

HIMACHAL PRADESH FOREST DEPARTMENT WILDLIFE WING



MANAGEMENT PLAN OF SHIMLA WATER CATCHMENT WILDLIFE SANCTUARY

(2022-23 to 2031-32)

PREPARED BY
Wildlife Division Shimla

COMMISSIONED BY
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Every management plan is the result of perseverance and efforts from several persons who contributes to various aspects of plan in terms of data collection, photographs, proposals, vision in management etc. As the last sentence is written, I would like to express my immense gratitude to several of these persons without whom this management plan would not have become a reality.

First of all, I would like to sincerely thank Sh Rajiv Kumar IFS, Chief Wildlife Warden, Himachal Pradesh for his valuable guidance and inputs in drafting of the management plan especially with respect to inclusion of various maps and new chapters that are novel additions to the plan. Gratitude is also due to Sh. Anil Thakur IFS, APCCF Wildlife for his constant motivation and encouragement in preparation and finalization of the plan and for his valuable recommendations which have substantially enriched the plan. This management plan is as much a creation of Sh. K Thirumal IFS, Chief Conservator of Forests (Wildlife) as it is of the author. The undersigned is immensely thankful to his invaluable guidance and inputs in providing framework to management plan and for motivating the entire staff of Shimla Water Catchment with his infectious sincerity and dedication in compilation of the plan. I would like to express my thanks to CCF(IT) Sh. Pushpinder Rana IFS for his valuable leadership of GIS & IT lab of Himachal Pradesh Forest Department and all its technical staff for their painstaking efforts in drafting various GIS based maps that have greatly enhanced the plan. The undersigned would like to thank my predecessor Sh. Krishan Kumar IFS for laying the groundwork for this management plan. The soul of this management plan is based on invaluable inputs from the field given by Range Officer and his staff who daily patrol the sanctuary boundaries. I would like to thank Sh. Hira Lal, Range Forest Officer and all of his staff especially Deep Ram, Sr. Forest Guard (for the wonderful photographs), Rachna Beakta, Forest Guard (for data collection and compilation) and Devinder, Forest Guard (for compiling GIS based Maps) for their painstaking efforts in collecting and compiling data.

N Ravisankar, IFS
Deputy Conservator of Forests
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Rajiv Kumar IFS

Pr. Chief Conservator of Forests (Wild Life) and Chief Wild Life Warden Himachal Pradesh

MESSAGE

India as a mega diverse nation contributes about 7% of the world's biodiversity and the state of Himachal Pradesh having 15% protected area out of its total geographic area is a crucial contributor to this mega diversity. The state's PA network harbors a rich assemblage of floral and faunal diversity given the multitude of habitats —the forests, meadows, rivers, grasslands, alpine pastures, steep valleys and cliffs which offers refuge to wide variety of fauna. The altitudinal variation and the numerous forest types and habitats mean the state has a great array of mosaic habitats which is crucial for the prosperity of wildlife. The forest and wildlife in this age is facing pressures owing to rapid economic growth and development combined with inability of management and planners to integrate the pressures as part of their plan and address the issues. The climate crisis we are witnessing today, the fragmentation of wildlife habitat owing to widespread linear infrastructure and the rising cases of human-wildlife conflict are some such critical issues which is hampering conservation ubiquitously. In this context, there is a great need to strengthen the arm of wildlife conservation, nurture the values of coexistence and tolerance and provide innovative solutions harnessing new age technologies to satisfy development pressures yet take wildlife conservation along. The Shimla Water Catchment Wildlife sanctuary is a unique protected area of the state famed for its British heritage and conservation with management objective of water conservation and harvesting. It is well known for its diversity of orchids, medicinal taxa and avian diversity making it a crucial cog in the protected area network especially from the point of eco-tourism and conservation education given its urban location. I am glad to know that the management plan for this protected area has been prepared for the next 10 years in a comprehensive manner documenting the historical practices, existing floral and faunal diversity, research studies carried out in the sanctuary, current activities of eco-tourism etc. The plan also makes detailed documentation of existing natural resources and assets through GIS maps which have greatly enriched visualization and spatial planning outlook. The management plan by incorporating chapters on Eco-sensitive zone and offering prescriptions for this buffer zone strives to garner support of local community and enable safe wildlife passage in the buffer area which is the need of hour in conservation planning. The plan provides a detailed framework of eco-tourism along with scientific carrying capacity formulations which strikes a great balance with the objective of sustainable eco-tourism and conservation education. Further, the plan provides a new architecture of eco-development involving communities around the sanctuary which can be greatly beneficial in the new paradigm of participatory conservation. The renewed organizational framework of field staff departed from the traditional forest beat/block system is also a welcome addition to the plan which is site specific and pursuant to the management objective.

I would like to congratulate the entire team behind this management plan authored by N Ravisankar IFS, DCF Wildlife Shimla under the supervision of K Thirumal IFS, CCF(WL) South for their immense effort and hard work to bring together such a comprehensive document. It is my sincere hope that future managers of the protected area would make best use of this document in managing the protected area and realize the vision and objectives set out in this plan.

(Rajiv Kumar)





MESSAGE

Anil Thakur, IFS
Additional Principal
Chief Conservator of Forests (Wildlife)

The state of Himachal Pradesh is having a rich protected area spread across 15% of its geographical area with majestic floristic diversity and treasured faunal diversity. From the snowcapped habitats for Snow Leopard in Pin Valley to the elephant corridor down south in Simbalbara National park, the state has been able to provide a safe haven for wildlife in a time which has seen fast paced development and increased anthropogenic impacts. In this renewed paradigm, I believe there is a great need to address the new management questions and provide novel solutions corresponding to the technological development that has taken place in wildlife management.

This management plan of 10 years for the Shimla Water Catchment is unique in striking that philosophy by addressing the pressures of development and balancing wildlife conservation through innovative ideas. The development of wildlife corridor overcoming fragmentation, climate change monitoring through weather stations, modern census methods of camera trapping etc. are some such novel prescriptions that would certainly enrich management of this protected area which is unique in being one of the oldest protected patches of forest for the purpose of water conservation. The plan also comprehensively details and documents the existing situation in view of floral and faunal diversity marked by beautiful photographs from various field personnel. I would like to congratulate the entire team under leadership of Sh. K Thirumal IFS, CCF(WL) South and Sh N Ravisankar IFS, DCF(WL) Shimla for their painstaking efforts in bringing out this management plan with invaluable contributions from range level staff led by Sh. Hira Lal, RFO Shimla Water Catchment. I sincerely hope this document would be a primary source of guidance and reference to officers in future, the research fraternity and academia.

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MESSAGE

K.Thirumal, IFS

Chief Conservator of Forests Wild Life (South) Circle

India has a Protected Areas Network covering of 106 National Park, 564 Wildlife Sanctuaries,99 Conservation Reserves and 218 Community Reserves constituting an area of 1,73,053 Sq.km of the country's total land area which is equivalent to about 5.26 percentage of the total land area. Protected areas of Himachal Pradesh constitute around 15.1 percentage of the geographical area of the state, which is above the national average. This illustrates that the state is a pioneer in protected area management having about 5 National Parks, 33 Wildlife Sanctuaries and 3 Conservation Reserves. Each protected areas is managed as per the management plan prescription for period of about 10 years as per the approval of the Chief Wildlife Warden of the state.

The Shimla water catchment wildlife sanctuary is a unique urban protected area having immense floristic and biodiversity. It is one of the oldest forest patches to be protected and preserved right from British era for the purpose of water conservation and harvesting for the then Shimla city. The sanctuary is renowned for its orchid diversity with as many as 21 diverse orchid species documented in the area. Further, this PA has one of the highest densities of Koklass Pheasants with more than 25 pairs recorded in the most recent annual census of pheasants. This protected area is also visited by various dignitaries, policy makers, judges of the Honourable Supreme Court of India and High Courts. Hence, it also plays a great role in education and sensitization of highest level of decision makers of the nation and how conservation of nature and wildlife integrates with policy, law and administration. In this context, there is a great need to preserve this invaluable biodiversity, promote sensitization, conservation education and sustainable eco-tourism which requires a long term road map in the shape of a management plan. The management plan of the Shimla water catchment wildlife sanctuary was expired during the year 2021 and the revised management plan was written by Shri N Ravi Sankar Sarma IFS and his range level team for the period from 2023-24 to 2032-33. The plan is written as per the 'A Guide for Planning Wildlife Management in Protected Areas and Managed Landscapes' by Vishwas B Savarkar, IFS (Retd).

In the current plan the author has covered comprehensively the details about history of management, the existing situation of the protected area and provided novel management prescriptions of eco-development, eco-tourism, wildlife corridor, wildlife awareness and conservation education, research and monitoring etc. I congratulate the entire team for bringing out this management plan and hope it will be a guiding light to future managers of the protected area, foresters and researchers visiting the sanctuary.

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(K.Thirumal)





PREFACE

N. Ravisankar Sarma, IFS

Deputy Conservator of Forests Wild Life Division Shimla

A management plan is a visionary document that plays out in Protected Areas for the next 10 years. This management plan is for a unique PA in a largely urban landscape not far away from the noisy capital of state in Shimla. In this regard, this sanctuary is markedly different given its immense potential for wildlife awareness, conservation education and eco-tourism. In the hilly state PA network, often sanctuaries are far away and remote which limits access to visitors for such activities. In this context, this PA attains great importance for its wildlife awareness and education potential for the large urban population and the many tourists that influx the area in summers and winters. The plan also provides a clear vision to integrate the local community members in various capacities to foster community based eco tourism, voluntary protection and livelihood creation.

This plan for the next 10 years has in its foundation the framework to develop conservation education and eco tourism in the catchment landscape with this being one of the focal objective of management of the protected area. The scientific calculation of carrying capacity of visitors is a notable addition in this plan clearly defining the limits of tourism. Apart from this, concerted focus in this plan is given to safeguarding habitat for the Koklass Pheasant and Himalayan Goral which have been identified as flagship species of conservation in sanctuary. The monitoring of these species, mammals, avifauna in this small PA through various census methods finds key mention in this document stressing on camera trap based and call count methods. In the era of climate change and warming, the plan also calls for weather monitoring using novel technology.

This document is a testament to the knowledge and awareness of the field staff of the protected area. In recognizing the need to build staff capacity, this plan also stresses on importance of quarters, amenities for staff and need for modern equipment in wildlife management and survey. It is my sincere hope that the many managers that this PA witnesses over the next 10 years would consider this document as their principal guiding document for management and bring to fruition the vision that is carved out over the next many pages of this book.

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Approval Order

Office of the Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Himachal Pradesh.



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OFFICE ORDER

Office Order No/2022-23/	64	Dated Shimla-1, the/	05-04-2023

The Management Plan of Shimla Water Catchment Wildlife Sanctuary for the period from 2022-23 to 2031-32 as submitted by the author Deputy Conservator of Forests (Wildlife), Sh. N. Ravisankar Sarma, IFS Shimla Wildlife Division is hereby approved for the management of the protected area for the next 10 years.

-Sd-

Pr. Chief Conservator of Forests (WL) and Chief Wildlife Warden H. P. Shimla-1.

Endst. No. WLM /Management Plan/ 60-63 Dated/ 05-04-7023

Copy forwarded to :-

- 1. Additional Principal Chief Conservator of Forests (Wildlife), O/o Pr.CCF (Wildlife) Shimla for information and necessary action.
- 2. Chief Conservator of Forests (Wildlife) (S) Shimla w.r.t. his office Memo No. 6455 dated 28.03.2023 for information and necessary action.
- √3. Divisional Forest Officer (Wildlife) Shimla for information and necessary action.

4. Office Order File.

Pr. Chief Conservator of Forests (WL) and Chief Wildlife Warden H. P. Shimla-1.

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ABBREVIATIONS

CRPC – Criminal Procedure Code

CCTV- Closed Circuit Television

CSR- Corporate Social Responsibility

DF0- Divisional Forest Officer

EC- Executive Committee

EDC- Eco Development Committee

ESZ- Eco Sensitive Zone

GIS- Geographic Information System

GPS-Global Positioning System

IPC-Indian Penal Code

IPH- Irrigation and Public Health

IT- Information Technology

LPG- Liquefied Petroleum Gas

MoU- Memorandum of Understanding

NH- National Highway

NGO - Non Governmental Organization

NTCA - National Tiger Conservation

Authority

PA- Protected Area

PF- Protected Forest

PRA - Participatory Rural Appraisal

SADA- Special Area Development Authority

SC- Scheduled Caste

SMS- Short Message Service

ST- Scheduled Tribe

SWC- Shimla Water Catchment

TIES - International Ecotourism Society

TRAFFIC - Trade Records Analysis of Flora

and Fauna in Commerce

UNESCO- United Nations Educational,

Scientific and Cultural Organization

WCCB - Wildlife Crime Control Bureau

WII- Wildlife Institute of India

WPA- Wildlife Protection Act, 1972

WWF - World Wildlife Fund for Nature

ZSI- Zoological Survey of India

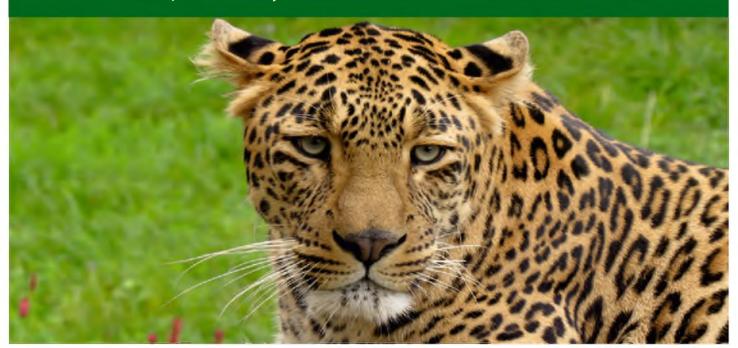


PART ONE DESCRIPTION AND EVALUATION

THE PROTECTED AREA: EXISTING SITUATION

CHAPTER - I
INTRODUCTION TO THE AREA

1.1 NAME, LOCATION, CONSTITUTION AND THE EXTENT OF AREA

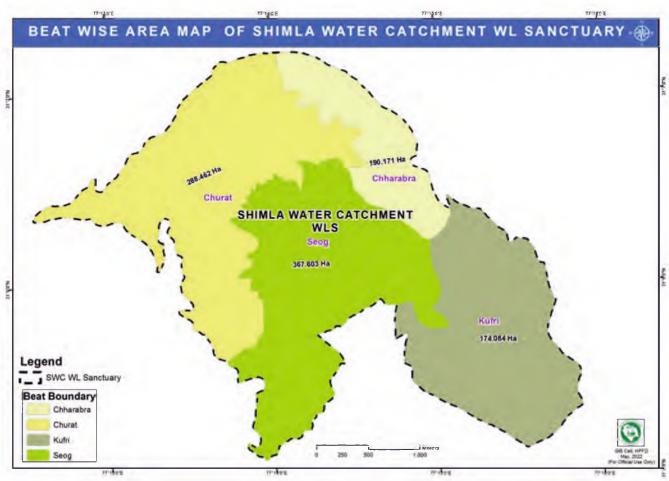


Shimla Water Catchment Sanctuary got its name as this Sanctuary is the catchment area for sources supplying water to Shimla town .The water is carried through pipes for supply to Shimla town after treatment. It is located at a distance of 23 km from Jubbarhatti Airport and 8 Km East of Shimla, the capital of Himachal Pradesh. Shimla Water Catchment Sanctuary lies between 31 05' to 31 75' N latitude and 77 12' to 77 15' E longitudes. The sanctuary has an area of 10.20 sq km. with Range Office headquartered at Dhalli. It is under administrative control of Deputy Conservator of Forests, Wildlife Division Shimla. Shimla Water Catchment Range has two Sanctuaries i.e. Shimla Water Catchment Wildlife Sanctuary and Chail Wildlife Sanctuary.

The area of this sanctuary was obtained in the form of lease in perpetuity from Rana of Koti Estate by British Government on behalf of the Shimla Municipal Corporation in 1878 comprising of old Catchment area. The evaluation survey of the forests were carried out and it was decided that Municipal committee will pay Rs.2200/- as annual revenue to the Tikka of Koti and in addition to this, half of the profit from the felled trees. In 1891 some more area was added and annual rent was fixed in the newly added area. The area came under state control in 1947-48 and was notified a protected forest in 1952. It was first notified as Sanctuary on July 29, 1958, Re-notified on 14th December, 1982 and further notified as Wildlife Sanctuary vides Government Notification No. FFE-13 (6)20/99 dated 23.12.1999 (Appendix-1). After the rationalization of Wildlife Sanctuaries and National park in Himachal Pradesh as per the direction of the Hon'ble Supreme court order dated 01/02/2013, the State Government has issued the Final Notification vide Notification No. FFE-B-F (6)11/2005-II dated on 7th June, 2013 through which Shimla Water Catchment area comprising an area of 10 sq km was notified as Wildlife Sanctuary under Section 26 A of Wildlife Protection Act, 1972 (Appendix-2)

The area remained under the control of Municipal Corporation Shimla upto 18th April 2006 and under the control of Shimla Forest Division (Urban) upto 31st March 2009. Due to reorganization of divisions, the jurisdiction of Shimla Water Catchment Wildlife Sanctuary was transferred to the Wildlife Division Shimla w.e.f. 1st April 2009. This is one of the few sanctuaries in Himachal Pradesh which is devoid from habitation and rights.

At present headquarters of the sanctuary is at Dhalli, which is at a distance of 10 km from Shimla Bus Stand on National Highway 5. Seog Forest Rest House is located at a distance of 7 km from Dhalli gate of the sanctuary. The total extent of the Sanctuary is 1020.32 hectare administratively divided into 2 blocks and 4 beats as given below.



Map 1.1: Beat Wise Map of Shimla Water Catchment Wildlife Sanctuary

The entire sanctuary comprises 35 compartments. The breakup of sanctuary area according to compartments is given in the Appendix-3.



Image 1.1: Entrance Arch of Shmla Water Catchment Wildlife Sanctuary



1.2 APPROACH AND ACCESS

The sanctuary is accessible from Dhalli from NH-05. The entrance gate of sanctuary is around 500 metres from Dhalli Chowk. As the NH-05 cuts through the sanctuary, large parts of the sanctuary are accessible through this road.

Town	Distance (in kms)
Shimla	10
Chandigarh	135
Delhi	378

The distance between town/city to Shimla Water Catchment Sanctuary is given in the Table 1.1

The nearest airport is at Jubbarhatti which is 23kms from Shimla town. Flights are available to Shimla from Delhi and Chandigarh, operated by various airlines.

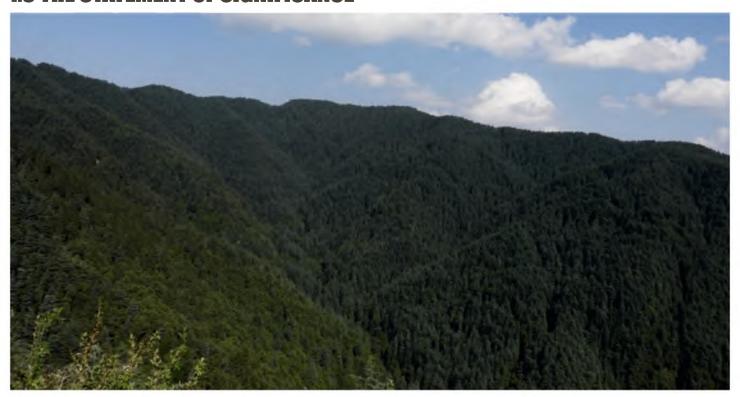


Image 1.2: Kalka-Shimla UNESCO Heritage Railway Line

The Kalka -Shimla railway is a narrow gauge railway in North India which traverses a mostly mountainous route from Kalka to Shimla. Kalka railway station, is situated at a distance of around 96 km, is the nearest railway station to Shimla. Shimla railway station lies on Kalka - Shimla Railway line, which is also a UNESCO World Heritage Site.



1.3 THE STATEMENT OF SIGNIFICANCE



The sanctuary has several important values from various perspectives. These values are identified and categorized below:

A. Economic

- The sanctuary ensures water supply of high quality to the state Capital Shimla
- The sanctuary through developed eco-tourism activities in the form of nature trails, cycle trails provides livelihood and income to local people. There is thus direct and indirect job creation through ecotourism activities as part of Seog Eco Tourism Society
- Located en route to Kufri, a famous hill station, the sanctuary is another cog in the wheel of satellite model of eco-tourism which leads to job creation and business for street side vendors, nature guides, hoteliers, restaurants etc. in and around the sanctuary.

B. Ecological Services

- The sanctuary derives its name from its ecological function i.e. water supply which it is performing since British time.
- The sanctuary lies in the watershed of Yamuna River and regulates the run off precipitation into Yamuna.
- It protects the soil in the geologically fragile and erosion prone Himalayas as highly dense deodar and mix deodar forests protect the soil from splash erosion and bind the soil together



1.3 THE STATEMENT OF SIGNIFICANCE

C. Biological

- Shimla Water Catchment Wildlife Sanctuary along with territorial forests adjacent to it forms good conservation unit
- Shimla Water Catchment sanctuary is among the finest forest of deodar that supports the associated fauna. It has wide variety of flora diversity as referred in the appendix 4. The orchid diversity of catchment sanctuary is also a pertinent biological and aesthetic service
- It supports good population of near threatened species of goral and barking deer. Recent Rapid Survey
 results also highlight presence of various mammals including leopards, yellow throated marten, leopard cat
 etc.
- Koklass pheasants are found in highest density among the protected areas of the state. The sanctuary as such forms a niche habitat for other pheasant species like the Cheer Pheasant, Kalij Pheasant and Red Jungle Fowl while supporting rich avian species.

D. Conceptual

• The area support very high number of species of floral and faunal importance.

E. Recreational & Aesthetic Service

- The sanctuary offers opportunities for wildlife tourism to nature lovers of Shimla city as well as tourists coming to Shimla. Currently, activities like nature walks, bird watching, cycle trails are conducted at the sanctuary as part of wildlife tourism
- The area is a bird watchers paradise. Probability of sighting animals is good especially during trekking.
- Scenic landscape of the sanctuary area is a true experience of wilderness. The famous Green/Hassan valley view point of sanctuary from the road head attracts many a tourist to this landscape.

F. Research and Education

- The sanctuary has potential for research on a variety of subjects of biological importance and ecological monitoring e.g. ethno botany, ethno zoology, forestry, wildlife related or ecosystem related studies etc.
- It has potential for conservation education for local people and tourists.
- It has a good demonstration value to showcase water conservation by forests.





PART ONE DESCRIPTION AND EVALUATION

THE PROTECTED AREA: EXISTING SITUATION

CHAPTER - 2

BACKGROUND INFORMATION AND ATTRIBUTES

BACKGROUND INFORMATION AND ATTRIBUTES

2.1 BOUNDARIES

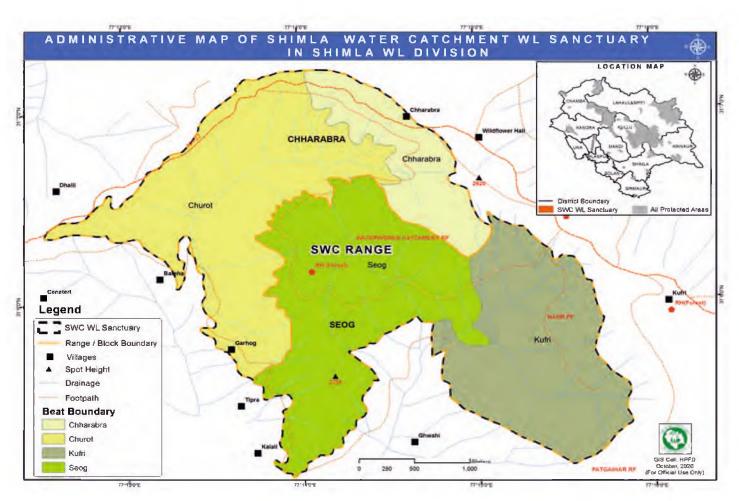
Shimla Water Catchment Wildlife Sanctuary is surrounded by Shimla Forest Division all around. The boundaries of Shimla Water Catchment Wildlife Sanctuary are as follows:

East: Kufri Bazar to Cast Iron Pillar No 35 along Kufri-Chail Road up to Point 2632 metres.

West: From boundary of water works catchment and Tipra Village private land via cast iron pillar No.79 village excluding private land of Tipra, Garhog and Bareha village upto starting point of Northern boundaries.

North: Starts from entry point to Water Catchment near Dhalli and water works chowki/pumping station on Hindustan Tibet Road NH 05then along same NH downside via Chharabra upto Kufri Bazar.

South: From Point 2632 metres then separating Nahr PF inside and Patgaihar PF outside excluding the private land of villages in Nalla flowing from Kufri and Seog upto boundary of water works catchment and Tipra village private land.



Map 2.1: Administrative Map of Shimla Water Catchment Wildlife Sanctuary



2.2 GEOLOGY, ROCK AND SOIL

Geology and Rock

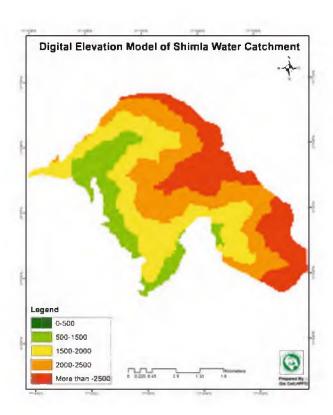
The area shows cross-section of unfossiliferous sequence of formation belonging to the Chails, the slates and the Blaine's geological series. The area is dominated by Jutogh and Shimla group of rocks apart from their development of Balaini formation. The oldest group of rock Jutogh is found in the protected area. The Shimla group of rocks is characterised by Sanjauli and Chhaosa formation. The latter formation is exposed at Dhalli whereas the former formation is dominated by relatively coarse elastics and exposed at Halog.

Soil

The soil in the protected area is more or less clayey or clayey loam. On the northern aspects of the protected area where there are folds and hollows, the soil is deep, fertile and moist. The general character of soil in the protected area is good depth, moist, fine texture and fertile.

2.3 TERRAIN

Shimla Water Catchment Wildlife Sanctuary is located in the Lesser Himalayas. It derives its name from hydrological function it is performing for more than last 120 years. Shimla Water Catchment Sanctuary lies between an altitude of approximately 1915 m -2750 m above mean sea level. The sanctuary is drained by a number of seasonal streams which eventually converge into perennial streams. The terrain of Shimla Water Catchment Wildlife Sanctuary is moderate to very steep and precipitous at places. All the streams of the Sanctuary form the catchment of the Aswini Khad which ultimately drains into the Giri River, a tributary of River Yamuna.



Map 2.2: Digital Elevation Model Map of Shimla Water Catchment Wildlife Sanctuary



2.4 CLIMATE

The climate of Shimla Water Catchment is temperate with cold winters and pleasant summers. The temperature goes up to a maximum of 32° C in summer and a minimum of - 4° C in winters as per record of the last 10 years sourced from Meteorological Centre, Shimla. During winters precipitation in the form of snowfall was very good but has reduced considerably over the years. The sanctuary receives good rainfall in the months from June to August helping to retain moisture on the forest floor. Snowfall in the sanctuary is vital as it replenishes the streams and ensures streams and water holes remain functional for a longer period substantially aiding wildlife fitness.

