total	7.62	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

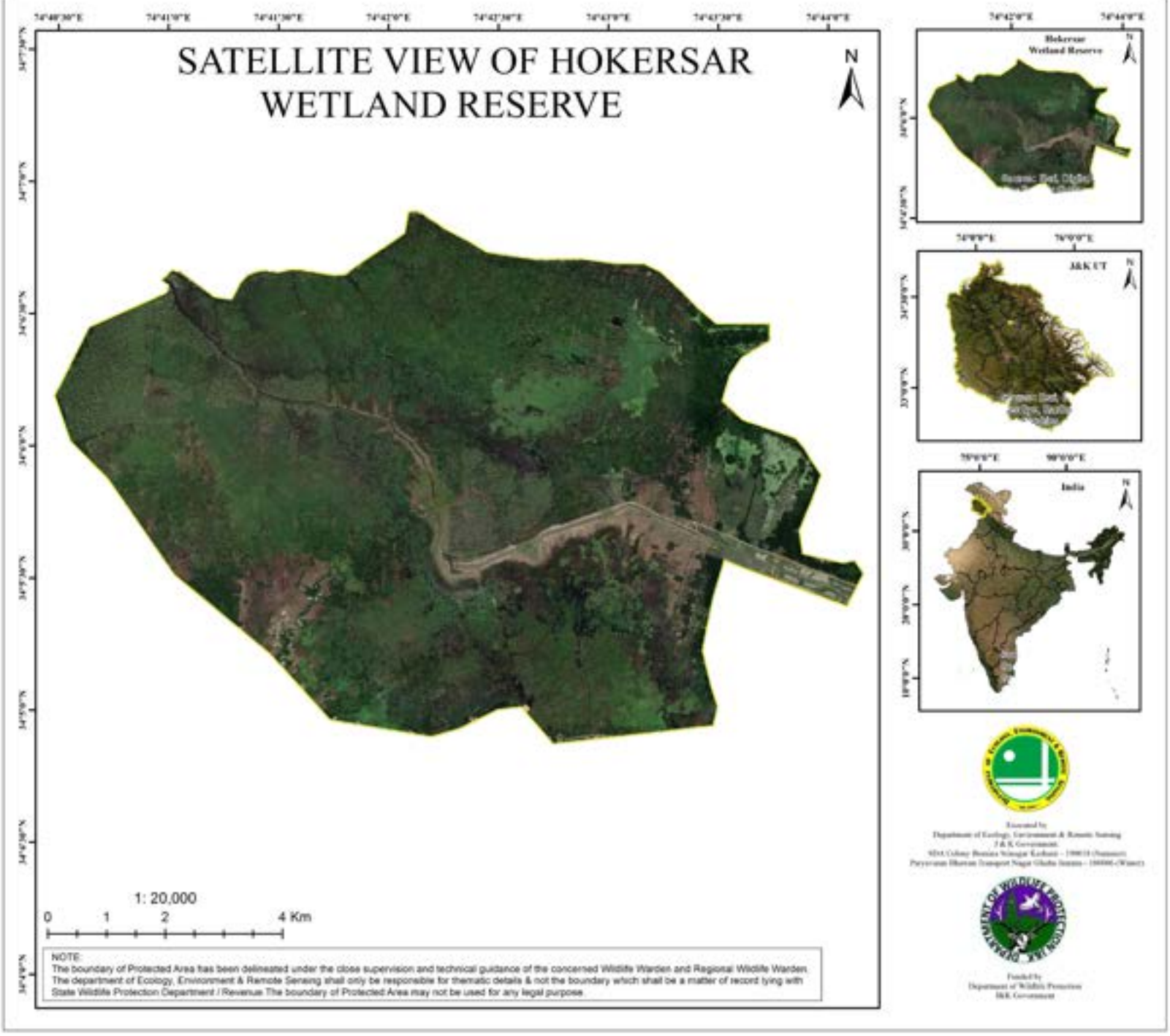
LITHOLOGICAL MAP OF HYGAM WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Silt with Clay	7.62	100.00
Total	7.62	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.



HOKERSAR WETLAND RESERVE

Hokersar, has been declared as Ramsar sites, in the year 2005 owing to its biodiversity value. Hokersar is literally the heaven of migratory birds because tens of thousands of water fowls chose to visit this wetland, from different parts of the world to visit valley during winters. Hokersar wetland, which is some 10 kilometers away from Srinagar, houses lakhs of migratory birds.

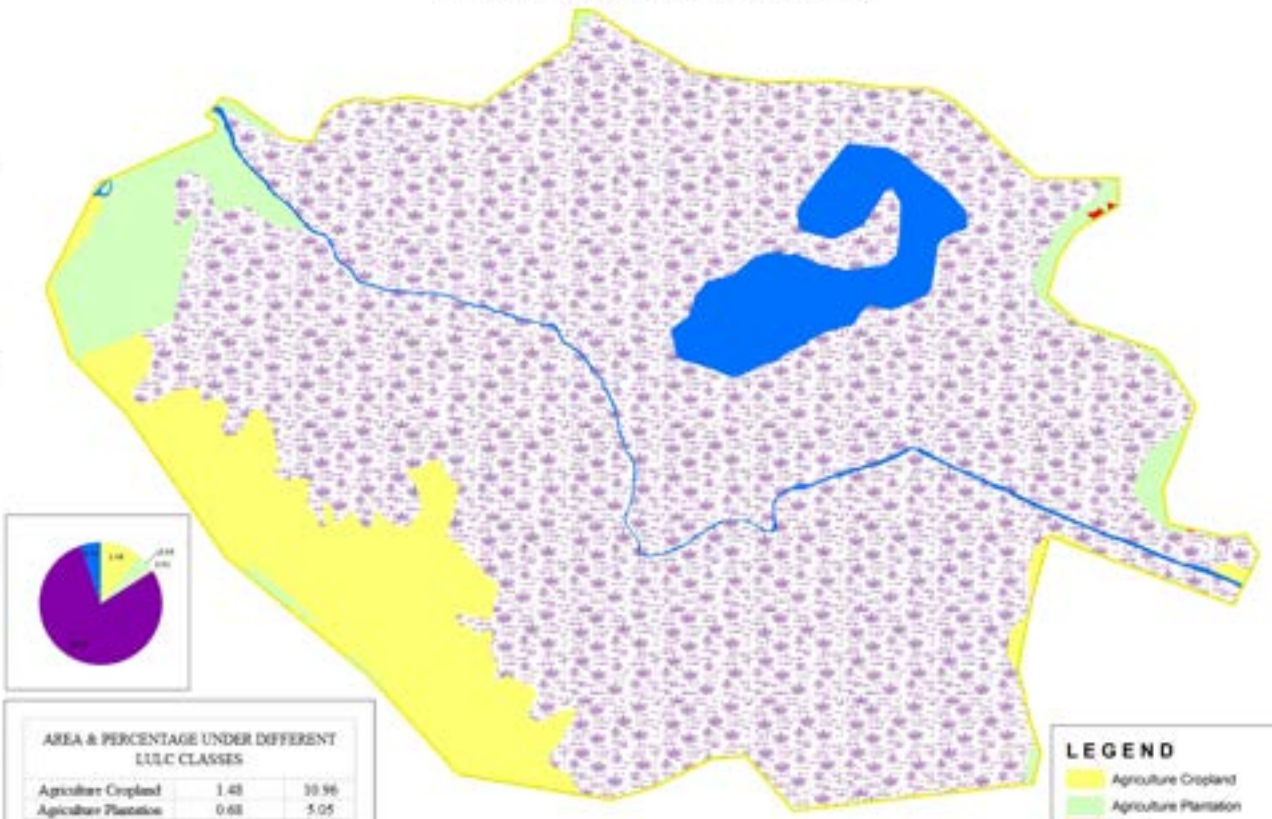
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 13.75 **GIS AREA** (KM2): 13.55
ALTITUDE (M): 1565
PERIMETER (KMS): 17.06
GEO - COORDINATES: 34° 4.876′ N - 34° 6.893′ N, 74° 40.483′ E - 74° 44.170′ E

RESIDENT BIRDS: Little grebe (*Tachybaptus ruficollis*), Himalayan griffon vulture (*Gyps himalayensis*), Great horned owl (*Bubo bubo*), Central Asian kingfisher (*Alcedo atthis pallasi*), House crow (*Corvus splendens*), Blue Rock Pigeon (*Columba livia*), Common sand piper (*Actitis hypoleucos*), Common Myna (*Acridotheres tristis*) and Eastern grey heron (*Ardea cinerea*).

MIGRATORY BIRDS: Eurasian wigeon (*Mareca penelope*), Greylag Goose (Ancer ancer), Greater painted snipe (*Rostratula benghalensis*), European Hoopoe (*Upupa epops*), Indian Moorhen (*Gallinula chloropus indicus*), Pheasant tailed jacana (*Hydrophasianus chirurgus*), Common swallow (*Hirundo rustica*), Rufous backed shrike (*Lanius schach*), Little Bittern (*Ixobrychus minutus*), Indian oriole (*Oriolus kundoo*), Slaty headed parakeet (*Psittacula himalayana*), Ruddy shelduck (*Tadorna ferruginea*).

MAJOR FLORA: Hokersar wetland reserve a definite type of vegetation raging from submerged, free floating, emergent, aquatic grasses besides algal bloams. The following typical vegetation types are exhibited here *Typha angustifolia, salvinia spp, phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba.* Also Salix alba is found in scattered location.

LAND USE LAND COVER MAP OF HOKERSAR WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

Agriculture Cropland	1.48	10.96
Agriculture Plantation	0.68	5.05
Builtup	0.01	0.05
Marshy	10.66	78.81
Open Water	0.72	5.33
Total	13.55	100.00

LEGEND
- Agriculture Cropland
- Agriculture Plantation
- Builtup
- Marshy
- Open Water
- Freshkhori Wetland Reserve

1: 20,000
0 1 2 4 Km

NOTE:
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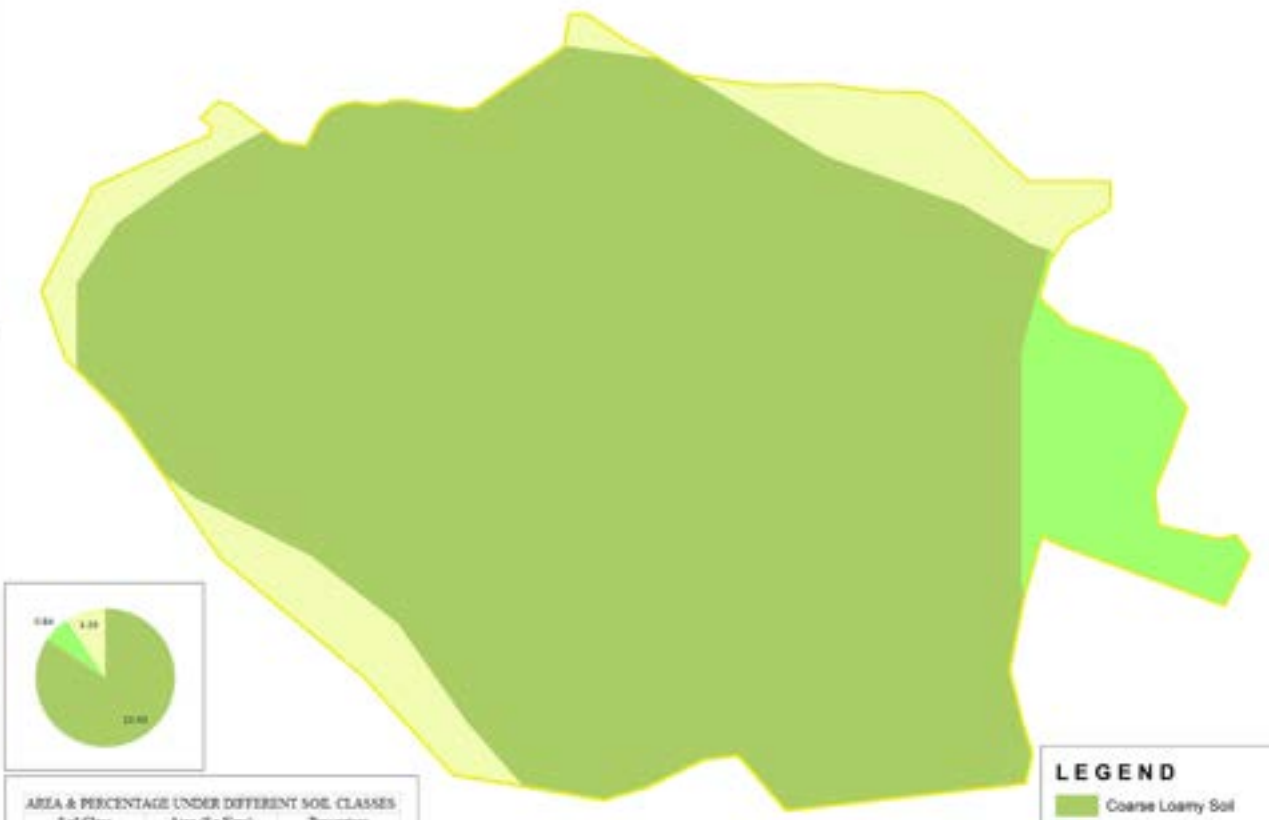
SOIL MAP OF HOKERSAR WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

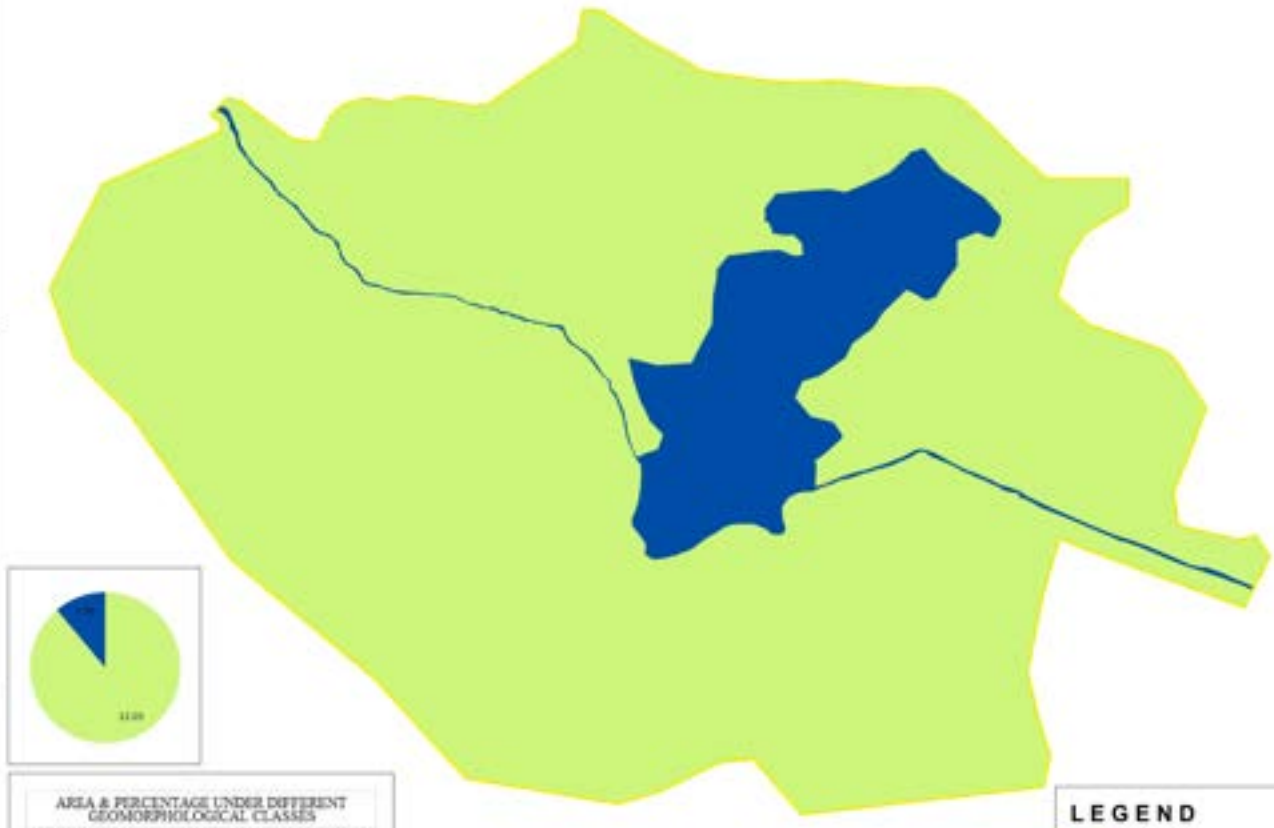
Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	11.43	84.30
Fine Loamy Soil	0.84	6.21
Fine Silty Soil	1.29	9.49
Total	13.55	100.00

LEGEND
- Coarse Loamy Soil
- Fine Loamy Soil
- Fine Silty Soil
- Hokersar Wetland Reserve

1: 20,000
0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF HOKERSAR WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

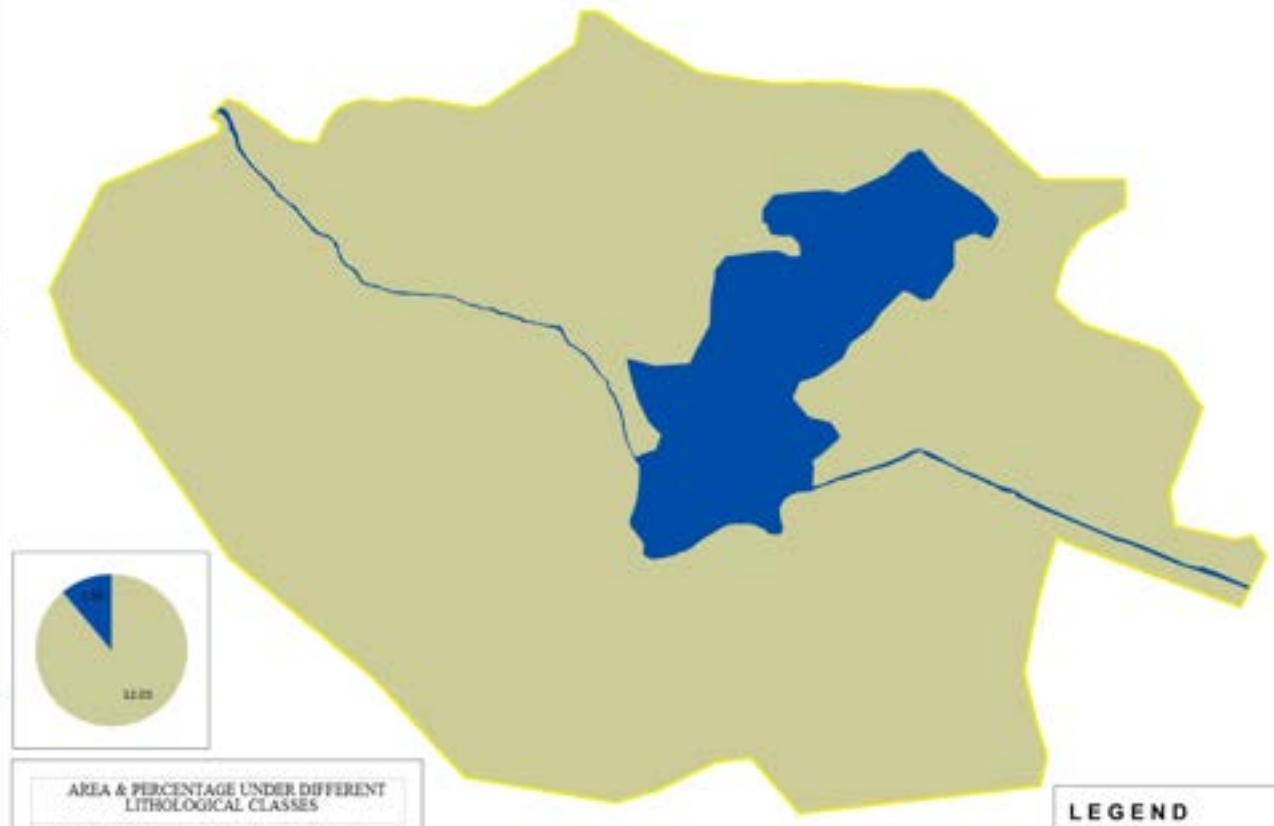
Geomorphological Class	Area (Sq Kms)	Percentage
Flood plain	12.05	88.90
Waterbody	1.50	11.10
Total	13.55	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Flood Plain
- Waterbody
- Hokersar Wetland Reserve

1: 20,000
0 1 2 4 Km

LITHOLOGICAL MAP OF HOKERSAR WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Silt with Clay	12.05	88.90
Waterbody	1.50	11.10
Total	13.55	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Sand Silt with Clay
- Waterbody
- Hokersar Wetland Reserve

1: 20,000
0 1 2 4 Km

KRANCHOO WETLAND RESERVE

The Krachoo Wetland Reserve is located in Pampore town of south Kashmir of Pulwama district. It is located about 16 Kms from summer capital Srinagar. The Krachoo Wetland Reserve supports a rich diversity of migratory birds coming from different parts of world including Siberia and Central Asia during winter. It was notified in the year 1945.

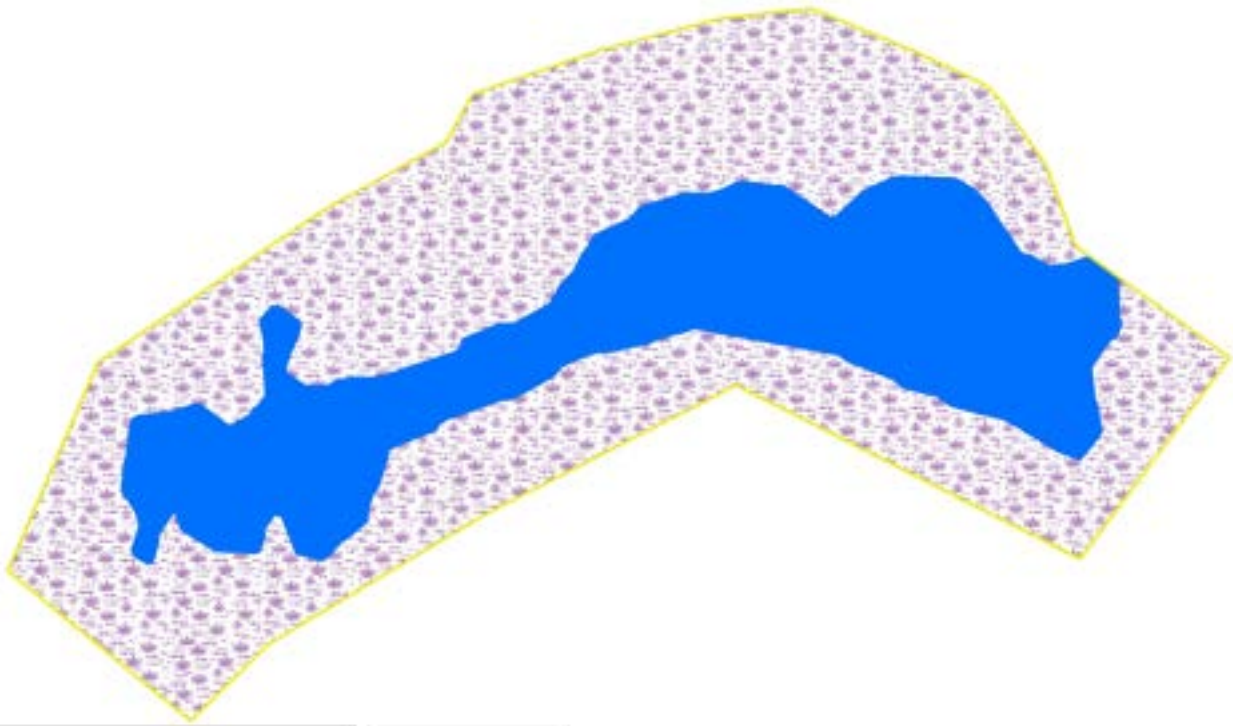
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 1.28 **GIS AREA** (KM2): 0.22
ALTITUDE (M): 1551
PERIMETER (KMS): 2.25
GEO - COORDINATES:
33° 59.576′ N - 33° 59.854′ N, 74° 55.935′ E - 74° 56.507′ E

RESIDENT BIRDS: House sparrow (*Passer domesticus*), Little grebe (*Tachybaptus ruficollis*), Himalayan griffon vulture (*Gyps himalayensis*), Great horned owl (*Bubo bubo*) Common sand piper (*Actitis hypoleucos*), Common Myna (*Acridotheres tristis*), Blue Rock Pigeon (*Columba livia*), White Cheeked bulbul (*Pycnonotus leucogenys*), Common pariah kite (*Milvus migrans*), Blue crowned night heron (*Nycticorax nycticorax*), Eastern grey heron (*Ardea cinerea*), Indian pond heron (*Ardeola grayii*), Central Asian kingfisher (*Alcedo atthis pallasi*) and House crow (*Corvus splendens*).

MIGRATORY BIRDS: Bar-headed goose (*Anser indicus*), Grey heron (*Ardea cinerea*), Purple heron (*Ardea purpurea*), Greylag goose (*Anser anser*), Gadwall (*Anas strepera*), Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Rock pigeon (*Columba livia*), Orient turtle dove (*Streptopelia orientalis*), Eurasian Collared Dove (*Streptopelia decaocto*), Asian Koel (*Eudynamys solopacea*), Greater Coucal (*Centropus sinensis*), Common Kingfisher (*Alcedo atthis*), White throated kingfisher (*Halcyon smyrnensis*), Pied Kingfisher (*Caryle rudis*), Indian Roller (*Coracias benghalensis*),Bay backed Shrike (*Lanius vittatus*), Long tailed Shrike (*Lanius schach*), Little Grebe (*Tachybaptus ruficollis*), Great Comorant (*Phalacrocorax carbo*), Cattle Egret (*Bubulus ibis*), Great egret (*Casmerodius albus*).

MAJOR FLORA: Common aquatic vegetation includes *Polygonum amphibium, Juncus articulatus, Typha angustifolia, Phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba, Trapa natans, Lemna.*

LAND USE LAND COVER MAP OF KRANCHOO WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Marshy	0.14	61.54
Open Water	0.08	38.46
Total	0.22	100.00

LEGEND
- Marshy
- Open Water
- Kranchoo Wetland Reserve

1: 3,000
0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF KRANCHOO WETLAND RESERVE

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

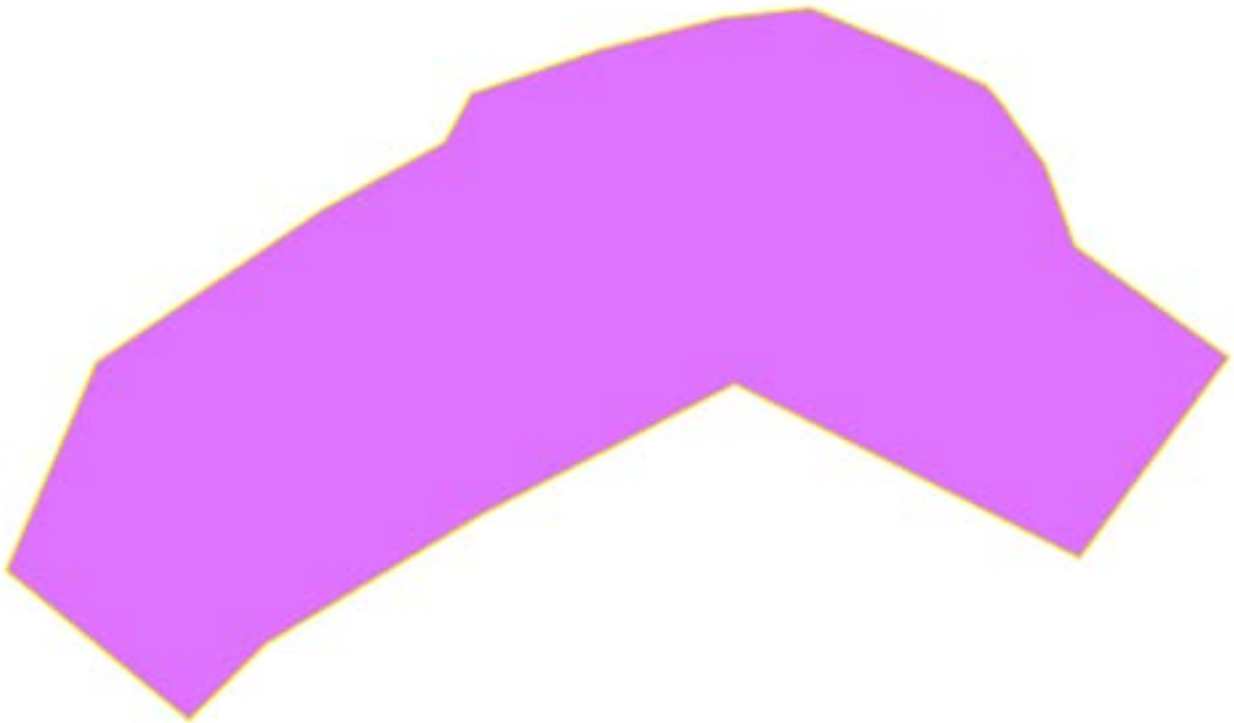
Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	0.22	100.00
Total	0.22	100.00

LEGEND
- Fine Loamy Soil
- Kranchoo Wetland Reserve

1: 3,000
0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF KRANCHOO WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Piedmont Zone	0.22	100.00
Total	0.22	100.00

LEGEND
- Piedmont Zone
- Kranchoo Wetland Reserve

1: 3,000
0 1 2 4 Km

NOTE
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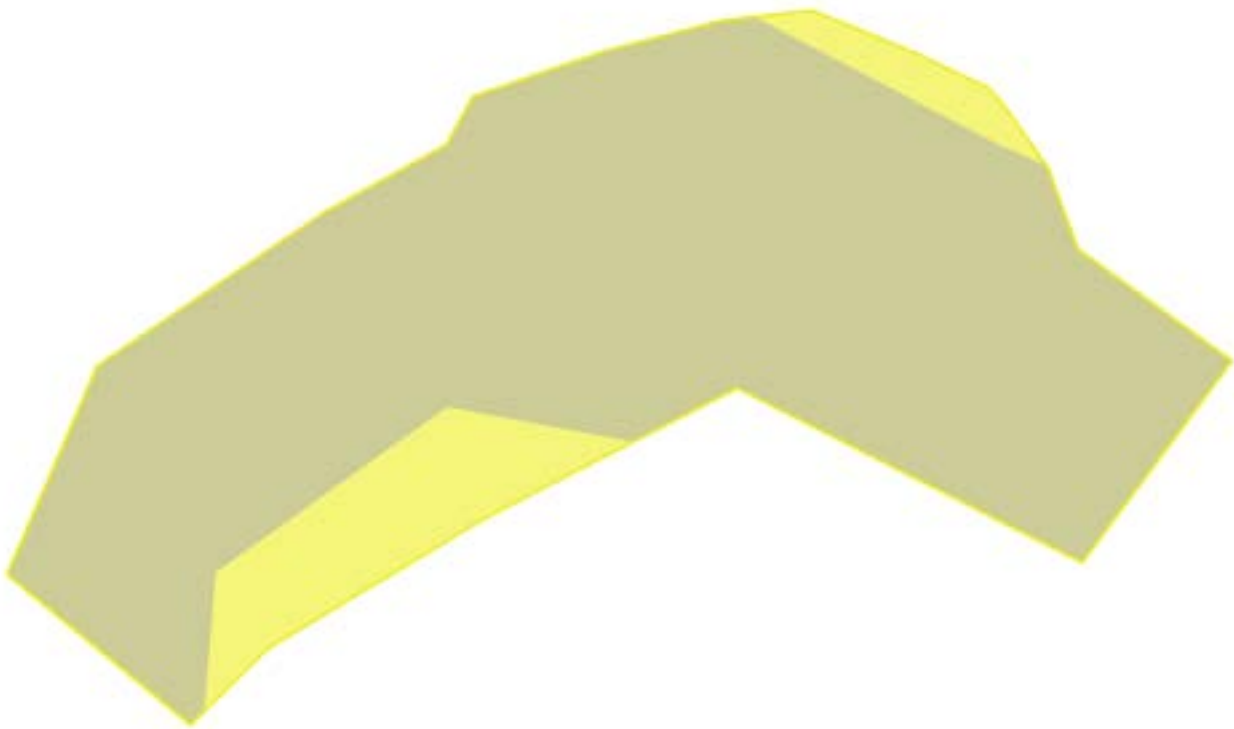
LITHOLOGICAL MAP OF KRANCHOO WETLAND RESERVE



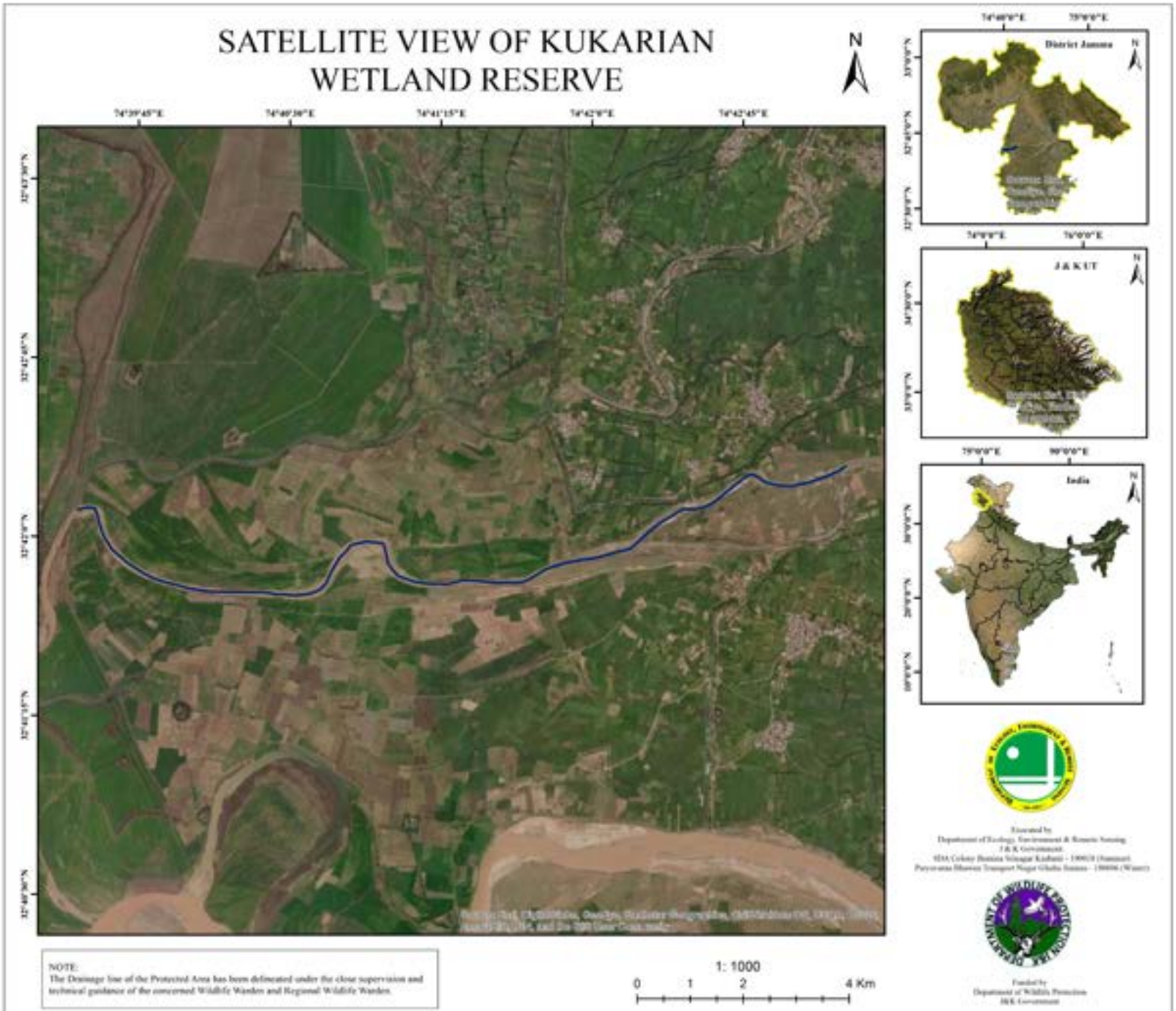
AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Silt with Clay	0.19	88.00
Clay with Sand Silt	0.03	12.00
Total	0.22	100.00

LEGEND
- Clay with Sand Silt
- Sand Silt with Clay
- Kranchoo Wetland Reserve

1: 3,000
0 1 2 4 Km

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.



KUKARIAN WETLAND RESERVE

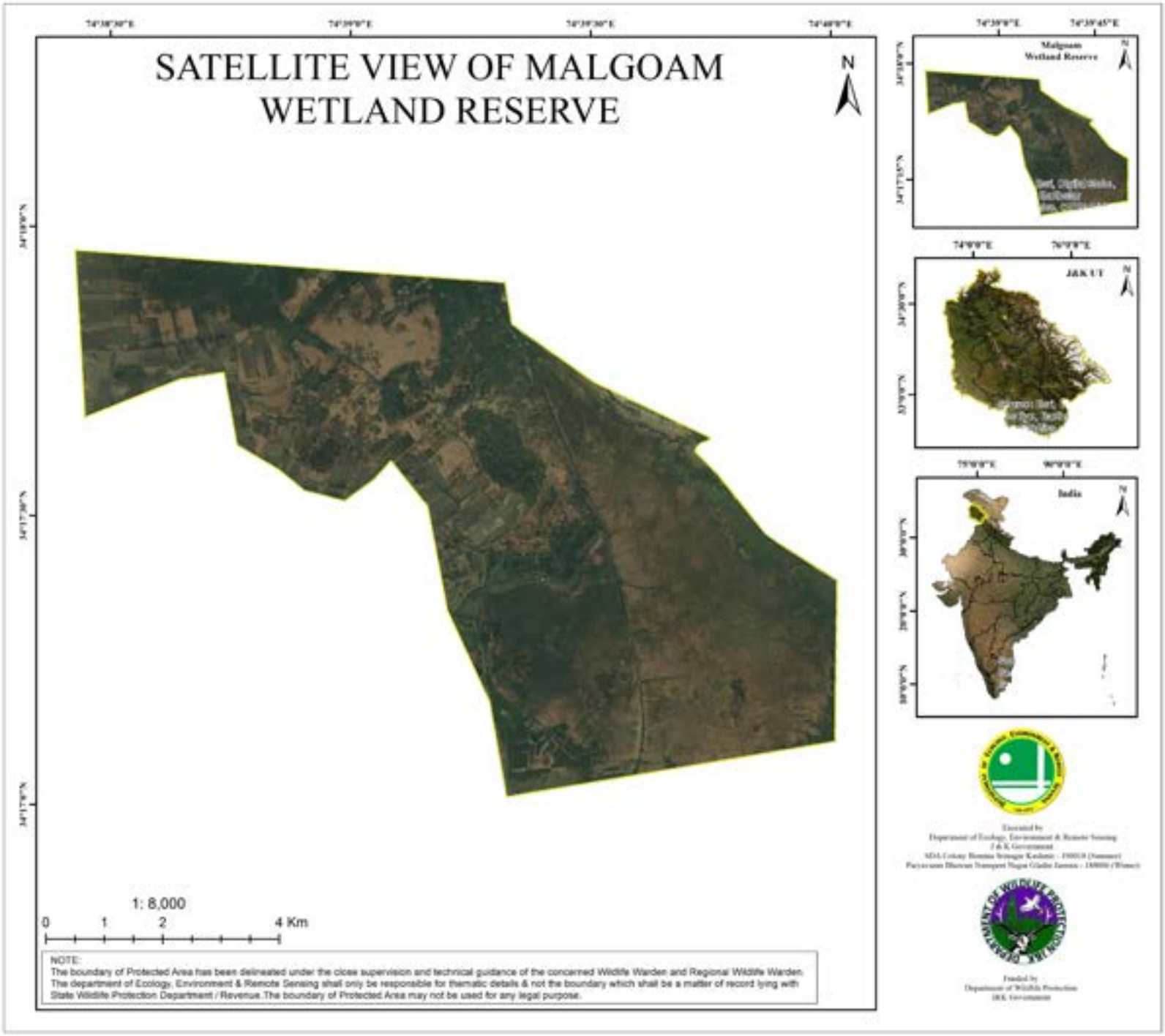
The Kukarian wetland is located in Jammu district and was notified by the Forest Department in 1981, to ensure proper conservation of the biodiversity and develop it as a tourist spot. Kukrian wetland reserve is spread over Batore, Bangore, Kukrian, Sandun and Makwal villages. The wetland is abode to diverse species of the birds from different corners of the world on the pattern of Gharana wetland in R S Pura.

SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981
NOTIFIED AREA (KM2): 24.25 **GIS AREA** (KM2): NA
ALTITUDE (M): 211
GEO – COORDINATES: 74° 41.584′ E & 32° 41.977′ N

RESIDENT BIRDS: Indian Cuckoo (*Cuculus micropterus*), Common Myna (*Acridotheres tristis*), Golden oriole (*Oriolus oriolus*), Red vented Bulbul (*Pycnonotus cafer*), Flower peckers (*Dicaeidae*), Grey tits (Parus afer), Starlings (*Sturnidae*), Babblers (*Timaliidae*), Barbets (*Megalaimidae*), Finches (*Fringillidae*), Fantails (*Rhipidura*),Fly catchers (*Tyrannidae*), Kingfishers (*Alcedinidae*), Thrushes (*Turdidae*), Hoopoes (*Upupidae*) , Wagtails (*Motacilla*), Warblers (*Parulidae*), kites (*Accipitridae*), Griffon Vulture (*Gyps fulvus*), Pheasants (*Phasianus colchicus*).