2.4.1. RAINFALL PATTERN AND DISTRIBUTION

The rainfall is received in monsoon and average annual rainfall over the last 10 years from 2011-2020 is 1430 mm with range spread between 1230 mm to 1640 mm. The rainfall pattern is typical south west monsoon type with rainfall concentrated from June to August. The annual rainfall data received in the sanctuary in last 10 years as sourced from Meteorological Centre, Shimla is as follows:

March April May **July** Sept January February **June** August October November December Day 384 30v Dilly 249 24hr 28V 307 264 150.9 26.5 26.5 154.5 18.3 124.0 74,4 183.2 36.7 245.6 27.1 168.6 18.7 42.4 18.9 2020 35.7 154.5 93.7 63.4 6.5 0.0 0.0 21.6 2019 44.5 89.6 84.5 170 B 19.7 67.6 25.8 60.4 13.7 71.2 42.8 54.7 60.6 360.1 153.1 499.0 30.5 126.6 19.0 37.9 14.B 35.9 16.2 39.1 15.8 41.8 15.0 28.5 26.5 656 60.3 846 49.9 192.4 1186 419.0 172.6 378.6 53.3 295.6 1.7 20 15.5 33.9 3.8 2.7 163 16.3 2018 2017 52.4 :48.1 8.4 19.6 13.1 51.6 52.7 85.2 31.7 124.6 340 151.5 31.8 216.1 57.2 326.6 46.6 182.5 90 2.6 25.3 43.8 76.1 23 0.0 5.5 2016 17.1 35.0 23.2 53.7 125.3 6.5 26.5 56.0 104.8 50.7 193.6 65.2 416.8 402.6 22.2 39.9 23 0.0 48 37.5 2015 243 72.1 26.0 106.1 43.1 196.4 33.8 1165 5.1 16.1 36.8 110.5 89.1 409.2 58.5 265.5 18.4 62.9 23.0 50 9.4 35.4 24.6 51.3 21.2 88.0 35.5 142.5 28 6 12.4 17.6 68.3 53.8 235.6 95.5 561.5 616 160.5 34.4 108.0 86 29.0 0.0 0.0 62.6 92.9 2014 68.8 120 4 75.6 195.9 34.9 7.8 14.7 100 68.4 319.6 207.4 239.5 24.8 133.6 340 13.8 13.2 2013 18.7 2012 55.3 133.3 32.7 32.0 22.9 80.5 5.2 13.8 31.5 \$1.3 66.6 3159 43.4 350.6 162.0 2.9 2.7 2.7 11.2 2011 5.7 15.0 13.2 55.9 10.7 37.6 20.6 37.0 23.4 93.7 43.6 196.3 42.3 296.9 44.7 338.4 41.7 159.4 13.5 19.0 00 0.0 20.2 17.0

Annual Rainfall Data for the last 10 years (in mm)



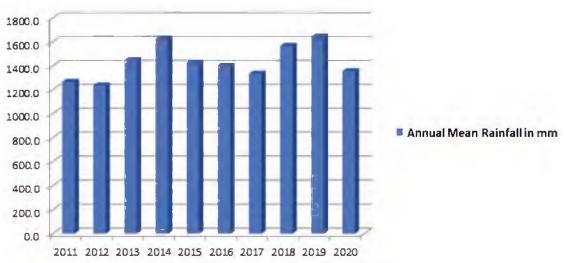


Table 2.1: Annual Rainfall data of last 10 years

Chart 2.1: Annual Rainfall: Trend in last 10 years



The sanctuary also receives good amount of snowfall during the winter months. However, over the past few years it is observed that onset of snowfall is late and total precipitation in form of snow is erratic with some years witnessing high snowfall and other years witnessing less snowfall. The following chart depicts the trend of snowfall over the last 10 years.

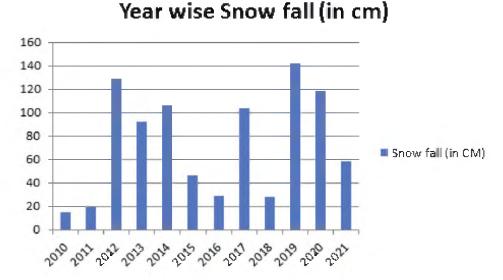


Chart 2.2: Snowfall trends over past 10 years

2.4.2. TEMPERATURE

Generally, the climate in this area remains cool and moist throughout the year and the mean maximum temperature is 24.2° Celsius whereas the mean minimum temperature is 6.7° Celsius. The hottest months during the year are April, May and June with max temperature touching 30-32° Celsius. The coldest months during the year are December, January and February when the mercury drops as low as -4° Celsius.

May March January February April June July August Sept October November December max mail min man min man min max mān min mail min main min mai. max min mater min max Min 2020 15.7 -3.719.7 -2.419.7 25.5 66 29.0 275 10.4 26.0 13.0 27.0 156 26.9 14.6 26.1 96 209 28 198 -11 2019 15.7 20.2 -2.4 24.2 1.2 27.9 6.7 30.2 1.01 30.5 11.7 27.5 15.2 25.5 15.0 25.6 12.7 230 1.6 20.9 4.2 17.4 0,5 2018 206 -0.4 21.6 00 24.2 5.0 26.7 8.0 29.4 5.8 28.1 11.4 26.3 140 24.5 146 25.4 12.3 24.4 8.7 20.4 3.3 17.1 06 17.4 20.4 2.0 RE 40.9 6.3 28.3 30.1 25.7 15.6 35.1 8.8 5.5 21.3 20 2017 -3.2 28.5 10.3 11.6 26.4 26.0 5.8 25.4 21.1 165 218 1.3 240 2.1 27.5 8.2 29.8 29.4 12.0 27.0 14.9 26.6 148 25.2 13.0 248 9.4 23.6 7.0 22.3 38 2016 18.5 20.5 0.7 24.1 64 29.3 10.5 29.1 125 25.3 14.6 25.4 139 25.7 12.0 25.4 5.3 22.0 43 200 0.8 2015 -2.0 0.8 269 16.0 18.0 -24 23.1 1.0 28.4 56 30.6 82 12.1 27.8 14.6 268 138 26.9 12.0 23.5 7.2 20.8 58 19.5 0.4 31.4 15.1 -1.5 19.1 06 218 40 239 7.3 30.8 102 28.9 12.3 26,9 15.1 25.0 156 26.3 10.6 23.3 7.5 21.9 4.1 20,4 0.2 2013 19.3 1.6 2012 149 -2.9 -38 24.7 26.4 61 31.9 9.5 31.0 12.1 27.6 14.4 25.4 15.4 25.2 13.0 23.4 6.3 21.2 2.7 20.4 0.0

Annual Temperature Data for the last 10 years (in °C)

22.9 Source: Meteorological Centre, Shimla (2021)

9.0

7.8

12

Table 2.2: Annual Temperature Trends over past 10 years

101

25.5 14.7 148 256 13.2 24.3

255

28.7

10.1 26.8

26.8 6.3

3.9



16.6 -3.3 21.0 0.0 15.1

2011

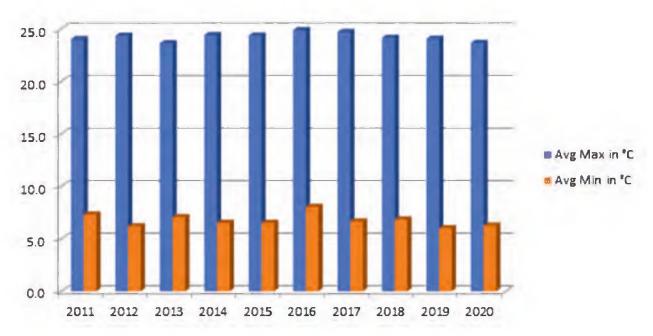


Chart 2.3: Mean Temperature Maxima and Minima: Trend over last 10 years

2.4.3. HUMIDITY

Humidity in the protected area remains high given adequate rainfall and snow in monsoon and winter months. However, in the summers, the sanctuary experiences a dry climate which leads to drying up of water holes and render the lower Chil Pine zone of the sanctuary vulnerable to forest fires. The relative humidity data for past 10 years is depicted in the chart below:

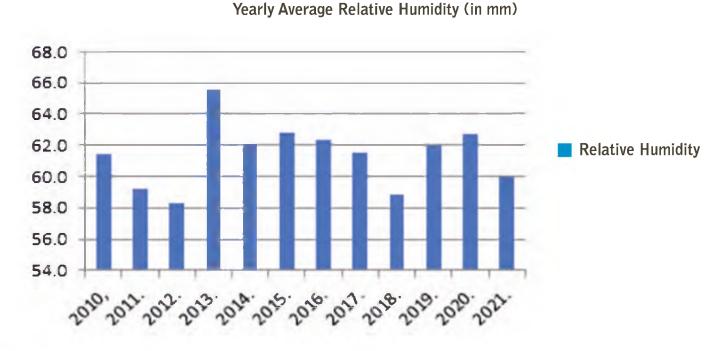


Chart 2.4: Relative Humidity trend over past 10 years



2.4.4. WIND SPEED

Generally the sanctuary experiences slow to moderate winds owing to its hilly terrain and topography which results in katabatic winds flowing down the sloppy terrain at night and mountain winds blowing uphill during the day. The wind speeds increase during the winters before the onset of precipitation in the form of snowfall.

2.4.5. DROUGHTAND ITS PERIODICITY

As the sanctuary receives precipitation in most of the months during monsoon and winter, drought has generally not been an issue of concern. However, given the delay in monsoon and snow precipitation, there is a need to monitor the situation and ensure drought does not arise.

2.5 WATER SOUDCES

Twenty five small streams are in the sanctuary which forms the hydrology of the area. One artificial reservoir is at Seog, which was constructed in 1901. Out of these 25 water streams, 19 are on the upper side of pipeline road and 6 are on lower side of the pipeline road.

The water from 19 sources in the upper part of the sanctuary reaches to Dhalli Filter Station through gravity. The water from 6 sources in the lower part of the sanctuary reaches Churat through gravity and then from Churat, it is lifted by pumps to Dhalli. Earlier lifting was done with the help of steam engine which were commissioned in 1883, but later on with the advent of electricity, these steam engines were replaced with electrically driven engines in 1912.

Stream Nos 1 and 17 in the protected area are the only 2 perennial streams that function throughout the year out of the existing 19 streams in upper side. All streams below the pipeline road are functional throughout the year. The rest of the streams are seasonal and function mostly during the monsoon months.



Image 2.1: Water Source at Stream No.1

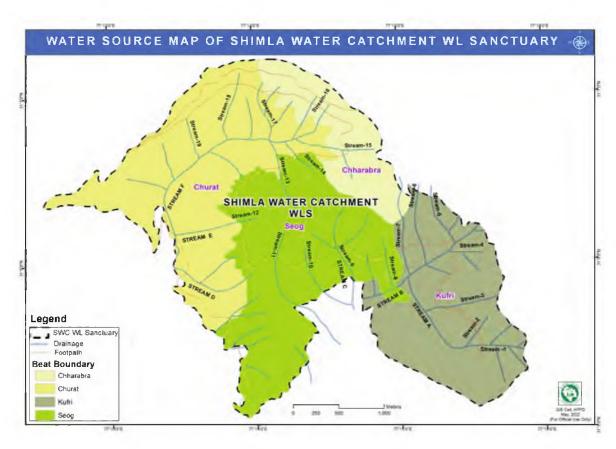


Image 2.2: Water Source at Stream No.2



Image 2.3: Reservoir at Seog





Map 2.3: Water Source Map of Shimla Water Catchment WL Sanctuary

2.6 BANGE OF WILDLIFE, STATUS, DISTRIBUTION AND HABITAT

Sanctuary has a varied range of wildlife from invertebrates to mammals. Varied species of butterflies like Orange Oak leaf, Indian Cabbage white, Large Tortoise shell, Common leopard etc can be seen during April to June. These butterflies can be seen throughout the sanctuary mainly in the open areas of Seog, Charabra and Kufri beats. Shimla water catchment Sanctuary is known as paradise for birds as large number of birds of different categories viz. flycatchers, bushchats, barbets, owls, pheasants can be seen in this Sanctuary. Plantation of Nirgal was also done in past years in some areas so as to provide shelter and nesting places for birds.

Number of mammals like common leopard, yellow throated marten, goral, barking deer, porcupine can be seen throughout the sanctuary. The presence of good grass cover and palatable understory throughout the sanctuary has helped herbivore biomass to prosper. The Himalayan Goral population thrives on steep slopes covered with grass. A rapid survey was done to assess biodiversity in Shimla Water Catchment Sanctuary. The result of the survey was that bird species richness of 95 in the sanctuary area while mammal richness was 6 with an encounter rate of 0.96 per km.

The general habitat character of sanctuary is characterized by moist Himalayan temperate forest with tree cover of Deodar, oak species with understory of various palatable grass species which support and prosper the herbivore biomass. As water sources are plenty throughout the sanctuary, the habitat quality in terms of water sources for wildlife fitness are excellent.



2.6.1 VEGETATION

There are good quality Deodar forests in the sanctuary. Deodar plantation was also done long back in 1890' since relocation of villages from inside the Protected Area. Deodar is the dominant species of the area. Other species includes Ban-oak, Mohru-oak, Kharsu-oak, KaiI, Spruce, Silver fir, Rhododendron, Chir, Kainth, Khanor, Acacia mollissima, Juniperous macropoda, Poplar, Taxus etc. Shrubs include Desmodium, Indigofera, Salix, Berberis, Rosa, Rubus, and Daphnae etc. Ground flora includes various grass species, variety of ferns and vascular herbs. List of plants found in Shimla water Catchment are annexed in Appendix-4.

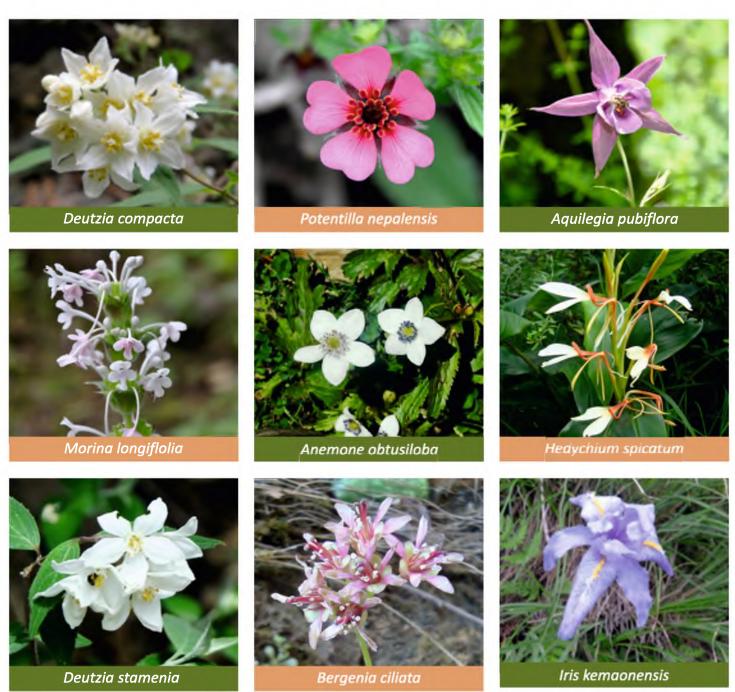


Image 2.4: Flowering Plants of Shimla Water Catchment Wildlife Sanctuary



BACKGROUND INFORMATION AND ATTRIBUTES

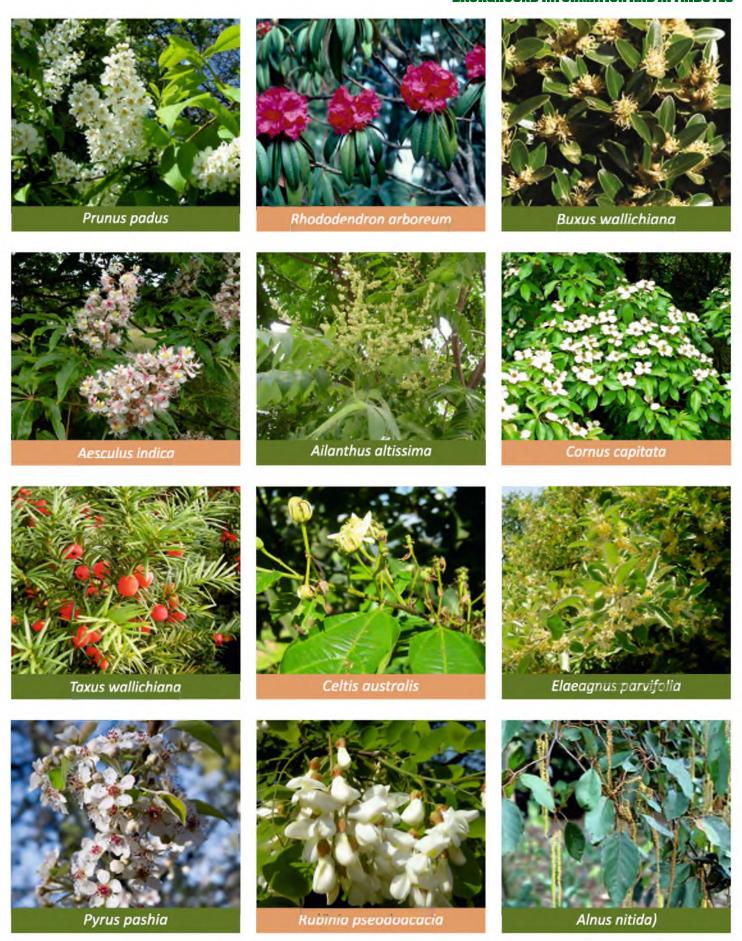


Image 2.5: Flowering Trees of Shimla Water Catchment Wildlife Sanctuary

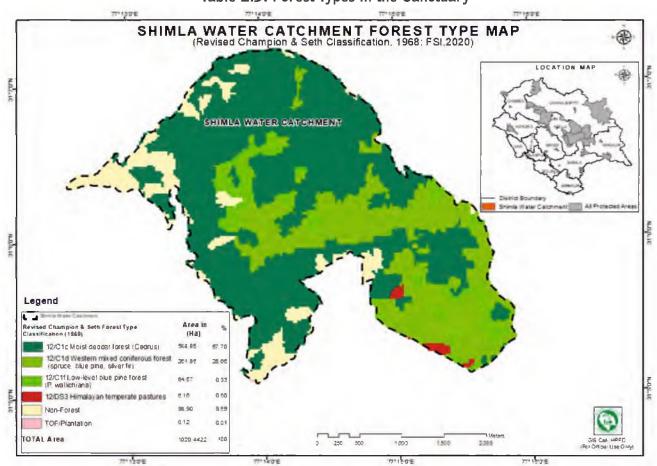


2.6.2 FOREST TYPES

The forest types found in the sanctuary as per Champion & Seth (1965) classification may be categorized as under

Sr. No	Forest type	Classification
1	Moist Deodar Forest	12 C 1 c
2	Western Mixed Coniferous Forest	12 C 1 d
3	Low Level Blue Pine Forest	12 C 1 f
4	Himalayan Temperate Pastures	12/ DS3

Table 2.3: Forest Types in the Sanctuary



Map 2.4: Forest Types in the Sanctuary







Moist Deodar Forest



Western Mixed Coniferous Forest



18

THE SANCTUARY IS HOME TO 21 VARIETY OF ORCHID SPECIES AND LIST OF SAME IS GIVEN IN APPENDIX-5.

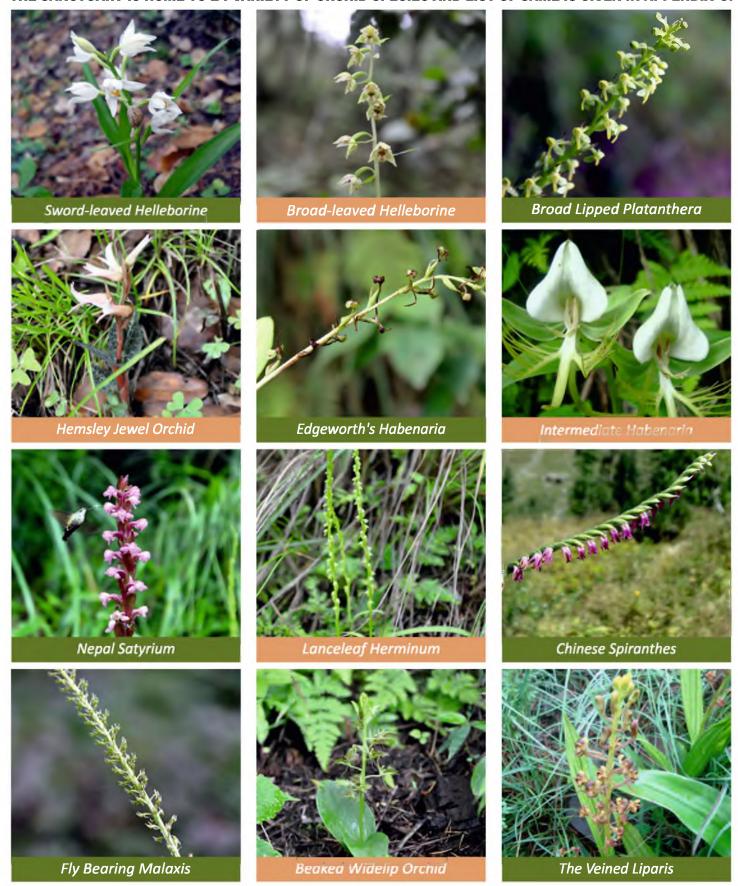


Image 2.6: Orchids of Shimla Water Catchment Wildlife Sanctuary



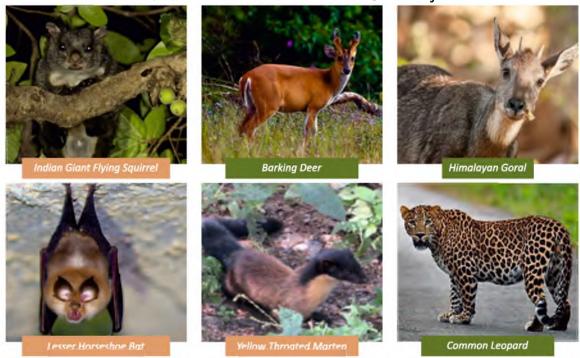
2.6.3 ANIMALS

2.6.3.1 MAMMALS

A number of mammal species are found in the Sanctuary and the main predator species is the leopard (Panthera pardus). Barking deer (Muntiacus muntjak) are commonly sighted whereas Gorals (Naemorhed -us goral), classified as near threatened as per the IUCN Red Data List, are found habitating along steep ridges. Indian Crested Porcupine (Hystrix indica) and Yellow throated marten (Martes flavigula) are among the small mammals that can be occasionally sighted. The langur and Rhesus macaque are the main primate species. Protection and habitat maintenance of these animals is an important function of the Sanctuary. During winter Bears have also been spotted in the sanctuary area in the past.

Sr. no	Common name	Local name	Zoological name	Schedule	Schedule as per wildlife protection act (amendment), 2022
1	Leopard	Tendua	Panthera Pardus	I	I
2	Goral	Goral	Nemorhaedus goral	III	I
3	Barking deer	Kakkad	Muntiacus muntjak	III	I
4	Rhesus macaque	Bandar	Macaca mulatta	II	Not the part of the schedule
5	Grey langur	Langur	Presbytis entellus	II	I
6	Leopard cat	Tenduabilli	Felis bengalesis	II	I
7	Porcupine	Shail	Hytrix indica	IV	I
8	Red fox	loamdi	Vulpus vulpes	II	I
9	Yellow throated marten	Sarkalu	Martes flavigula	II	II
10	Indian giant flying squirrel	Eenn	Petaurista Philippensis	II	Not the part of the schedule
11	Sambar	Raal	Rusa unicolor	I	I

Table 2.4: List of Mammals in the Sanctuary





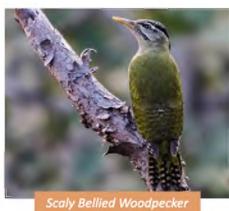
2.6.3.2 AVIFAUNA

The sanctuary is rich in bird life. The sanctuary has birds that are typical of the Himalayan region including Himalayan Woodpecker, Yellow-billed Magpie, Green backed tit, Ultramarine flycatchers, Eurasian Jay, Rufous Sibia, White Throated Laughing Thrush, Grey Wing Black Bird, Slaty Headed Parakeet. The complete list of birds of sanctuary is given in Appendix-6.

The sanctuary has a very high density of Koklass pheasant (*Pucrasia macrolopha*). A census carried out in 2022 gave an estimate of 24-26 pairs in the protected area which is one of the highest reported density under natural conditions for this bird. Kalij Pheasant (*Lophura leucomelanos*) and Cheer pheasants(*Catreus wallichii*) are also present in the area.























2.6.3.3 BUTTERFLIES

The sanctuary is known for wide diversity of butterflies that inhabit the open areas of the sanctuary particularly in Seog and Churat beats where there is good presence of water and attracting plants such as Buddleja crispa, Debregeasia hypoleuca, Spartium junceum etc. The detailed list of butterflies is given in Appendix 8.



















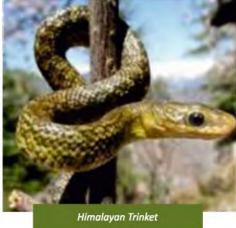
Image 2.8: Butterflies of Shimla Water Catchment Wildlife Sanctuary

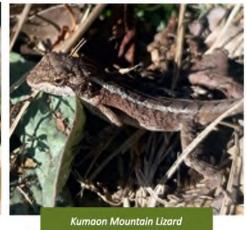


2.6.3.4 REPTILES & AMPHIBIANS

The sanctuary having several water streams and sources is home to diverse reptiles and amphibian. Several snakes including Himalayan Pit Viper, Himalayan Wolf Snake, Northern White Lipped Pit Viper are found in the sanctuary. Apart from snakes, several species of lizards, skinks, geckos and frogs are found in the protected area. The sanctuary is home to species Japalura kumaonensis, a species endemic to western Himalayas. The detailed list of reptiles and amphibians are given in Appendix-7.









PART ONE DESCRIPTION AND EVALUATION

THE PROTECTED AREA: EXISTING SITUATION

CHAPTER - 3
HISTORY OF MANAGEMENT AND PRESENT PRACTICES

3.1 GENERAL

The area was property of Rana of Koti Estate and was obtained in the form of lease on behalf of the Shimla Municipal Committee in 1878. The area was managed by Municipal Corporation upto 17th April 2006. The sanctuary was transferred to Shimla(Urban) Forest Division and remained under its control from 18th April 2006 to 31st March 2009. Due to reorganization of the Urban Forest Division, the Sanctuary came under the control of the Wildlife Division from 1 April, 2009. The area was historically managed for harvesting of water resources and hence was well protected. However, in recent decades, the sanctuary is being managed for a variety of ecosystem services including provision of water resources, eco tourism, biodiversity conservation, wildlife habitat and aesthetic values.

3.2 TIMBER OPERATIONS INCLUDING COLLECTION OF NTFP, FIREWOOD HARVEST ETC.

The area had the predominance of Deodar. Initially the area was occupied by a number of villages which were eventually relocated and villages sites were planted with deodar artificially. No salvage felling was carried out after 1991-92. The following table shows the list of relocated villages from the protected area.

Sr. No	Name of Relocated Village Site	Location	Area(ha)
1	Graich	CNo.9(A)	3.24
2	Palang	CNo.18	12.55
3	Chaoki	CNo.32	4.86
4	Seog	CNo.18	2.83
5	Sungri	CNo.6	5.56
6	Patti	CNo.27	6.07

Table 3.1: List of relocated villages from the protected area

Up to 1982, the area was managed in accordance with the proposals which comprised a series of selection felling designed to pass over the whole area every five years and to remove all the malformed and unsound trees over three feet in girth in twenty years. These selection felling were coupled with the system of thinning and improvement felling prescribed for the same areas with the same felling rotation and the yield of these lateral cuttings was controlled by the prescription of a maximum number of cubic feet not to be exceeded in a year. After 1982, when these forests were declared as wildlife sanctuary, no felling or subsidiary operation was carried out. Salvage felling was stopped after 1991-92. After declaring the area as Sanctuary, no collection of non timber forest produces, firewood or harvest is being permitted in accordance with Wildlife Protection Act, 1972.



3.3 NON-WOOD FOREST PRODUCE (NWFP) COLLECTION

Various kinds of Non wood Forest Produce are available in the forests of wildlife sanctuary like Guchhi (Morchella esculanta), Banafsha (Viola sp), Ban Haldi (Curcuma angustifolia), Patharchat (Bergenia stracheyi), Lingar (Diplazium esculentum), Kashmal (Berberies sp.), Burah (Rhododendron sp) etc.

Local people do not have any rights over forest produce. In accordance with the laws in place, no NTFP is being collected from the sanctuary by residents of the adjoining villages. Presently, collection of Non wood Forest Produces is prohibited within sanctuary limits.

3.4 LEASES

There is no village inside the sanctuary. No rights or leases exist in the sanctuary area. However, contracts were given for the extraction of fodder in the past, which were later on stopped as per Supreme Court's guidelines.

3.5 OTHER PROGRAMMES AND ACTIVITIES

3.5.1 SEOG ECO TOURISM SOCIETY

Seog Eco Tourism Society was established to promote eco tourism activities in the catchment area. The society was established in the year 2008 under the HP Societies Registration Act, 2006. The administrative structure of the society involves the General Board chaired by the Chief Conservator of Forests (Wildlife), Wildlife South Circle while the Executive Secretary of the society is the Deputy Conservator of Forests (Wildlife) which meets at least twice in a year to carry out and review works under Seog Society. Further, the society has also a governing board empowered to take timely decisions with respect to management of eco tourism activities in the protected area.

Currently, the official members of the society include the following:

- 1. Range Officer Shimla Water Catchment Range
- 2. Block Officer Chhrabara
- 3. Block Officer Seog
- 4. Representative from Tourism Department
- 5. Representative from Irrigation & Public Health
- 6. Representative of District Administration Special Area Development Authority

The following are list of Non-official members:

- 1. Representative of Institute of Hotel Management
- 2. Principal, Government Senior Secondary School
- 3. Chamyana Panchayat Pradhan
- 4. Kufri Panchayat Pradhan
- 5. Pradhan Mahila Mandal Maloothi

The General Board of Seog Eco Tourism society meets once or twice a year for monitoring and facilitating eco tourism and wildlife awareness and education activities. Currently, the GB of society has met a total of 11 times. It has been instrumental in conceptualizing the basic framework of eco tourism in Catchment area i.e. nature walk, cycling in the sanctuary premises. However, its efforts have been limited in the involvement of local community in eco tourism activities. Currently, only indirect benefits and job creation are feasible benefits from eco tourism for the local populace.



Sr.No	Year	Number of Adult Visitors	Number of Student Visitors	Number of Foreign Tourists including students	Total Number of Visitors
1	2015-16	1834	2029	58	3921
2	2016-17	1441	1467	55	2963
3	2017-18	1625	1986	59	3670
4	2018-19	1585	1647	81	3313
5	2019-20	2263	2005	96	4364
6	2020-21	999	755	4	1758
7	2021-22	1567	1442	12	3021

Table 3.2: Tourist footfall at the PA over last 7 years

3.5.2 SOIL MOISTURE CONSERVATION WORKS

The streams inside the sanctuary are prone to erosion like other streams of Himalayan region. Since the area is well vegetated, the problem of erosion is not so severe. However, the downstream areas of the sanctuary are more vulnerable to erosion and check measures should focus on drainage line treatment especially with regard to Stream No 1.

Soil conservation works done in the sanctuary consists of construction of welded mesh check dam, check wall, retaining wall and dry stone check dam. Welded mesh check dams have proved to be effective in controlling erosion of streams. Dry stone check dams have also been successful in conserving the soil and moisture

3.5.3 PLANTATION WORK

Plantations have been carried out inside the sanctuary on a regular basis for the past years, in blank portions. The main species planted from 2011-12 to 2018-19 are Deodar, Ban Oak, Moru, Khanor, Maluk, Daru, Kainth etc.

Year	Location	Area (in Ha)	Species	No of plants
2011-2012	C.No.9A	0.50	Ban	550
2012-2013	C.No.3A	0.25	Ban	250
2016-2017	C.No.19,33	2.75	Maluk, Deodar, Khanoor, Daru	2850
2018-2019	C.No.19	1.50	Khanoor, Ban, Kainth	1500

Table 3.3: Plantation work in the past ten years

3.5.4 MAINTENANCE OF TREK PATHS

The Bridal/Trek paths have dual purpose of patrolling/inspection and for eco-tourism purposes. However, every year these paths are to be maintained to clear them of leaf litter and make them ideal for movement on foot. Further, snowfall during the winters also leads to falling of tree branches or stem which may block such paths. Hence, maintenance of these paths is done periodically to ensure they remain functional.

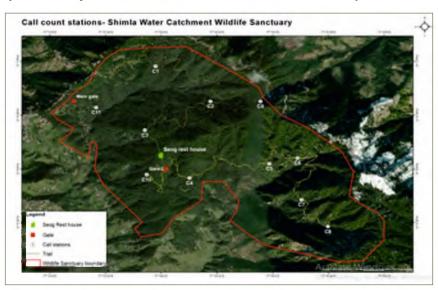


Sr. No.	Bridle Path	Distance(Km)
1	Dhalli to Churat	4
2	Vaid Building to Churat	2.5
3	IHM to Seog	3.5
4	Seog to Karyali	2
5	Seog to Gharog	3.5
6	Seog to Churat	3.5
7	Chharabara to Seog	3.5
8	Chharabara to IHM	3
9	Wildflower Hall to Seog	3.5
10	Dhalli to Seog	7
11	Seog to Stream No-1	7
12	Kufri to Compartment No-15	3
13	Kufri to Karyal Ghati	3
14	Kufri to Chini Banglow	2
15	Kufri to Chowki No 3	2

Table 3.4: Maintenance of paths

3.5.5 KOKLASS ESTIMATION:

Estimation/ survey of Koklass Pheasants is conducted annually by wildlife authorities the latest one being conducted in 2022. The call count method is used to carry out the survey. Ten points are identified to represent the whole sanctuary where each point is surveyed by each team. From the perusal and analysis of the data sheet filled by the field teams, the density of Koklass Pheasant is found to be 24-26 pairs in the sanctuary.



Map 3.1: GIS Map showing designated call stations for call count in sanctuary



CALL STATION NO.	LAT	LONG	ELEVATION (m)	HABITAT
1	31.11593	77.23254	2274	Mixed forest
2	31.11046	77.2407	2298	Natural
3	31.10591	77.2308	2341	Natural
4	31.09865	77.23745	2308	Natural
5	31.10083	77.2495	2308	Natural
6	31.10171	77.25371	2320	Natural
7	31.09524	77.2543	2318	Mixed forest
8	31.09102	77.25827	2320	Mixed forest
9	31.09361	77.26194	2618	Natural
10	31.09914	77.2312	2212	Mixed forest
11	31.10882	77.21695	2271	Deodar

Table 3.5: GIS Map showing designated call stations for call count in sanctuary

3.5.6 RAPID SURVEY OF FAUNA

Rapid Mammal Survey was conducted in the year 2019 by Nature Conservation Foundation in coordination with Wildlife Wing through established transect walks delineated across the whole sanctuary. The study was aimed at generating a dataset of biodiversity in the sanctuary with emphasis placed on understanding the presence of mammals and birds. The results of the study contributed to better understanding of protected areas and created a baseline evaluation of wildlife presence.

3.5.6.1 MAMMAL SURVEY

The methodology for the survey was estimation through sign survey, direct sighting, encounter rate and camera trap based information. Nocturnal surveys were conducted to estimate animals displaying nocturnal/crepuscular behaviour. Observers were tasked with documentation of signs or direct observations of all medium-sized and large mammals. Direct observations were in the form of visual sightings or aural detection. Indirect signs of mammals were either in the form of faecal droppings or as a print in clear substrate, which were identified where possible. Camera traps were also used during the survey. These were placed along or near a well-established trail opportunistically to supplement the overall mammals checklist.

Species	No. of Detections	% of detections made directly
Barking deer	60	21.7
Himalayan Goral	60	8.3
Common Leopard	20	0
Indian crested porcupine	14	0
Grey Langur	6	83.3

Table 3.6: Mammals detected in Rapid Survey

HISTORY OF MANAGEMENT AND PRESENT PRACTICES

As seen from table, Barking Deer (Muntiacus muntjak) and Himalayan Goral (Naemorhedus goral) were the most frequently detected species of mammal during the survey, comprising 75% of all detections. Barking Deer was detected directly with the highest frequency, being sighted on 11 occasions and heard on 2 occasions. Goral was seen on only 5 occasions, which is likely due to their preference of steeper and less accessible habitats. As per the survey, 6 different mammals were recorded in the sanctuary.

3.5.6.2 BIRD SURVEY

The bird survey in Catchment Wildlife Sanctuary was carried out using methodology of point sampling, call count and direct sighting on transect walk.

Ninety Four bird species were recorded in the Rapid Survey with maximum detections of Oriental Turtle Dove followed by Great Barbet. Apart from these, the maximum detections that were made were of Large Billed Crow, Ultramarine flycatcher, Koklass Pheasants, Rufous Sibia and Green backed tit. The avian diversity was recorded more in Churat and Seog beats in the sanctuary.

3.5.7 AWARENESS PROGRAMMES

Various awareness programmes regarding forest fires, water and soil conservation, illicit felling, and hunting are conducted for the conservation and protection of flora and fauna of the sanctuary.

3.5.7.1 WILDLIFE WEEK

Wildlife week is celebrated annually during first week of October and for the celebration of this week various activities are carried out by the forest department by involving school students. Activities like slogan writing, painting, quiz competition, cycling etc. are carried out in the sanctuary.





Image 3.1: Wildlife Week Celebrations during 2021 at Sanctuary



3.5.8 TRAINING

Various training programs and sensitization modules are conducted regularly for batches of Indian Forest Service Officer Trainees, State Forest Service Officer Trainees, Audit & Account Officer Trainees, Revenue Officers, Police Officers, Range Officer Trainees and field staff trainees, Public Administration Trainees, Members of the Judiciary, Forestry Graduates and members of civil society.





Image 3.2: Interaction with IFS Officer Trainees 2021 Batch & RO Trainees from HPFA

3.5.8.1 VISIT OF HIGH LEVEL DIGNITARIES

This protected area holds great value in sensitization of importance of forest and wildlife conservation in providing valuable ecosystem services. In this context, several high profile dignitaries visit the sanctuary area to understand and experience conservation value.





Image 3.3: Honourable President Sh. Ram Nath Kovind's visit to Shimla Water Catchment Sanctuary on 24th May, 2018



Image 3.4: Hon'ble Governor of Himachal Pradesh Sh Rajendra Arlekar (3rd May 2022)



Image 3.5: Honourable Supreme Court Judge Justice D.Y. Chandrachud

3.5.9 INTER-AGENCY PROGRAMMES

Shimla Water Catchment Wildlife Sanctuary was notified as wildlife Sanctuary in the year 1999. Earlier right from British time this forest was protected by the British Government as the main source of Water supply to Shimla City. At present Himachal Pradesh Irrigation and Public Health Department is responsible for the smooth supply of water to Shimla City from this Wildlife Sanctuary. Hence all the necessary works required for smooth supply of water such as repair of Water Pipe line, Maintenance of Water Pipe line road, desilting of water sources etc are being carried out by the HP IPH Department inside the Sanctuary.

3.6 FOREST PROTECTION

Forest protection is accorded top priority in the Sanctuary. Protection here is multidimensional as wildlife habitat faces varied threats from littering, horse grazing, muck/debris dumping, hunting, illicit felling etc. In order to curb these and enforce the Wildlife Protection Act and other forest laws in its letter and spirit, forest protection is essential activity which is performed through varied measures like patrolling, fencing of areas, holding awareness programmes, levying fines/damage bills.

3.6.1 LEGAL STATUS

The Shimla Water Catchment Wildlife Sanctuary post reorganization and rationalization was notified during the year 2013 vide Notification No.FFE-B-F(6)-11/2005-Li/Shimla Water Catchment dated 07.06.2013 with effect from the Date of Publication in the State Gazette.

3.6.2 HUNTING

Hunting in the sanctuary has been prohibited.

3.6.3 ILLEGAL ACTIVITIES

The sanctuary is not prone to illegal activities like poaching, illicit felling etc. However, few offences were detected during the past like illegal grazing, lopping, collection of loose stones, dry fuel wood. The detail of offences detected in past decade in the sanctuary is given in Appendix 9.

3.6.3.1 POACHING

No poaching has been detected in the recent past. However as a precautionary measure, patrolling is carried out on foot by the sanctuary staff on the bridle paths which covers the entire sanctuary. Sanctuary staffs generally carry out patrolling in groups, which is effective. Sometimes sanctuary staff carry out patrolling individually. Night patrolling is done by staff as and when required or depending on local intelligence and inputs.

Both day and night patrolling schedule has been prepared and strictly followed. At present sanctuary is equipped with one motorcycle which is used in patrolling.

3.6.3.2 ILLEGAL CUTTING OF TREES

Illicit felling has not been a major cause of concern for the sanctuary. However, the lopping of trees have been recorded as offences and there is need to keep constant vigil in lower portions of Seog and Churat beat adjacent to human settlements.



3.6.4 DOMESTIC LIVESTOCK GRAZING

There are few villages on the periphery of the Sanctuary namely Churat and Karyali. On few occasions, cattle enter and graze, but it is effectively controlled by the field staff. Horses from Kufri-Chharabra area that are engaged in tourism activities in Kufri also occasionally enter the sanctuary area for grazing. The same is controlled by the staff through levying of fines.

3.6.5 WILD FIRES

Currently, only one fire line exists within the Protected Area whereas bridal paths also function as fire lines. Lower portion of the sanctuary is dominated by Chir pine, hence prone to fires in summer. Fire watcher huts have been established at vantage points. Each watch point are manned by firewatchers. All forest staffs are registered on FAST 3 portal developed by Forest Survey of India, Dehradun for receiving SMS based fire alerts for fast action. Whenever there is a fire incident, forest staffs along with fire watchers and local community are involved in dousing of forest fires.





Image 3.6: Fire Watch Towers at vantage points in the Sanctuary

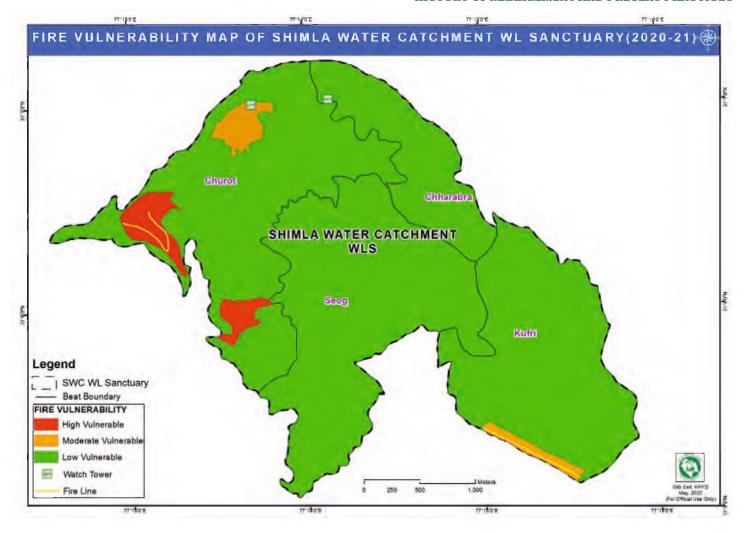
Fire is not a major threat in the sanctuary as moisture retention is good in the forest floor. In past 10 years, only 1 case of fire has been reported in the sanctuary, the detail of which is given below:

Sr. No.	Year	Kind of Fire	Name of Forest	Area In hac
1	2021-22	Ground Fire	C-23 of Churat Beat	1/2hac

Table 3.7: List of Fires in last 10 years



HISTORY OF MANAGEMENT AND PRESENT PRACTICES



Map 3.2: Fire Vulnerability Map of Shimla Water Catchment Widllife Sanctuary

Sr. No.	Area	Distance	E	Compartment
1	Vaid building to Churat nullah	2Km	Churat	C No-22
2	Karyali to Patgair road	1.5Km	Seog	C No-19
3	Boundary pillar no 42 to 58	1.5Km	Kufri	C No-15

Table 3.8: Details of Fire Prone Areas



3.6.6 INSECT ATTACK AND PATHOLOGICAL PROBLEMS

As such no pathological outbreaks have been observed in Sanctuary till now. The diverse composition of sanctuary contributes to this pathological resilience.

3.6.7 WILBLIFE HEALTH

Various species of weed are present in parts of the sanctuary. Sanctuary area has a high prevalence of Parthenocissus semicordata which is a climbing weed and results in lowering the quantity as well as quality of wood by strangulating the stem. The other weed species are Bidens pilosa and various species of Impatiens spp. etc. Weed presence reduces the habitat quality of the sanctuary as it reduces fodder availability for herbivores. This has an adverse impact on herbivore populations and thus on the food chain of carnivores such as the leopard. Weed infestation therefore, has an impact on all levels of the biological pyramid. This may impact the health of the wildlife.



Image 3.7: Acacia mearnsi



Image 3.8: Parthenocissus semicordata

Further, there are plantations of exotic Acacia spp. in the sanctuary. The exotic species is propagating fast and taking up forest floor in Churat beat of the protected area. The proliferation of this exotic species is limiting regeneration and propagation of native species that contributes positively to wildlife health.

3.7 ECO TOURISM

Shimla water catchment is named as such because of its sources of water in the Sanctuary. It has a lush green deodar-oak forest landscape which offers very good potential for development of Eco-Tourism. Seog Eco-Tourism society was established and registered under Himachal Pradesh Societies Registration Act, 2006 with a view to enhance the activities of community based ecotourism within the sanctuary for the visitors. The objective is to provide a truly enriching experience to visitors and provide wildlife awareness and education through eco-tourism activities.

Sr. No.	Trekking Route	Distance (Km)
1	Chharabra – Seog	4
2	Kufri – Seog	4
3	Dhalli – Seog	7
4	Seog - Churat	4

Table 3.9: Eco-tourism trek routes in Sanctuary

HISTORY OF MANAGEMENT AND PRESENT PRACTICES

At present the following activities are carried out as part of eco-tourism within the sanctuary:

- Nature Walk: The nature walk starts from entry gate of Catchment Sanctuary at Dhalli and extends 7 km till the water reservoir at Seog. Visitors can avail permit for nature walk by paying permit fees at the entrance gate. Along the trail, visitors can spot various fauna and flora in the lush green deodar landscape. The sanctuary given its rich diversity of avifauna especially in summer months can attract bird watchers and ornithologists. The walk comprises several vantage points offering scenic views of the catchment landscape. The visitors are also offered amenities of resting points along nature walk. Along the nature walk, several sign boards detailing the flora and fauna of the sanctuary provide valuable information to the visitors, enriching their awareness and wildlife education.
- Cycling: The cycling trail extends from the entry gate till Seog Reservoir. Visitors can pay ticket charges at the gate and avail cycles on rent for the time spent inside the sanctuary. As a safeguard, railings are provided at dangerous points along the cycling trail.
- Seog Rest House: Established in 1901 and nestled in the Deodar-Oak forests, Seog forest rest house offers
 a unique opportunity for visitors for short stay during their visit to sanctuary. The rest house is a heritage
 building of British times and has been renovated and maintained, conserving the same architecture and
 design. Several high profile visitors including The Honourable President of India, Honourable Governors of
 States, Honourable Supreme Court Judges and other high level dignitaries have visited the rest house
 during their visit to the sanctuary and left their indelible memoirs on visitor register of Seog FRH
- Souvenir Shop: The souvenir shop situated inside the Range office building offers the opportunity for visitors to carry with them some memoirs of their visit to the catchment area in the form of various articles. Currently, the souvenir shop is run departmentally.







Image 3.9: Eco Tourism Activities for visitors at Shimla Water Catchment Wildlife Sanctuary



3.8 RESEARCH, MONITORING AND TRAINING

3.8.1 RESEARCH & MONITORING

The Wildlife Sanctuary has been subject to a variety of research studies and publications in domains of hydrology, wildlife census and floristic survey. The following are some such research studies that have been conducted in the protected area in the recent past:

- Rapid Survey of Mammals and Avifauna conducted by Wildlife Wing HP Forest Department in coordination with Nature Conservation Foundation
- Hydrological and Ecological Studies towards Integrated Water Resource
 Management: A case study of Shimla Water Catchment Wildlife Sanctuary: Dipika Rana, Kulraj Singh Kapoor and Vidya Ratan Singh-Himalayan Forest Research Institute
- Orchids of Water Catchment Wildlife Sanctuary, Shimla (Himachal Pradesh), Northwestern Himalayas: Their Diversity, Status, Indigenous Uses and Conservation Status: Ankush Prakash & Promila Pathak.

3.8.2 TRAINING

All field staffs are trained in forestry, wildlife conservation, laws and regulations related to protected area management in designated forest training institutes of the state government. Regular refresher courses are conducted for the field staff in various protected area management concepts. Workshops are conducted for wildlife staff on census techniques including camera trapping, transect walks, drafting of data sheets etc in association with institutes like Zoological Survey of India, Wildlife Institute of India.

3.0 WILDLIFE CONSERVATION STRATEGIES AND THEIR EVALUATION:

A. Patrolling

At present joint patrolling, night nakas, individual patrolling are done to protect the wildlife from poachers. Patrolling is carried out on foot and sometimes a motor cycle is also used for this purpose. In this protected area, patrolling along NH is also performed as it is crucial to stop flow of litter through enforcement of laws and levying of fines.

B. Fencing

At present fencing is at various points i.e. from SWC gate to Charabra road, at Institute of Hotel Management etc. which prevent litter inside the Sanctuary from NH-05. Fencing is limited to few areas where there is threat of littering or inflow of roadside litter. The other areas are kept as such to ensure wildlife corridor connectivity in the whole sanctuary landscape and with adjacent territorial forests.

C. Water ponds

Small kaccha water ponds of various capacities have been constructed in all beats for retaining water for use by wild animals especially during summers.

D. Salt licks

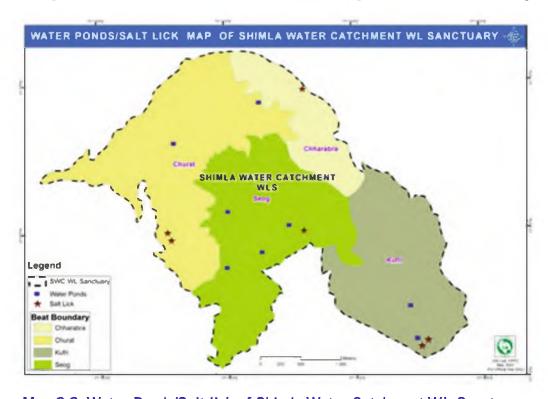
These are rectangular structures in which salt is added by staff for wild animals.



HISTORY OF MANAGEMENT AND PRESENT PRACTICES



Image 3.10: Various Wildlife Conservation Strategies followed in Sanctuary



Map 3.3: Water Ponds/Salt lick of Shimla Water Catchment WL Sanctuary



E. PLANTATION

Nirgal plantation has been taken up in the sanctuary with a view to promote and enrich wildlife potential.

F. AWARENESS

Along the NH-05, awareness boards have been installed to mitigate the threats of littering, trespassing of horses and comply with speed limit of vehicles in wildlife area. Further, pamphlets and brochures on history of Shimla Water Catchment, flora, fauna of the sanctuary are distributed among visitors and local community to promote awareness on conservation.









Image 3.11: Awareness Signages in Sanctuary Area

3.10 ADMINISTRATIVE SET UP:

The sanctuary is administered by a Deputy Conservator of Forests, Wildlife Division Shimla headquartered at Shimla. Range Forest Officer, Shimla Water Catchment Range, Dhalli is the officer in charge of the sanctuary.

The sanctuary is divided into two blocks, Seog and Chharabra, each headed by a Block Officer. Chharabra block is divided into Chharabra and Churat beats, while Seog block is divided into Seog and Kufri beats. Each beat is headed by a forest guard. The headquarters of this administrative unit is given below:



Sr. No.	Block/Beat	Headquarter
1	Chharabra Block	Chharabra
2	Seog Block	Seog
3	Churat Beat	Dhalli
4	Chharabra Beat	Chharabra
5	Kufri Beat	Kufri
6	Seog Beat	Seog

Table 3.10: Administrative Setup

3.10.1 POWER AND FUNGTIONS DELEGATER TO FIELD LEVEL OFFICIALS

3.10.1.1 DUTIES OF RANGE OFFICERS

- To communicate all orders and instructions to his subordinates.
- To check and control all work within his range.
- To collect, check and consolidate all returns and registers, to prepare the monthly range accounts and to carry out all office work promptly and correctly.
- To prevent any misuse of authority by subordinates particularly in forest offences.

3.10.1.2 DUTIES OF DLOCK OFFICER

- •To manage the block unit assigned to him to the best of his ability with respect to forest and wildlife conservation
- To assist the range officer to best of his ability,
- To carry out the works of the department honestly and efficiently.
- To carry out all the orders given to him.
- To report to range officer on all important happenings.
- $\bullet \textbf{Thoroughly understand rules for compounding forest offences and closely to observe them. } \\$
- To prevent forest guard under his control from misusing their authority accepting bribes or harassing the people.

3.10.1.3 Duties of Forest Guard

- •To manage the beat unit assigned to him to the best of his ability with respect to forest and wildlife conservation
- To be fully acquainted with his beat and to have knowledge of everything taking place in his Beat.
- To be fully acquainted with and to possess a list of rights privileges and concessions that may be exercised by the people in the forests of his /her beat.
- Strictly observe the rule for compounding forests offences.
- Repairs of boundary pillars, roads and buildings in his beat under orders of Range officer.
- Maintenance of fences, plantation, weeding but not to incur expenditure without range officer's sanction.