MIGRATORY BIRDS: Pond heron (*Ardeola*), Grey heron (*Ardea cinerea*), Purple heron (*Ardea purpurea*), Greylag goose (*Anser anser*), Gadwall (*Anas strepera*), Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Rock pigeon (*Columba livia*), Eurasian Collared Dove (*Streptopelia decaocto*), Asian Koel (*Eudynamys solopacea*), Greater Coucal (*Centropus sinensis*), Common Kingfisher (*Alcedo atthis*), White throated kingfisher (*Halcyon smyrnensis*), Pied Kingfisher (*Caryle rudis*), Indian Roller (*Coracias benghalensis*), Bay backed Shrike (*Lanius vittatus*), Long tailed Shrike (*Lanius schach*), Little Grebe (*Tachybaptus ruficollis*), Bar-headed goose (*Anser indicus*), Great Comorant (*Phalacrocorax carbo*), Cattle Egret (*Bubulus ibis*), Great egret (*Casmerodius albus*).

MAJOR FLORA The wetland is covered with tall grasses such as moonj grass (*Saccharum munja*) in marshy areas. Other common species are Ipomia, *Ziziphus jujuba* in bushes and *Vitex negundo* and Shisham (*Dalbergia sissoo*) sporadicaly.



MALGOAM WETLAND RESERVE

It was notified in the year 1970. It is one of the famous wetlands of the kashmir valley. The wetland is a home not only to resident birds but also to migratory birds

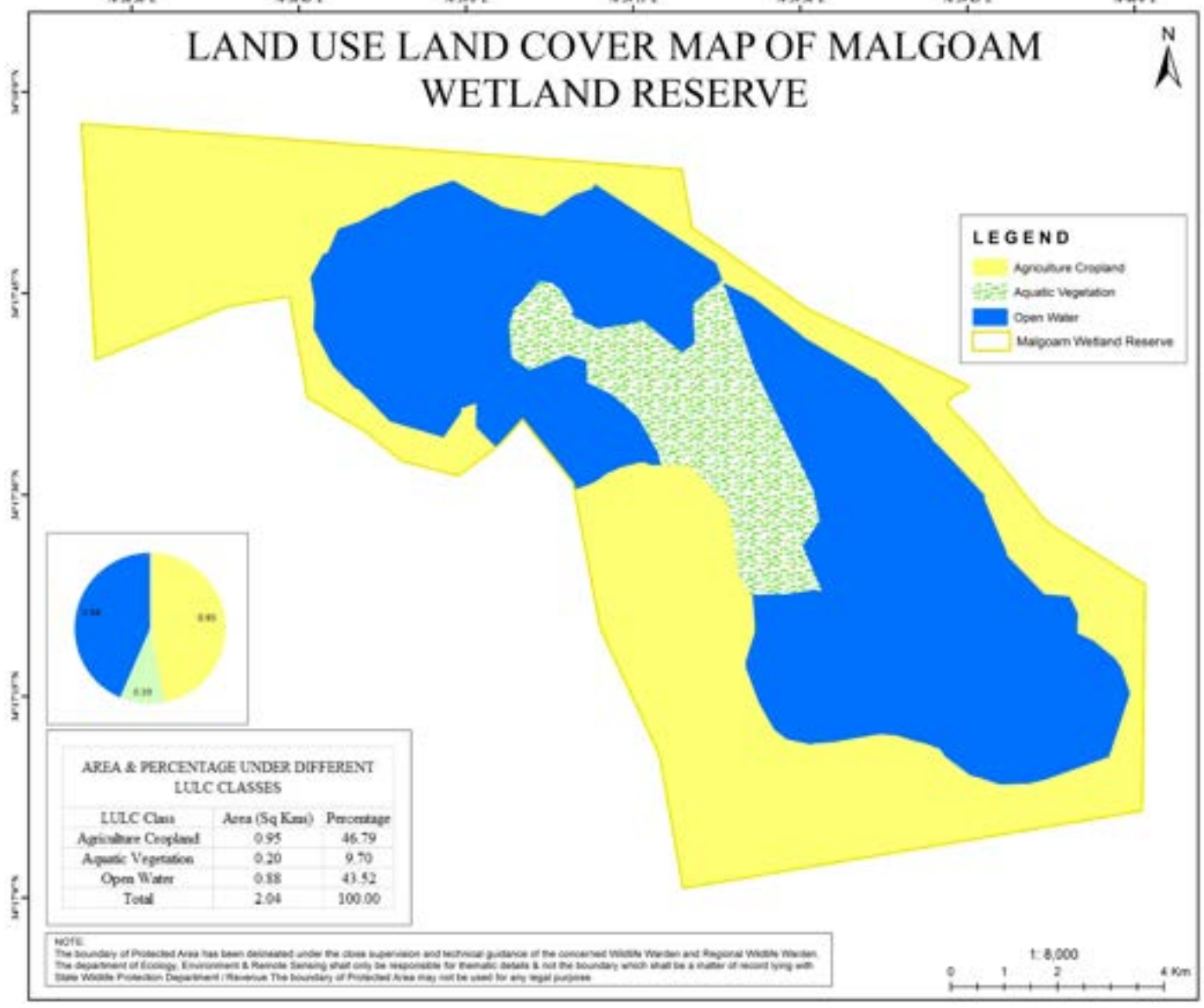
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 4.50 **GIS AREA** (KM2): 2.04
ALTITUDE (M): 1543
PERIMETER (KMS): 7.51
GEO - COORDINATES:
34° 17.015′ N - 34° 17.961′ N, 74° 38.426′ E - 74° 40.018′ E

RESIDENT BIRDS: Common sand piper (*Actitis hypoleucos*), Common Myna (*Acridotheres tristis*), Eastern grey heron (*Ardea cinerea*), Indian pond heron (*Ardeola grayii*), Central Asian kingfisher (*Alcedo atthis pallasi*), House crow (*Corvus splendens*), Blue Rock Pigeon (*Columba livia*), White Cheeked bulbul (*Pycnonotus leucogenys*), Common pariah kite (*Milvus migrans*), Blue crowned night heron (*Nycticorax nycticorax*), House sparrow (*Passer domesticus*), Little grebe (*Tachybaptus ruficollis*), Himalayan griffon vulture(*Gyps himalayensis*), Great horned owl (*Bubo bubo*)

MIGRATORY BIRDS: Common pochard (*Aythya ferina)*, Red crested pochard (*Anas rufina*), Graylag goose (*Anser anser*), Northern shoveler (Anas clypeata), Garganey (Anas querquedula), Gadwall (*Anas strepera*), Mallard (*Anas platyrhynchos*), Common swallow (*Hirundo rustica*), Rufous backed shrike (*Lanius schach*), Little Bittern (*Ixobrychus minutus*), Indian oriole (*Oriolus kundoo*), Slaty headed parakeet (*Psittacula himalayana*), Greater painted snipe (*Rostratula benghalensis*), European Hoopoe (*Upupa epops*) and Ruddy shelduck (*Tadorna ferruginea*).

MAJOR FLORA: Common aquatic vegetation includes *Polygonum amphibium, Juncus articulatus, Typha angustifolia, Phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba, Trapa natans, Lemna.*

LAND USE LAND COVER MAP OF MALGOAM WETLAND RESERVE

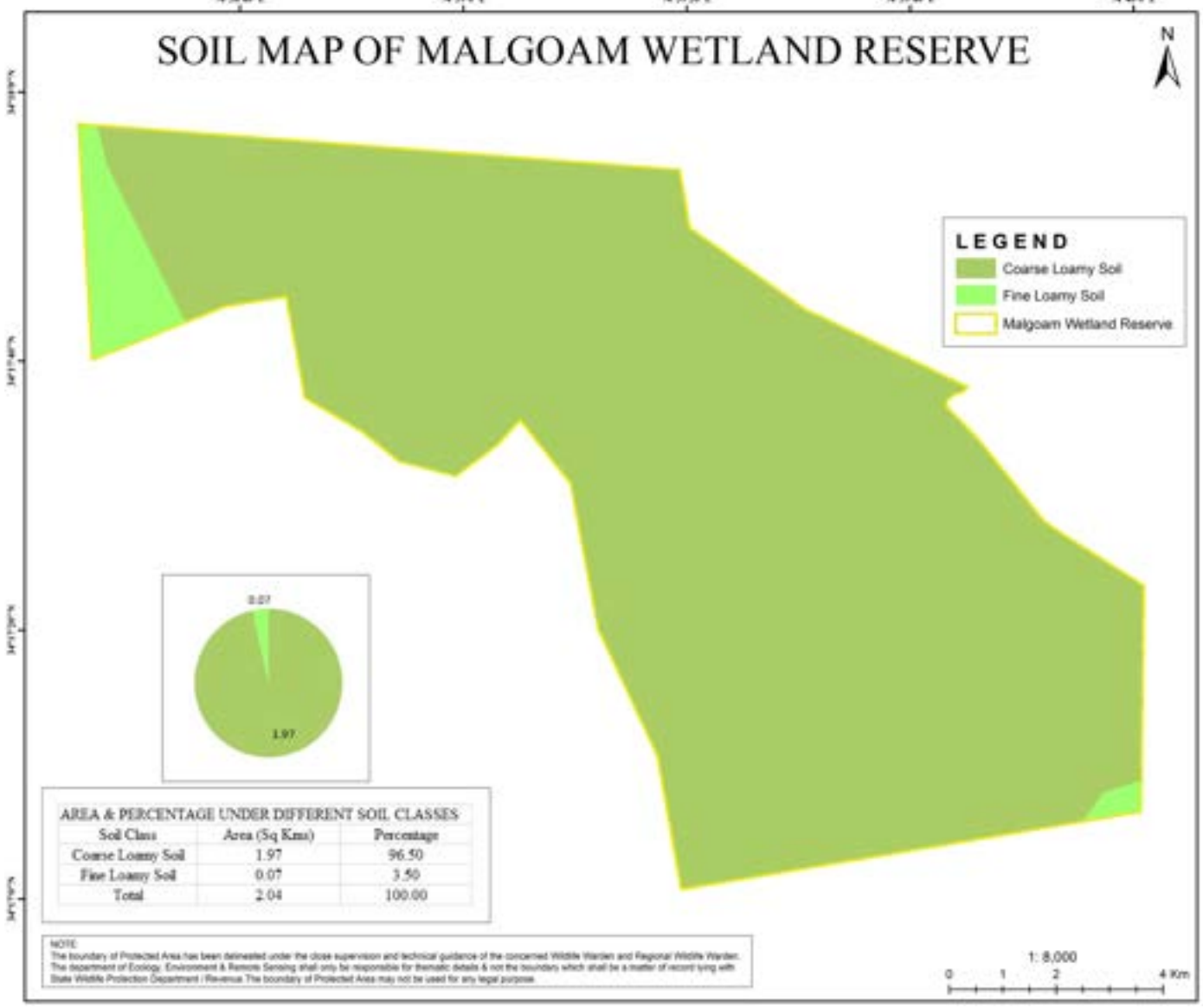


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.95	46.79
Aquatic Vegetation	0.20	9.70
Open Water	0.88	43.52
Total	2.04	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF MALGOAM WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Coarse Loamy Soil	1.97	96.50
Fine Loamy Soil	0.07	3.50
Total	2.04	100.00

NOTE:
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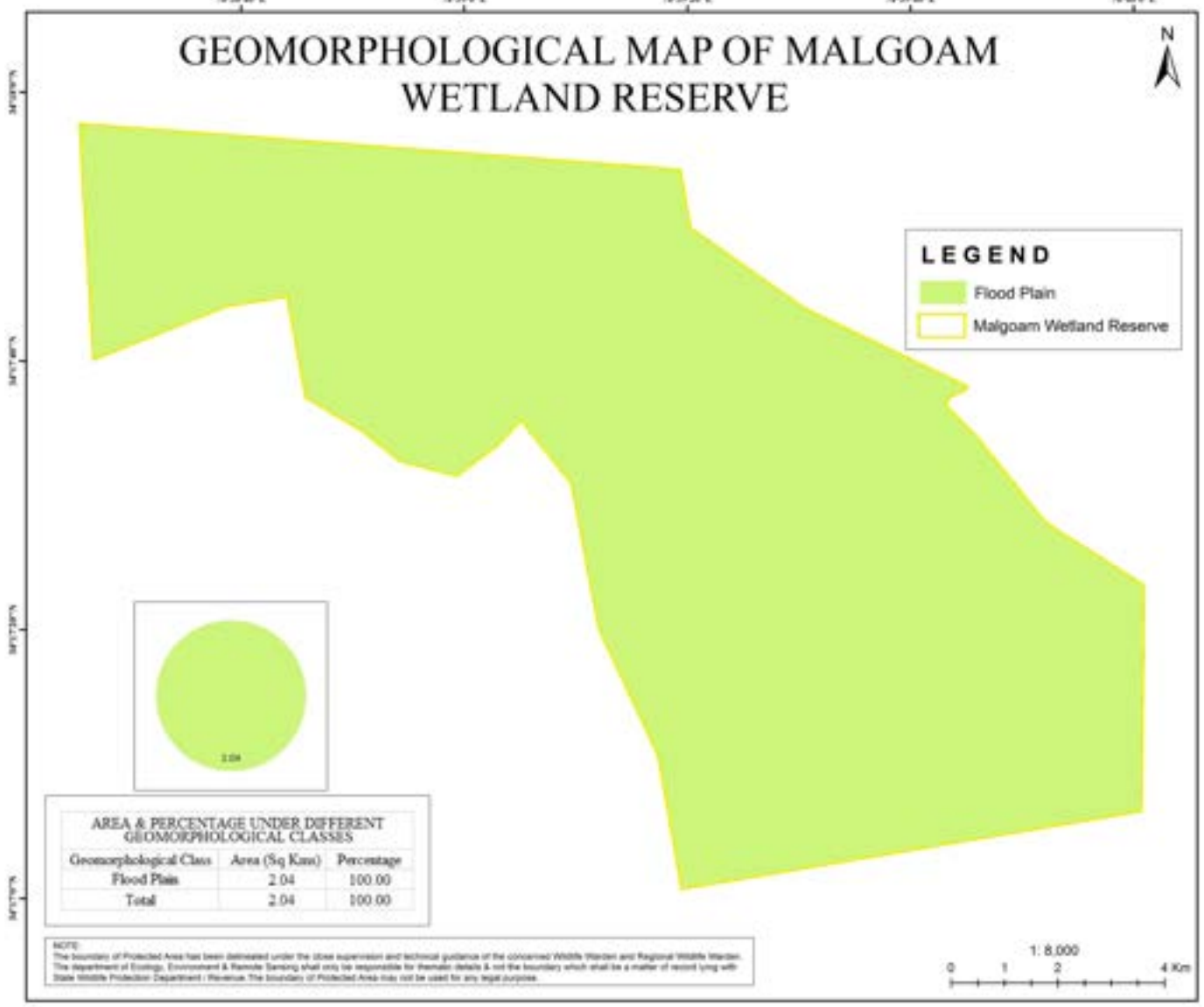
GEOMORPHOLOGICAL MAP OF MALGOAM WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Flood Plain	2.04	100.00
Total	2.04	100.00

NOTE:
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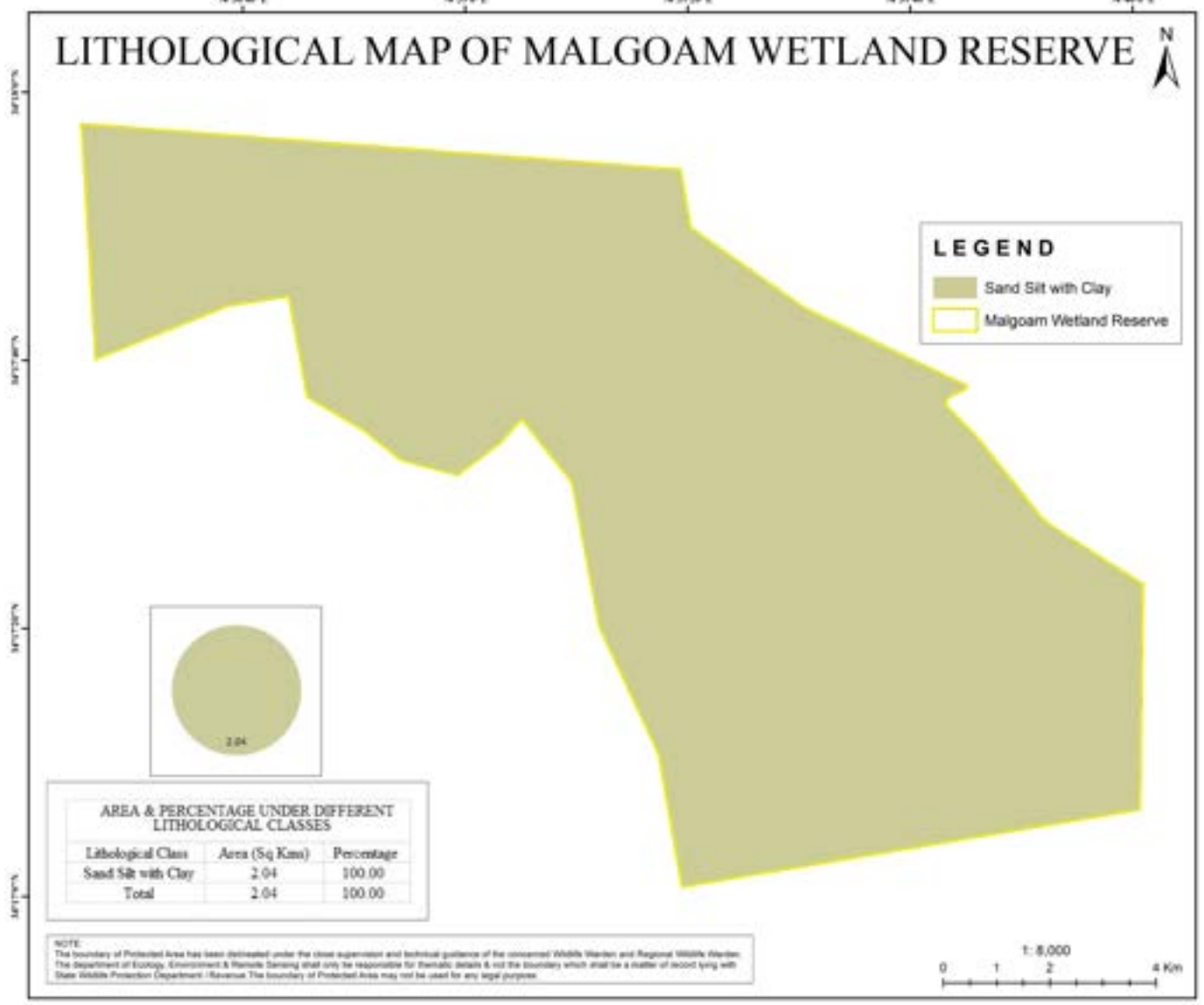
LITHOLOGICAL MAP OF MALGOAM WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Silt with Clay	2.04	100.00
Total	2.04	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

MANIBUGH WETLAND RESERVE

The Manibugh wetland reserve supports a rich diversity of migratory birds coming from different parts of world including Siberia and Central Asia during winter. It was notified in the year 1945. The Manibug Wetland Reserve is located near Pampore town of south Kashmir about 16 Kms from summer capital Srinagar. The area adjoining this wetland is famous for its cash crop Saffron (saffron crocus) cultivation.

SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 1.06 **GIS AREA** (KM2): 0.07
ALTITUDE (M): 1544
PERIMETER (KMS): 1.29
GEO - COORDINATES:
33° 59.883′ N - 34° 0.116′ N, 74° 55.574′ E - 74° 55.863′ E

RESIDENT BIRDS: House sparrow (*Passer domesticus*), Central Asian kingfisher (*Alcedo atthis pallasi*), Common sand piper (*Actitis hypoleucos*), Common Myna (*Acridotheres tristis*), Eastern grey heron (*Ardea cinerea*), Indian pond heron (*Ardeola grayii*), Blue Rock Pigeon (*Columba livia*), Blue crowned night heron (*Nycticorax nycticorax*) and House crow (*Corvus splendens*).

MIGRATORY BIRDS: Mallard (*Anas platyrhynchos*), Common pochard (*Aythya ferina)*, Indian Moorhen (*Gallinula chloropus indicus*), Northern Pintail (*Anas acuta*), Garganey (Anas querquedula), Slaty headed parakeet (*Psittacula himalayana*), Greater painted snipe (*Rostratula benghalensis*), European Hoopoe (*Upupa epops*) Common Teal (*Anas crecca*), Wigeon (*Anas Penelope*), Gadwall (*Anas strepera*), Pheasant tailed jacana (*Hydrophasianus chirurgus*), Common swallow (*Hirundo rustica*), Rufous backed shrike (*Lanius schach*) and Little Bittern (*Ixobrychus minutus*) .