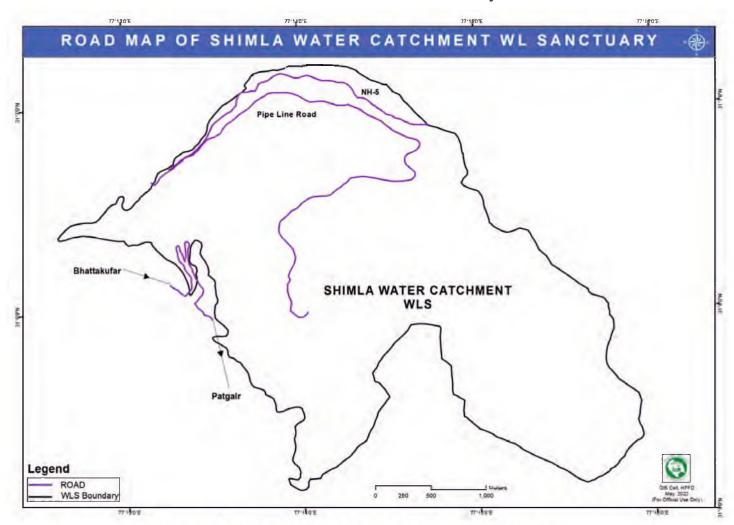


3.11 COMMUNICATION

3.11.1 ROADS

Sr. No.	Road Name	Length (km)	Description
1	NH-05 (Dhalli-Kufri)	5	Sanctuary area lies on both sides of the NH
2	Pipe line road	14	Pipe line road divides the sanctuary into two parts
6	Bhattakuffar- Patgair road	5.0	Road touches the boundary of the sanctuary

Table 3.11: List of Roads in Sanctuary



Map 3.4: Road map of Shimla water catchment WL santuary

A Forest Road was constructed in 1893-94 in order to facilitate the delivery of fuel to the pumping Engines situated at Churat. Hindustan-Tibet road (NH-5) also passes through the sanctuary area. Pipe-Line Road which is 14 km long roughly divides the sanctuary area into two halves. The entry to the sanctuary is at Dhalli.



3.11.2 PATROLLING PATHS

A basic network of paths have been developed which criss cross the whole sanctuary area. These paths act as natural fire lines. List of bridal paths within the sanctuary is given below

LIST OF PATHS

Sr. No.	Name	Length(Km)
1	Institute of Hotel Management to Seog	3.5
2	Institute of Hotel Management to Chharabra	3.0
3	Chharabra to Seog	3.5
4	Wildflower Hall to Seog	3.5
5	Dhalli gate to Churat nursery	4.0
6	Dhalli gate to Seog Rest House	6.0
7	Seog to Churat Nursery	3.5
8	Vaid Building to Churat Pump House	2.5
9	Seog to Gharog	3.5
10	Seog to Karyali	2.0
11	Seog to Stream No. 1	5.5
12	Kufri to C No. 15	3.0
13	Kufri to Karyal Ghatti	3.0
14	Kufri to Chini Bangla	2.0
15	Kufri to Chowki No. 3	2.0

Table 3.12: List of trek/patrol paths in the PA



3.11.3 TELEPHONES

At present there is a telephone at range office for official communication and public enquiry. The phone number of office is 0177-2925219.

3.11.4 WIRELESS & MOBILE COMMUNICATION

Four walkie-talkies and communication allowances are given to the staff during fire season. Most of the field staff owns their own mobile set, and they are given mobile bill allowances for better communication.

3.11.5 EMAIL & SOCIAL MEDIA GROUP

An email ID has been created at range level- rfoswcdhalliwl@gmail.com for easy correspondence between division and range. In order to further streamline coordination between staff and division office, a social media group involving all range level staff has been created for fast dissemination of information and orders.

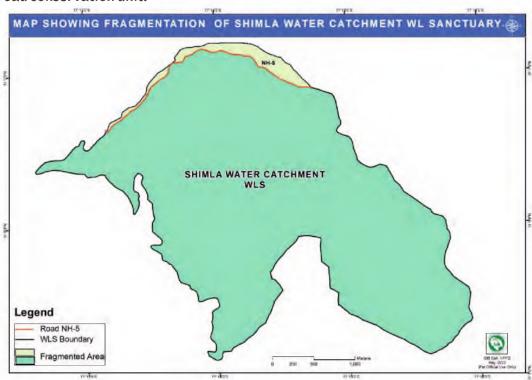
A website of HP Wildlife Wing at http://hpwildlife.gov.in has been developed which mentions details of all protected areas in Himachal Pradesh including the Shimla Water Catchment Wildlife Sanctuary.

3.12 SOMMARY OF THREATS TO WILDLIFE

Sanctuary has water sources, flora, fauna which needs to be conserved and protected. At present, the most likely threats to protected area are lopping, littering, grazing, pollution, debris dumping, encroachment, minor hunting etc. as villages are in the vicinity. These threats need to be mitigated for conservation and preservation of biodiversity of the protected area. Present threats are as under:

3.12.1 FRAGMENTATION OF HABITAT

NH-5 passes through the sanctuary which divides sanctuary into two isolated conservation units with area above NH-5 being a smaller habitat patch and the lower area being a larger habitat patch. Due to this fragmentation of habitat and heavy movement of vehicles in the stretch, there is no functional wildlife corridor connecting these two habitat patches of the sanctuary and adjoining territorial forests that otherwise would have made a broad conservation unit.



Map 3.5: Fragmentation of Shimla water catchment WL santuary



3.12.2 LITTERING

As all areas adjacent to the sanctuary experience heavy tourist influx, there is a substantial littering threat to habitat. Further, the presence of several roadside vendors selling food articles enhances the littering threat. The easy access offered by NH-5 and sanctuary being roadside increases vulnerability to littering.

Currently, the Special Area Development Authority is looking after waste disposal and waste management. For this purpose, waste dumpers are established in various locations and periodically collected. In this regard, wildlife wing through Seog eco-tourism society exercises monitoring and control over waste management and disposal. Further, fines are levied by forest staff as per existing provisions of law. Cleanliness drives involving local communities are carried out regularly in order to safeguard the habitat and remove litter from wildlife habitat.

3.12.3 NOISE POLLUTION

NH-5 passes through the sanctuary and the volume of vehicular traffic has been increasing dramatically during the past decade. As the road is connecting Shimla to popular tourist hill stations of Himachal Pradesh, the vehicular noise emanating poses disturbance to wildlife especially during breeding season of wildlife.

3.12.4 EVENAGED FODESTS

Sanctuary has even aged forests and there is a need for scientific management to protect it from damage in future. This is a threat to naturally regenerating as well as artificially planted plants as even aged forests are prone to wildfires, disease outbreak and insect infestation.

3.12.5 HORSE GRAZING

Horse riding being a popular tourist activity in adjacent town of kufri, there is a threat of horses trespassing into sanctuary area and grazing. This poses threat of disease outbreak to the wildlife and also contributes to interspecific competition reducing forage availability to wild herbivores.

3.12.0 WEED & EXOTIC SPECIES

The sanctuary has a high prevalence of Parthenocissus semicordata which is a climbing weed that reduces the growth potential of woody lots which eventually reduces habitat potential in the protected area. The sanctuary also has patches of acacia spp which is not native to the catchment area and alters habitat complex of the area.

3.12.7 MUCK DUMPING

This area is the source of water to Shimla town since British time but because of NH-5 along the sanctuary threat of muck dumping is always there. This dumping can contaminate the sources of water. This is a matter of great concern and need to be checked.

3.12.8 ENCROACHMENT

Considering the sanctuary is adjacent to NH and several settlements especially at Dhalli, Charabarra and Kufri, there is a great vulnerability to encroachments. The threat in this regard is particularly adjacent to the above towns and settlements. Further, National Board for Wildlife has accorded permission for an ambulance road from Dhalli Chowk to Durga colony that passes through the sanctuary at its boundary for 480 meters. In this light, there is a heightened threat to encroachment in this area which needs to be monitored regularly.

3.12.0 ILLICIT FELLING

The threat of illicit felling in sanctuary is less generally. However, as access has improved much and NH cuts the sanctuary. The entire portion of the sanctuary on the upside of NH adjacent to it remains vulnerable to illicit felling and transportation especially during the night hours.

3.12.10 LOPPING

The lower portion of sanctuary adjacent to village settlements sees the threat of lopping for fire wood and subsistence use.



PART ONE DESCRIPTION AND EVALUATION

THE PROTECTED AREA: EXISTING SITUATION

CHAPTER - 4

THE PROTECTED AREA AND
THE INTERFACE LAND USE SITUATION

4.1 THE EXISTING SITUATION IN THE ZONE OF INFLUENCE

The Zone of Influence of the sanctuary lies within it and outside. The NH-5 and adjoining tourist enterprises in the form of hotels, resorts, shops, road side vendors, and restaurants constitute the main zone of influence of the protected area. Apart from the tourist establishments, the village settlements adjoining the Southern boundaries of the sanctuary also exert influence on sanctuary. The biotic pressure from sanctuary mainly arises from horse rearing for tourism in North-east boundary town of Kufri and cattle rearing and fuel wood dependence for the villages on the southern border.

4.1.1 THE LOCATION, BOUNDARIES AND NATURAL ATTRIBUTES OF ZONE OF INFLUENCE

The Zone of Influence extends in the eco sensitive zone of protected area. The Eco Sensitive Zone of Shimla Water Catchment Wildlife Sanctuary was notified vide Notification No. 1647 dated 08/06/2017. The boundaries of zone of influence are coterminous with the boundary of eco sensitive zone.

The natural attributes of this zone are vastly different as the elevated regions of zone of influence has deodar laded landscapes and tourism dependent economy whereas the southern and the lower elevations have Chil Pine Zone and livestock and agricultural economy.

The varying natural attributes mean that these two parts of zone of influence exerts different pressures and anthropogenic pressures on the wildlife habitat of the sanctuary.

4.1.2 VILLAGES INSIDE/OUTSIDE THE PROTECTED AREA, ETHNIC IBENTITIES, TRABITIONS, CUSTOMS, BELATIONSHIP BETWEEN DISTINCT GBOUPS OF PEOPLE, RELATIONSHIP WITH RESOURCES, HABITAT AHB AREA

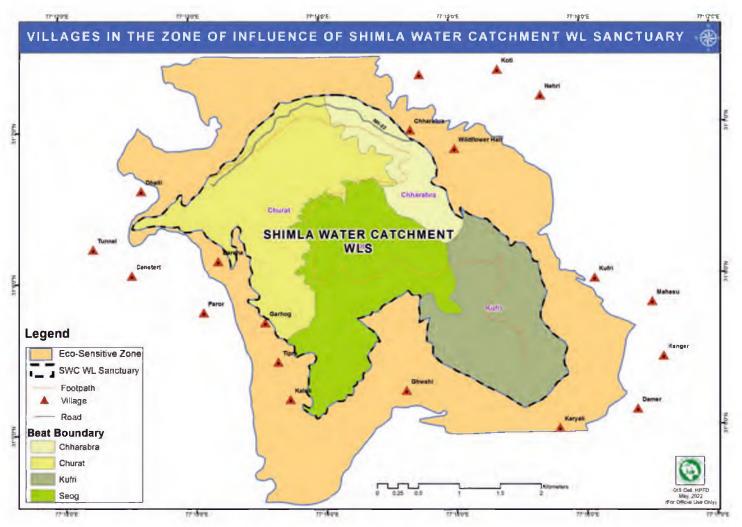
There is no village or human settlement within the protected area. However, there are 10 villages adjacent to the protected area in the zone of influence. The list of such villages is as follows:

Sr. No.	Name of Village	Human Population (in Nos)	Cattle Population (in Nos)	Horse/ Yak Populatio (in Nos)
1	Chharabra (Dhalli-Kufri)	68	Horses-1050	10-60-87
2	Tathrog	19	Yak - 20	9-06-05
3	Kufri	250		8-0-0
4	Karyal ghatti	40		2-08-25
5	Badiyan	152		7-33-81
6	Karyali	52		2-08-25
7	Maluthi & Gad	113		12-56-22
8	Gharog	65		3-52-58
9	Kalhali	120		4-25-50
10	Tipra	129		7-34-62

Table 4.1: Details of villages in zone of influence



THE PROTECTED AREA AND THE INTERFACE LAND USE SITUATION



Map 4.1: Villages in Zone of Influence of Sanctuary

The resident population in these villages are members of local community and generally practice agriculture and livestock rearing except the main towns of Chharabra, Kufri and Dhalli which is heavily dependent on tourism.

The relationship between resident villages is peaceful and that does not have any significant impact on the protected area and habitat. However, their relationship with resources is such that several people are dependent on the scenic landscape of water catchment wildlife sanctuary.

The photograph point popularly called as 'Green Valley'/'Hassan Valley' is a manifestation of this relation where the aesthetic service offered by the Shimla Water Catchment Wildlife Sanctuary directly translates to several jobs and livelihoods for the local populace as photographers, guides, road side vendors etc.

However, this also contributes to negative effect for habitat due to littering and subsequent degradation of habitat. Similarly, the horses reared for tourism in Kufri has resource dependence on grasses and this resource dependence leads to threat of Horse grazing in the area.



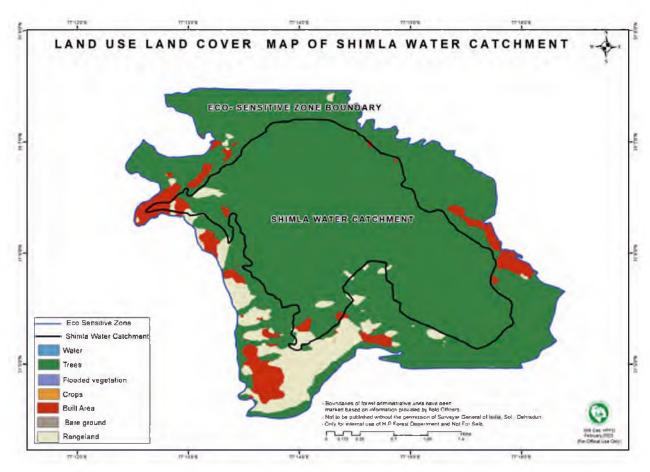
4.1.3 THE STATE OF PEOPLE'S ECONOMY. VOCATIONS, LAND USE, USE OF FORESTS AND NON FOREST BASED NATURAL RESOURCES BY PEOPLE AND SEASONAL PATTERN

The state of people's economy in the zone of influence is heavily dominated by tourism enterprise. The vocations of people are generally directly linked to tourism in terms of ownership of hotels, restaurants, shops, road side stalls etc. Further, vocations also include employment in government sector, service sector apart from horticulture and agriculture.

The land use pattern in the zone of influence reflects the tourism enterprise domination in area with a number of homestays, hotels, restaurants and shops dominating the land use. The tourism in zone of influence shows seasonal trends with peaks being in the summer and Winter seasons.

The land use land cover map of ESZ of Shimla Water Catchment given below illustrates that there are substantial built up areas in the western extent of sanctuary. However, there is good tree cover in the other areas which can form a contiguous habitat patch along with the sanctuary especially in the northern and eastern extent.

The forest based resource dependence of people is mostly based on aesthetic service offered by the majestic deodar landscape of catchment area and the hydrological service in terms of water retention and regulation of precipitation. Apart from this, the fuel wood dependence in lower elevations and the grass resource



Map 4.2: Shimla Water Catchment Land Use Land Cover



THE PROTECTED AREA AND THE INTERFACE LAND USE SITUATION

dependence for horses in north east extent of sanctuary summarize the natural resource forest based dependence in the zone of influence.

4.1.4 IMPLICATION OF LAND USE AND RESOURCE DEPENDENCY FOR THE CONSERVATION OF PROTECTED AREA

The main implication arising from land use and resource dependency is anthropogenic pressure in form of littering as well as noise pollution and disturbance to wildlife. Apart from this, it also lends to threat of disease transmission and inter-specific competition with regard to horse and cattle presence in certain pockets of sanctuary.

4.1.5 FORESTS AND PROTECTED AREA MANAGEMENT PRACTICES AND THEIR IMPLICATIONS FOR PEOPLE

Protected Area Management has reaped several direct and indirect benefits to people. These are in the form of various eco system services that have substantially improved living standards of people. The implications in this regard include:

- Provisioning of water services through various streams and retaining water through tanks
- Aesthetic Services in form of majestic deodar landscape which offers several direct and indirect livelihood creation opportunities for the local community dependent on tourism
- Recreational Services in the form of cycling and nature walk for resident and tourist population
- · Climate Regulation in the area through presence of dense canopy of forests

Apart from these positive implications, there are several other concerning implications for people arising from protected area management. These include:

- Non availability of grazing area: The cattle and horse stock in villages surrounding the protected area is still
 substantial yet declining over years. However, given the complete ban on grazing in sanctuaries by Honourable
 Supreme Court, this means local community face difficulty in this aspect of PA management in terms of non
 availability of grazing area/ fodder for their livestock
- Human Wildlife Conflict: Although negligible as there is no human settlement inside the sanctuary. However, given the small size of sanctuary, there is always chance for spill over of wildlife population to human habitation which may result in conflict
- Regulation of Tourism in Eco Sensitive Zone: An essential aspect of Protected Area management is the enforcement of eco sensitive zone provisions in its buffer/ shock absorber area. This means that several activities are to be regulated/ prohibited in this particular zone. In catchment area, the major activity in eco sensitive zone is tourism. The regulation thus poses some constraints to tourism sector entrepreneurs in the form of higher costs to meet the conditions meted out to them.
- Dangerous Trees: As NH cuts the sanctuary and several shops/ establishments are on the boundary of



sanctuary, there is an issue of dangerous trees which pose threat to human life and property. However, as the area is part of wildlife sanctuary regulated under Wildlife Protection Act, 1972, there is no provision to remove such trees unless mentioned in management plan. This is a major hindrance to safety and security of the local community as well as visiting tourists.

4.2 DEVELOPMENT PROGRAMMES AND CONSERVATION ISSUES

4.2.1 EVALUATION OF GOVERNMENT AND NON-GOVERNMENTAL AGENCY PROGRAMMES FOR DEVELOPMENT IMPLICATIONS FOR THE PROTECTED AREA IN THE ZONE OF INFLUENCE

The development programmes in zone of influence are mainly driven through schemes initiated by central and state governments. The local bodies and panchayats are the main executing agency of these programs. The development activities in zone of influences includes and is not limited to construction of toilets, construction of retaining/ boundary walls, provision of drinking water, provision of LPG, construction of cow sheds and financing of houses for BPL community. These developmental activities have been able to better quality of life of local community and reduce their dependence on sanctuary for their basic needs.

4.2.2 A SUMMARY OF PROBLEM FACED BY THE PEOPLE THAT AFFECT THE PROTECTED AREA AND ZONE OF INFLUENCE

In order to summarize the problems faced by people which affect both Protected Area and its zone of influence, the following points are put forth:

- Sustainable Tourism: In order to boost economy and maximize profit, people want the growth of tourism in unregulated way. However, the presence of Protected Area and sensitive environment requires regulation and sustainability to be incorporated into tourism. This conflict in value system is the essential problem in Protected Area management of Shimla Water Catchment Wildlife Sanctuary
- Little Diversification of Economy: As almost the entire economy in Kufri/ Charabra and Dhalli is dependent on tourism, there are little avenues for other livelihoods. This further enhances the tourism pressure on Water Catchment Wildlife Sanctuary
- Low Participation in Conservation/Wildlife Education: The people in and around area have not been involved to the extent they should be when it comes to PA management. This has reduced the effectiveness of PA management as often people's link is missing in the plans
- Dependence on Grass/ Fodder/ fuel wood: especially in lower elevations and eastern extent exerts biotic pressure on the Protected Area and render it vulnerable to transmission of diseases and inter-specific competition



PART TWO THE PROPOSED MANAGEMENT

CHAPTER - V

THE VISION, OBJECTIVES, ISSUES & PROBLEMS

5.1 VISION

The vision of managing Shimla Water Catchment Wildlife Sanctuary is to ensure the integrity of this small sanctuary in the lesser Himalayan landscape and conservation of area for provisioning of water, biodiversity, climate regulation, eco-tourism and other key ecosystem services essential for human well-being.

5.2 OBJECTIVES OF MANAGEMENT

The following are the objectives of management for achieving the vision statement

- To contribute to the supply of drinking water to meet the ever rising demand of Shimla town.
- To ensure the protection of viable wildlife populations for ecological, scientific, aesthetic and cultural values.
- To conserve unique habitats of the Himalayan Goral and Koklass/ Cheer pheasants
- To enhance management capabilities of the staffs and other stakeholders especially in domain of wildlife laws and census
- To promote low impact high value ecotourism in the area for wildlife awareness and education
- To involve local community in the management of area and create a win-win link between community based eco-tourism for livelihood generation and wildlife conservation
- To develop a systemic research and census methodology for protected area management especially in domain of hydrology, wildlife census and floristic survey
- To bridge the gap between citizen science and data collection in order to supplement the research activities in the sanctuary at the same time creating foot soldiers of next generation
- To relieve the sanctuary from anthropogenic pressure such as grazing, littering and protect the area in letter and spirit of wildlife protection act and all other forest laws

5.3 CONSTRAINTS IN ACHIEVING OBJECTIVES

	ir Io	Objectives	Constraints in achieving objectives	Strategies to Overcome constraints
]		To contribute to supply of drinking water needs of Shimla Town	I.Climate Change	Establishing a weather monitoring station in the sanctuary
			II.Non-functionality of streams	 Soil Moisture conservation measures including percolation ponds in upper ridges and staggered trenches for retention of water Desiltation of water sources



	THE TIGION, OBJECTIVES, ICCOLO AND I HOBEL		
SrNo	Objectives	Constraints in achieving objectives	Strategies to Overcome constraints
	To ensure the protection of viable wildlife populations for ecological, scientific, aesthetic and cultural values	I.Fragmentation of Habitat	Exploring option of overpass or eco bridges for linking wildlife corridor
		II.Small Size of PA	 Formation of conservation unit with adjoining territorial forests. Enhancing sensitization of communities within ESZ for galvanizing their support in conservation activities
2		III.Lack of monitoring and data collection	Developing mandatory periodical wildlife census in various categories viz. mammals, aves, reptiles, amphibian etc. and corresponding digital datasheets for submission by wildlife staff
		IV.Fire	 Construction of new fire line in Kufri Beat Maintenance of firelines and fire protection activities Maintenance of Watch Tower Procurement of modern fire fighting equipment and protective gear Engagement of fire watchers
		V.Low capacity of staff	Regular training, refresher courses and exposure visits to staff
3	To conserve unique habitats of the Himalayan Goral and Koklass/ Cheer pheasants	I.Lack of monitoring and data collection	 Habitat mapping of Himalayan Goral and pellet count/ camera trap based census Call Count and camera trap based census for Koklass/ Cheer Pheasants Identification and delineation of hotspot habitat for Himalayan Goral and Koklass/ Cheer Pheasants Removal of acacia spp. and provide space for native grass and tree species for habitat enrichment
4	To enhance management capabilities of the staffs and otherstakeholders especially in domain of wildlife laws and census	I.Isolated working of forest, police department and other state organizations like WCCB, WII	Setting up an inter departmental coordination mechanism for intelligence sharing, detection of offences and better conviction rates.



	I NE TISIUN, UDJEU I ITES, ISSUES AND PRODLEM		
Sr No	Objectives	Constraints in achieving objectives	Strategies to Overcome constraints
		II. Overwhelming presence of specialized institutes in domain like WII, ZSI	Encouraging and incentivizing the staff through rewards and recognition for their good efforts in the domain of wildlife study and census. Gradually enhancing self sufficiency in basic census and data collection.
		III.Shortfall in census equipment	Procurement of all requisite equipment especially range finders, camera traps, digital camera
	To promote low impact	I.Small Size of PA	Regulation of number of visitors per day using carrying capacity formulation
5	high value ecotourism in the area for wildlife awareness and	II.Difficulty in sighting wildlife in Hilly terrain	Developing existing floristic/ nature trail
	education	III.Footprint of visitors	Sensitizing the visitors on do's and don't's to reduce their footprint and enforcing 'No Plastic Zone'
6	To involve local community in the management of area and create a win-win link between community based eco tourism for livelihood generation and wildlife conservation	i.Hesitancy among local community to be involved	Developing an easy to understand financially viable model for involving local community through Eco Development Committees
1		ii.Low Green Skill set for local community members	Conducting green skill development programmes for local community especially with regard to floristic and faunal diversity of catchment area so that they can act as guides for visitors
		iii.Absence of framework for involving local community	Involving local community members in Eco sensitive zone by grouping them into committees for purpose of eco-tourism



Sr No	Objectives	Constraints in achieving objectives	Strategies to Overcome constraints
	To develop a systemic research and census methodology for protected area management especially in domain of hydrology, wildlife census and floristic survey	I. Low Staff Capacity	 Training and refresher courses for staff Specialized studies can be entrusted to reputed organizations specialized in study following due procedure
7		II. Lack of adequate research studies/ works with respect to the sanctuary	 Involving research scholars doing their PhD/ MSc Research Thesis in protected area research Internship programs to involve graduates in wildlife sciences/ biology and other related disciplines in research works in the sanctuary
		I.Absence of Biologist/ Research Officer for the Protected Area	The services of biologist posted in Himalayan Nature Park, Kufri shall be utilized to coordinate the research efforts/census/ periodical wildlife monitoring
	To bridge the gap between citizen science and data collection in order to supplement	I. No institutional mechanism for integrating citizen science to protected area management	Utilizing Seog Eco Tourism society to create a network of eco clubs of various educational institutions, wildlife and bird watching enthusiasts for involving citizens in bird watching, pheasant census, floristic surveys etc
8	the research activities in the sanctuary at the same time creating foot soldiers of next generation	II. Skill set gaps for interested citizens/ volunteers	Skill development of citizens/ volunteers in domain of bird census, floristic survey through identification & data collection techniques
	36.10.40.01	III. No portal for organized data collection and analysis	Utilizing the free open source software of E-Bird for bird census and developing other cost effective mechanisms for floristic and bird surveys
	To relieve the sanctuary from	I. Low Staff capacity given scale of problem	Developing a network of volunteers for enforcing laws and conserving landscape
	anthropogenic pressure such as grazing, littering and protect the area in letter and spirit of wildlife protection act and all other forest laws	II. Low Awareness among public	 Awareness signage boards along NH-05 Periodically conducting awareness programmes and spreading message through FM radios/ social media/ newspapers
9		III. Low capacity of staff in enforcement of laws/ prosecution of wildlife offences	Capacity building through conducting internal workshops and developing SOP for steps to follow in various case situations



Table 5.1: Constraints in achieving objectives and respective strategies

PART TWO THE PROPOSED MANAGEMENT

CHAPTER - VI
THE STRATEGIES

THE STRATEGIES

6.1 Boundaries:

Shimla Water Catchment Wildlife Sanctuary is surrounded by Shimla Forest Division all around. The boundaries of Shimla Water Catchment Wildlife Sanctuary are as follows:

East: Kufri Bazar to Cast Iron Pillar No 35 along Kufri-Chail Road up to Point 2632 metres

West: From boundary of water works catchment and Tipra village private land via cast iron pillar No.79 village excluding private land of Tipra, Garhog and Bareha village upto starting point of northern boundaries.

North: Starts from entry point to Water Catchment near Dhalli and water works chowki/pumping station on Hindustan Tibet Road NH 05 then along same NH downside via Chharabra upto Kufri Bazar

South: From Point 2632 metres then separating Nahr PF inside and Patgaihar PF outside excluding the private land of villages in Nalla flowing from Kufri and Seog upto boundary of water works catchment and Tipra village private land

Ecological Boundaries:

SWC Sanctuary is surrounded by Shimla Forest Division all around. There is an area of 7.71sq km Eco Sensitive Zone around the sanctuary which acts as a buffer zone.



Map 6.1: Eco Sensitive Zone of Shimla Water Catchment Wildlife Sanctuary

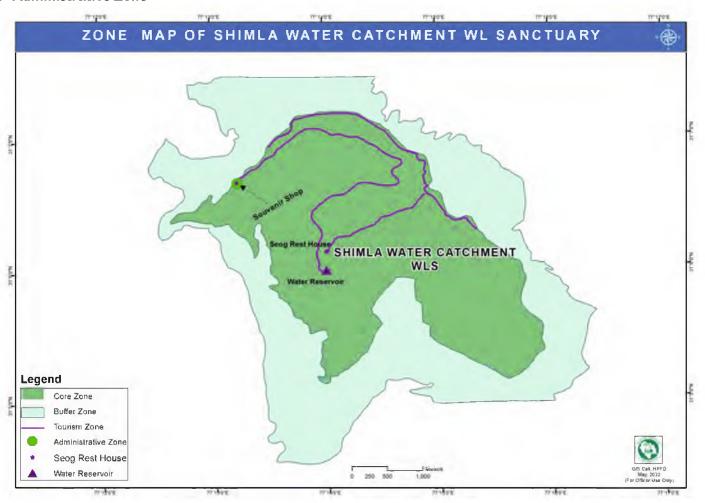
6.2 Zonation

Zonation is an essential strategy for deciding management aspects and local people's participation. A zone is a specific management area distinguishable on account of its objectives. Separate zones need to be created because some of the management objectives may not necessarily be compatible with each other. Zones cannot be managed in isolation and must relate to the functions of other zones and they must fulfil the overall objectives of Protected Area management. Management zones must be large enough to achieve the objectives proposed in that zone. The management zones need not be fixed in space or in time. Management interventions commensurate with the objectives of each zone are essential.

6.3 Zona Plans

Following zones are being proposed in Shimla Water Catchment Wildlife Sanctuary for achieving the objectives mentioned in Chapter V.

- 1. Core Zone
- 2. Buffer Zone
- 3. Eco-Tourism zone
- 4. Administrative Zone



Map 6.2: Zonation Map of Shimla Water Catchment Wildlife Sanctuary



Details ef various areas falling under each zone:

Core Zone: Entire Shimla Water Catchment Wildlife Sanctuary excluding eco tourism zone and administrative zone

Buffer Zone: Co-terminous with the notified eco sensitive zone of Shimla Water Catchment Wildlife Sanctuary

Eco-Tourism Zone: Includes the 4 trek paths/ nature trails in the PA which is accessible for visitors for purposes of eco-tourism along with Seog Forest Rest House, Souvenir Shop and Ticket Window at the gate

Administrative Zone: Headquarters including Range Office, Meeting Hall and Parking facility at the entrance gate

6.3.1 Core Zone

The following regulations are prescribed for the management of Core zone which extends as per the above given map.

- 1. Protection measures to be given highest priority in the Core zone.
- 2. The sanctuary boundary areas to be demarcated and construct missing boundary pillars.
- 3. High restriction on visitors in the core zone except unless the area is mentioned in eco-tourism zone.
- 4. Forestry manipulation of the habitat such as Invasive weed management, Fire Protection and Waterhole Management are allowed as part of scientific management practices.
- 5. Scientific research, monitoring and evaluation of wildlife management are permitted inside the core area with the permission of Chief Wildlife Warden.
- 6. Regular monitoring and data collection with respect to wildlife population and habitat quality to be performed.

6.3.1.1 Programme of Activities

- 1. Protection of forest and wildlife in the sanctuary.
- 2. Demarcation of activities.
- 3. Improvement of general habitat for wildlife including conserving of soil, water and soil moisture.
- 4. Special concentration on conservation of targeted species like Himalayan Goral and Koklass/ Cheer Pheasant
- 5. Capacity building, training and providing improved field accessories.
- 6. Fire Protection especially in the lower elevations and pine zones.
- 7. Monitoring and data collection.



6.3.1.2 Works under Programme of Activities

a. Work under Programme of Protection

Protection is of the highest importance in Shimla Water Catchment Wildlife Sanctuary given the presence of NH-5 and human settlements/ tourist establishments in the zone of influence. In order to protect the PA from several extraneous influences like debris dumping, littering, grazing, lopping, encroachment and illicit felling, the staff would regularly patrol individually and intermittently jointly. A special focus of staff in this regard should extent to the NH-5 and regulating the heavy tourist pressure and enforcing laws of wildlife sanctuary in terms of littering and debris dumping in this area. Further, as large part of sanctuary perimeter touches human settlements or areas of tourist establishments, the staff shall keep special focus on prevention of encroachments and shall use powers devolved to them under Indian Forest Act, 1927 and Wildlife Protection Act, 1972 to act swiftly upon encroachments.

As the capacity and number of staff is limited, voluntary protection committees shall be formed given the presence of enthusiastic and wildlife sensitive citizen network in Shimla. This may also include children and youth who can become foot soldiers in protection of sanctuary. They may patrol the NH, educate the visitors on various do's and don'ts and prevent littering in Protected Area premises.

b. Work under Programme of Demarcation

Shimla Water Catchment Wildlife Sanctuary has a total No of 173 boundary pillars which demarcates its boundary. Out of these 173 boundaries, 32 pillars are missing which should be identified, reconstructed and records of same need to be maintained at range and division level. The details of missing boundary pillar including GPS location is annexed vide appendix 10. Boundary pillars of iron as currently established in the sanctuary should be erected as per this list after demarcation wherever required to prevent encroachments and secure forest area. Beat maps showing clear boundaries should be maintained.

The boundary of the sanctuary maintained clearly in the ground. In order to achieve the same, it is prescribed that existing boundary pillars be maintained and area around existing Boundary Pillars be cleared so that the iron pillars are easily visible. This will be done by periodic boundary patrol as well as maintaining very conspicuous iron pillars and construction of new pillars and replacement of damaged ones if needed. The boundary needs to be perambulated by Forest Watcher and Forest Guard at least once in a week, Forester once in a month and Forest Range officer once in three months.



Image 6.1: Iron boundary pillar currently installed in sanctuary



c. Work under Improvement of Wildlife Habitat

The entire sanctuary area is covered by 25 streams, the rejuvenation and conservation of which forms the focal point of wildlife habitat improvement. For this purpose, all major streams are identified in each beat. The macro water shed areas; mini-water shed areas and micro water shed areas are demarcated for each major stream. Crate wire structures and dry stone Check dams/ check walls will be constructed in the water shed areas wherever necessary.

As the terrain of the area is hilly, there is need for periodical removal of Silt especially from water retention structures. If any spring occurs inside the watersheds, that spot will be developed as a waterhole and periodically de-silted. In order to reduce the inflow of silt in water ponds, stone pitching or stone soiling can be done. It is necessary to carry out repair works and improvement of existing check dams and percolation ponds for sustained use of soil moisture conservation structures.

It is proposed to construct new concrete Water Harvesting structures in Churat and Kufri beats in order to further year round availability of water for wildlife and enhance wildlife fitness.

It is prescribed to remove Acacia spp. and provide space for native grass and tree species like Arundinaria falcata to enrich wildlife habitat and fitness.

In Seog beat Compartment No 19, there are open areas in Chil Pine Zone. This area has potential for oak and broad leaf species. It is thus prescribed to undertake plantation in this area of broad leaved species to enrich wildlife habitat for frugiovorous and browsing species.

d. Works undor the programme for conservation of targeted species like Himalayan Goral and Koklass/Cheer Pheasants

The sloppy grasslands in sanctuary would be conserved for Himalayan Goral. During breeding season of these species, entry timings for visitors would be regulated for minimal disturbance. In order to protect and conserve their habitats, necessary efforts in terms of protection from wildlife offences and fire would be taken up. Annual census would be conducted for these two species using methodology of pellet count, transect walk and camera trapping for Himalayan Goral. Similarly, point sampling and call count from identified stations would be taken up for annual Koklass/ Cheer pheasant census. The habitat of these species would be identified and mapped through the same exercise. In order to encourage herbivore population especially gorals, there is need to restore and maintain grassland patches and regularly monitor them. Plantations should be strictly avoided in these grassland patches.

e. Capacity building, training and providing improved field accessories

The new forest staffs managing Protected Area are educated and have sufficient technological acumen. This should be utilized to ensure their maximum contribution in domain of wildlife census and wildlife habitat mapping. In this domain, they should be imparted all basic training in wildlife census like transect walks, data sheet based data collection, pellet count, point sampling, encounter rate, vegetation sampling, camera trap based census, pugmark census etc. A mobile application can be developed that facilitates data collection and



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data analysis through data input by field level staff. In order to enable them to perform this, there is also need to ensure they are sufficiently equipped with basic tools such as GPS devices, camera traps, range finders etc.

Further, the staff capacity needs concerted focus in the domain of prosecution and booking of offences. Currently, although legal powers are entrusted to forest officers, they sparingly use them because of lack of knowledge in procedure. Hence, they end up taking the help of police department in lodging FIRs. This equation needs to be changed and forest personnel should be imparted all necessary training in booking and prosecution of wildlife offences.

f. Fire Protection especially in the lower elevations and pine zone

These activities are to be focused in that part of the sanctuary which is most prone to forest fires because of the Chir Pine trees, the needles of which are highly inflammable. In sanctuary, the fire prone areas fall in lower elevations of Seog and Churat beat as represented in fire vulnerability map.

In order to mitigate fires and protect the wildlife habitat from wild fires, the following activities are to be taken up diligently:

Creation of Fire lines

There is a need of fire line in fire zone so as to avoid loss of natural habitat of various animals and plants. It is proposed to create a new fire line in Kufri beat in fire vulnerable area. There is a need to map all the fire lines and ensure they are sufficiently spread out to safeguard various patches of forests.

Collection of debris

The fire zone should be cleared of fire wood, dried biomass to avoid fires. There needs to be periodical maintenance in clearing fire lines and bridal path of fuel to ensure fire breaks are functional.

Participation of communities

Forest are the only source of oxygen and forest fire cause damage to whole forest ecosystem . This can be reduced by awareness and education of masses, restriction on activities that can lead to fire and participation of communities.

Firewatchers can be engaged from local community and rewards/ incentives can be given for community in case of zero fire incidents.

• Rapid response team

Should be created to prevent and control forest fires. They should be well equipped with fire blowers, water pumps, protective gear and all necessary equipment to fight fire. The Rapid Response team should have a composite nature of field staff and local community

Equipping Staff

Modern day fire fighting involves the use of various fire fighting tools and protection equipment. The following tools are recommended for the wildlife staff at Shimla Water Catchment Wildlife Sanctuary:



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Tools	Purpose
100.0	1 41 7333
Binoculars	For the fire watch stations
Darats	For scraping and maintaining fire line
Long blade knives	For cutting of trees, branches, weeds etc.
Power Chain Saws	For cutting burning trees
Fire beating brooms (to be locally made from vegetative materials/	For beating out the fire
Hunter shoes/caps	For the fire fighters
Fire resistant cloth	For the fire fighters
Water cans	For fire fighting as well as for meeting water requirements of fire fighters
Leaf Blowers	For firefighting in grass lands

Table 6.1: Fire fighting equipment prescribed for Staff

Activities Permitted in the core zone

- I. Total protection against all forms of biotic interferences shall be ensured.
- ii. Only scientific studies and research activities with proper permission from head of department and not involving destructive sampling techniques shall be permitted.
- iii. The core zone will be free from usual forestry operations. Similarly, grazing, fuel wood collection and NTFP collection are prohibited.
- iv. Only regular habitat maintenance / protection works like clearing fire lines, maintenance of existing roads, trek paths, buildings, check dams, water holes, soil and moisture conservation works apart from monitoring activities will be permitted.
- v. Manipulation of habitat in this zone for any purpose is prohibited except otherwise prescribed. Even removal of dead and wind fallen trees are also prohibited.
- vi. Tourism shall not be allowed except in demarcated eco-tourism zone
- vii. New roads shall not be formed. Existing roads shall however be maintained as kaccha path.
- viii. Construction of buildings for any purpose is prohibited expects raising watch towers for the purpose of monitoring
- ix. Administrative sign boards prepared in camouflaged colour which would blend with the environment should be maintained.



6.3.2 Buffer Zone

The Buffer Zone of Shimla Water Catchment Wildlife Sanctuary is created for purpose of shock absorbing of various biotic and anthropogenic pressures. In this regard, it is prescribed that the eco-sensitive zone notified for Shimla Water Catchment sanctuary notified vide notification No.1647 dated 08 June 2017 shall be the buffer zone.

The Buffer Zone shall be regulated as per eco sensitive zone notification of Shimla Water Catchment Wildlife Sanctuary as well as the Eco Sensitive Zone master plan that is prepared by the Monitoring Committee constituted under the notification. In this regard, it is prescribed that activities in this area are classified into prohibited, regulated and encouraged as per the notification. The same is mentioned in Chapter XII: Eco Sensitive Zone.

6.3.2.1 Programme of Activities

- a. Cleanliness drives for clearing litter and preventing habitat degradation
- b. Coordination with territorial forest department for managing linking wildlife corridors to the sanctuary
- c. Coordination with Special Area Development Authority, Local bodies and other line departments to manage dependence on forest resources and safeguarding of wildlife habitat
- d. Awareness drives involving self-help groups, mahila mandals, eco clubs, school students
- e. Providing framework to channel Corporate Social Responsibility funds from nearby tourist hotels and enterprises for wildlife conservation and development of eco-tourism infrastructure

6.3.2.1.1 Works under Programme of Activities

a. Cleanliness drives for clearing litter and preventing habitat degradation

The buffer zone of the sanctuary involves several human settlements, villages and Kufri town which can provide valuable manpower to organize cleanliness drives in sanctuary and surrounding area to manage the litter pressure and safeguard habitat quality by removing the litter.

b. Coordination with territorial forest department for managing linking wildlife corridors to the sanctuary

The sanctuary is surrounded by forests of Shimla Forest Division all around. Further, as per eco sensitive zone notification of the PA, DFO(T) Shimla is the Member Secretary of the monitoring committee of eco sensitive zone. Hence, the coordination with territorial department for managing the corridors, securing them and minimizing diversions for non-forest purpose is crucial.



c. Coordination with Special Area Development Authority, Local bodies and other line departments to manage dependence on forest resources and safeguarding of wildlife habitat

The coordination with SADA is mainly with regard ti regulation of tourism and waste management in the buffer zone. The local bodies and line departments are crucial as they implement several development programs like construction of toilets, houses, fodder provision for livestock, provision of electricity and cost-effective energy. The department should coordinate with them to ensure the timely implementation of such programs that reduce dependence of communities on the sanctuary.

d. Awareness drives involving self-help groups, mahilo mandals, eco clubs, school students

The buffer zone has good potential of wildlife awareness and education. In this regard, guided treks, bird watching, competitions and other awareness programs can be conducted for the groups in buffer zone so that they are made aware of wildlife potential.

e. Providing framework to channel Corporate Social Responsibility funds from nearby tourist hotels and enterprises for wildlife conservation and development of eco-tourism infrastructure

The buffer zone has presence of renowned corporate groups in field of tourism and hospitality. It is proposed to arrive at a framework of CSR to channel funds into PA management. A list of activities for such CSR needs to be identified on priority. It can include aspects like provision of waste baskets to road side venders, dumpers on NH-05, visitor amenities, awareness pamphlets/brochures, eco development activities etc.

Activities Permitted in Buffer Zone

The detailed prescription for prohibited, regulated and promoted activities shall be same as defined in eco sensitive zone notification. The same is provided in detail in the eco sensitive zone chapter.

6.3.3 Eco Tourism Zone

The Eco Tourism zone in sanctuary is restricted to the 4 trek paths that are open for visitors for wildlife awareness and education purpose. Further, the heritage building of Seog Forest Rest House, Ticket Window and Souvenir Shop are also prescribed to be part of this zone.

It is prescribed to have a philosophy of low foot print high value eco-tourism where visitors leave little impact on ecosystem but they gain substantially in terms of wildlife awareness and environmental consciousness. The activities prescribed in ecotourism zone consists of nature walk, cycling (only along 7 km trail from Dhalli to Seog), bird watching and low emission vehicle/golf cart based safari (only along above mentioned 7km trail).

The organizational unit of implementing eco-tourism activities shall be the Seog Eco Tourism Society and Eco Development Committees constituted under it. The Chamyana Panchayat and Mahila Mandal Malothi would be initially involved in the formation of such eco development committees as they are villages adjacent to the Protected Area and benefits from ecotourism should equally benefit them and improve their living standards. The EDCs so formed shall be vested with responsibility to carry out eco-tourism activities especially guided nature walks/ safaris for the visitors thus creating a framework of community based eco-tourism for livelihood creation and enriched high value tourism experience for visitors.



6.3.3.1 Common Programmo for Eco Tourism

- 1) Whenever there is forecast for heavy rain/ snow the eco-tourism activities temporarily halted as a safety precaution taking into consideration the prevalent weather conditions
- 2) Field staff and EDC members who are looking after Eco tourism activities shall be provided training on safety measures and handling disastrous situations like flash flood, fire and sudden rain etc., ctuary as a state of the art eco-tourism initiative in the landscape for visitors from far and wide.
- 3) Community members, school students will be taken to eco-tourism site as awareness programme on special days like World Environment Day, World Forestry Day, International Biodiversity Day, Earth Day, Wildlife Week etc.
- 4) Field staff and EDC members involved in eco-tourism management shall be given training on reception, catering and hospitality skills apart from training on flora, fauna and history of Shimla Water Catchment Wildlife Sanctuary
- 5) Eco Tourism activities shall commence from early morning especially with regard to bird watching/ wildlife sightings given the greater probability of sightings during morning hours. However, the same shall be regulated during breeding season.
- 6) The Seog Eco Tourism Society shall enter into a formal understanding with EDCs on revenue sharing from eco-tourism activities.
- 7) The Eco Tourism activities shall be capped by carrying capacity calculated and formulated as per existing NTCA guidelines. The same shall be detailed in eco-tourism chapter.
- 8) Wildlife education signage along the nature trail shall be developed to enrich visitor experience.
- 9) In order to enhance visitor experience and spare forest staff for wildlife management, certain services like cycling and parking facilities may be outsourced.
- 10) It is prescribed to create a network of eco clubs of various educational institutions, wildlife and bird watching enthusiasts for involving citizens in bird watching, pheasant census, floristic surveys etc. to create a brand of catchment area as an urban protected area with thriving flora and fauna. Various groups of such eco clubs shall visit the catchment area for bird watching and wildlife safari walks in coordination with staff.
- 11) Developing Flora Trail for Eco Tourism: In areas zoned for eco-tourism, there is a great diversity of flora in sanctuary that can be invaluable from perspective of flora education and awareness to the young generation that is fast growing unaware of the native flora diversity and nomenclature. This underutilized potential can be tapped by developing flora trail with adequate signage and developing an application detailing unique aspects of various flora and its medicinal values.
- 12) It is prescribed to create Catchment Area ambassadors in order to further the popularity of the area among local population. They can be made the nodal persons for coordinating wildlife awareness and education activities



6.3.4 Administrative Zone

This includes that portion of protected area which hosts the Office of the Range Forest Officer, Meeting Room and Parking facility. This zone would be managed with perspective of carrying out office work and holding meetings between staff of forest department in order to carry out Protected Area Management activities. It is proposed to create a multi-storey building adjacent to the present Range Office which can function as Range Forest Officer Residence.

6.4 Theme Plans

Protection Management

Habitat Management

Human Resource Development

6.4.1 Protection Management

Protection in the wildlife sanctuary is accorded the highest priority given the multifarious threats to wildlife and its habitat. These threats are in the form of littering, debris/ muck dumping, horse/ cattle grazing, possibility of encroachment, illicit felling/ lopping etc. The following strategies are prescribed for controlling these threats and ensuring the sustenance and ecological integrity of the protected area:

A. Patrolling

Regular patrolling is must for effective protection of valuable flora and fauna of the Sanctuary. Patrolling should focus on more vulnerable areas where there are chances of littering, debris dumping, encroachment, kindling of fire, lopping etc. It is prescribed to prepare a vulnerability map prepared with seasonal variation for each beat. As the chance of offences is generally higher along the perimeter of the protected area, patrolling should focus on this area.

Night patrolling should be encouraged and should be done regularly by field staff. Instead of individual patrolling in beats, joint patrolling is prescribed in sensitive parts of the protected area. A robust intelligence network at the ground level of informers must also be created for fast relay of information. Such informers should also be rewarded through a reward mechanism in their efforts of protection. As per Section 60 (A) subsection (2), rewards may be provided to persons rendering assistance in protection from corpus of fine levied on them (maximum 50 percent) for offences that are compounded under Section 54 of Wildlife Protection Act.

Field staff should be exposed to the laws of Indian Forest Act (1927), Wildlife Protection Act (1972) and understand the do's and don'ts upon booking an offence. In this regard, there is need for training on procedures of booking wildlife offences, drafting offence report, handling of evidences, charging of offences under various sections of wildlife and forest laws etc.

B. Protection from Littering

One of the biggest threats to sanctuary is litter pressure from adjacent NH-05 vendors and tourists. In order to resist this, there is a need for selective fencing in adjacent areas where litter pressure is high. Periodical clean up drives including local NGOs, community with Seog Eco Tourism Society can



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greatly help in relieving sanctuary of litter pressure. Field staff should regularly patrol the NH-05 stretch and impose fines to foster deterrence to littering. It is prescribed to have adequate number of signboards on Dhalli-Kufri road that declares adjacent area as sanctuary area and prohibiting littering subject to fines. In addition to this, voluntary protection committees - 'Swaicha Sanrakshan Samiti' -involving the youth and students can be formed to keep a check on littering by visitors and educate tourists along the Dhalli-Kufri highway.

C. Fire Protection

At present there is need of fire protection equipment, maintenance of fire lines, employing of fire watcher during fire season and controlled burning which will act as fire break. Apart from this, the PA staffs shall be equipped with fire fighting tools and fire protection equipment. Detailed fire protection measures are already mentioned in zonation sector where fire zone has been carved out for easier management.

D. Selective Fencing of Area

It is prescribed to have selective fencing of the area to minimize the threat of litter/ debris/ muck dumping in the protected area. It is prescribed to keep the conservation unit as open as possible in order to ensure functionality of wildlife corridor linking both sides of NH-5. Selective fencing would also act as a mitigation measure to trespassing of horses or cattle into the sanctuary.

E. Coordination with Governmental & Non-Governmental Agencies

There are several organizations including WCCB, TRAFFIC, WWF and other such NGOs or governmental agencies that work in the field of wildlife crime and wildlife protection. A platform for coordinating with such agencies to understand wildlife crime network and associated vulnerability of sanctuary within the network is to be developed. It is thus prescribed to set up such a coordination mechanism with aforementioned agencies in order to take preventive action for wildlife protection.

F. Organizing an Intelligence Network

Forewarned is forearmed. All enforcement work demands that precise advance information is available before any action is initiated. Wildlife authorities need a well-organized intelligence network.

Intelligence is evaluated information useful for decision making. Thus the base for generation of intelligence is credible information. This information has to be collected, sifted, collated, analyzed and evaluated before it becomes intelligence. An intelligence network should deal with all these stages of processing information. Information could be gathered from open published material and through confidential channels employing agents or sources. Information flow should be established from the field formation from the people and from open sources. Over and above these, confidential sources and agents are to be raised, trained and placed in position to enable us to get information which, will be known only to a few.

The Asst. Conservator of Forests posted at division level will head the intelligence cell. For this purpose ACF, Rangers should have intelligence experience.

As a long term measure selected forest officers should be deputed to, undergo operational training in intelligence technique and field craft. This training could be organized with the assistance of Central Intelligence Bureau and State Police Intelligence.



The use of informants is a key component of any intelligence system. If used well, informants can determine the final result of an investigation. Developing an informant, using his information and keeping the informant over a number of years is a vital skill.

Setting up a system of information gathering analysis and evaluation is the most important facet in anti-poaching or anti-smuggling. The procedure for setting up an intelligence network is as follows.

Collection

- The collection of information must be carefully planned, co-ordinated and directed against a specific target or gaps in information. It must be reviewed at different stages of the process.
- Overt collection of information can be through investigators, law enforcement agency records and from other sources.
- Covert collection of information can be through physical or electronic surveillance, informants or undercover agents.
- Collection of data must be done in accordance with the laws of the land.

Evaluation

- All information must be verified by an independent source if possible.
- Credibility ratings must be given to each item of information.
- Decide on the leads to be followed up.

Collation

- A filing system with cross-referencing and cross-indexing should be set up.
- A coding system for this should be worked out with emphasis on quick recovery of data.
- Useless and incorrect information should be sifted out.

Analysis

- An analyst must re-assemble the investigators data.
- Preliminary hypotheses from this must be reviewed.
- Close contact must be maintained.
- The following points should be kept in mind while running an intelligence network.

Location

- The network should be headquartered at a place where the transfer of information to the recipient agencies is easy.
- The security of the location is the paramount.



Staff

- The network should preferably be run by a small, efficient autonomous unit.
- Integrity, capability and personality are crucial in all staff.
- Investigators must be experienced, motivated, capable of taking initiative and of interpreting factual accuracy.
- Analysts must be intelligent, logical and precise.
- Specialist analysts should be used for certain skills such as legal issues, identification etc.,
- There should be one head of the unit with complete responsibility.

Training

- The value of good observes and good reporters should be made clear.
- The complexity and sophistication of organised crime must be emphasised.
- The goals of the unit must be made clear.
- Basic training in identification of species and products should be given.
- Use of the intelligence gathered methodology of collection and analysis, new developments in collection techniques, court matters etc., must be explained.

Security

- Background investigation should be conducted on every new unit member, periodic updates must be undertaken.
- Entry to the intelligence area should be restricted.
- Files and computers must be physically and electronically protected. Duplicates must be maintained at two locations.
- Phone lines, computer lines and all means of communication should be checked at periodic intervals.
- Security is not an end in itself. It should not be used to conceal mistakes, corrupt activities, etc.

Potential sources of Information

- Informants
- Crime scene investigation
- Documents (Judicial, official, contracts, deeds, certificates, letters, books, memos etc.,)
- Business and service agencies (Banks, Hotels, Tax agencies, Telephone, Credit, Insurance etc.,)
- Law enforcement agencies
- General publications (newspapers, magazines, telephone and business directories etc.,)
- Surveillance



G. Rewards for Providing Information

A credible reward system is the sheet anchor for generation of information. There is need to establish and operate a cash reward system for providing information. Rewards should be just, appropriate and made on the spot. As is being done in the Customs Department payment of rewards should vary according to the value of the item covered by the information. Payment should be delinked from the disposal of cases in the courts. Rewards should be paid to all giving the information including forest and wildlife officials. Cash rewards should be payable for:

- a. Information leading to the seizure of wildlife products and arrest of the offenders
- b. Information leading to successful prosecution of cases in courts: and
- c. Information pertaining to the organization modus operandi and other details of gangs indulging in wildlife trade

Range Forest Officer in charge should be provided with a permanent advance for payment of cash rewards. They should be encouraged to make spot payments according to a predetermined scale. The amounts spent are to be recouped promptly. At the time of inspection, senior officers should look into this aspect of work to evaluate the performance of field staff.