MAJOR FLORA: Common aquatic vegetation includes *Polygonum amphibium, Juncus articulatus, Typha angustifolia, Phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba, Trapa natans, Lemna.*

LAND USE LAND COVER MAP OF MANIBUGH WETLAND RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Plantation	0.001	1.57
Aquatic Vegetation	0.01	11.18
Open Water	0.06	87.25
Total	0.07	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

LEGEND
- Agriculture Plantation
- Aquatic Vegetation
- Open Water
- Manibugh Wetland Reserve

1: 2,000
0 1 2 4 Km

SOIL MAP OF MANIBUGH WETLAND RESERVE

AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Loamy Soil	0.07	100.00
Total	0.07	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

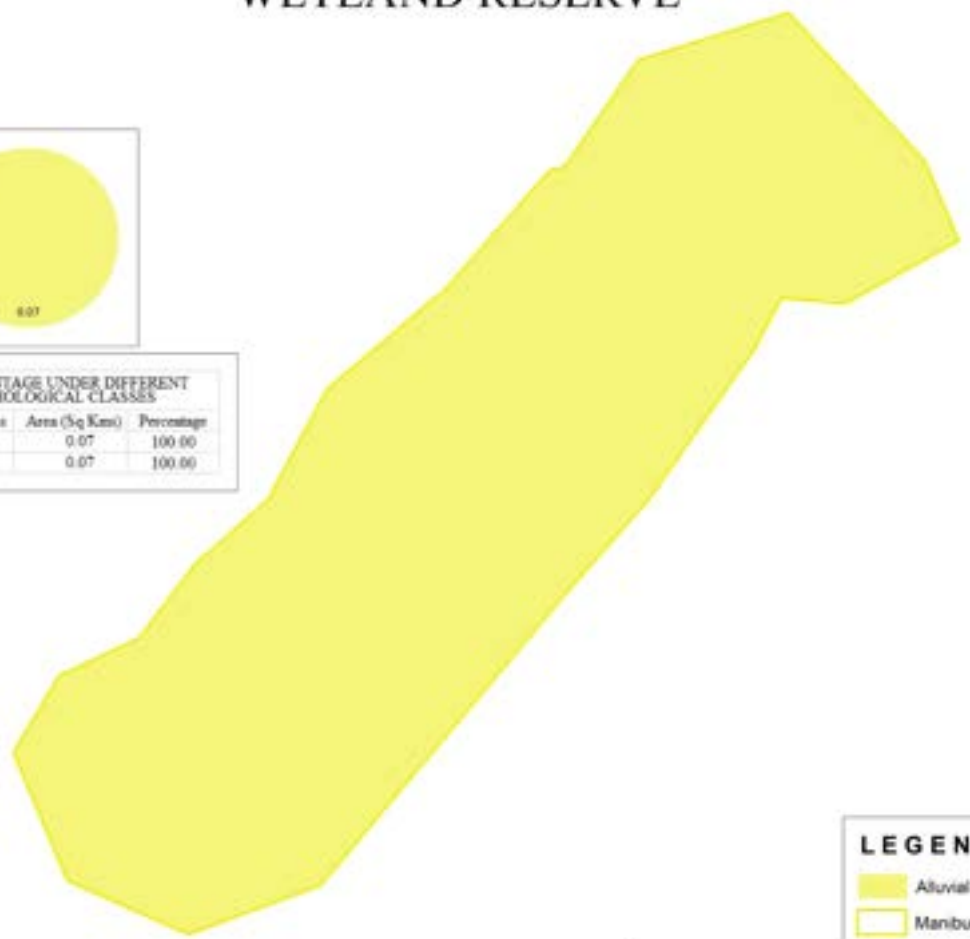
LEGEND
- Fine Loamy Soil
- Manibugh Wetland Reserve

1: 2,000
0 1 2 4 Km

GEOMORPHOLOGICAL MAP OF MANIBUGH WETLAND RESERVE

AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Alluvial Plain	0.07	100.00
Total	0.07	100.00



LEGEND
- Alluvial Plain
- Manibugh Wetland Reserve

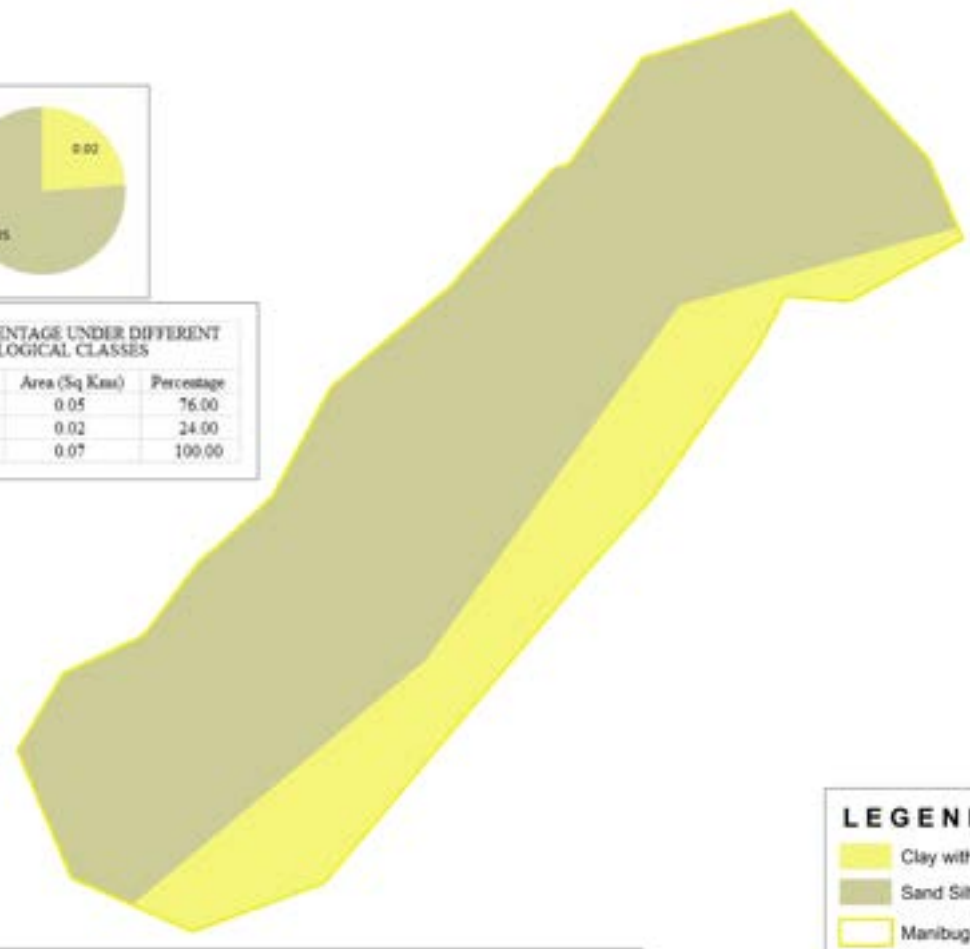
1: 2,000
0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LITHOLOGICAL MAP OF MANIBUGH WETLAND RESERVE

AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

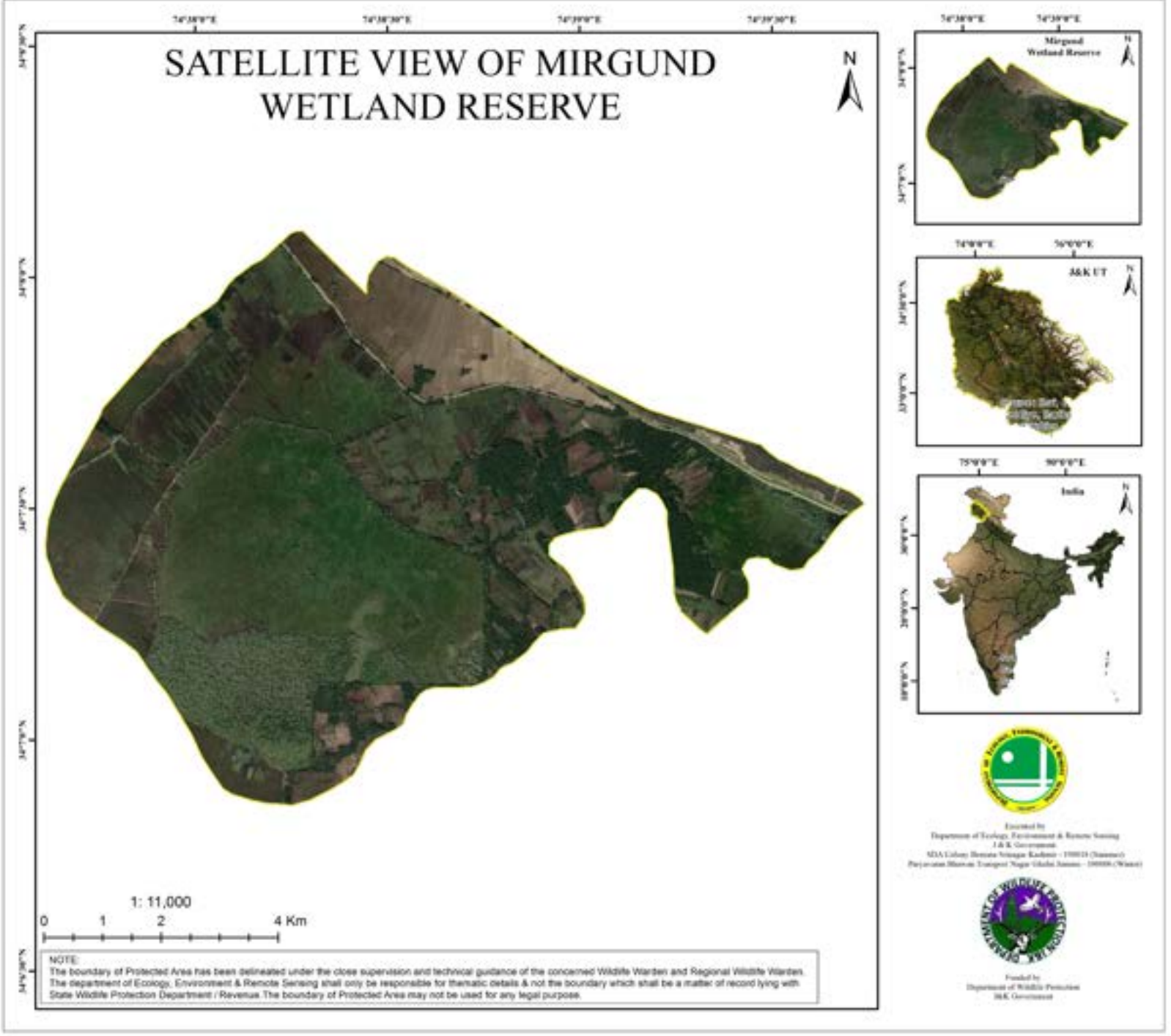
Lithological Class	Area (Sq Kms)	Percentage
Sand Silt with Clay	0.05	76.00
Clay with Sand Silt	0.02	24.00
Total	0.07	100.00



LEGEND
- Clay with Sand Silt
- Sand Silt with Clay
- Manibugh Wetland Reserve

1: 2,000
0 1 2 4 Km

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.



MIRGUND WETLAND RESERVE

Mirgund wetland is about 16 km away from Srinagar, towards its North West. It is situated towards left of Gulmarg road on one side and on its right side is the Baramulla, Sopore highway. Mirgund wetland is one amongst many other Kashmir Himalayan lakes and wetlands which is famous for the Migratory Birds. The wetland enjoys rich biodiversity, supports extensive and diverse macrophytic vegetation, its vast portion of open water area with rich floating vegetation. Mirgund wetland has remained an important staging and wintering area for migratory water fowl species besides common domestic birds.

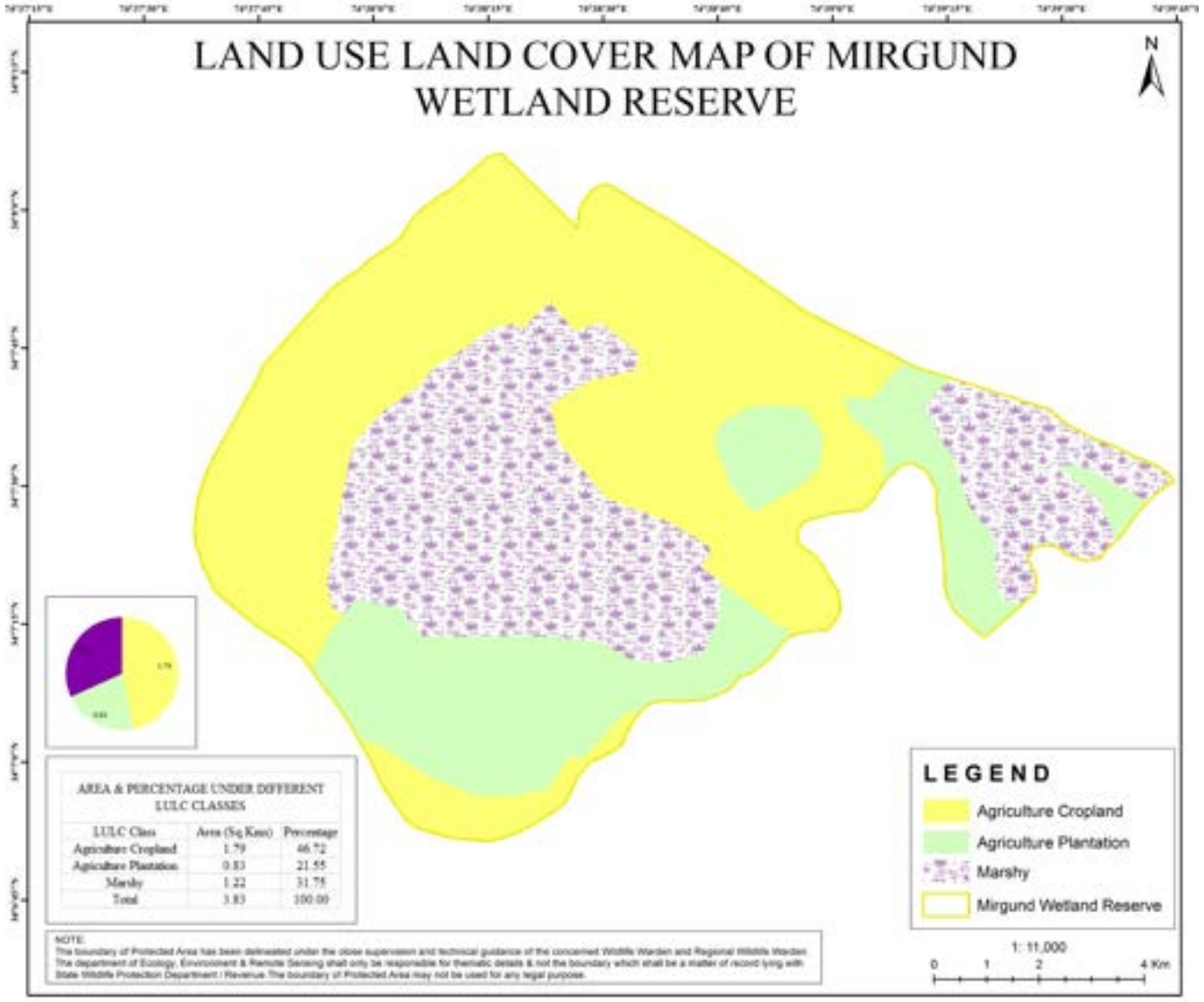
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 4.00 **GIS AREA** (KM2): 3.83
ALTITUDE (M): 1562
PERIMETER (KMS): 9.88
GEO - COORDINATES:
34° 6.860′ N - 34° 8.105′ N, 74° 37.615′ E - 74° 39.748′ E

RESIDENT BIRDS: Common Myna (*Acridotheres tristis*),Central Asian kingfisher (*Alcedo atthis pallasi*), House crow (*Corvus splendens*), White Cheeked bulbul (*Pycnonotus leucogenys*), Common pariah kite (*Milvus migrans*), Little grebe (*Tachybaptus ruficollis*), Himalayan griffon vulture(*Gyps himalayensis*).

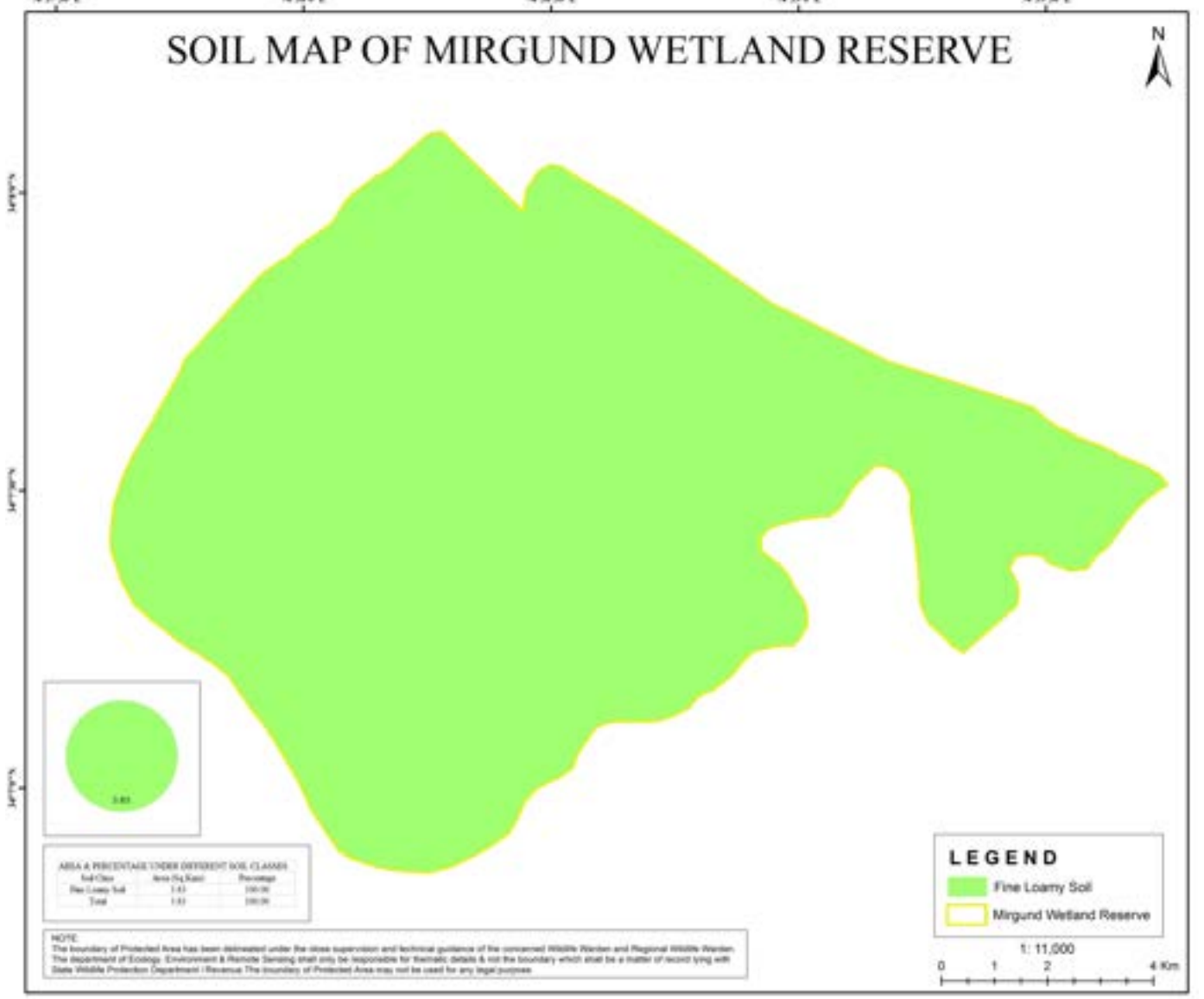
MIGRATORY BIRDS: Gadwall (*Anas strepera*), Mallard (*Anas platyrhynchos*), Ruddy shelduck (*Tadorna ferruginea*), Eurasian wigeon (*Mareca penelope*), Pheasant tailed jacana (*Hydrophasianus chirurgus*), Common swallow (*Hirundo rustica*), Greater painted snipe (*Rostratula benghalensis*) and European Hoopoe (*Upupa epops*) .

MAJOR FLORA: The following typical vegetation types are exhibited here *Typha angustifolia, salvinia spp, phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba.* Also Salix alba is found in scattered location.

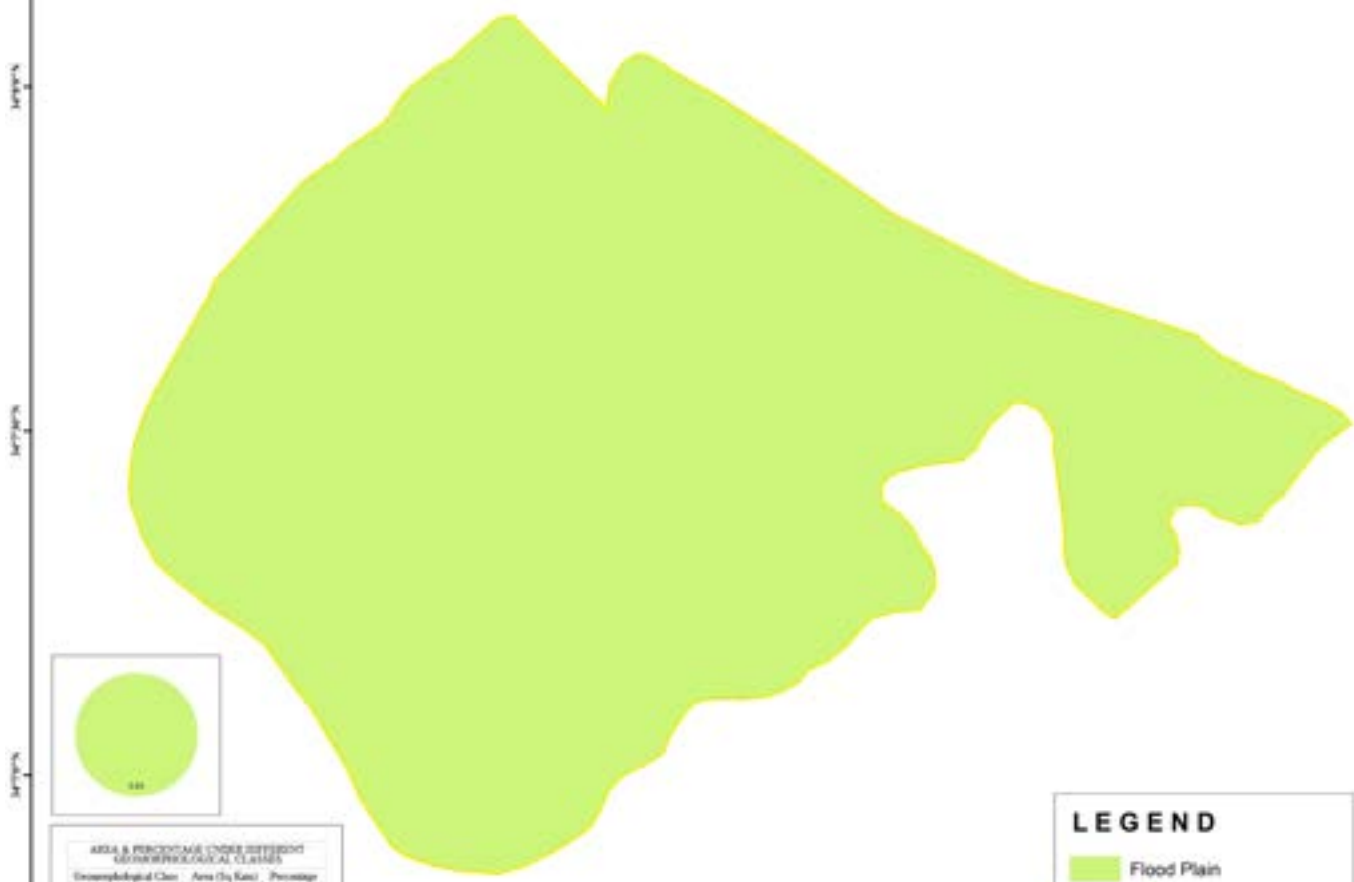
LAND USE LAND COVER MAP OF MIRGUND WETLAND RESERVE



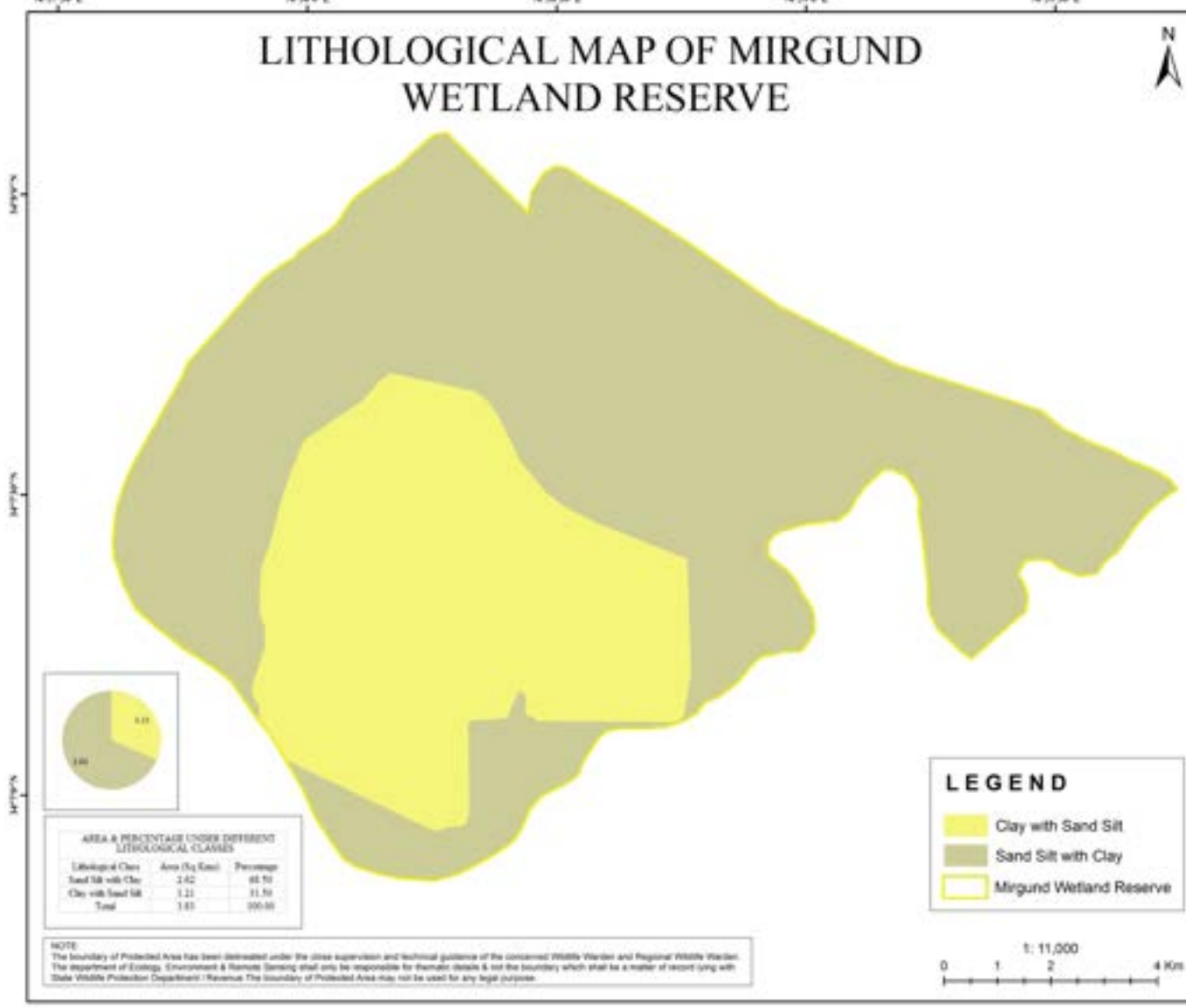
SOIL MAP OF MIRGUND WETLAND RESERVE

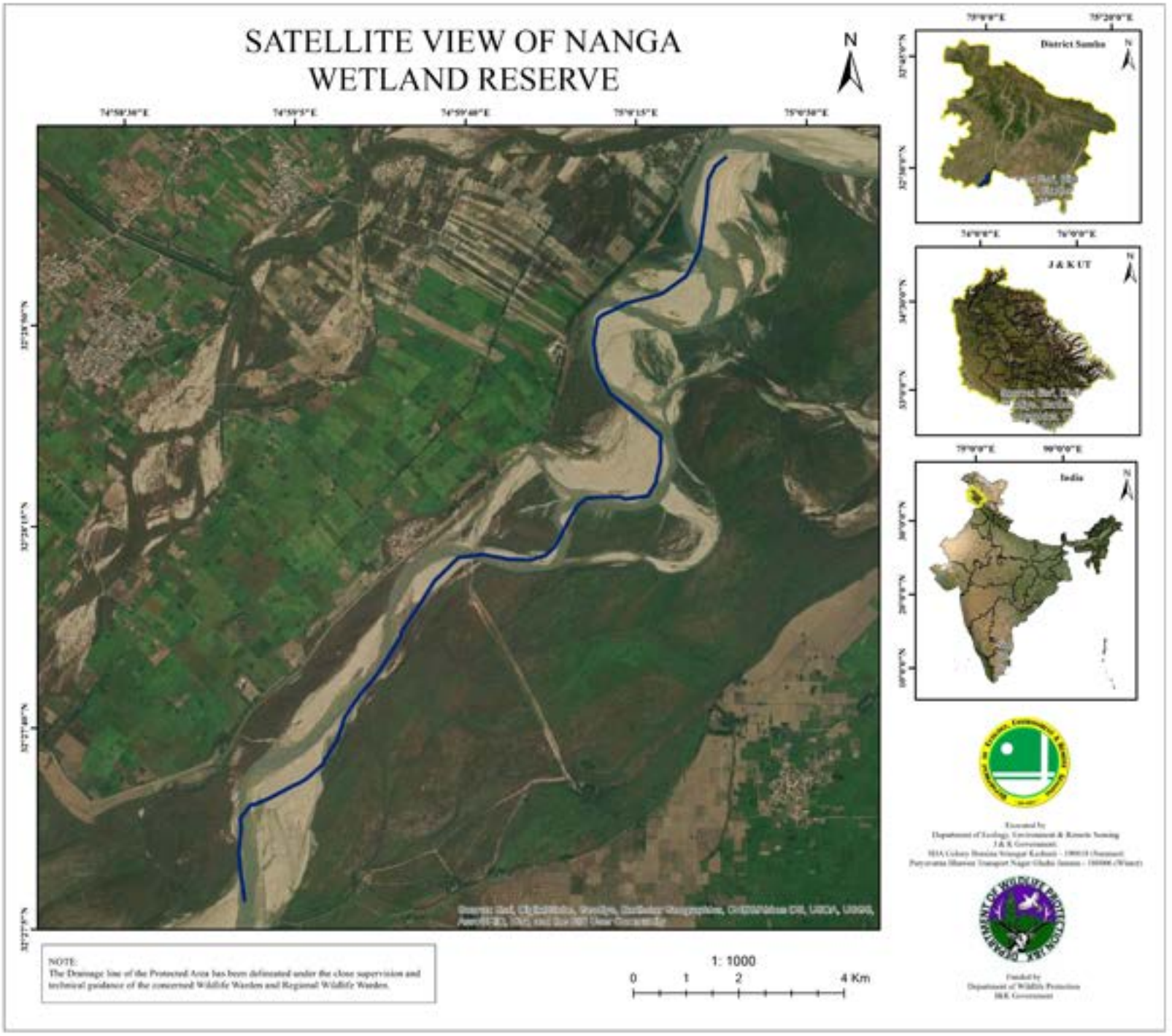


GEOMORPHOLOGICAL MAP OF MIRGUND WETLAND RESERVE



LITHOLOGICAL MAP OF MIRGUND WETLAND RESERVE





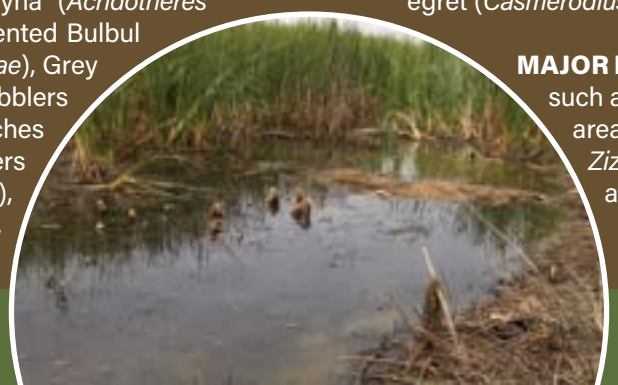
NANGA WETLAND RESERVE

The Nanga Wetland Reserve is named after the village Nanga and is located in Nanga village of Samba tehsil on Vijaypur-Ramgarh area. The reserve is situated in west of Pakistan border. The area was notified via government order FST/20 of 1981 dated 04 Feb 1981 as wetland reserve. This wetland reserve harbours an excellent population of both flora & fauna.

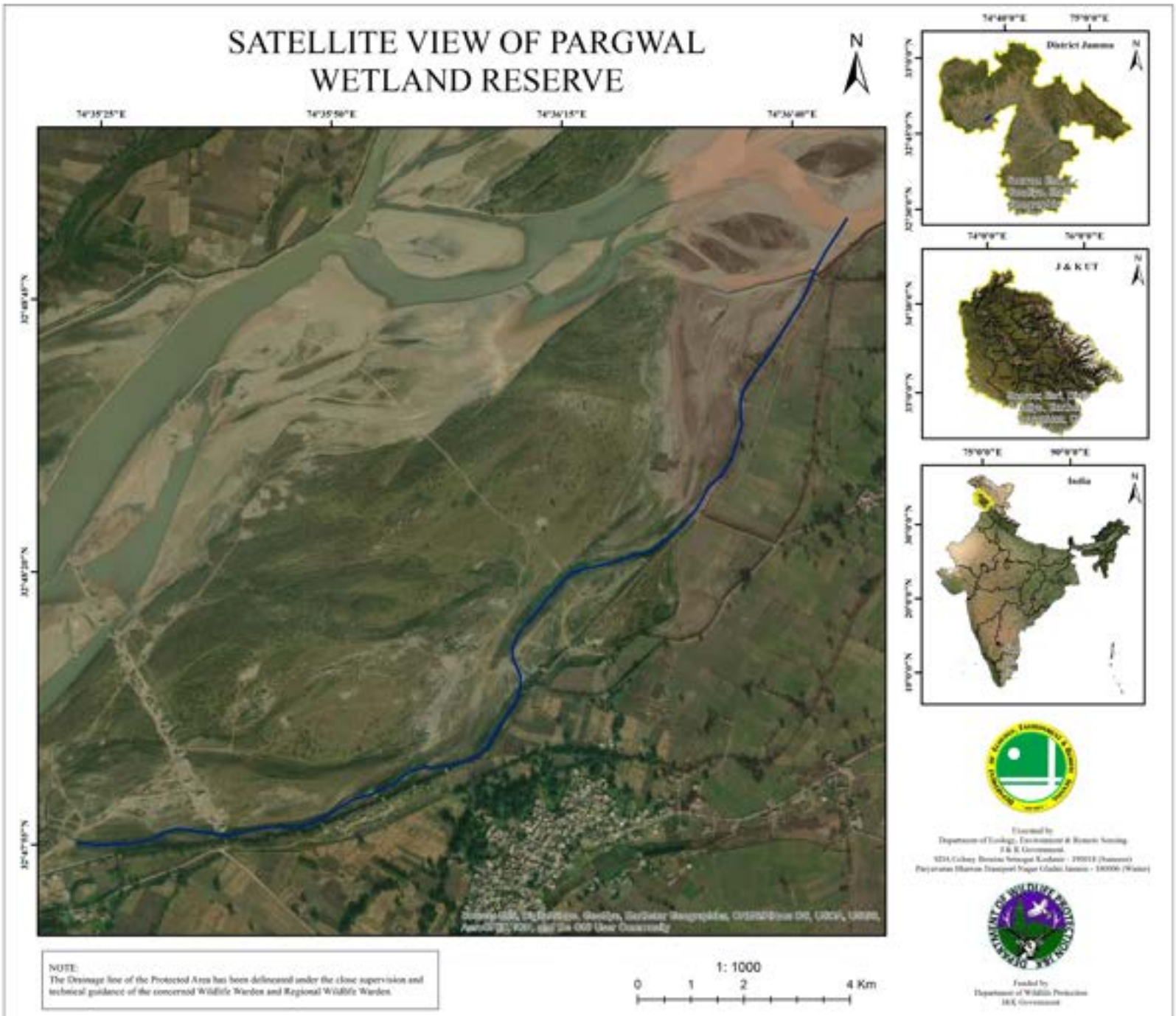
SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981
NOTIFIED AREA (KM2): 15.25 **GIS AREA** (KM2): NA
ALTITUDE (M): 247
GEO – COORDINATES: 32° 27.580′ N & 74° 57.688′ E

RESIDENT BIRDS: Purple Sunbird (*Cinnyris asiaticus*), Brown Rock Chat (*Cercomela fusca*), Red wattled Lapwing (*Vanellus indicus*), Indian Cuckoo (*Cuculus micropterus*),Common Myna (*Acridotheres tristis*), Golden oriole (*Oriolus oriolus*),Red vented Bulbul (*Pycnonotus cafer*), Flower peckers (*Dicaeidae*), Grey tits (Parus afer), Starlings(*Sturnidae*),Babblers (*Timaliidae*), Barbets (*Megalaimidae)*, Finches (*Fringillidae*), Fantails (*Rhipidura*), Fly catchers (*Tyrannidae*), Kingfishers (*Alcedinidae*), Thrushes (*Turdidae*), Hoopoes (*Upupidae*) , Wagtails (*Motacilla*), Warblers (*Parulidae*),kites (*Accipitridae*), Griffon Vulture (*Gyps fulvus*), Pheasants (*Phasianus colchicus*).

MIGRATORY BIRDS: Cattle egret (*Bubulcus ibis*), Gadwall (*Anas strepera*), Grey Heron, Purple Heron etc do exist but not in large numbers.Bar-headed goose (*Anser indicus*), Grey heron (*Ardea cinerea*), Purple heron (*Ardea purpurea*), Greylag goose (*Anser anser*), Gadwall (*Anas strepera*), Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Rock pigeon (*Columba livia*), Eurasian Collared Dove (*Streptopelia decaocto*), Asian Koel (*Eudynamys solopacea*), Greater Coucal (*Centropus sinensis*), Common Kingfisher (*Alcedo atthis*), White throated kingfisher (*Halcyon smyrnensis*), Pied Kingfisher (*Caryle rudis*), Indian Roller (*Coracias benghalensis*), Bay backed Shrike (*Lanius vittatus*), Long tailed Shrike (*Lanius schach*), Little Grebe (*Tachybaptus ruficollis*), Great Comorant (*Phalacrocorax carbo*), Great egret (*Casmerodius albus*).



MAJOR FLORA: The area is covered with tall grasses such as moonj grass (*Saccharum munja*) in marshy areas. Other common species are Ipomia, *Ziziphus jujuba* in bushes and *Vitex negundo* and Shisham (*Dalbergia sissoo*) sporadicaly.