H. Collection of Data

Range Forest Officer in charge of the protected area will be directed to report once a fortnight in respect of Schedule 1, Schedule 2 animal's details about:

- a. Occurrences of death Whether due to natural or un-natural causes;
- b. Incidents of poaching and attempts
- c. Seizure of products related to these species
- d. Cases registered/disposals if any in the Courts
- e. Encounters with poachers/casualties to wildlife staff and
- $\label{eq:continuous} \textbf{f.} \quad \textbf{Details of natural calamities affecting the habitat.}$
- g. A computerized format will be devised and information will be relayed through NICNET.

CRIME SCENE SEARCH

If a wildlife crime has been committed, an important starting point to the investigation is searching for evidence at the scene of the crime. The following steps are recommended.

- 1. Isolate scene with rope or tape.
- 2. Keep written notes or audio/video recordings
- 3. Take photos
- 4. Sketch area and positioning
- 5. Search for evidence
- 6. Take footprints of animals and humans in the area
- 7. Collect evidence
- 8. Search for wounds or marks on the animal.



How to search for evidence

Use one of the methods given below to maximize efficiency.

- 1. Start searching point-to-point in a straight line.
- 2. Divide area into quadrants. Search one quadrant at a time.
- 3. Cover the area in a spiral manner.
- 4. Send your personnel from point to point and then back again.
- 5. Send your personnel in a radial manner from the centre of a supposed circle.

Collection of evidence from crime scene

• Collecting evidence from the scene of a crime has to be done in a scientific and precise manner in order for the evidence to have some use in the final investigation. The following evidence is commonly available at poaching site.

Foot print / Pugmark

- Photograph print before taking impression
- Put glass on the print. Sketch from above.
- Your eyes must be at 90o to the print in order to avoid parallax error.
- Fill print with plaster of paris. Allow it to dry and collect the cast.

Blood

- Collect blood from animal's body using a dropper into a test tube. Seal it tight with a cork;
- If blood is found on soil, collect blood with soil in a test tube and seal it.
- Collect soil without blood from the scene.

Hair

- Use forceps to collect hair for evidence.
- Do not bend hair while collecting.
- Collect hair from the root if possible.
- Place in a plastic bag (not paper envelope). Seal and label it.

Fair Arms

- Use gloves to pick up the firearms.
- Do not insert any object in to barrel of the gun.
- Note position of lock, hammer and catch and do not change it.
- Note if gun has been fired or not.

Finger Print

- Photograph fingerprints before lifting them.
- If fingerprint tape is available use it to collect print.



Bullet

- Take out bullet from animal's body without scratching it. Place it in a paper bag. Seal it and label it.
- Cartridge cases found outside should also be collected in paper bags, sealed and labelled.
- In case bullet is embedded in hard object, cut around the bullet and place the whole block in a paper bag. Seal it and label it.

Photograph

A photograph is useful evidence. On it should be date, time, place of incident, brief description, name & signature of photographer. Always place a case no or some other identifier in each picture along with ruler or something that references size.

Conducting a Criminal Investigation

 Once the evidence on the scene of the crime is collected, the next step is to conduct a criminal investigation into the crime. Remember that for an investigation to start, a crime need not have been committed and this could be the beginning of an effort to foil the crime. For simplicity you can divide the investigation into five phases.

1. Intelligence gathering

- Try and identify the suspects.
- Through various sources, determine the scope of activity of the suspects.
- Documents and validate all the intelligence information gathered.
- Analyse the intelligence reports.

2. Decision to conduct the investigation

The final decision to conduct the investigation must be taken after the background intelligence has been analysed. At this stage, you can decide to close the case if background information so indicates.

3. Planning the investigation

- Is there sufficient manpower?
- Who will supervise the investigation?
- Who will co-ordinate the investigation and serve as the "team leader"?
- How many investigators/officers are available to provide for surveillance, evidence analysis, and technical support?
- Is the equipment available adequate and well maintained?
- Are there arrangements for the storage of evidence?

4. Implementing the plan

- Always remember to:
- Stay flexible.
- Continue to update your intelligence.
- Continue to identify your defendants, suspects and charges.
- Gather, label, analyse, evaluate and secure your evidence.
- If needed obtain and execute arrest warrants, summons, search warrants.
- Conduct interrogations; take confessions in presence of two independent witnesses.



Brief lawyer of the accused and inform his/her family.

Produce in court within 24 hours.

•Release synopsis of the investigation to the media.

Prepare and submit your evidence.

5. Evaluate your results

Ask yourself what finally was accomplished. Evaluate if investigation has been a deterrent to future illegal activities and if, due to the case, more update and accurate intelligence is available.

I. Prosecution Procedures

Search/Seizure

The power of entry, search, arrest and detention are conferred under section 50 of the WPA. Police officers not below the rank of Sub-inspector have also been authorized under this section.

Investigating officer should search the suspect, his premises and his vehicle. If prima-facie evidence of contraband is found, seize them and place them in safe custody, then arrest the suspect. A receipt of such said articles be prepared and copy thereof be given to such person in the presence of two or more independent witnesses, and whose signatures should be obtained. The arresting officer should forthwith communicate to such persons the full particulars of the offence as well as the grounds for such an arrest.

Production

Immediately after the arrest, the concerned officer must produce the arrested person and the articles seized, within 24 hours, before the concerned Magistrate. Any person can also help law enforcement by acting as a law enforcement officer in case the crime is committed in front of the said individual. In this case private individuals can arrest, search and seize (u.s. 41 CrPc) and file provided the offence is cognizable and non-bailable.

Non bailable/bailable offence

Offences which are cognizable and punishable with imprisonment for three years or more are non-bailable and ones which are less than three years and non-cognizable are bailable.

Conditional bail

Prosecuting officer in the event of grant of bail to an accused must ensure that the court in its order imposes a condition that the accused shall not commit an offence similar to the offence which he is accused of. Such a condition would be deterrent for the accused to further commit such offences and expedite the cancellation of bail already granted in case the accused commits another offence under the WPA.

Confession

Law does not permit recording a statement whether confessional or otherwise of an accused except on the presence of the designated Magistrate.

Recording statements as evidence (as per Section 50(8) of WPA)

- a) Any officer not below the rank of Asst. Conservator of Forests is authorised to record statements of witnesses as evidence.
- b) Statement of the witness is recorded in the presence of the accused.



- c) Accused is given an opportunity to put questions, if any to such witness.
- d) Witness to sign such statement.
- e) If the accused agrees then his signatures be also appended.

Complaint

A complaint is, any allegation made orally or in writing to a Magistrate, with a view to his taking action under CRPC against some person, whether known or unknown who has committed an offence. A complaint under WPA is made under Section 50(4). Such complaint can be filed only by authorized officers under section 55 of WPA. Members of the public can also file a wildlife court case by following the procedure under section 55©.

Format of complaint

Law has not prescribed any specific format for drafting a compliant.

Contents of Compliant

Compliant must specify clearly detailed description of events, the source of the information; the enquiries made along with names of persons, places and details of the evidence collected, the instrument/weapon used.

Forensic certificate

A document certifying the species of the animal / skin / animal article or plant seized is an essential ingredient of the documents that need to be filed in the Court.

Power to file a compliant

- a) The director of Wildlife preservation or any other officer authorised on his behalf by the Central Government; or
- b) The Chief Wildlife Warden or any officer authorised on his behalf by the State Government; or
- c) Any person who has given notice of not less than 60 days, in the manner prescribed of the alleged offence. (Section 55 of WPA). The prescribed format has been appended under Wildlife Protection Rules, 1995.

Authorisation to file complaint

Complaint may be filed by any officer authorized by Chief Wildlife Warden or any other officer authorized by state government under Section 55(b) of WPA.

Role of Honorary Wildlife Wardens

Para 16 of Guidelines for Appointment of Honorary Wildlife Wardens stipulates that suitable Honorary Wildlife wardens can be authorized to file complaints in courts. Honorary Wildlife Wardens should consult Chief Wildlife Warden of their state in this regard.

The following are steps in the prosecution of a wildlife criminal

Power to enter, search any premises, vehicles, etc., and seize any wild animal article etc., (Section 50 of WPA). Power to stop, detain or arrest any person without warrant (Section 50 WPA).

Recording of statement of the witness to the offence by Assistance Director of Wildlife Preservation or by Wildlife Warden (Section 50 (d) of WPA).

▼o produce the arrested person and articles seized before the concerned Magistrate (Section 50 (g) of WPA).



Bail/Conditional grant of bail (Section 437(3) (b) CrPc.).

Authorisation to file complaint (Section 55 of WPA).

Filling of complaint (Section 55 of WPA read with section 190 (CrPc).

Examination of the authorised person presenting the complaint to be dispensed with (Section 200 CRPC).

Issuance of warrants/summons by Magistrate to the accused along with the copy of compliant (section 204 Cr. Pc)

Recording of Pre-charge evidence (Section 244 CrPc.).

Framing of charge (Section 246 of CrPc).

Accused to state whether pleads guilty or not guilty of such charge (Section 246(2)) of CrPc).

Accused pleads not guilty, then witnesses whose statement had been recorded earlier to be summoned for cross examination by the accused (Section 246(4) CrPc).

Accused to enter upon his defense and produce his evidence (Section 247 CrPc).

Examination of the accused by court. Accused has right to refuse to answer such questions (Section 313 CrPc.).

Submission of arguments (Section 314 Crpc.)

Judgement: acquittal or conviction of the accused (Section 248 Cr.Pc)

Submission of arguments or quantum of sentence, in event of conviction (Section 248 Cr pc).

Pronouncement of sentence/fine by court (section 248 CrPC) in presence of accused. Accused to be sent to jail to undergo sentence.

Appeal.

Disposal of Confiscated Specimens

An important element of a seizure is the disposal of the seized contraband. In most cases, this can be done only after the final court proceedings are completed. In other cases, especially when it is live animal, different procedures must be followed.

Options of disposal following due procedure

a) Dead Specimens, parts and Derivatives:

Donations to museums and forensic labs, for scientific research.

Use for training and educational purposes.

6torage.

Destruction: This is the recommended option. Display of wildlife articles can encourage demand.

b) Live Specimens

Return to country of origin.

Fransfer to a rescue center / Zoo.

Return to the wild.

Euthanasia.

If a live animal or plant is involved, remember that the survival and the security of the animal or plant should paramount.

Seizures of wildlife should be brought to the attention of wildlife officers as soon as possible. Decisions of disposal should be made in agreement with the management authority.



6.4.2 Habitat Management

The habitat management theme in Shimla Water Catchment Wildlife Sanctuary is mostly linked with retention of water, soil conservation, and rejuvenation of non-functional streams, removal of weeds / exotic species and sustenance and maintenance of grasslands. These measures would substantially enrich wildlife habitats and lead to prospering of more fauna in the protected area.

6.4.2.1 Soil and Water Conservation Measures

All drainage lines/ streams in sanctuary should be dynamically mapped and water ponds creation shall be followed up with camera trap monitoring to ensure that wildlife are utilizing the created water holes/ ponds. The water ponds/holes should be adequately spaced to ensure that fitness needs of wildlife are met.

Several streams of the protected area have become seasonal or are non-functional for large parts of year. This indicates that water retention capacity has substantially reduced in the PA. In this context, there is a need to limit run off and retain water for longer periods within the sanctuary. This would make available more water for species and contribute to better fitness of wildlife in the area.

In this context, it is critical that all water sources and aquifers in the area be identified as an initial step towards rejuvenation of water sources. As the work involved is highly technical in nature, it is prescribed to involve a hydrologist / geologist and the Jal Shakti Vibhag in the identification of water sources and delineation of spring shed. The spring shed so identified and delineated needs to be treated so that water sources in the area are reclaimed and streams in the sanctuary are functional for larger periods in the year. In order to achieve the same, it is prescribed to construct percolation ponds at sites selected in consultation with Jal Shakti Vibhag and as per technical advice provided by hydrologist/ geologist for retaining water and treating spring shed.

Further, staggered trenches are proposed in order to better water retention capacity of the protected area. Grass sowing can be done at the berm of staggered trench structures given the steep terrain and chances of siltation. These trenches would also have to be maintained and desilted so that they remain functional for water retention. In order to limit soil erosion and run-off in the area, it is proposed to construct several check structures in the form of crate wires, dry stone structures in the areas of sanctuary taking into factors the slope gradient, threat of erosion, water run-off from the area etc.

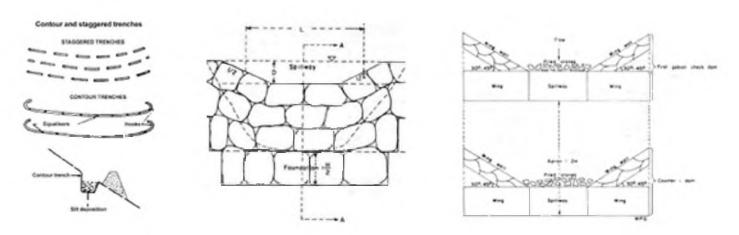


Diagram 6.1: Prescribed soil moisture conservation structures





The following measures are prescribed in the Protected Area to ensure soil and water conservation:

Crate Wire Structures to treat drainage lines of various streams

Staggered trenches with grass sowing along the dug out soil bed

De-siltation of existing water holes retaining their saucer shape in order to ensure their capacity remains utilized and sufficient for wildlife

Dry stone check dams with concrete foundation in order to regulate the flow of water and save nutrient rich top layer of soil

Stone pitching of boundary perimeter of existing water holes to regulate the flow of water and reduce siltation rate

A concrete water harvesting structure is proposed to be created in Churat beat for wildlife given its rich potential in terms of water discharge and drainage

Weather stations are to be installed in Seog beat of sanctuary adjacent to the forest rest house to evaluate the rainfall trends and change in climate over the years





Image 6.2: Weather Station: Representative Image and Diagram

6.4.2.2 Removal of invasive/Exotic Species

The 7 km trail from Dhalli to Seog has been planted with acacia spp. which is exotic to the area. It is prescribed to remove all tree species of acacia that have been artificially introduced to the area in the past. The area so cleared shall be sowed with native grass species and wherever possible be planted with native tree species found in the sanctuary.

6.4.2.3 Maintenance of Grasslands

In order to maintain ecological integrity of grass lands and their function as a key habitat for wild herbivores especially the Himalayan Goral, it is prescribed to strictly avoid all plantations in grassland habitat complex of Shimla Water Catchment Wildlife Sanctuary.



6.4.2.4 Species Specific Conservation Plans

6.4.2.4.1 Himalayan Goral (Naemorhedus goral)

The Himalayan Goral is a bovid species native to the Himalayan landscape. It is listed as Near Threatened in IUCN Red Data Book, Appendix 1 of CITES and falls in Schedule III of Wildlife Protection Act. It is a mammal that is threatened by poaching and hunting for its meat. In this context, it is vital from legal and ecological point to specifically conserve Himalayan Goral in the Catchment landscape.





Image 6.3: Himalayan Goral and its Natural Habitat in Catchment Landscape

The Himalayan Goral habitat is the steep rocky slopes and grasslands of the sanctuary. It is thus prescribed to maintain grass lands and strictly avoid plantation in the grasslands with gentle slope that are mainly used by goral for feeding. In case of extreme slopes which goral use as resting points, no specific management intervention is required. The maintenance of grassland and cliff habitat forms the core of habitat management for goral. This has been ascertained and confirmed by several research studies – Prater (1971), Mead (1989) and Gaston (1981). Further, the forest type mainly used by Gorals is the sub-tropical forest with palatable grass species of Themeda spp and Chrysopogan spp apart from shrubs and leaves of trees that form vital part of diet of animal especially in winter. The focus of management should be to conserve the said habitat type and assist in all ways natural regeneration of native grass species found in the sanctuary.

Fire protection is also crucial to protection of Himalayan Goral habitat as grasslands form a vulnerable and integral part of the goral landscape. In order to protect them from fire, there is need for maintenance of firelines adjoining grass land complex and undertaking swift fire fighting measures during the onset of fire.

As Himalayan Goral is an animal that is vulnerable to poaching/hunting for its meat, there is a need to maintain strict vigil and patrol in the protected area. The catchment area is easily accessible through road and thus is vulnerable to entry of hunters. In this context, joint night patrols are suggested to combat hunting. Further, intelligence collection and coalition as prescribed above should be followed as prescribed in addition to coordination with adjoining territorial departments and Wildlife Crime Control Bureau. Camera traps in the area can also act as vital source of information in this regard.



6.4.2.4.2 Keklass Pheasant (Pucrasia macrolopha)

The Koklass Pheasant is listed in Schedule IV of Wildlife Protection Act. The flagship species of Shimla Water Catchment Sanctuary shall be the Koklass pheasant given its high distribution in the sanctuary and unique habitat. The sanctuary being famed for this aspect shall delve on this species to further its popularity and brand of conservation.

The ideal habitat of Koklass pheasant is a grassland complex with sparse tree cover with branches that provide ideal site for roosting. Every effort shall be made to maintain such habitat in the sanctuary. The dietary need of Koklass pheasants are mainly pine nuts, shoots and insects. As the bird is heavily dependent on insects during breeding season, soil moisture conservation measures and retaining leaf litter on floor is crucial to sustain insect population. In order to provide a minimal disturbance environment to Koklass during the breeding season i.e. the months of April, May, the timing of eco-tourism activities



Image 6.4: Kokalass Pheasant (Male)

during this period shall be regulated/ modified during early morning and evening hours. In order to monitor population trends spatially and temporally, it is prescribed to conduct annual census of Koklass pheasants using call count method.

6.4.2.4.3 Cheer Pheasant (Caetrus wallichii)

The Cheer Pheasant is a species that is listed as Vulnerable by IUCN in its Red Data book and falls in Schedule I (Part 3) of Wildlife Protection Act. Recognizing the decline in population and habitat fragmentation of Cheer Pheasants, the Wildlife Wing of Himachal Pradesh has initiated the conservation breeding and reintroduction in wild of this species.

The Cheer Pheasant is found in varying elevations from 1800 metre to 2700 metre in Shimla Water Catchment Sanctuary. The grassland with roosting branches is the ideal habitat for Cheer Pheasant and habitat coincides with boundary of sanctuary adjacent to villages and experience biotic pressure in terms of grazing, lopping and is vulnerable to hunting.

It is prescribed that these areas be regularly patrolled and offences be booked regularly to foster deterrence. Apart from this, it is prescribed that eco development works like provision of gas cylinders, fodder seeds, encouraging of stall feeding etc. will be done after conducting PRA exercise to ascertain requirement for adjacent villages to reduce biotic pressure and provide disturbance free habitat to cheer pheasants. Fire protection measures for protection of grassland habitat are also prescribed in the Cheer habitat complex.

6.4.3 Human Resource Development

The Human resource for protected area management refers to the sanctuary staff. They are the ones at the forefront of all protection and conservation activities. In order to get the maximum out of the PA staff, it is prescribed to build their capacity, provide them with all necessary modern equipment, develop infrastructure and communication and ensure their welfare.



6.4.3.1 Capacity Building of Staff

Although the wildlife staffs is well trained and versed with basic forest and wildlife laws, there is a vacuum in their skill set when it comes to prosecution of wildlife offences, wildlife census and handling of computers and digital data. Any modern day wildlife manager needs to be trained in aspects of data collection, data analysis and graphical representation of data developing spatial intelligence.

The following trainings/ workshops are herewith prescribed for wildlife staff:

- a) Booking wildlife offences under various wildlife and forest laws including drafting of damage report and how to lodge preliminary offence report/ FIR independently without police intervention.
- b) Seizure procedure, Collection of evidences, their safe storage and production in court and disposal as applicable.
- c) Intelligence collection, coalition and investigation techniques in wildlife crime control.
- d) Various wildlife census techniques including transect walk, call count, pellet count, sign survey, grid based camera trapping including data collection and analysis using standard data sheets.
- e) Data collection for social assessment and wildlife census using modern day wildlife data collection software tools.
- f) Use of firearms in emergency scenario.

Apart from workshops, it is also necessary to equip them with tools and equipment. In this regard, the following tools/ equipment are prescribed for procurement:

- I. GPS Devices to all frontline staff from rank of forest guard should be provided with individual GPS devices. This is vital in delineating natural resource and other assets in the protected area.
- ii. Camera Trap to carry out wildlife census and also for intelligence gathering in case of wildlife crime
- iii. Fire Rakers for controlling fire in the PA
- iv. Power Chain Saws for disaster management in sanctuary
- v. Fire protection clothing and protective gear for safety of staff during fire protection
- vi. Wireless/ Mobile phone for fast communication and dissemination of information
- vii. Laptop/Computer/Tablets along with internet connection at Range Office
- viii. Range Finders for wildlife census in transect walk
- ix. Binoculars for bird census
- x. Digital Cameras for recording photographs of various works in the sanctuary and of wildlife and the catchment landscape

xi. Search light/Torches for night patrolling and conducting nocturnal surveys







Compass

Camera Trap

GPS







Walkie Talkie

Range Finder

Image 6.5: Equipments used by staff

6.4.3.2 Development of Infrastructure and Communication

The existing infrastructure in terms of buildings, communication network, vehicle, computer etc is not adequate and there is need to strengthen the infrastructure for better management of the Sanctuary.

The buildings that need to be constructed are:

Range forest officer quarter

Block Forest Officer quarter Chharabra

Guard huts for Forest Guards of Seog and Churat

A recreational space for visitors on top of souvenir shop including basic facilities for eco tourists

A chowkidar resting room needs to be constructed at Seog to cater to basic requirement of class IV worker at Seog

It is proposed to convert the existing souvenir shop beside the Range Office to a library that consists of all publications and research related to the protected area.

List of buildings in the Sanctuary are attached in Appendix-14. It is proposed that all existing buildings — staff quarters and office infrastructure be periodically repaired and maintained.

A watch tower in Churat beat is in dilapidated condition and needs to be urgently repaired and made usable for field staff and visitors.

Communication

At present there is one motor cycle and four wireless walkie-talkie for each beat for communication. The motor cycle is old and needs to be replaced with new one. It is prescribed to periodically repair the walkie talkies and procure new ones as and when required to strengthen communication. It is prescribed to have a four wheeler patrol/ fire ambulance vehicle for patrolling during night hours along jeep able road. The Range Office working has been computerized to a great extent. It is prescribed that Range Office be converted to e-office in order to further smoothen the communication and fast track correspondence. It is prescribed to have CCTV surveillance at the end of trail in order to ensure that zonation plan of eco-tourism is complied with.

6.4.3.3 Staff Welfare

The basic aspect of staff welfare is to ready the quarters of sanctuary staff. It is prescribed to construct quarters for Range Forest Officer, Seog Beat Forest Guard and Churat Beat Forest Guard at the earliest along with BO Quarter Chharabara.



THE STRATEGIES

Further, field staff shall be provided with jackets, shoes, trekking shoes in a uniform manner. The jackets shall clearly mention sanctuary name in order to give a professional outlook to staff and clearly identify them as sanctuary staff. It shall blend well with camouflage colour largely prescribed for forest staff.

The field staff doing good work shall be appreciated through certificates recognizing them for their works and also through other rewards in the form of cash prizes. The Deputy Conservator of Forests shall be authorized to take decision in this regard. Such measures would give an incentive for field staff to work better with good competitive spirit and keep their motivation high.



PART TWO THE PROPOSED MANAGEMENT

CHAPTER - VII

EOOTOURISM, INTERPRETATION AND CONSERVATION EDUCATION

ECOTOURISM, INTERPRETATION AND CONSERVATION EDUCATION

7.1 General

The term Ecotourism has been defined as the "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education" (TIES, 2015), Education is meant to be inclusive of both staff and guests. It is about uniting conservation, communities, and sustainable travel.

With unrestricted increasing attention to the ecological environment and the improvement of environmental awareness, ecotourism is becoming ever more prevalent, and the demand for tourism is increasing year by year (CREST, 2019).

When it comes to Shimla Water Catchment Wildlife Sanctuary, there are several categories of visitors with a wide variety of aspirations. The common man wishes to see the spectacular natural sceneries and the wildlife within the limited time and money he can afford to spend. The other set of visitors are of the group who has keen interest and enthusiasm to understand and learn about mammals, birds and techniques of wildlife management.

The sanctuary has several advantages that can be leveraged when it comes to eco-tourism. It has good accessibility off the NH-5 for visitors and lies adjacent to both Shimla city and Kufri which is a tourist town thus being a part of a tourist circuit network. Further, the scenic landscape of sanctuary with highly dense canopy and pure deodar forest is a major aesthetic attraction to visitors especially given it is so close to city limits yet far away from its hustle and bustle. The variety of flora and fauna especially mammals and birds that can be sighted during nature walk, the several streams that criss-cross the PA, the British heritage visible in the card room and Seog FRH greatly enhance the eco-tourism potential of the Catchment area.

7.2 Objectives

The following are the goals of eco-tourism in the sanctuary:

a. Wildlife Awareness and Education:

Through guided nature walks and bird watchers trails, the visitors can understand the diverse flora, fauna, the ecosystem services that sanctuary provides and the importance of conservation of this wildlife habitat.

b. Citizen Science based Database:

The several visitors that come to the sanctuary are also foot soldiers who can collect data and provide the same to the wildlife wing. This can form the base for citizen science based data especially when it comes to avian fauna in sanctuary.



c. Livelihood for Local Community:

Eco tourism offers several opportunities for local community to be involved as nature guides, local manufacturers of souvenir/ handicraft products to souvenir shop, providing service in terms of cycling and parking in sanctuary, drivers, etc. This can provide gainful employment for the youth and create a sense of goodwill between forest department and local community.

d. Aids in Protection:

Any increase in eco-tourism and visits of tourists would also serve to regulate and moderate offences in the protected area.

e. Revenue Generation:

Eco tourism activities provide meaningful revenue to Seog Eco Tourism society which can be further used for infrastructure development and conservation education thus creating a virtuous cycle of high value ecotourism.

f. Low Visitor Footprint:

The principal aim of eco-tourism in sanctuary is to leave as little footprint as possible and cater to low impact high value eco-tourism through regulating number of visits per day and fixation of carrying capacity on the basis of available formula models.

7.3 Issues/Problems

The principal aim of eco-tourism in sanctuary is to leave as little footprint as possible and cater to low impact high value eco-tourism through regulating number of visits per day and fixation of carrying capacity on the basis of available formula models.

The following are the main issues/problems faced in implementing eco-tourism activities inside the sanctuary:

1. Small Size of Protected Area:

The small size of sanctuary severely limits number of visitors that can be allowed per day as per carrying capacity norms.

2. Developing a feasible community based eco-tourism model:

The villages surrounding the protected area are hesitant to join eco-tourism activities as they are not assured fixed income for all seasons. Currently, some of them have membership in society but are not benefitting much from eco-tourism activities in the sanctuary. The low tourist footfall during winters and monsoon is a major roadblock to this. It is a significant challenge thus to develop an economically feasible eco-tourism model that appeals to the adjacent villages.

3. Regulating number of visits/day:

The annual footfall of tourists visiting Shimla Water Catchment Wildlife Sanctuary is given in table below:

It is a challenge to arrive at a number for maximum visitors per day. The carrying capacity fixation must take into account various factors including size of the protected area, size of eco tourism zone demarcated for eco tourism purpose, soil and moisture conservation status, breeding season of wildlife, mode of eco tourism etc.