PARGWAL WETLAND RESERVE

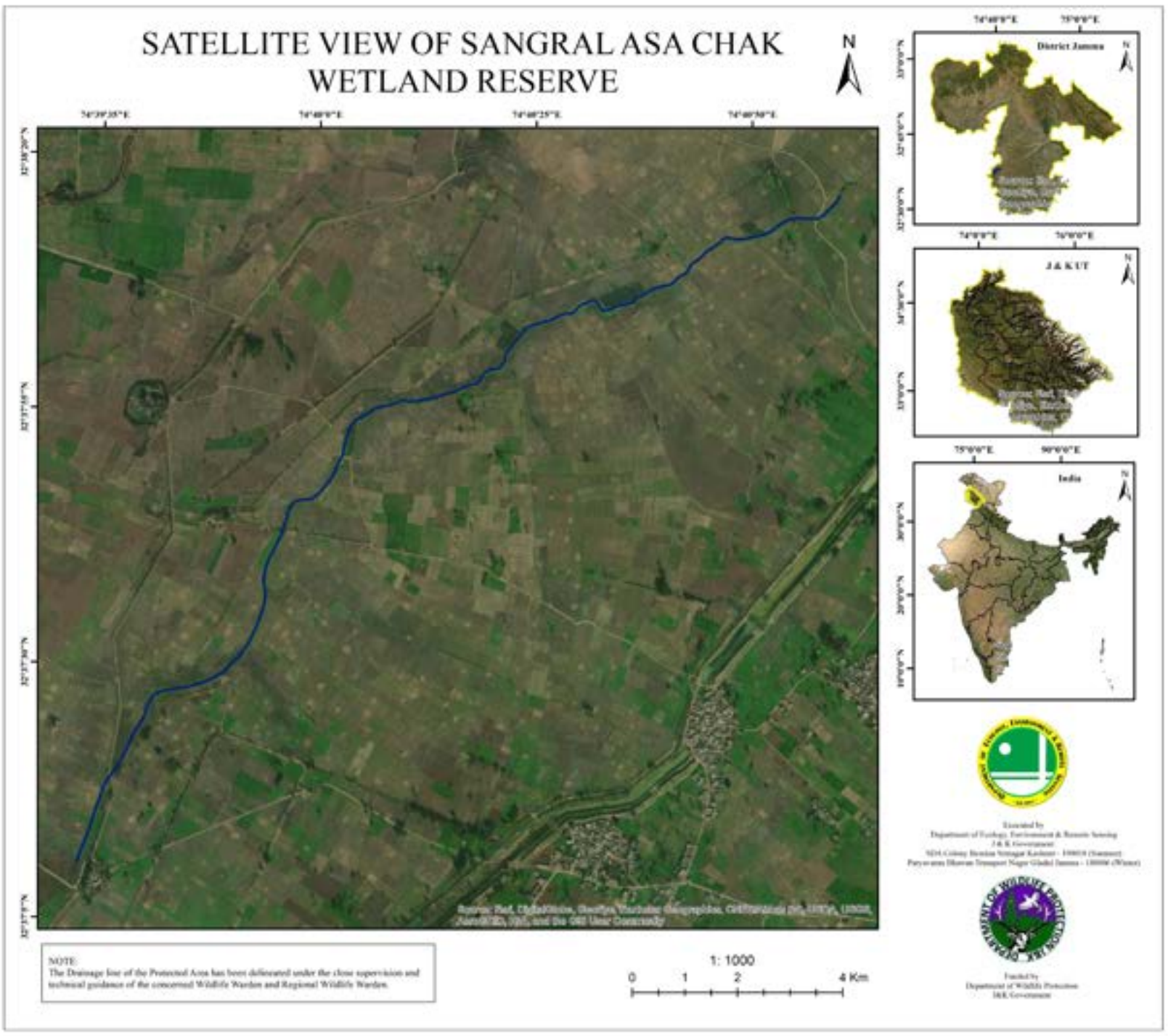
The Pargwal wetland reserve is named after the village Pargwal situated on the island of Chenab river (between main river and a creek of it) neat the chicken neck area of Pakistan. This wetland reserve was notified in 1981. The wetland reserve is abode to diverse specifies of the birds from different corners of the world.

SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981
NOTIFIED AREA (KM2): 49.25 **GIS AREA** (KM2): NA
GEO – COORDINATES: 32° 47.878′ N & 74° 35.346′ E
ALTITUDE (M): 218

RESIDENT BIRDS: Purple Sunbird (*Cinnyris asiaticus*), Brown Rock Chat (*Cercomela fusca*),Red wattled Lapwing (*Vanellus indicus*), Indian Cuckoo (*Cuculus micropterus*),Common Myna (*Acridotheres tristis*), Golden oriole (*Oriolus oriolus*), Red vented Bulbul (*Pycnonotus cafer*), Flower peckers (*Dicaeidae*), Grey tits (Parus afer), Starlings(*Sturnidae*), Babblers (*Timaliidae*), Barbets (*Megalaimidae),* Finches (*Fringillidae*), Fantails (*Rhipidura*),Fly catchers (*Tyrannidae*), Kingfishers (*Alcedinidae*), Thrushes (*Turdidae*), Hoopoes (*Upupidae*) , Wagtails (*Motacilla*), Warblers (*Parulidae*),kites (*Accipitridae*), Griffon Vulture (*Gyps fulvus*), Pheasants (*Phasianus colchicus*).

MIGRATORY BIRDS: Cormorant (*Phalacrocoracidae*), Bar-headed goose (*Anser indicus*), Grey heron (*Ardea cinerea*), Purple heron (*Ardea purpurea*), Greylag goose (*Anser anser*), Gadwall (*Anas strepera*), Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Rock pigeon (*Columba livia*), Oriental turtle Dove (*Streptopelia orientalis*), Eurasian Collared Dove (*Streptopelia decaocto*), Asian Koel (*Eudynamys solopacea*), Greater Coucal (*Centropus sinensis*), Common Kingfisher (*Alcedo atthis*), White throated kingfisher (*Halcyon smyrnensis*), Pied Kingfisher (*Caryle rudis*), Indian Roller (*Coracias benghalensis*),Bay backed Shrike (*Lanius vittatus*), Long tailed Shrike (*Lanius schach*), Little Grebe (*Tachybaptus ruficollis*), Cattle Egret (*Bubulus ibis*), Great egret (*Casmerodius albus*).

MAJOR FLORA: The reserve is covered by open Scrub with moonj grass (*Saccharum munja*) and Shisham (*Dalbergia sissoo*) in scattered location. The other common species are *Mangifera indica, Bombax inalambrica, Ziziphus jujuba*.



SANGRAL ASA CHAK
WETLAND RESERVE

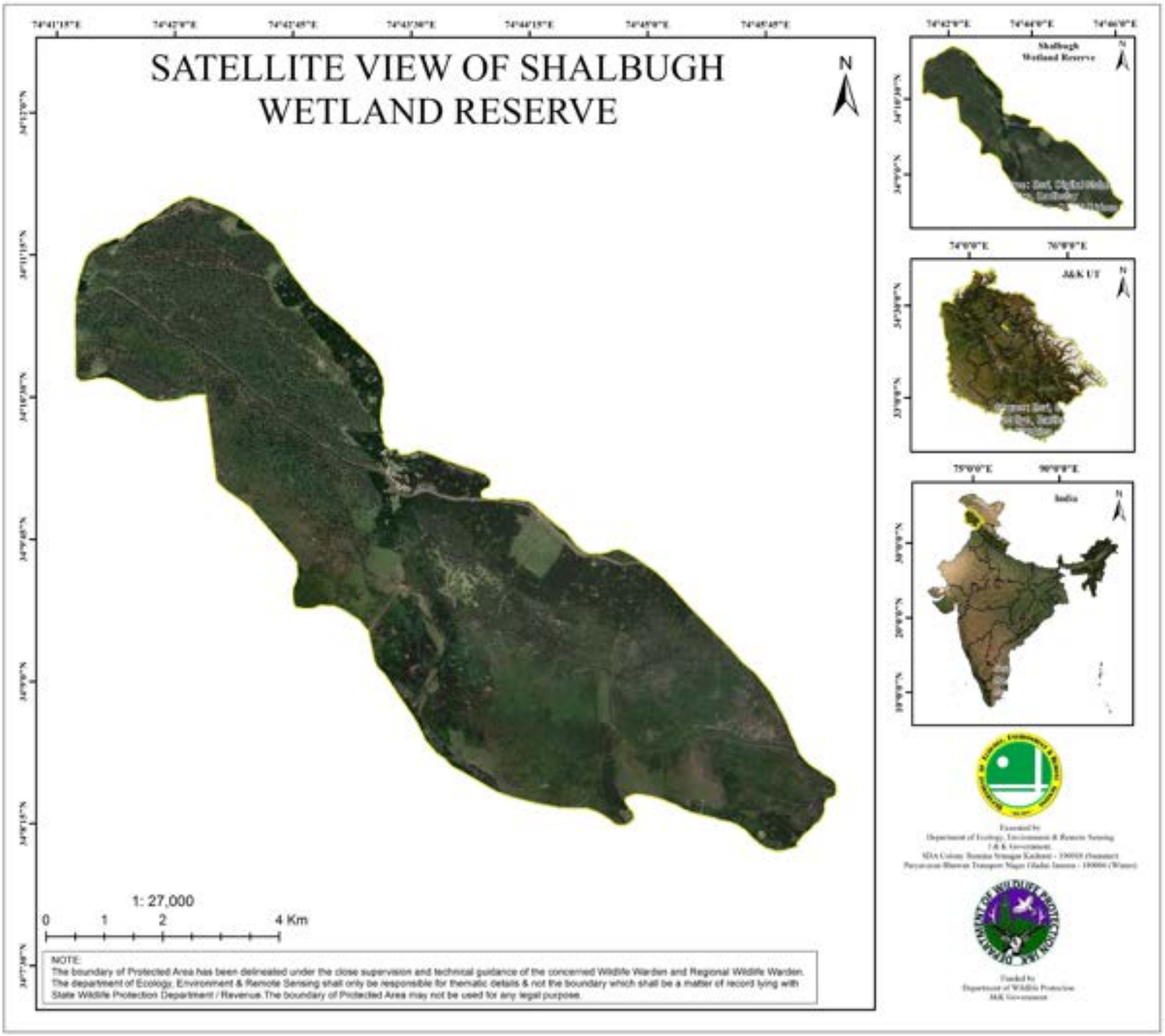
The Sangral Asa chak wetland reserve is named after three villages of Asa chak in Nash, Badulian in the south and Sangral in the middle. This reserve situated in the east of Pakistan border and west of Kulian Tunkerwali and Raipur Salydan and Chandu Chak village. This wetland was notified in 1981.

SRO/NOTIFICATION NO: Government order No.20-FST of 1981 04.02.1981
NOTIFIED AREA (KM2): 7.00 **GIS AREA** (KM2): NA
ALTITUDE (M): 205
GEO – COORDINATES: 32° 37.475′ N & 74° 39.627′ E

RESIDENT BIRDS: Purple Sunbird (*Cinnyris asiaticus*), Brown Rock Chat (*Cercomela fusca*),Red wattled Lapwing (*Vanellus indicus*), Indian Cuckoo (*Cuculus micropterus*), Common Myna (*Acridotheres tristis*), Golden oriole (*Oriolus oriolus*), Red vented Bulbul (*Pycnonotus cafer*), Flower peckers (*Dicaeidae*), Grey tits (Parus afer), Starlings(*Sturnidae*), Babblers (*Timaliidae*), Barbets (*Megalaimidae*), Finches (*Fringillidae*), Fantails (*Rhipidura*), Fly catchers (*Tyrannidae*), Kingfishers (*Alcedinidae*), Thrushes (*Turdidae*), Hoopoes (*Upupidae*) , Wagtails (*Motacilla*), Warblers (*Paruli-dae*),kites (*Accipitridae*), Griffon Vulture (*Gyps fulvus*).

MIGRATORY BIRDS: Grey patridge (*Perdix perdix*), Bar-headed goose (*Anser indicus*), Grey heron (*Ardea cinerea*), Purple heron (*Ardea purpurea*), Greylag goose (*Anser anser*), Gadwall (*Anas strepera*), Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Rock pigeon (*Columba livia*), Eurasian Collared Dove (*Streptopelia decaocto*), Asian Koel (*Eudynamys solopacea*), Greater Coucal (*Centropus sinensis*), Common Kingfisher (*Alcedo atthis*), White throated kingfisher (*Halcyon smyrnensis*), Pied Kingfisher (*Caryle rudis*), Indian Roller (*Coracias benghalensis*), Bay backed Shrike (*Lanius vittatus*), Long tailed Shrike (*Lanius schach*), Little Grebe (*Tachybaptus ruficollis*), Great Comorant (*Phalacrocorax carbo*), Cattle Egret (*Bubulus ibis*), Great egret (*Casmerodius albus*).

MAJOR FLORA: The reserve is covered with open Scrub cum grassland. The most predominant specie is moonj grass (*Saccharum munja*) in scattered location. The other common species are Shisham (*Dalbergia sissoo*), *Ziziphus jujuba*, Drek.



SHALBUGH WETLAND RESERVE

Shalbugh Wetland was notified in the year 1945. The experts said that the migratory birds from central Asia, Siberia, Japan and Philippine, Russia, China and other countries used to arrive in huge numbers during November every year. The wetland has remained an important staging and wintering area for migratory water fowl species besides common domestic birds.

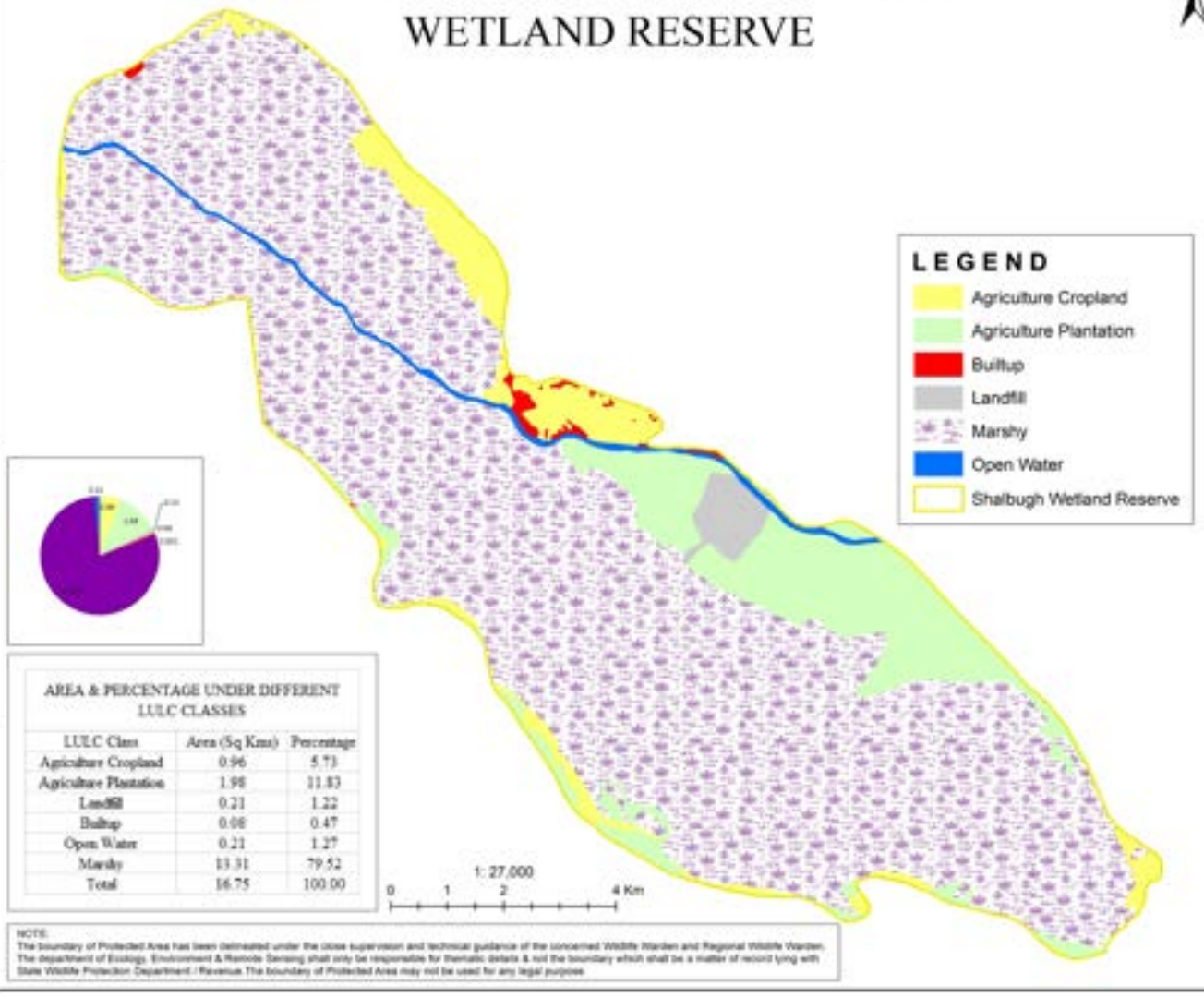
SRO/NOTIFICATION NO: Cabinet order No.710 of 1945 dated 17.07.1945
NOTIFIED AREA (KM2): 16.00 **GIS AREA** (KM2): 16.75
PERIMETER (KMS): 22.72
ALTITUDE (M): 1552
GEO - COORDINATES:
34° 8.115′ N - 34° 11.566′ N, 74° 45.863′ E - 74° 46.210′ E

RESIDENT BIRDS: Common sand piper (*Actitis hypoleucos*), Common Myna (*Acridotheres tristis*), Eastern grey heron (*Ardea cinerea*), Indian pond heron (*Ardeola grayii*), Central Asian kingfisher (*Alcedo atthis pallasi*), House crow (*Corvus splendens*), Blue Rock Pigeon (*Columba livia*) and Blue crowned night heron (*Nycticorax nycticorax*).

MIGRATORY BIRDS: Northern Pintail (*Anas acuta*), Common Teal (*Anas crecca*), Wigeon (*Anas penelope*), Gadwall (*Anas strepera*), Mallard (*Anas platyrhynchos*), Common pochard (*Aythya ferina)*, Indian Moorhen (*Gallinula chloropus indicus*), Pheasant tailed jacana (*Hydrophasianus chirurgus*), Common swallow (*Hirundo rustica*), Rufous backed shrike (*Lanius schach*), Little Bittern (*Ixobrychus minutus*), Indian oriole (*Oriolus kundoo*), Slaty headed parakeet (*Psittacula himalayana*), Greater painted snipe (*Rostratula benghalensis*) and European Hoopoe (*Upupa epops*) .

MAJOR FLORA: The following typical vegetation types are exhibited here *Typha angustifolia, salvinia spp, phragmites communis, Mentha piperita, Utricularia aurea, Myriophyllum verticillatum, Nymphaea alba. Also Salix alba* is found in scattered location.

LAND USE LAND COVER MAP OF SHALBUGH WETLAND RESERVE

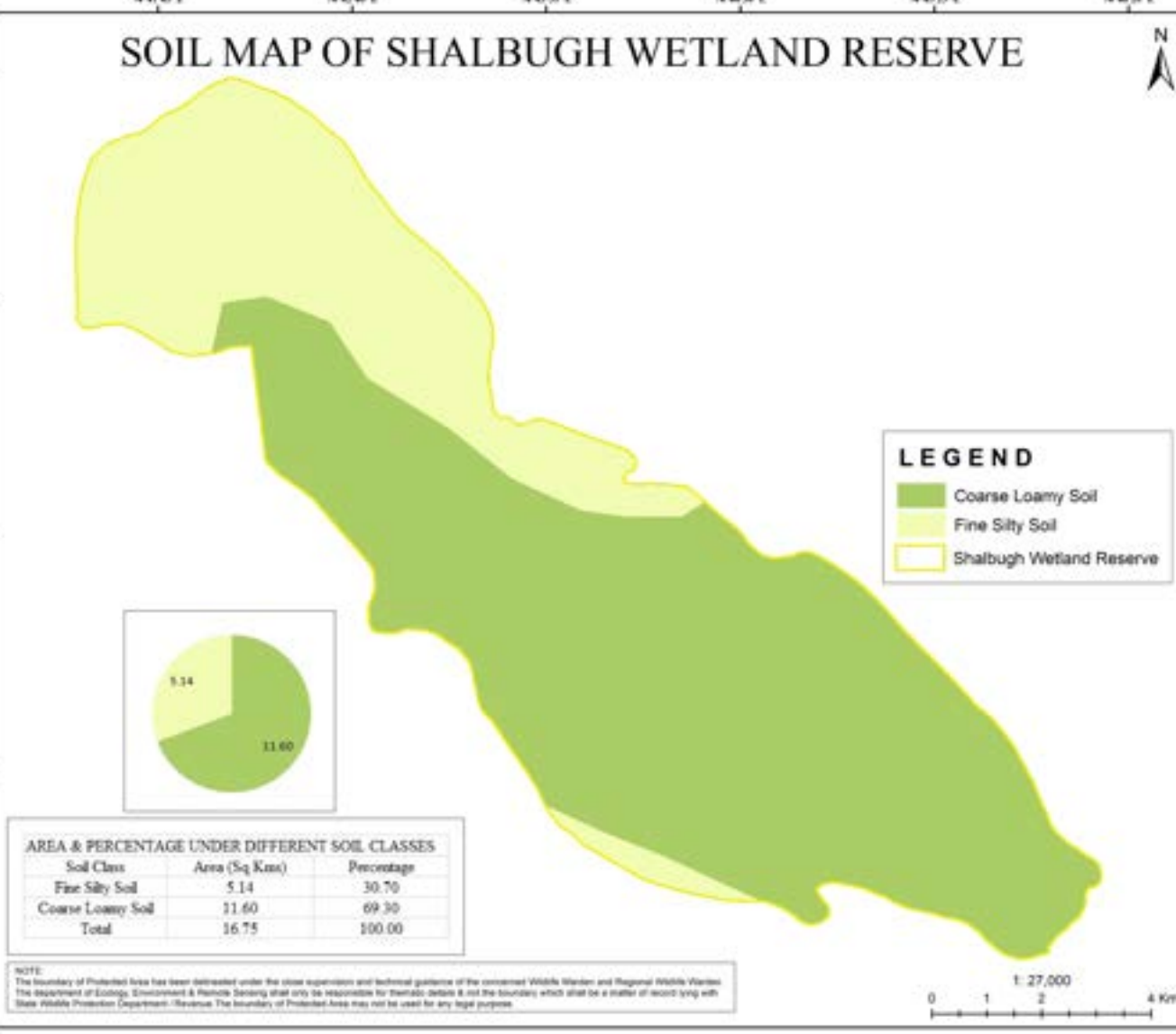


AREA & PERCENTAGE UNDER DIFFERENT LULC CLASSES

LULC Class	Area (Sq Kms)	Percentage
Agriculture Cropland	0.96	5.73
Agriculture Plantation	1.98	11.83
Landfill	0.21	1.22
Builtup	0.08	0.47
Open Water	0.21	1.27
Marshy	13.31	79.52
Total	16.75	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

SOIL MAP OF SHALBUGH WETLAND RESERVE

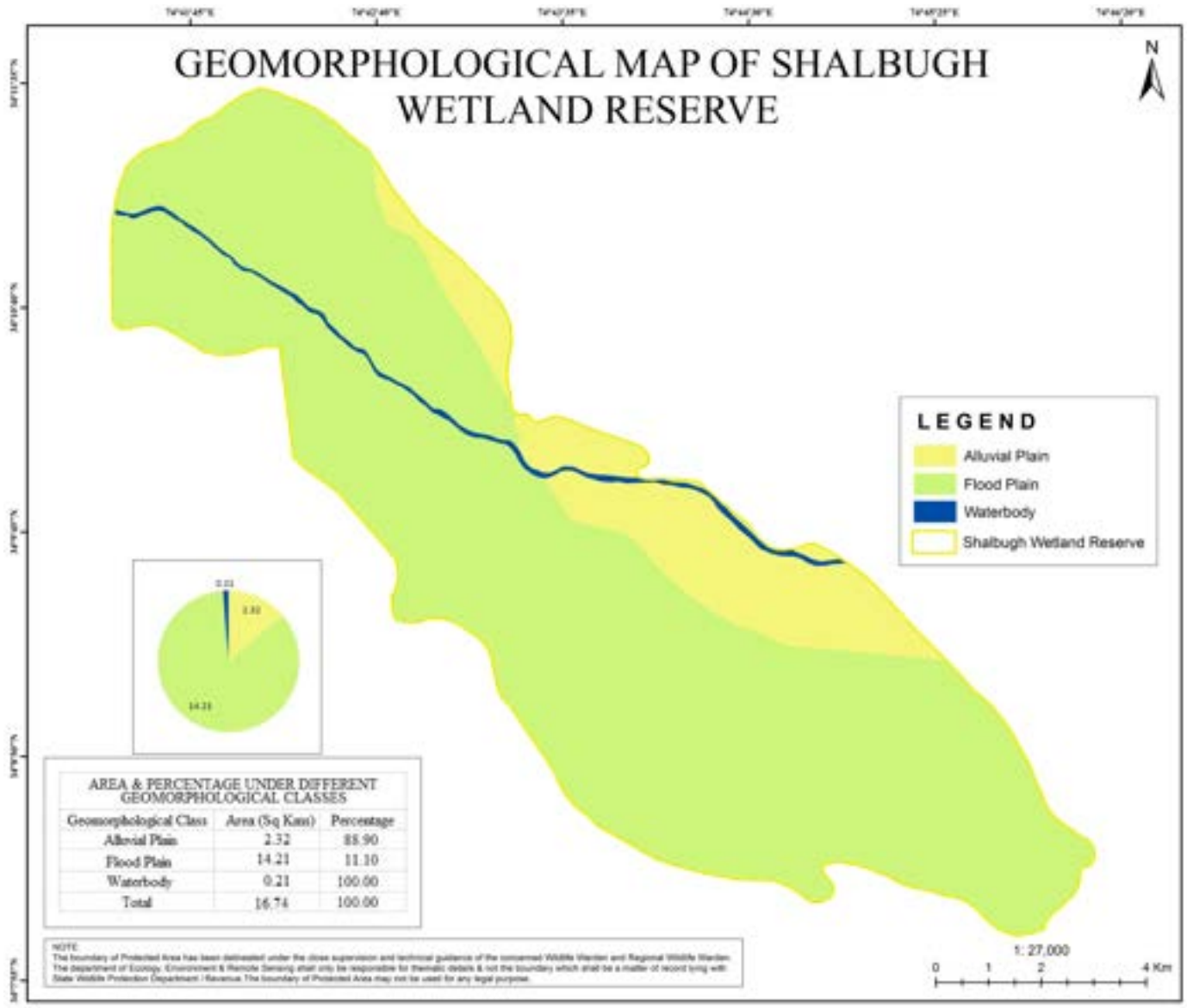


AREA & PERCENTAGE UNDER DIFFERENT SOIL CLASSES

Soil Class	Area (Sq Kms)	Percentage
Fine Silty Soil	5.14	30.70
Coarse Loamy Soil	11.60	69.30
Total	16.75	100.00

NOTE:
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue.The boundary of Protected Area may not be used for any legal purpose.

GEOMORPHOLOGICAL MAP OF SHALBUGH WETLAND RESERVE

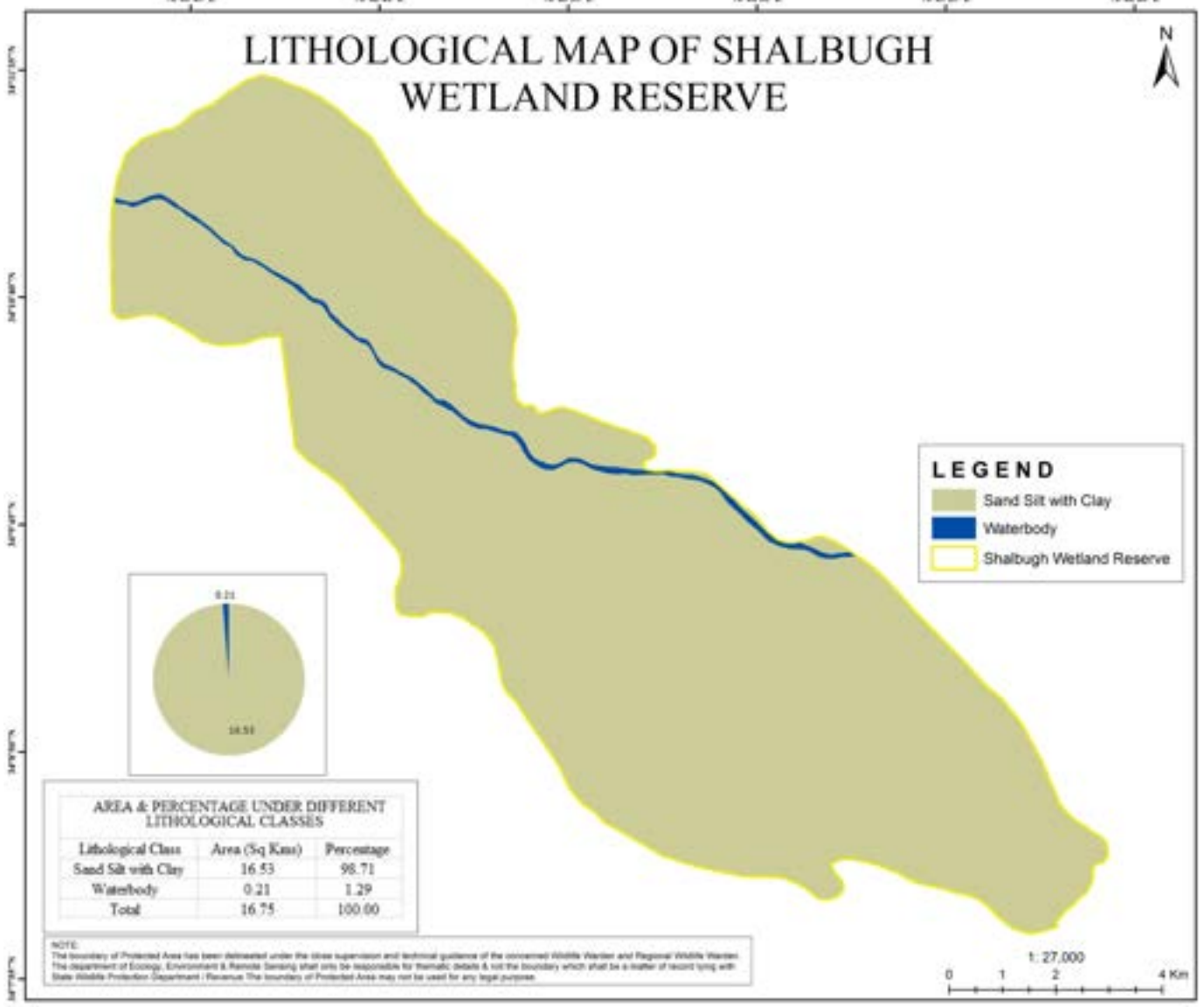


AREA & PERCENTAGE UNDER DIFFERENT GEOMORPHOLOGICAL CLASSES

Geomorphological Class	Area (Sq Kms)	Percentage
Alluvial Plain	2.32	88.90
Flood Plain	14.21	11.10
Waterbody	0.21	100.00
Total	16.74	100.00

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

LITHOLOGICAL MAP OF SHALBUGH WETLAND RESERVE



AREA & PERCENTAGE UNDER DIFFERENT LITHOLOGICAL CLASSES

Lithological Class	Area (Sq Kms)	Percentage
Sand Silt with Clay	16.53	98.71
Waterbody	0.21	1.29
Total	16.75	100.00

NOTE
The boundary of Protected Area has been delineated under the close supervision and technical guidance of the concerned Wildlife Warden and Regional Wildlife Warden. The department of Ecology, Environment & Remote Sensing shall only be responsible for thematic details & not the boundary which shall be a matter of record lying with State Wildlife Protection Department / Revenue. The boundary of Protected Area may not be used for any legal purpose.

Wildlife Control Rooms & Rescue Centre's

Jammu & Kashmir

B

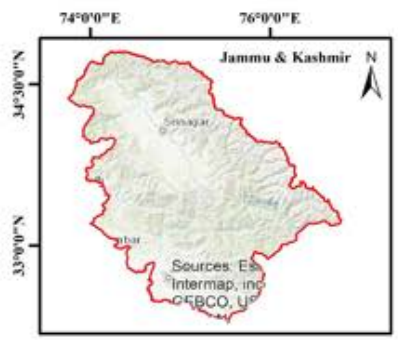
WILDLIFE CONTROL ROOMS AND RESCUE CENTRES
JAMMU & KASHMIR

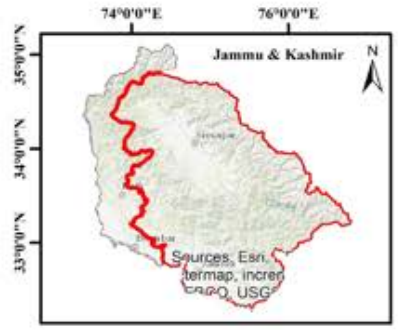
1.CR Manda Jammu
2.CR Nandni
3.CR Gharana, RSPora
4.CR Sudhmahadev
5.CR Tanday Rakh
6.CR Kathua
7.CR Mansar
8.RC Mansar
9.CR Surinsar
10.RC Jasrota
11.CR Jasrota
12.CR Thein
13.RC Thein
14.CR Dachigam
15.CR Khrew Shar
16.CR Wayil Ganderbal
17.CR Waterkhani Kupwara
18.CR Handwara
19.CR Langate Kothdagi
20.CR Sopore
21.CR Baramulla
22.CR Tangmarg
23.CR Bandipora
24.CR Mini Secretriat Arhama Shopian
25.CR Tral
26.CR Khangund
27.RC Khangund
28.RC Tral
29.RC Hirpora
30.CR Marwah
31.CR Dachhan
32.CR Chatroo
33.CR Kishtwar
34.CR Doda
35.CR Batote
36.CR Ramban
37.CR Gool
38.Cr Banihaal
39.CR Seshara
40.CR Rajouri
41.CR Battalkote Loran
42.CR Surankote
43.CR Nowshera
44.CR Poonch
45.CR Chadoora MAC
46.CR Beerwah MAC
47.CR Dal Lake AP
48.RC Hokersar Souzeith
49.CR Bijbehara Anantnag
50.CR Sirgufwara
51.CR Divsar
52.CR Achhabal
53.CR Seer Hamdan

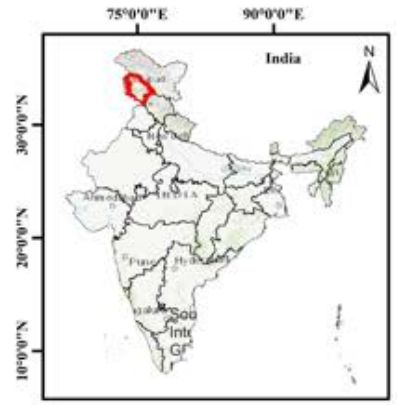
Jammu Wetland Reserves
J&K Protected Areas
J&K (UT)

Note: CR = Control Room
RC = Rescue Centre

1:7000
0 1 2 4 Km







Executed by
Department of Ecology, Environment & Remote Sensing
J & K Government,
SDA Colony Bemina Srinagar Kashmir - 190018 (Summer)
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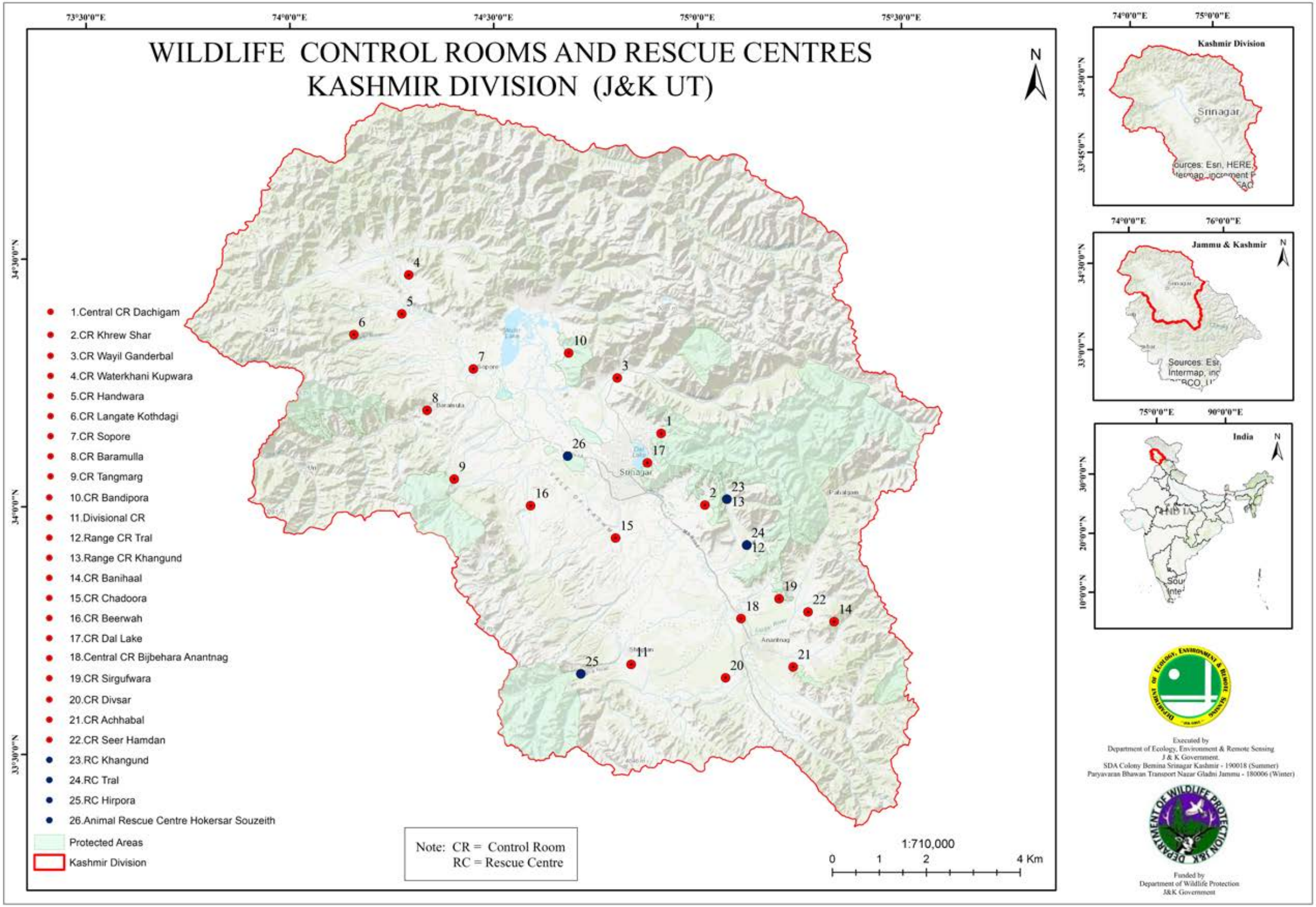
Funded by
Department of Wildlife Protection
J&K Government

WILDLIFE CONTROL ROOMS AND RESCUE CENTRES
KASHMIR DIVISION (J&K UT)



Executed by
Department of Ecology, Environment & Remote Sensing
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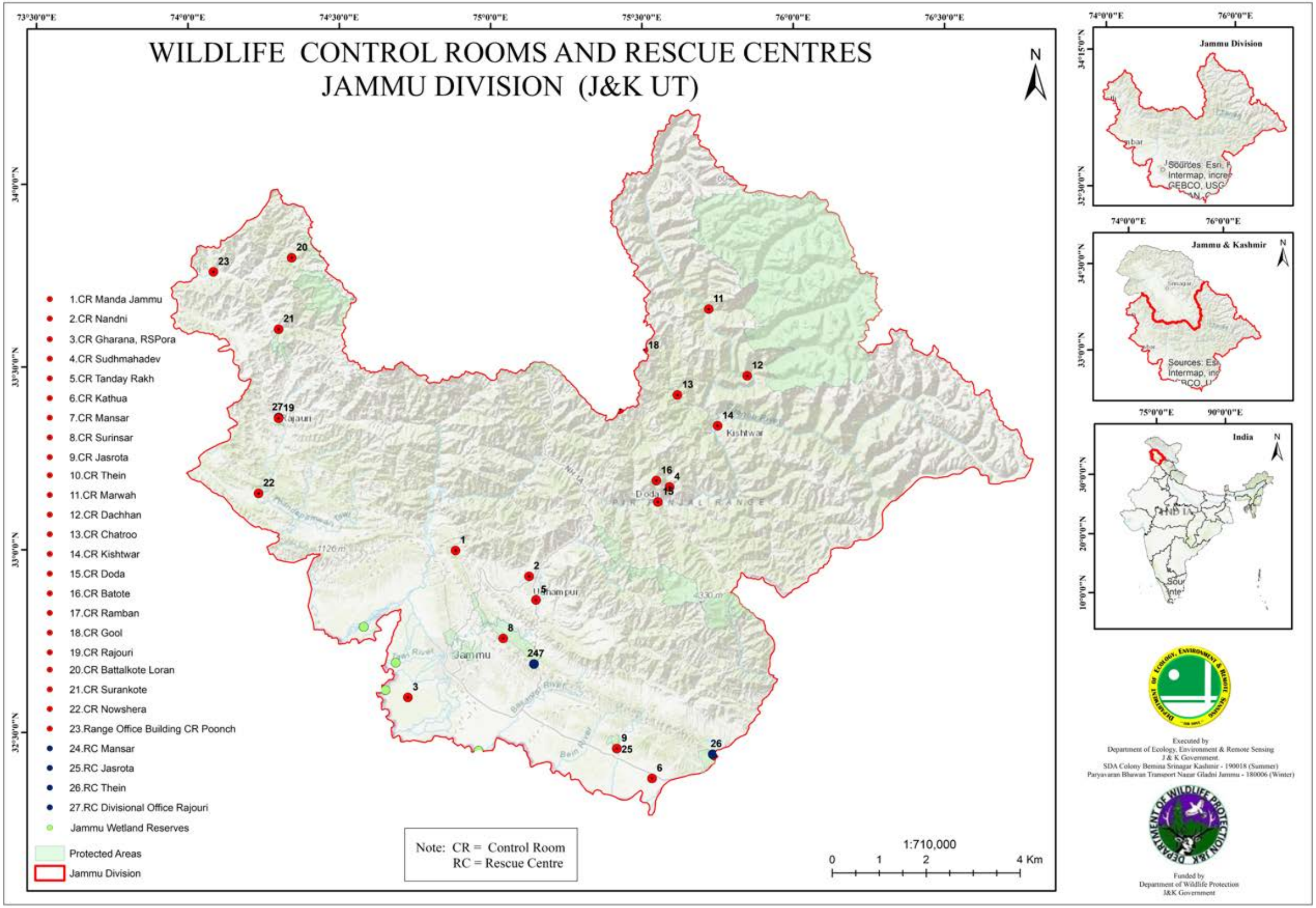
SDA Colony Bemina Srinagar Kashmir - 190018 (Summer)
Paryavaran Bhawan Transport Nazar Gladni Jammu - 180006 (Winter)

Funded by
Department of Wildlife Protection
J&K Government

WILDLIFE CONTROL ROOMS AND RESCUE CENTRES
JAMMU DIVISION (J&K UT)



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SDA Colony Bemina Srinagar Kashmir - 190018 (Summer)
Paryavaran Bhawan Transport Nagar Gladni Jammu - 180006 (Winter)

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Glossary

Agriculture Cropland: These are the areas with standing crop as on the date of Satellite overpass. Cropped areas appear in bright red to red in color with varying shape and size in a contiguous to non- contiguous pattern. They are widely distributed indifferent terrains; prominently appear in the irrigated areas irrespective of the source of irrigation. It includes kharif, rabi and zaid crop lands along with areas under double or triple crops.