4. Agencies outside operating eco tourism in the Sanctuary:

Currently, some private agencies are executing eco tourism activities. This leads to inequitable benefit sharing from a public good that is the sanctuary. Further, there is no formal agreement or memorandum of understanding between Seog Eco Tourism Society and such agencies.

5. Littering inside Sanctuary

By visitors is a challenge that needs to be dealt with through sensitization and awareness among the visiting tourists.

6. Low Probability of Wildlife sightings:

As the catchment landscape has steep slopes at several places, probability of wildlife sightings for visitors are low.

7. Shortage of trained personnel:

As eco-tourism is a specialized domain in terms of guides, hospitality, catering services, there is a shortage in trained personnel available for conducting eco tourism activities in the sanctuary.

7.4 Strategies

The tourism in Shimla Water Catchment Sanctuary should focus on natural resources like the beautiful forest patches, the precious wildlife that includes the presence of both the majestic mammals and birds, scenic views of the landscape, the role of forest in water conservation and other attractions. Any form of ecological tourism should therefore be promoted duly keeping in view the concept of 'carrying capacity'. This should be strictly adhered to ensure minimal disturbance to wildlife, an enriching experience for the visitors and sustainable tourism. The philosophy of strategy of eco-tourism is to demarcate a clear zone for eco-tourism activities in the sanctuary and to provide a high value experience to regulated number of visitors in terms of wildlife awareness and education.

7.4.1 Identification of EcoTourism Zone

The eco-tourism activities in the protected area shall only be limited to the eco-tourism zone identified for the said purpose and clearly delineated in the aforementioned zonation plan. The demarcated eco tourism zone involving 4 trek routes is once again represented in map below.

Sr.No	Trek Route	Distance (in Km)	Intensity of Use
1	Dhalli — Seog	7	High
2	Kufri – Seog	4	Low
3	Chharabra — Seog	4	Low
4	Seog - Churat	4	Low

Table 7.1: Trek routes for eco-tourism in sanctuary





Map 7.1: Eco Tourism Zone Map

Among the 4 trek routes listed, the 7 km trail from Dhalli to Seog shall be classified as high intensity use area whereas the other 3 trek routes shall be classified as low intensity user area. In this context, there is need to develop more regulatory mechanism and infrastructure in the 7 km trail. Further, it is prescribed to popularize the low user intensity trek routes to equitably distribute tourist pressure across the designated eco-tourism zone.

7.4.2 Mode of EcoTourism

The mode of eco-tourism proposed in the sanctuary is nature walk, cycling and commute along the 7km trail by low emission/ electric vehicles/ golf carts. In order to minimize pollution threats and disturbance to wildlife, vehicle based safari is not prescribed.



7.4.3 Visitor Amenities

It is prescribed that visitor amenities in the protected area premises be limited for eco-tourism purposes given already small size of protected area and other biotic and anthropogenic pressures.

The following are the suggested interventions from eco-tourism standpoint:

- A new souvenir shop cum ticket window has been developed adjacent to the Range Office. This can offer
 opportunity to visitors to collect memoirs on their visit to catchment, facilitate branding of Shimla Water
 Catchment and propagate wildlife awareness and education through souvenir products. It is proposed to
 operationalize the shop.
- 2. An open learning centre for the flora and fauna studies of Shimla Water Catchment area is proposed to be developed adjacent to the Seog Forest Rest House for conservation education. This is necessary considering the large number of scientists, researchers, conservationists, young students, school children that come to the sanctuary to study about the flora and fauna of the sanctuary and various ecological roles played by the Catchment landscape
- 3. The existing souvenir shop shall be converted into a conservation library where all available literature regarding wildlife conservation and forest management shall be kept for public use.
- 4. The sanctuary has presence of several railings along the cycle track in order to avoid accidents. It is prescribed to limit the number of such infrastructure to safeguard wildlife habitat and corridor.
- 5. The sanctuary is already having good signages along the main trail and name plates for trees. It is prescribed to reinstall faded signages with new photographs and also add to visitor experience by installing signages that provide interesting facts on flora of Shimla Water Catchment Sanctuary and history of the protected area.
- 6. In order to facilitate cycling as an eco-tourism activity, the sanctuary through Seog Eco Tourism society is having cycles and a cycle shed as assets. Overtime, several of these cycles have become a liability due to need of frequent maintenance. It is prescribed that Seog Society no more invest money in cycles and explore option of engaging third party to provide cycles as a service and arrive at a contractual agreement with such party as required. It is prescribed to use the same model for golf cart/ battery/low emission vehicle based eco-tourism in sanctuary.
- 7. There is a need of binoculars at the gate which can be provided on rent to bird watchers or tourists.
- 8. In order to effectively regulate eco-tourism, it is proposed to have CCTV based surveillance mechanism at the ticket window, souvenir shop, area of entry into sanctuary (on all trek routes) and at the final end point of main 7km trek route. Further, it is proposed to have a digital dashboard that automatically displays the number of visitors that have visited in the sanctuary in the reception.



7.4.4 Involvement of Local Communities

It is prescribed to create Catchment Area Eco Development Committee involving interested local community members initially through Mahila Mandal Maloothi and Chamyana Panchayat which may be later expanded to other villages on the boundary of sanctuary post detailed PRA exercise. The strategies for involving them for eco-tourism based activities are as follows:

- a. Framework of EDC: The said EDC will be formed under Seog Eco Tourism Society.
- b. Nature of involving communities: The EDC members can act as nature guides for visitors. They may describe about the sanctuary, its history, purpose of management, mode of water harvesting from sanctuary, flora and fauna of the sanctuary etc. so that visitors have an enriched tourism experience. Further, they can also act as drivers of golf cart/ battery/ low emission vehicle.
- c. Revenue Sharing Framework: The revenue realized from guided nature walks/ golf cart/ battery vehicle/ low emission based vehicles shall be shared with EDCs who can then distribute between them their share of income. The percentage of such sharing can be arrived at after detailed deliberations between the Governing Board of Seog Society and EDC.
- d. Training of Local Community Members: In order to maximize the visitor experience, it is prescribed that local community members be trained in hospitality, wildlife, flora of sanctuary, ecosystem services provided by sanctuary and purpose of management of wildlife sanctuary. In case of hospitality training, Institute of Hotel Management can facilitate the same to the staff.
- e. Certification: A certificate and ID card is to be provided to the trained individuals who are certified to be guides. A uniform shall be decided for nature guides to identify them and provide them a professional outlook.
- f. Group size of 3-5: In sanctuary, a group size of 3-5 may be formed of incoming visitors. Each group may be accompanied by a guide that is trained and certified.
- g. CSR Funding: Corporate engaged in tourism and hospitality in buffer zone of sanctuary has been reaping benefits of eco-tourism. This equation can be changed by streamlining CSR funds from such corporate entities for community based eco-tourism in region creating a hybrid model of eco-tourism. CSR funds can be used for training programmes of local community members as nature guides and other entry point activities in adjacent villages.
- h. Seasonality of Eco Tourism Activities: Considering the aforementioned eco-tourism activities are highly seasonal in nature with highest footfall expected in Summer Season in months from April to July, it is prescribed that number of nature guides be also flexible as per season with more nature guides being available during the summer months and less during monsoon and winter months. During winter months, snow treks can be promoted on the already designated trek routes given it is a unique experience for visitors.



I. Mou with private agencies:

In cases where partnering agencies are hotels lying outside of sanctuary area, there is need to develop comprehensive memorandum of understanding between Seog Eco Tourism Society and the partnering agency such as Wildflower Hall. This shall lay down the basic principles of eco-tourism with partnering agencies with minimal disturbance, in accordance with aforementioned carrying capacity norms and providing benefits to local people directly and indirectly. Such MoUs shall clearly define the responsibilities of partnering party to adhere with existing laws, rules and regulations of sanctuary governance. This also provides opportunity to utilize CSR funds for wildlife conservation and environment protection with regard to Shimla Water Catchment Wildlife Sanctuary.

7.4.5 Possible Eco Tourism Activities Proposed

The following are eco-tourism activities proposed during the period of management plan:

- i. Guided nature walk/Trek along designated 4 trek routes as already mentioned
- ii. Cycling along the 7km trail from Dhalli to Seog
- iii. Golf cart/battery/low emission vehicle based eco-tourism along the 7km jeepable road from Dhalli to Seog
- iv. Bird watchers' walks involving members of Shimla Water Catchment Bird Watcher's Club along the designated trek routes with a certified guide.
- v. Souvenir Shop for collecting memoirs and facilitating the spread of message of wildlife conservation.
- vi. Developing Flora Trail for Eco Tourism: In areas zoned for eco-tourism i.e the 7km trail from Dhalli to Seog, there is a great diversity of flora in sanctuary that can be invaluable from perspective of flora education and awareness to the young generation that is fast growing unaware of the native flora diversity and nomenclature. This underutilized potential can be tapped by developing flora trail with adequate signage and information kiosks (at the entrance) detailing unique aspects of various flora and its medicinal values. QR coding of diverse plants can be introduced with connection to an app data base that users can easily download at the entrance.

This can be a substantial value addition and enrichment to tourists visiting the sanctuary and also kindle in them love and curiosity alike for native flora of state. This can also offer added revenue generation possibilities for the society and EDCs under the society with minimal wildlife disturbance.

7.4.6 Proposed Staff Strength for Eco Tourirsm

No separate staff is proposed as such for conducting eco-tourism activities given small size of sanctuary. All forest guards, deputy ranger under the leadership of Range Officer is responsible for facilitating and regulating eco-tourism within sanctuary limits. Apart from this, the number of nature guides and drivers that needs to be engaged may be kept flexible depending on tourist footfall in each season.



7.4.7 Anticipated Benefits and Outcomes from Eco Tourism

The following are the anticipated benefits and outcomes from eco-tourism in the catchment area:

- i. Wildlife awareness and education for the visitors and knowledge about ecological role and eco system services provided by the catchment landscape.
- ii. Livelihood creation and gainful income generation for local community.
- iii. Citizen science based data that can be integrated into conservation management and for population estimation of various fauna.
- iv. Indirect benefits and job creation: The aesthetic service provided by catchment landscape is utilized by several photographers and tour guides of Kufri-Charabara area to create livelihoods.
- v. Protection and Conservation of the sanctuary is also aided by eco-tourism activities as presence in the sanctuary trek routes dissuades any illegal activity.

7.4.8 Liaison with other departments, institutions and agencies

7.4.8.1 Tourism Department: The District Tourism Officer is already part of the Seog Eco Tourism Society and liaison is prescribed to be through the platform of General Board of Seog Eco Tourism Society. Further, it is prescribed that Shimla Water Catchment Sanctuary may be branded and popularized as a destination for avid nature lovers and enthusiastic bird watchers through social and other media of the tourism department. The tourism department can also function as a fund providing agency to carry out various ecotourism and conservation education activities in the sanctuary area.

7.4.8.2 Special Area Development Authority: The focal point of coordination with SADA lies in waste management due to heavy tourist influx especially along the NH-5 that cuts through the sanctuary. The coordination mechanism for the same shall be the meetings of Seog Eco Tourism society.

7.4.8.3 ECO Clubs of Schools & Colleges: The coordination is required especially when it comes to bird watching walks and flora walks with purpose of conservation and nature education. Further, interested students can act as volunteers and protectors of the catchment area especially when it comes to regulating littering.

7.4.8.4 Institute of Hotel Management Charabara: The IHM Charabara is a renowned institution in field of hospitality and hotel management. Its support shall be galvanized for purpose of providing hospitality training to nature guides and in conducting clean up drives.

7.4.8.5 Local Panchayats and Mahila Mandals: As part of Seog Eco Tourism society, coordination with local bodies is essential for conducting community based eco-tourism activities.

7.4.8.6 Hotels and other Establishments: A mechanism of coordination through EDCs formed under Seog Eco Tourism society can be created with hotels and other such establishments in the Kufri-Charabara area for conducting organized sustainable environment friendly tourism.

7.4.9 Publicity

Shimla Water Catchment Wildlife Sanctuary should get popularized as one of the best tourist destinations in the country. For this there are different strategies has to be used. The online publicity through the



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official website is active with all the details regarding the sanctuary and contact details for further information. Further, the publicity techniques through print and electronic media should happen regularly. Different type of programmes should be conducted by involving students from schools, colleges and common people should be carried out to get the attention of people from various part of the globe. Social media page of Shimla Wildlife Division can be used to publicize the sanctuary, the various ecological services it offers and the eco-tourism opportunities it provides thus elucidating the need for conservation.

Sanctuary Literature

The printed pamphlets and brochures about the wilderness of Shimla Water Catchment Sanctuary are available for tourists. It has a brief idea about the fauna and flora, wildlife, natural resources, landscape, history and other main attractions. It should be updated to include a section where the tourist will get informed about the rules and guidelines which is compulsory to follow inside the sanctuary. It is proposed to have an annual magazine for the sanctuary detailing various activities carried out by forest department wildlife wing in the sanctuary for conservation.

7.4.10 Regulations, Monitoring and Evaluation 7.4.10.1 Carrying Capacity of the PA

Carrying capacity of Shimla Water Catchment Sanctuary that defines maximum permissible footfall needs to be calculated given wildlife considerations and size of area. This carrying capacity limit needs to be strictly adhered to within zonation limits specified for eco-tourism in sanctuary.

The carrying capacity limits is calculated vide MoEFCC guidelines on sustainable eco-tourism in protected areas and tiger reserves using below formulation.

Physical Carrying Capacity = PCC = A X V/a X RF

Where, A = available area for public use

V/a = one visitor / M2

Rf = rotation factor (number of visits per day)

Area available for public use = 7 km (Entry gate to Seog) + 4 km (Charabra to Seog Trek Path) + 4 km (Charabra to Kufri Trek Path) + 4 km (Churat to Seog) = 19 km

It is assumed that for visitor convenience, there shall be a maximum of 5 visitors in a km stretch, V/A = 10

Rotation Factor = Opening Period/TotalTime Spent

Opening period is prescribed to be 8 hours from 8-4 except during breeding period of pheasants that is from April 1—June 15. During this period, the opening time shall be 9-4 and entry before that shall be allowed only for researchers and scientists or citizen science data collection purpose. Time spent by an average visitor in sanctuary is approximately 2 hrs which gives

Rotation Factor = 8/1.5 = 5.3

On basis of above

PCC for on foot visitors= $19 \times 10 \times 5.3 = 1007$ visits/day

In the case of low emission vehicle tourism,

Available area = 7km

V/A = 2 as at least 500m is to be required for a vehicle

PCC for Vehicle = $7 \times 2 \times 5.3 = 74 \text{ visits/day}$

Correction factors are to be included to this estimate to take account of 3 main factors- namely soil erosion given vulnerability of landscape, wildlife considerations (breeding season), temporary closing of roads in sanctuary due to winter and monsoon.



ECOTOURISM. INTERPRETATION AND CONSERVATION EDUCATION

Correction Factor (Soil Erosion) = Highly vulnerable stretch (km) x Weightage factor + Moderately vulnerable stretch x weightage factor/Area available for use

 $CF(SE) = 0 + 2 \times 2/19 = 0.21$ in case for on-foot visitors

CF(SE) = 0.5x3+1x2/7=0.50 in case of vehicular visitors as erosion is larger in path suggested for e-vehicle based commute and the activity has greater impact on erosion.

Correction Factor for wildlife considerations in sanctuary should take into account breeding seasons of various species.

For herbivore species like gorals and barking deer, 2 months of courtship/ breeding season is considered. Similarly for pheasants including the Koklass pheasant for which sanctuary is flagship species, a period of 2 months (from April to May) is vital for breeding. Although there is no established specific breeding season for leopards, a period of 2 months is taken for apex predator species of sanctuary. Taking into account all of above, correction factor for wildlife species is calculated as

CFw = 2+3+2/12=7/12=0.58

Sanctuary roads are temporarily closed for a period of approximately 2 months in total considering winter and monsoon. Hence correction factor for temporarily closing of roads is calculated as follows:

CFt = 2/12 = 0.16 in case of on-foot visitors

CFt = 3.5/12 = 0.30 in case of vehicular visitors as vehicular patch remains closed for commute for larger period

Real Carrying Capacity = PCC (1-CFse) (1-CFw) (1-CFt)

RCC for on foot visitors = $1007 \times 0.79 \times 0.42 \times 0.84$

RCC for on foot visitors = 281 visits/day

RCC for vehicular visits = $74 \times 0.50 \times 0.42 \times 0.70 = 11$ visits/day

The final effective carrying capacity of sanctuary is calculated by taking into account the Managerial capacity of sanctuary. Shimla Water Catchment Sanctuary has adequate staff adequately trained in forest and wildlife management. However, there is shortage of vehicles, watch towers and other monitoring mechanisms to control eco-tourism activities. Considering all of this, MC is defined to be 70%.

Effective Permissible Carrying Capacity = MC x RCC

EPCC for on foot visitors is approximated to be 200 visits/day

EPCC for vehicular tourists = 8 visits/day

The above carrying capacity limits are indicative and may be revised by the Chief conservator of Forests(Wildlife) South cum Chairman of Governing Board of Seog Eco Tourism Society as per prevailing conditions of climate, path, moisture level, mode of vehicle etc.



ECOTOURISM. INTERPRETATION AND CONSERVATION EDUCATION

7.4.10.2 Regulating Framework

The regulation of eco-tourism is principally the job of forest department staff. The regulation is in the number of visiting tourists and with their adherence to wildlife protection laws, rules and regulations in force in state of Himachal Pradesh and India. The visitors need to be clearly made aware of do's and don'ts in sanctuary. The same is communicated to them through brochure and signage's. Further, it is prescribed that nature guides be also trained in various do's and don'ts and they educate visitors and ensure such regulations are complied with.

7.4.10.3 Monitoring Techniques

The eco-tourism activities shall be monitored broadly through CCTV based surveillance technique connected to a digital dashboard or display screen at the entrance that mentions the number of visitors per day. Further, all tickets/permits issued shall be through common ticketing portal of HP Wildlife Wing which also serves as monitoring tool for number of visitors.

7.4.10.4 Feedback Collection Techniques

It is proposed that visitors may be given a feedback-form such that proper feedback may be recorded. Such evaluation can help in future planning exercises, and also to better manage the protected area for its ecotourism potential. There can be QR code based visitor feedback form that can be installed at the entrance. This can help the PA manager understand the various bottlenecks associated with eco-tourism in the sanctuary and work on the same.



PART TWO THE PROPOSED MANAGEMENT

CHAPTER - VIII
ECO-DEVELOPMENT

ECO- DEVELOPMENT

The term eco-development was coined by Mr Maurice F. Strong, the first Executive Director of the United Nations Environment Programme (UNEP) and it refers to an integrated approach to environment and development. It is the development at regional and local levels, consistent with the potentials of the area involved, with attention given to the adequate and rational use of natural resources, and to the application of technological styles (innovation and assimilation) and organizational forms that respect the natural ecosystems and local socio-cultural patterns."

Fundamentally, the objective of eco-development is to utilize resources to meet human requirements and to improve and maintain the quality of human life for current and future generations. To face this challenge, development must take place in a manner that integrates biological considerations with economic, social and political factors to address both human welfare and the human environment.

8.10bjectives

Eco-development around the sanctuary need to be developed with the following objectives:

- To galvanize local community participation in conservation, protection and promotion of eco-tourism in Shimla Water Catchment Wildlife Sanctuary
- To improve the socio-economic conditions of the people living in the buffer zone by providing them several direct and indirect livelihood options through eco-tourism and protection activities
- To promote formation of women's self-help group and develop their skills for enhancing their income through micro-financing support with the support of Seog Eco Tourism Society
- To meet various needs of local population and road side vendors to minimize the biotic and anthropogenic pressure in the sanctuary
- To increase the awareness among the local people regarding the role of forests and wildlife in general and this sanctuary in particular.

8.2 Specific Issues

The following are the specific issues being faced while pursing eco development activities in Shimla Water Catchment area:

- a. Developing a feasible community based eco-tourism model: The villages surrounding the protected area are hesitant to join eco-tourism activities as they are not assured fixed income for all seasons. Currently, they have membership in society but are not benefitting much from eco-tourism activities in the sanctuary. The low tourist footfall during winters and monsoon is a major roadblock to this. It is a significant challenge thus to develop an economically feasible eco-tourism model that appeals to the adjacent villages
- b. Biotic Pressure on sanctuary exists in the form of requirement of fuel wood, grazing etc.



8.3 Broad Strategies, Implementation Mechanism

The broad strategy of implementing eco development programme in the catchment area shall be to formulate village wise Eco Development Committees for fringe villages in buffer zone that have been identified in the management plan and to clearly define its structure, duties and responsibilities. The main activity of eco development shall be eco-tourism and developing income generation strategies to the sanctuary dependent communities. The framework for implementing eco-tourism activities has already been discussed in detail in Chapter VII. Apart from this, other eco development activity suggested include provision of micro credit facilities for income generation activities, provision of waste bins along the NH for road side vendors, provision of gas cylinders for people living in zone of influence to reduce their dependence on fuel wood, provision of toilets, skilling local community in handicraft/ other livelihoods and other activities as per PRA exercise.

Sr.No	Village in Buffer Zone
1	Bareha
2	Dhalli
3	Garhog
4	Tipra
5	Karyali
6	Ghwahi
7	Kalali
8	Chharabra
9	Kufri

List of Villages in Buffer Zone Identified for Eco Development Activities

8.3.1 Organizational Structure of Eco Development Committee

The following shall be salient features of organizational structure of the said EDC:

- a) The eco-development committee shall be registered under Himachal Pradesh Societies Registration Act, 1975.
- b) Membership will be voluntary and the Mahila Mandals and Gram Panchayats shall coordinate to include interested members into the EDCs
- c) Membership Fee of Two rupee per member per year shall be collected. It shall be free for members from SC/ST community.
- d) Periodicity of meeting of EDC shall be once in 3 months and Quorum for meeting will be 25 percent of total membership

8.3.2 Executive Committee Organization

Executive Committee of EDC: For every EDC an executive committee shall be selected comprising the following members.



- a. Elected Members- not more than 3 members elected by the EDC.
- b. At least half of the elected members should be women.
- c. The concerned Forest Guard, Deputy Range Officer and one representative of a voluntary agency shall be exofficio members.
- d. Concerned Range Officer will be the Member Secretary.
- e. Term of office for elected members will be One year; election for EC has to be held every year and members can get re-elected.
- f. Voting Rights will be available only for the elected members.
- g. No voting rights for the ex officio members.
- h. Periodicity of meeting shall be once in a month or whenever needed.

President of EDC: The Executive Committee will elect its own chairperson. He/she shall also be the chairperson of the Eco Development Committee also. The Term of office of President shall be 2 years; can be re-elected for 2nd term; should not be continued beyond 2 terms.

8.3.3 Fund Flow

Fund Flow of EDC: The following procedure shall be adopted for managing the fund flow to the EDC.

- a. A Joint Account, Jointly operated by the Member Secretary (Range Forest Officer) and the Chairman of the EDC shall be opened in a nearby bank.
- b. Executive Secretary of Seog Eco Tourism Society shall directly send the cheque to the EDC account based on memorandum of understanding agreed to by Seog Society and constituted Eco Development Committees that defines revenue sharing framework.
- c. Funds from the EDC account can be drawn only for the items of works passed in a resolution by the EDC.
- d. The Chairman will maintain the cash book through Member Secretary;
- e. Printed cash books will be supplied by the Forest Department.
- f. The accounts of EDC shall be annually audited by the local fund audit and also by chartered accountant.

8.3.4 Role and Responsibility of EC

The committee will be constituted at the commencement of and at the end of every term with the Range Officer concerned acting as the Returning Officer for filling in the quota of elected members. The executive committee will meet at least once a month, or more often if need be. The Member-Secretary shall be responsible for convening the meetings and maintaining the record of proceedings. He shall send one copy of the proceedings to the Executive Secretary Seog Eco Tourism Society to keep him informed and obtain necessary guidance and approval. The Deputy Conservator of Forests (Wildlife) cum Executive Secretary Seog Eco Tourism Society may give directions from time to time for smooth and proper functioning of the committee which will be binding on the committee.

8.3.5 EDC Duties and Responsibilities

A general body meeting of the Eco Development Committee shall be held once in every three months to review the activities and functioning of the Executive Committee. The Deputy Range Officer and the concerned Forest Guard will have the right to participate, but no right to vote. The Member Secretary will vote in case of a tie of votes.



The reciprocal commitments of the EDC are given below:

- a) The members of the ED Committee, individually and collectively, will ensure protection against poaching razing, fires, littering and thefts of forest produce in accordance with the eco-development micro plan.
- b) Make other villagers aware of the importance of forests.
- c) Assist the Forest Officers in carrying out forestry development works in accordance with the approved ecodevelopment plan.
- d) Identify volunteers and interested youth to carry out eco tourism activities in the catchment area
- e) Assist the wildlife wing and staff in regulating anthropogenic pressure especially with regard to littering

8.3.6 Memorandum of understanding

A memorandum of Understanding needs to be signed between the Seog Eco Tourism Society and the Executive Committee of the Eco Development Committees constituted. The MOU contains undertaking given by EC members in the MOU to implement the eco development plan with utmost sincerity and devotion to prevent grazing inside the reserve totally or to a certain extent, to stop collection of fuel-wood, minor forest produce and small timber completely from the forests, to protect the reserve by themselves and to extend cooperation to the forest department staff in protection and conservation of the reserve especially from the multifarious threats i.e. littering, debris dumping, minor hunting, horse grazing.

8.4 Past History of People Participation in Sanctuary

Currently, there exists little people participation in management of protected area and only notional membership exists in Seog Eco Tourism society for local body representatives. Apart from this, some members of the local community are engaged as fire watchers and anti-grazers/ anti-poachers.

8.5 Village Level Site-Specific Strategies

In order to understand the various needs of villagers, a participatory research analysis (PRA) is proposed to be conducted in adjacent villages of the Catchment area. Based on the results of the PRA, an eco-development plan can be created for the said villages. This plan shall broadly include development of community assets, provision of eco-friendly energy devices, development of skill set for local community and provision of sanitation facilities .

The village level site specific strategies of eco development involving the local community shall be as follows:

- Identify entry point activities to enlist support of people
- Community asset building to create meaningful infrastructure development on village common lands
- Skilling of local community in vocations and livelihoods linked to forest, eco-tourism, handicrafts
- Distribution of LPG Gas/ Solar Lights etc. at subsidized rates.
- Toilets and other waste management structures
- Provision of fodder seeds and encouraging stall feeding to livestock
- Provision of books for children in villages for purpose of education
- Any other need of village based on the result of PRA exercise



8.6 Monitoring and Evaluation

All the eco-development programmes should undergo through a monitoring and evaluation mechanism. This will ensure that the progress in the right direction and also keep the on-going activities on the right track through timely corrective measures. The monitoring team should comprise of PA personnel, representatives of EDC and NGOs. Monitoring formats should be prepared regularly and submitted for regular checking. The progress of the activities will be evaluated based on set indicators of successes. The indicators shall look at the effectiveness of eco development activities in two main fronts i.e. the improvement in living standards of fringe villages and the reduction in biotic and anthropogenic pressure on the protected area due to undertaken eco development activities.

The monitoring reports shall be made bi-annually and submitted to Deputy Conservator of Forests (Wildlife). He or she shall evaluate the same and take corrective steps to implement the eco development programme for better outcomes for conservation and living standards of fringe villages.