Agriculture Plantations: These are the areas under agricultural tree crops planted adopting agricultural management techniques. Depending on the location, they are exhibit a dispersed or contiguous pattern. Use of multi-season data will enable their separation in a better way. It includes agricultural plantation (like tea, coffee, rubber etc.) horticultural plantation (like coconut, arecanut, citrus fruits, orchards, fruits, ornamental shrubs and trees, vegetable gardens etc.) and agro-horticultural plantation.

Barren Rocky/Stony Waste: These are rock exposures of varying lithology often barren and devoid of soil and vegetation cover.

Builtup: It is an area of human habitation developed due to non-agricultural use and that has a cover of buildings, transport and communication, utilities in association with water, vegetation and vacant lands. Web LULC map consists of 3 classes under built-up viz., urban, rural and mining.

Forest : The term forest is used to refer to land with a tree canopy cover of more than 10 percent and area of more than 0.5 ha. Forests are determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 m (MOEF, 2011).

Evergreen/Semi-Evergreen: This term as such describes the phenology of perennial plants that are never entirely without green foliage. This category comprises of tall trees, which are predominantly remain green throughout the year. It includes both coniferous and tropical broadleaved evergreen species. Semi- evergreen is a forest type that includes a combination of evergreen and deciduous species with the former dominating the canopy cover.

Deciduous: This applies to the phenology of perennial plants that are leafless for a certain period of the year. The leaf shedding usually takes place simultaneously in connection with the unfavorable season. These are the forest types that are predominantly composed of species, which shed their leaves once a year, especially during summer. It also includes tree clad area with tree cover lying outside the notified forest boundary areas that are herbaceous with a woody appearance (e.g. bamboos, palms, tree ferns etc.).

Grass Land & Grazing Land: These are the areas of natural grass along with other vegetation, predominantly grass-like plants (Monocots) and non-grass like herbs (except Lantana species which are to be classified as scrub). It includes natural/semi-natural grass/ grazing lands of Alpine/Sub-Alpine or temperate or sub- tropical or tropical zones, desertic areas and manmade grasslands.

Salt-Affected Land: Generally characterized as land that has excess salt in the soils with patchy growth of grasses.

Sandy Area: These can occur in coastal, Riverine or inland areas. Desertic sands are characterized by accumulation of sand developed in situ or transported by Aeolian processes. Coastal sands are the sands that are accumulated as a strip along the sea-coast. Riverine sands are those that are seen as accumulations in the flood plain as sheets which are the resultant phenomena of river flooding.

Scrub: These are the forest areas which are generally seen at the fringes of dense forest cover and settlements, where there is biotic and abiotic interference. Most times they are located closer to habitations. Forest blanks which are the openings amidst forest areas, devoid of tree cover, observed as openings of assorted size and shapes as manifested on the imagery are also included in this category.

Snow and Glaciers: These are the areas under snow cover confined to the Himalayan region. They are mostly located in mountain peaks and steep slopes/high relief areas. These are the areas which remain under snow either on temporary or permanent basis. These are the areas under perpetual snow cover throughout the year. They are the origins of most of Himalayan river systems

Water Bodies: This category comprises areas with surface water in the form of ponds, lakes, tanks, reservoir, river /stream / canals: Rivers/streams are natural course of water flowing on the land surface along a definite channel/slope regularly or intermittently towards a sea in most cases . Canals are artificial water course constructed for irrigation, navigation or to drain out excess water from agricultural lands.

Geomorphology: It is the study of landforms, their processes of formation and form. Study includes looking at landscapes to work out how the earth surface processes, such as air, water and ice can mould the landscape. The processes of erosion and deposition result in different types of landforms.

Denudational Hills: Landforms which are formed by the continued process of erosion of original landscapes by the repeated action of denudational agents like river, wind and climatic components like rainfall, temperature etc.

Piedmont Zone: A small low cliff occurring in alluvium on a piedmont slope at the foot of and essentially parallel to a steep mountain range, resulting from dislocation of the surface, especially by faulting.

Structural Hills: Landforms of structural origin, which are related to the structural aspect of the area. Most of these landforms has genesis related to underlying structures.

Alluvial Plain: A level or gently sloping tract or a slightly undulating land surface produced by the extensive deposition of alluvium, usually adjacent to a river, that periodically overflows its banks.

Flood Plain: The surface or strip of relatively smooth land adjacent to a river channel constructed (or in the process of being constructed) by the present river in its existing regimen and covered with water which the river overflows its banks at the time of floods.

Glacial Plain: The plains which are formed by the movement of glaciers under the force of gravity. A glacial Out-wash plain and Till plain are examples of glacial plains.

Eolian Plain: The plains which are formed by the processes of transportation and deposition of sediments (Sand, Clay and Silt) by wind.

Lithology: It is the study of physical characteristics of a rock, including colour, composition and texture.

Amygdaloidal basalt: This is a basalt, a dark coloured volcanic rock formed from a magma of basic composition erupted on the Earth's surface. Magmas generally contain dissolved gas, which can form bubbles in the magma as the pressure is released on eruption. These bubbles can get trapped in the solidified rock. After some time, groundwater or hot solutions connected with the volcanic activity pass through the porous lava and deposit crystals in the open cavities, which gradually fill up with quartz, calcite (calcium carbonate) or

other minerals called zeolites. Filled cavities in lavas are called amygdales, and a rock full of them can be called amygdaloidal. The amygdales are usually white in colour.

Gneiss: Gneiss is a foliated metamorphic rock identified by its bands and lenses of varying mineral composition. Some of these bands (or lenses) contain granular minerals that are bound together in an interlocking texture.

Granite: Granite is a light-colored igneous rock with grains large enough to be visible with the unaided eye. It forms from the slow crystallization of magma below Earth's surface. Granite is composed mainly of quartz and feldspar with minor amounts of mica, amphiboles, and other minerals.

Limestone: It is a Sedimentary rock composed primarily of calcite a calcium carbonate mineral with a chemical composition of CaCO3.

Phyllite: Phyllite is a foliated metamorphic rock that has been subjected to low levels of heat, pressure and chemical activity. It is composed mainly of flake-shaped mica minerals in parallel alignment. The strong parallel alignment of the mica grains allows the rock to be easily split into sheets or slabs.

Schist: Schist is a foliated metamorphic rock made up of plate-shaped mineral grains that are large enough to see with an unaided eye. It is usually form platy metamorphic minerals such as muscovite, biotite and chlorite.

Slate: Slate is a fine-grained, foliated metamorphic rock that is created by the alteration of shale or mudstone by low-grade regional metamorphism. It is popular for a wide variety of uses such as roofing, flooring, and flagging because of its durability and attractive appearance.

Abbreviations

CBD:	Convention on Biological Diversity
DEERS:	Department of Ecology, Environment & Remote Sensing
DEM:	Digital Elevation Model
DOQQS:	Digital Ortho photo Quarter Quads
DWLP:	Department of Wildlife Protection
GCP:	Ground Control Point
GIS:	Geographical Information System
GPS:	Global Positioning System
IFS:	Indian Forest Service
IUCN:	International Union for Conservation of Nature and Natural Resources
LISS:	Linear Imaging Self Scanning
NBWL:	National Board for Wildlife
NWLAP:	National Wildlife Action Plan
PA:	Protected Area
PAN:	Protected Area Network
PCCF:	Principal Chief Conservator of Forest
PALSAR:	Phased Array Type L-band Synthetic Aperture Radar
RS:	Remote Sensing
RWLWJ:	Regional Wildlife Warden Jammu
RWLWK:	Regional Wildlife Warden Kashmir
SDG:	Sustaining Development Goals
UN:	United Nations
UT:	Union Territory
WDPA:	World Database on Protected Area

List of Figures and Tables

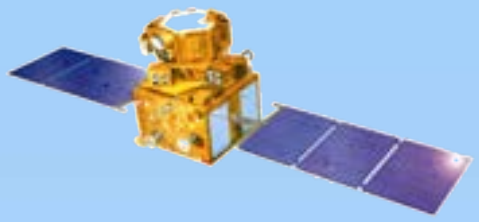
REFERENCES

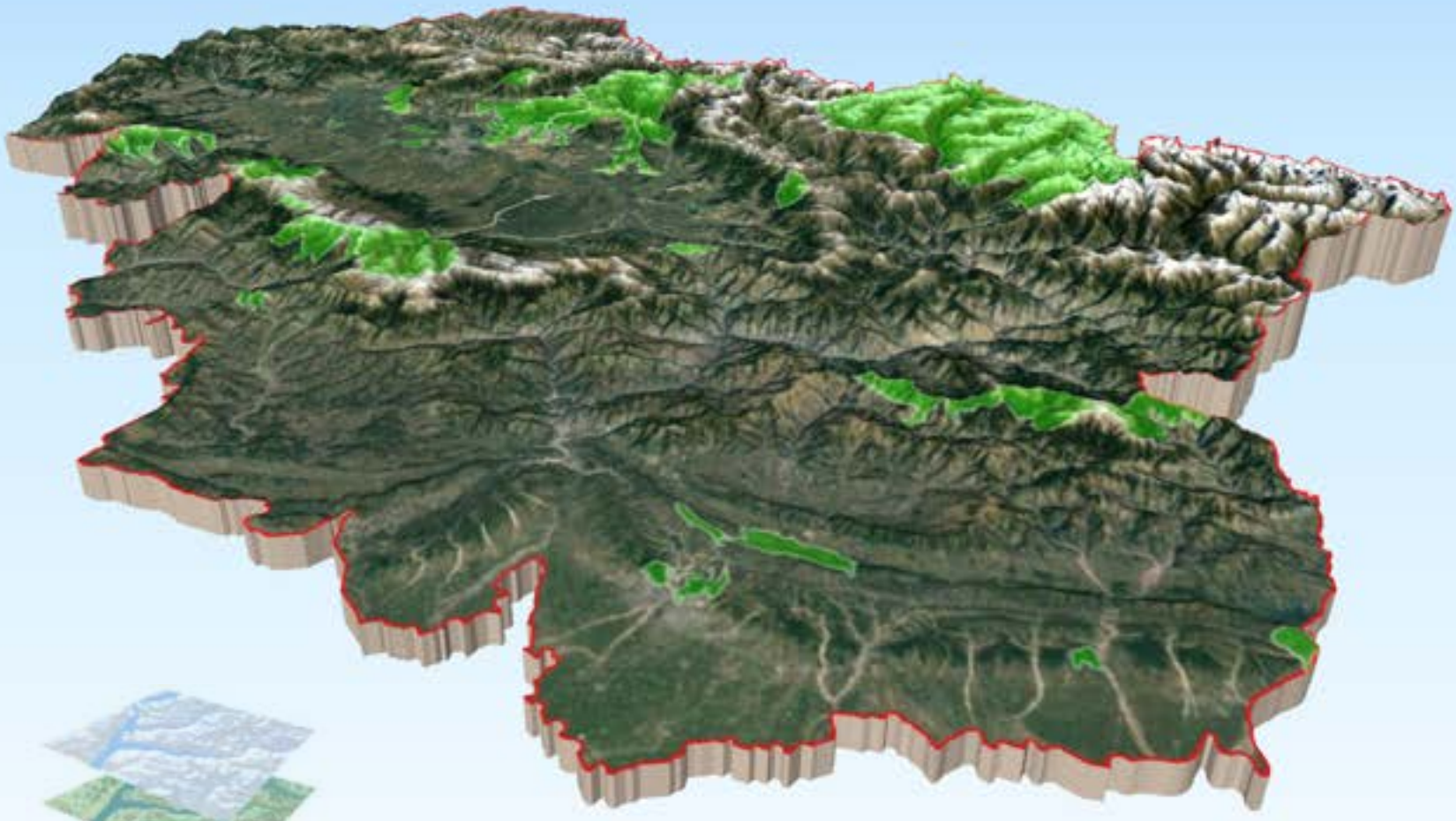
- Ahmad, K., Sathyakumar, S. and Qureshi, Q., 2005. Feeding Preferences of Hangul (Cervus elaphus hanglu) at Dachigam National Park, Kashmir, India. Final Report of the Department of Wildlife Protection, Jammu & Kashmir Government, Srinagar, and Wildlife Institute of India, Dehradun.
- Ahmad, K.H.U.R.S.H.E.E.D., Sathyakumar, S. and Qureshi, Q.A.M.A.R., 2006. Aspects of Ecology of Hangul (Cervus elaphus hanglu) in Dachigam National Park, Kashmir, India. Forest Research Institute University (Ph. D. thesis), Dehradun, India.
- Ahmad, K., Bhat, B.A., Ahmad, R. and Suhail, I., 2020. Wild mammalian diversity in Jammu and Kashmir state. In Biodiversity of the Himalaya: Jammu and Kashmir State (pp. 933-953). Springer, Singapore.
- Anjaneyulu, R.V.G., Krishna Prasad, A., Srinivasa Murthy, K., Rao, C.V. and Gopala Krishna, B., 2018. Pan Sharpening Using Relative Spectral Response of Sensor for Cartosat-1 Pan and Resourcesat Liss-4 mx data. International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences.
- Bates, R.S.P. and Lowther, E.H.N., 1952. The history of bird photography in India. J. Bombay Natural Society, 50(2).
- Bell, D.E., 1992. The 1992 convention on biological diversity: the continuing significance of US objections at the Earth Summit. Geo. Wash. J. Int'l L. & Econ., 26, p.479.
- Burrough, P.A., McDonnell, R., McDonnell, R.A. and Lloyd, C.D., 2015. Principles of geographical information systems. Oxford university press.
- Canada Center for Remote Sensing, 2007. Tutorial: Fundamentals of remote sensing.
- Coad, L., Leverington, F., Knights, K., Geldmann, J., Eassom, A., Kapos, V., Kingston, N., de Lima, M., Zamora, C., Cuardros, I. and Nolte, C., 2015. Measuring impact of protected area management interventions: current and future use of the Global Database of Protected Area Management Effectiveness. Philosophical Transactions of the Royal Society B: Biological Sciences, 370(1681), p.20140281.
- Dad, J.M. and Khan, A.B., 2011. Threatened medicinal plants of Gurez valley, Kashmir Himalayas: distribution pattern and current conservation status. International Journal of Biodiversity Science, Ecosystem Services & Management, 7(1), pp.20-26.
- Dhar, U. and Kachroo, P., 1983. Alpine Flora of Kashmir Himalaya.
- Dhar, U., Rawal, R.S. and Upreti, J., 2000. Setting priorities for conservation of medicinal plants––a case study in the Indian Himalaya. Biological conservation, 95(1), pp.57-65.
- EC-European Commission, 2009. Composite Report on the Conservation Status of Habitat Types and Species as required under Article 17 of the Habitats Directive. Report from the Commission to the Council and the European Parliament COM, 358.
- Genovesi, P. and Shine, C., 2004. European strategy on invasive alien species: Convention on the Conservation of European Wildlife and Habitats (Bern Convention) (No. 18-137). Council of Europe.
- Holmes, P.R. and Hatchwell, B.J., 1991. Notes on the ecology of the Little Bittern Ixobrychus minutus at Haigam Rakh, Kashmir, India. Forktail, 6, pp.25-33.
- IUCN, A., 2016. A global standard for the identification of key biodiversity areas. Version, 1, pp.2016-048.
- IUCN and World Commission on Protected Areas (WCPA), 2017. IUCN green list of protected and conserved areas: standard, version 1.1.
- IUCN-WCPA. "(Draft) Guidelines for recognizing and reporting other effective area- based conservation measures: Version 1." (2018).

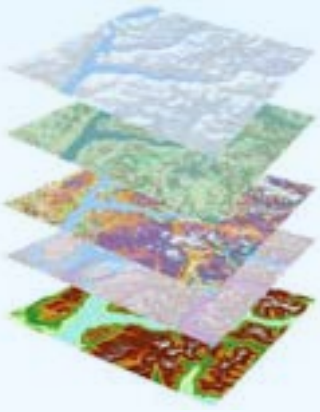
- Jeelani, S.M., Wani, M.P., Kumari, S. and Siddique, M.A.A., 2013. Ethnobotany of some polypetalous plants from the Kashmir Himalaya. Journal of Medicinal Plants Research, 7(36), pp.2714-2721.
- Khan, Z.S., Khuroo, A.A. and Dar, G.H., 2004. Ethnomedicinal survey of Uri, Kashmir Himalaya.
- Khuroo, A.A., Malik, A.H., Dar, A.R., Dar, G.H. and Khan, Z.S., 2007. Ethnoveterinary medicinal uses of some plant species by the Gujjar tribe of the Kashmir Himalaya. Asian Journal of Plant Sciences, 6(1), pp.148-152.
- Khuroo, A.A., Mehraj, G., Muzafar, I., Rashid, I. and Dar, G.H., 2020. Biodiversity conservation in Jammu and Kashmir state: current status and future challenges. In Biodiversity of the Himalaya: Jammu and Kashmir State (pp. 1049-1076). Springer, Singapore.
- Leica Geosystems, A.G., 1999. Introduction to GPS (Global Positioning System). Heerbrugg, Switzerland: Leica Geosystems AG.
- Lillesand, T., Kiefer, R.W. and Chipman, J., 2015. Remote sensing and image interpretation. John Wiley & Sons.
- Misra, P. and Enge, P., 2006. Global Positioning System: signals, measurements and performance second edition. Global Positioning System: Signals, Measurements And Performance Second Editions, 206, p.43.
- Molur, S., 1996. National Wildlife Database at Wildlife Institute of India. ZOO'S PRINT, 11(11), pp.10-11.
- Naqash, R.Y., 2013. Densities and population sizes of large mammals in Kishtwar high altitude national park, Jammu and Kashmir, India. Indian Forester, 139(10), pp.872-878.
- Noor, A., Ahmed, K. and Mir, Z.R., 2016. Estimating abundance of some wild faunal elements of Jasrota Wildlife Sanctuary, India. Journal of King Saud University-Science, 28(3), pp.232-238.
- Osmaston, B.B., 1927. Notes on the birds of Kashmir. J. Bombay Nat. Hist. Soc, 31, pp.975-999.
- Pandit, A., 1982. Feeding ecology of breeding birds in five wetlands of Kashmir. Indian journal of ecology.
- Phillips, A., 2004. The history of the international system of protected area management categories. Parks, 14(3), pp.4-14.
- Qadri, S.S., 1989. Ecological factors affecting waterfowl in the wetlands of Kashmir.
- Salim Ali (1986):Field guide to the birds of the eastern himalayas. Oxford University Press, Delhi
- Srinivasa Rao, S., Krishna Murthy, Y.V.N., Joshi, A.K., Shantanu, B., Das, S.N. and Pandit, D.S., 2003. Computerisation and Geo-referencing of cadastral maps in Chhattisgarh State. Technical Document, Regional Remote Sensing Service Centre/ISRO, Nagpur.
- Status report on Thajwas Wildlife Sanctuary by Department of Wildlife Protection Jammu & Kashmir.
- Stolton, S. (ed.), 2009. Communicating values and benefits of protected areas in Stolton, S., 2009. " Communicating values and benefits of protected areas in Europe" Island of Vilm, Germany, 14-18 April 2009. " Communicating values and benefits of protected areas in Europe" Island of Vilm, Germany, 14-18 April 2009., (260).
- Suhail, I., Iqbal, S., Ahmad, K., Lone, I., Mansoor, M., Zargar, R., Hussain, S. and Baba, M., 2009. Status and Distribution of Hangul Cervus Elaph us hanglu Wagner in Kashmir, India. Journal of the Bombay Natural History Society, 106(1), pp.63-71.
- Sukhdev, P., 2008. The economics of ecosystems and biodiversity. na.
- UNEP-WCMC, I.U.C.N., 2018. Protected planet: the world database on protected areas (WDPA). UNEP-WCMC and IUCN, Cambridge, UK Available at: http://wwwprotectedplanetnet, Accessed date, 21.
- UNEP-WCMC, I.U.C.N., 2018. NGS, 2018. Protected planet report, p.70.
- Watts, J., 2018. Red list research finds 26,000 global species under extinction threat. The Guardian, 5.
- WCPA, I., 2018. Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPA). Delivering effective conservation action through MPAs, to secure ocean health & sustainable development. Version, 1, p.4.

WILDLIFE PROTECTED AREA NETWORK

ATLAS OF J&K (UT)







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