PART TWO THE PROPOSED MANAGEMENT

CHAPTER - IX
RESEARCH, EDUCATION AND TRAINING

RESEARCH, EDUCATION AND TRAINING

9.1 Research

Shimla Water Catchment Wildlife Sanctuary is relatively a new sanctuary notified after rationalization in 2013. The body of research work done in this protected area is thus limited. However, there is great scope for research in the sanctuary in various fields of hydrology, water conservation, orchid diversity, understanding impact of climate change, wildlife habitat, avian fauna etc.

9.1.1 Priority Research Areas

The following are the priority research areas that are identified for the Shimla Water Catchment Wildlife Sanctuary:

- **i. Hydrology of Water Catchment and Functionality of Streams**: Over the years, the water retention capacity and total water discharge has substantially decreased as per existing research studies (Hydrological and ecological studies towards integrated resource management: A case study of Shimla Water Catchment Sanctuary- Dipika Rana et Al, February 2019). In this context, there is an urgent need to understand the temporal variations in hydrology and drainage lines in the sanctuary, the inherent reasons behind non-functionality of several streams that were once perennial sources and look for solutions to maximize water retention through a holistic soil moisture conservation plan
- **ii. Orchid Diversity in Shimla Water Catchment:** There is a great potential to catalogue orchids in catchment area and understand temporal variation in orchid diversity especially in back drop of climate change.
- **Hi. Prey Predator Density Studies** to understand the complex food web and how the eco system in catchment area supports several species
- iv. Status and Distribution of Water Holes and how effective water holes are in terms of utilization by wildlife
- v. Avian Fauna and to understand patterns of seasonal migration of birds. Research on population estimation of Koklass and Cheer Pheasants given its flagship and ecological value
- **vi. Forest Fire:** The sanctuary holds potential for fire research to understand fire trends over past years and how fire map has changed over time
- **vil. Forest Types:** Currently, 4 forest types exist in sanctuary. There is research potential to understand varying trends in forest types.
- viii. Climate Change Studies: There is scope of research in understanding variation in temperature, rainfall and snowfall patterns in sanctuary area especially given sanctuary is located near urban built up landscapes.
- ix. Study on Himalayan Goral: Habitat mapping of goral and dietary analysis and patterns in different seasons
- **x. Community based eco-tourism:** There is scope to understand working of different eco-tourism model in a protected area adjacent to urban landscape and mode of involving communities that are generally better off compared to rural PAs.
- xi. Study on Amphibians & Reptiles: There is little research done on amphibians and reptiles in
- **xii. Study on leopard:** To map territorial extent of top carnivore, understand prey base and assess the total population



9.2 Monitoring

Monitoring is a key aspect of protected area management to ensure that the management plan is implemented in letter and spirit. It brings to the fore various issues that crop up while managing the wildlife sanctuary and ensures the entire establishment remains alert and on the job.

9.2.1 Wildlife Monitoring

The following are various monitoring techniques for evaluating wildlife population and habitat assessment:

1. The animal encounter rate and sign encounter rate

This technique should be used for monitoring of animals. Trails 4 to 5 km long should be laid. The trail should be walked on a fixed date once every month. The data collection on the trail should include animal encounter, animal signs and habitat parameters. Animal sign survey and animal encounter rate survey should be carried out separately. Data analysis should be done carefully.

2. Pugmark method

This method should be used for estimating leopard population. Training in the proper technique is very important to prevent the staff from making mistakes.

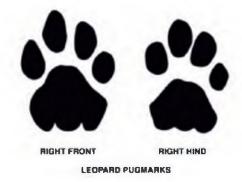




Image 9.1: Leopard pugmark

3. The line transect method

This should be started for population estimation in the sanctuary. Design of the line transect is very important. A well designed line transect network should be laid in the sanctuary area. The length of each transect should be 3 to 4 km. Due care should be taken in data analysis. The transect lines should be walked once a month. Training in recording the observations is very important. The staff should be well trained in making observations at the beginning of the exercise. The transect walk method involves noting down the observations of signs of various species during the walk. It is critical for estimation of carnivore and assessing



Image 9.2: Pellets of Himalayan Goral

population of herbivore in the sanctuary. The data sheet for noting down observations during transect walk is annexed to this management plan as control forms.

4.The Point Count method

This method should be used for population estimation of birds. For point count 500 m distance should be divided into 5 segments 100m each. Birds should be counted at 6 points i.e. starting point, 100 m, 200m, 300m, 400m and 500m. Observations like species, number, perpendicular distance and activity should be recorded. Data analysis should be done carefully.



RESEARCH, EDUCATION AND TRAINING

In case of pheasants, the call count method is prescribed. In this method several call count stations are temporarily marked in the wildlife sanctuary. A monitoring team consisting of 2 wildlife staff is deputed for the each call station. The team observes the call count in a radius of 300m and notes the approximate distance and direction of call using compass. On the basis of this information, the data sheets are filled and spatial abundance information regarding pheasants is computed. This method is prescribed for Koklass, Khalij and Cheer Pheasants in the sanctuary.

5. Camera Trap Dased Monitoring

In order to evaluate wildlife population, identify corridors and habitats, trap camera based monitoring is prescribed. In this method, the whole sanctuary is divided into 2x2 sq km grids and camera trap is laid in each 2x2 sq km grids. The said camera traps are kept stationary for a period of 30 days after which images are retrieved. The exercise is done for all such grids. The location of camera traps should be fixed such that it is at intersection of different trails or near water sources. This increases chances of wildlife sightings and offers good data. It is prescribed that after period of 30 days camera trap locations be changed for getting meaningful data.

9.2.2 Vegetation Monitoring

In order to monitor vegetation, sample plot based monitoring is prescribed. Sample plots of 0.1 Ha are randomly chosen in each forest type classified. The 0.1 Ha area is a square plot of 31.62m as prescribed by National Working Plan Code. The total number of trees of each species within the sampling plot to evaluate the species richness and diversity. In order to evaluate shrubs and herbs, nested quadrates within the 0.1 Ha sampling plot of 3x3m and 1x1m are laid out and similarly shrub and herb diversity is recorded.

Regeneration assessment is a critical aspect of vegetation monitoring. In order to evaluate regeneration, regeneration plots of 2x2 m are laid out along designated transect walks. 20 such regeneration plots are laid out along the transect walk and regeneration plots are monitored for regeneration of Deodar, Oak, Pine species.

9.2.3 Monitoring Weeds

The sanctuary has little presence of weeds and invasive alien species. It is prescribed that weed presence and infestation be regularly monitored. In addition, the spread of Acacia spp planted along 7km trail from Dhalli to Seog is required to be monitored.

9.2.4 Socio-Economic Monitoring

The socio-economic landscape of catchment and adjacent area is unique that it is heavily dependent on tourism and agriculture/horticulture apart from cattle rearing. As time goes on, the general trend is more and more people are moving from primary sector economy to service sector economy. At the same time, trend of unemployed youth is increasing. It is in this backdrop that community based eco-tourism involving local community of catchment area attains importance. Further, there is a need to keep vigil and watch on the mushrooming of road side vendors alongside the NH as this exerts considerable litter pressure on the sanctuary. A critical area of socio-economic monitoring in the catchment area is the development of further hotels and tourist facilities in and around Kufri-Charabara as this impacts sanctuary in terms of pollution.



9.2.5 Weather Monitoring

As climate change is taking over the world, it is prescribed that weather monitoring stations be set up in the sanctuary. These monitoring stations shall monitor temperature, rainfall, snowfall patterns, wind speeds and humidity. The monitoring shall aid in climate data and trends of temperature and precipitation. Along with monitoring of weather, there is a need to undertake climate change impact studies particularly with respect to catchment area. This includes change in forest fire trends, drying up of water ponds, change in vegetation and altitudinal zonation, change in habitat preferences of wildlife and change in hydrology and water retention pattern of sanctuary.

9.3 Training

Wildlife management has emerged as a science. The different cadre of wildlife staff is to be imparted with certain level of basic training and education on wildlife management. It is proposed to carry out regular training programmes on matter of wildlife protection and conservation in aspects of wildlife laws, intelligence collection, prosecution of offences, use of firearms, wildlife census techniques, eco-tourism and eco development.

9.3.1 On tho Job Training

It is a form of training where wildlife staff are attached with experienced staff in order to understand the requirements of job and duties and responsibilities. The On the Job Training phase provides sense of responsibility and accountability to wildlife staff and ready them for the bigger challenges that await them.

9.3.2 Formal Training Courses

The wildlife staff can be enrolled in formal training courses in fields of wildlife forensics, crime control, wildlife census that is conducted by institutions like Wildlife Institute of India, Wildlife Crime Control Bureau. The Deputy Conservator of Forests (Wildlife) may be trained for PG Diploma in Wildlife Management.

9.3.3 Training in use of firearms

The wildlife staff are always at risk to interactions with poachers/hunters/ smugglers of wildlife articles and products. In this context, it is crucial that they are provided weapons and training on how and when to use them and what are the legal do's and don'ts associated with use of weapons.

9.3.4 Training in Intelligence

A crucial part of wildlife protection and conservation is the formation of an intelligence network consisting of trustworthy informants. Further, modern day techniques of gathering cyber intelligence, camera trap based intelligence and CCTV based data are crucial in gathering intelligence. In this regard, it is proposed that wildlife staff be imparted skills in intelligence collection, coalition and analysis to understand patterns of wildlife offences and take preventive and curative action. This involves building vulnerability maps. The Police department and WCCB can play a crucial role in this regard.



9.3.5 Training in Investigation

The vital aspect of prosecution of wildlife offences involves investigation procedure and collection of evidences and witness statements. In this context, it is required to impart investigation skills for wildlife staff for collection of evidences, their safe custody and exhibition during trial.

9.3.6 Training in wildlife forensics

Wildlife forensics is critical aspect of investigation and collection of evidences. However, it is not realistic to expect that wildlife staff at range level be trained in wildlife forensics as it is a specialized field in which articles can be handled by trained professionals. In this context, it is prescribed that wildlife staff be made aware of the possibilities of wildlife forensic so that they utilize its possibilities after linking up with institutions or organizations performing such forensics.

9.3.7 Training in prosecution of wildlife offences

While forest officers are given under forest and wildlife laws to book offences, file FIR/Damage Reports and complaint to the magistrate, it is often seen that forest officers don't use the power and instead approach the police. In this context, it is prescribed that all wildlife staff be imparted training in prosecution of wildlife offences with each offences as a case study. The training shall clearly spell out the duties, role and responsibility vested upon wildlife staff in this regard.

9.3.8 Training in Eco Development& Eco Tourism

Although Seog Society was established long back in 2006, yet little progress has been made on development of local community and improvement of their living standards. In this context, there is an urgent need to impart training for wildlife staff on the models of eco development and community based eco-tourism practiced in PAs of other states. It is prescribed to conduct exposure visits of staff to other protected areas outside the state to understand organizational structure of eco-tourism societies, eco development committees and ways and means of involving local community in eco-tourism activities and how benefits realized can be transferred to them.

9.3.9 Training in Wildlife Census

It is prescribed that wildlife staff be trained in various techniques of data collection of wildlife with regard to call count, sign survey, pellet count, encounter rate, camera trap based survey and other common techniques of data collection.

9.3.10 Training in GIS/IT

With the advent of IT in wildlife management, there are various applications and portals that integrate wildlife data collection and spatial analysis. It is prescribed that wildlife staff be trained in GIS based analysis and IT based data collection techniques for streamlined data gathering and data analysis deriving spatial intelligence particularly with respect to fire burnt area assessment, regeneration survey, abundance of species and other such habitat parameters.



PART TWO THE PROPOSED MANAGEMENT

CHAPTER - X

ORGANIZATION, ADMINISTRATION & INFRASTRUCTURE

ORGANIZATION, ADMINISTRATION & INFRASTRUCTURE

10.1 Structure and Responsibilities

The area of the Shimla water Catchment is first notified as Sanctuary on July 29, 1958. The final notification was issued in the year 2013 (Appendix 2). The sanctuary is administratively managed under Shimla Wildlife Division headed by Deputy Conservator of Forests who reports to Chief Conservator of Forests, Wildlife South Circle. The overall monitoring and coordination of protected area management is under Himachal Pradesh Wildlife Wing headed by the Chief Wildlife Warden of Himachal Pradesh.

Range Forest Officer is the officer who is directly in-charge of the Sanctuary and looks after the day to day affairs and works in the field. There are 14 sanctioned posts for the Sanctuary as listed out below.

Sr.No	Designation	Existing number of posts
1	Range Forest Officer	1
2	Block officer	2
3	Range assistant	1
4	Forest guard	4
5	Peon	1
6	Chowkidar (Rest House at Seog)	1
7	Chowkidar (Range offifice)	1
8	Sweeper	1
9	Mali (Seog nursery)	1
10	Multi-Purpose Worker	1
	Total	14

Table 10.1: Sanctioned Staff Strength for the Sanctuary

Currently, the sanctuary is managed beat-wise with areas territorially allotted to forest guards overseen by deputy rangers. This mode of working is to be retained only from point of budgetary and protection related activities. An innovative approach is suggested in this context to better utilize the staff at hand considering the small area of PA and the various activities that are interwoven into management. It is prescribed that field staff be allocated sectors like eco-tourism, community development, wildlife monitoring. The following break up is prescribed in this regard:



S. No	Sector Allotted	Nodal Staff Responsible	Overseeing Staff		
2	Eco-Tourism Wildlife Awareness, Training and Education	Forest Guard (Eco-Tourism and Wildlife Awareness)	Deputy Range Forest Officer (Eco Tourism, Community Development and Wildlife Awareness)		
3	Community Development	Forest Guard (Community Engagement)			
4	Wildlife Monitoring & Research	Forest Guard (Wildlife Monitoring & Research)			
5	Monitoring and rejuvenation of streams and water sources	Forest Guard (Water Sources, Fire Protection and Climate	Deputy Range Forest Officer (Monitoring and Fire Protection)		
6	Fire Protection and Climate Change Monitoring	Change Monitoring)			

Table 10.2: Details of Staff

10.1.2 Research and Monitoring Staff

The sanctioned strength as above is sufficient and it is prescribed to retain aforementioned staff strength with respect to field level staff. However, there is no post of a research officer/ biologist/ botanist sanctioned at sanctuary level. It is prescribed that the post of a biologist shall be created and he/she may assist in all scientific aspects of wildlife management including drafting of management plan, wildlife census, habitat management etc.

10.2 Staff Amenities

A key factor in the success of any programme like wildlife protection which calls for a high degree of courage physical endurance and vigilance is the morale and motivation of the field staff. The following measures are suggested to build up morale and increase the level of motivation of wildlife staff as detailed below:-

10.2.1 Accoutrements

The wildlife staff should be provided with field boots/hunter shoes/Gum Boots on a regular basis as this is essential for movement in hilly terrain and an essential requirement during firefighting.



10.2.2 Uniforms

These should be supplied regularly at the norms fixed by the department and preferably full length trousers, full sleeve shirts be supplied instead of half sleeve shirts as they provide additional protection.

10.2.3 Protection against Rain/Snow

Presently Forest Departments do not supply rain coats or umbrellas to staff. These are essential to protect the health of the staff in high precipitation area. It is recommended that camouflage raincoats/ wind cheaters/ jackets clearly identifying them as staff of Shimla Water Catchment Wildlife Sanctuary be supplied to staff.

10.2.4 Medical Facilities

Medical facilities available at towns and cities may not be possible to be brought into the sanctuary. But the routine illness and regular medicines must be provided to the sanctuary staff.

10.2.5 Housing

Staff quarters for 4 field staff are currently not existing in Shimla Water Catchment. This is a huge blow to morale of staff and affects their routine work in forest areas. In this context, it is prescribed that forest guard quarters for Churat and Seog beat be constructed on priority. Further, Block Officer Quarter at Charabara and Range Office Quarter is also prescribed to be constructed during the period of management plan.

10.2.6 Transpart

A four wheeler patrolling vehicle is prescribed for the sanctuary. In addition, the existing motor bike needs to be replaced with new motor bike.

10.2.7 Mobila Phono

All the field staffs from Range Forest Officer to Forest guards may be provided allowance for mobile phone connectivity for better management of Sanctuary.

10.2.8 Field Equipment:

It is prescribed that at range level there should be 10 camera traps considering the small size of the sanctuary. Further, fire protection gear and equipment are much required and it is prescribed that they be procured at the earliest. Further, basic census equipment's like compass, GPS devices, binoculars are also prescribed for the wildlife staff for building their capacity.

10.2.9 Incentives and Awards

In order to keep the motivation levels of staff high, it is prescribed that a system of incentives and awards be built in for wildlife staff. Such awards and certificates of recognition can be provided to field staff who have done exemplary work in field of wildlife census, wildlife protection and management of eco-tourism activities.



PART TWO THE PROPOSED MANAGEMENT

CHAPTER - XI
ECO SENSITIVE ZONE

ECO SENSITIVE ZONE

11.1 Eco Sensitive Zone Area and Extent

The final notification of eco sensitive zone of Shimla Water Catchment Wildlife Sanctuary was issued by Ministry of Environment, Forests and Climate Change vides S.0 1858(E) dated 7th June 2017. The extent of area as notified is shown in Map below:



Map 11.1: Eco Sensitive Zone of Sanctuary

11.2 Restrictive Activities in ESZ

The aforementioned notification clearly categorizes activities in eco sensitive zone into prohibited, regulated and promoted activities. The table detailing same is as below:

Sr.No	Activity	, Remarks								
	PROHIBITED ACTIVITIES									
1	Commercial Mining, stone quarrying and crushing units.	(a)All new and existing (minor and major minerals), stone quarrying and crushing units are prohibited with immediate effect except for meeting the domestic needs of bona fide local residents including digging of earth for construction or repair of houses and for manufacture of country tiles or bricks for housing and for other activities. (b)The mining operations shall be carried out in accordance with the order of the Hon'ble Supreme Court dated the 4th August, 2006 in the matter of T.N. Godavarman Thirumulpad Vs. UOI in W.P.(C) No.202 of 1995 and dated the 21st April, 2014 in the matter of Goa Foundation Vs. UOI in W.P.(C) No.435 of 2012.								



o Activity Remarks							
	Prohibited Activities						
Setting of new saw mills.	No new or expansion of existing saw mills shall be permitted within the Eco-sensitive Zone.						
Use or production of any hazardous substances.	Prohibited (except as otherwise provided) as per applicable laws.						
causing water or air or soil or noise pollution.	No new industries and expansion of existing polluting industries in the Eco-sensitive zone shall be permitted. Only non-polluting industries shall be allowed within Eco- Sensitive Zone as per classification of Industries in the Guidelines issued by Central Pollution Control Board in February 2016, unless so specified in this notification. In addition, non-polluting cottage industries shall be promoted.						
Establishment of new major thermal and hydro-electric projects.	Prohibited (except as otherwise provided) as per applicable laws.						
Protection of hill slopes and river banks	No construction activity unless otherwise permitted by State Level Committee shall be undertaken on the hill with slopes more than 1 to 10 and also up to 100 meters from the banks of any river, and natural nallah.						
Commercial use of firewood.	Prohibited (except as otherwise provided) as per applicable laws.						
Use of plastic bags	Prohibited (except as otherwise provided) as per applicable laws.						
Under taking other activities related to tourism like over flying the Eco-Sensitive Zone area by hot air balloon, helicopter, drones, Microlites, etc.	Prohibited (except as otherwise provided) as per applicable laws.						
Commercial Fishing	Prohibited (except as otherwise provided) as per applicable laws.						
Discharge of untreated effluents in natural water bodies or land area.	Prohibited (except as otherwise provided) as per applicable laws.						
Establishment of solid waste disposal site and common incineration facility for solid and bio medical waste	No new solid waste disposal site and waste treatment/processing facility of solid waste is permitted within Eco sensitive zone. Further installation of common or individual incineration facility for treatment of any form of solid waste generated from industrial process and health establishment/hospitals etc. is Prohibited.						
	Setting of new saw mills. Use or production of any hazardous substances. Setting up of industries causing water or air or soil or noise pollution. Establishment of new major thermal and hydroelectric projects. Protection of hill slopes and river banks Commercial use of firewood. Use of plastic bags Under taking other activities related to tourism like over flying the Eco-Sensitive Zone area by hot air balloon, helicopter, drones, Microlites, etc. Commercial Fishing Discharge of untreated effluents in natural water bodies or land area. Establishment of solid waste disposal site and common incineration facility for solid and bio						



Sr.No	Activity	Remarks				
13	Establishment of large- scale commercial livestock and poultry farms by firms, corporate, companies.	Prohibited (except as otherwise provided) as per applicable laws except for meeting local needs.				
14	Setting up of brick kilns.	Prohibited (except as otherwise provided) as per applicable laws.				
REGULATED ACTIVITIES						
15	Commercial establishment of hotels and resorts.	No new commercial hotels and resorts shall be permitted within one kilometre of the boundary of the Protected Area or upto the extent of Ecosensitive zone, whichever is nearer, except for small temporary structures for Eco-tourism activities: Provided that, beyond one kilometre from the boundary of the protected Area or upto the extent of Eco-sensitive zone whichever is nearer, all new tourist activities or expansion of existing activities shall be in conformity with the Tourism Master Plan and guidelines as applicable.				
16	Construction activities	No new commercial construction of any kind shall be permitted within one Kilometre from the boundary of the Protected Area or upto extent of the Eco-sensitive Zone whichever is nearer: Provided that, local people shall be permitted to undertake construction in their land for their use including the activities listed in sub paragraph (1) of paragraph 6 as per building byelaws to meet the residential needs of the local residents such as: (I) Widening and strengthening of existing roads and construction of new roads; (ii) Construction and renovation of infrastructure and civic amenities; (iii) Cottage industries including village industries; convenience stores & local amenities supporting eco- tourism including home stays; and (iv) Promoted activities listed in this Notification.				
17	Trenching ground	Establishing of new trenching ground is prohibited. Old trenching grounds are to be regulated under applicable laws.				
18	Discharge of treated waste water/effluents in natural water bodies or land area.	The discharge of treated waste water/effluents shall be avoided to enter into the water bodies. Efforts to be made for recycle and reuse of treated waste water. Otherwise the discharge of treated waste water/effluent shall be regulated as per applicable laws.				
19	Air and Vehicular Pollution	Regulated under applicable laws.				
20	Commercial extraction of surface and ground water.	Reg ulated under applicable law.				



Sr.NO	Activity	Remarks				
21	Felling of Trees	(a)There shall be no felling of trees on the forest or Government or revenue or private lands without prior permission of the competent authority in the State Government. (b)The felling of trees shall be regulated in accordance with the provisions of the concerned Central or State Act and the rules made thereunder.				
22	Migratory graziers	Regulated under applicable laws and as per Zonal Master Plan.				
23	Existing establishments.	Regulated under applicable laws				
24	Erection of electrical and communication towers and laying of cables and other infrastructures	Regulated under applicable law. Underground cabling may be promoted. All existing electric lines passing through the ESZ shall be adequately insulated in the time frame prescribed under the Zonal Master Plan.				
25	Widening and strengthening of existing roads and construction of new roads.	Shall be done with mitigation measures, as per applicable laws, rules and regulation and available guidelines.				
26	Fencing of existing premises of hotels and lodges.	Regulated under applicable laws. In order to allow free movement of wildlife, hotels or other commercial establishments within the ESZ shall not fence their properties with barbed wire and no fence shall be higher than 1 meter. Any existing fence not complying with this stipulation shall be modified as per the time lines mentioned in the Zonal Master Plan.				
27	Timber Distribution (TD) Rights.	Regulated under applicable laws				
28	Collection of small Fodder.	Regulated under applicable laws				
29	Muck Dumping.	Regulated under applicable laws				
30	Drastic change of Agriculture system	Regulated under applicable laws				
31	Commercial use of Natural water Resource including Ground water Harvesting.	Regulated under applicable laws				
32	Movement of vehicular traffic at night.	Regulated for commercial purpose under applicable laws.				



ECO SENSITIVE ZONE

Sr.No	Activity	Remarks
		Regulated Activities
33	Introduction of Exotic species.	Regulated under applicable laws.
34	Commercial Sign boards and hoardings.	Regulated under applicable laws.
35	Collection of Forest produce or Non-Timber Forest Produce (NTFP).	Regulated under applicable laws.
36	Infrastructure including civic amenities.	Shall be done with mitigation measures, as per applicable laws, rules and regulation and available guidelines.
37	Open Well, Bore Well etc. for agriculture or other usage	Regulated and the activity should be strictly monitored by the appropriate authority.
38	Fencing of existing premises of hotels and lodges.	Regulated under applicable laws
39	Eco-tourism.	Regulated under applicable laws
		PROMOTED ACTIVITIES
40	Ongoing agriculture and horticulture practices by local communities along with dairies, dairy farming, aquaculture and fisheries.	Permitted under applicable laws for use of locals.
41	Organic farming	Shall be actively promoted.
42	Commercial use of Natural water Resourceincluding Ground water Harvesting.	Regulated under applicable laws
43	Small scale nonpolluting industries.	Nonpolluting industries termed as White Category as per classification of industries issued by the Central Pollution Control Board in February 2016 and non-hazardous, small- scale and service industry, agriculture, floriculture, horticulture or agro-based industry producing products from indigenous materials from the Eco-sensitive Zone shall be permitted by the competent Authority.



11.3 Management of Eco Sensitive Zone

In order to manage eco sensitive zone of Shimla Water Catchment, a monitoring committee has been constituted vide aforementioned notification chaired by the Deputy Commissioner, Shimla and Member Secretary being Deputy Conservator of Forests (Territorial) Shimla.

List of Members of Monitoring Committee of ESZ

- (i) Deputy Commissioner, Shimla as Chairman
- (ii) An expert in the area of ecology & environment to be nominated for 3 years by the Government of Himachal Pradesh
- (iii) One Representative of Non-Governmental Organisation (working in the field of environment including heritage conservation) to be nominated for three years by the Government of India
- (iv) Member Secretary or Member, Himachal Pradesh State Biodiversity Board
- (v) Executive Engineer, Himachal Pradesh Pollution Control Board
- (vi) Senior Town Planner
- (vii) Divisional Forest Officer (Wildlife), Shimla
- (viii) Divisional Forest Officer (Territorial), Shimla as Member Secretary

The committee shall devise an eco-sensitive zonal master plan to prepare a road map for management in eco sensitive zone and implementing the notification in letter and spirit. The Zonal master plan shall evaluate the scope of various prohibited, regulated and promoted activities in the ESZ and suggest ways and means to enforce them.

Roles and Responsibilities of Monitoring Committee

- 1. The tenure of the Monitoring Committee shall be for a period of three years from the date of issue of Notification.
- 2. The Monitoring Committee shall monitor the compliance of the provisions of this Notification.
- 3. The Monitoring Committee shall not allow the activities that are covered in the Schedule to the notification of the Government of India in the erstwhile Ministry of Environment and Forests number S.O. 1533 (E), dated the 14th September, 2006, and are falling in the Eco-sensitive Zone, including the prohibited activities as specified in the Table under paragraph 4 thereof. Only white categories of industries shall be considered as specified in the guidelines issued by the Centre Pollution Control Board for "classification of Industries, 2016".
- 4. The activities that are not covered in the Schedule to the notification of the Government of India in the erstwhile Ministry of Environment and Forests number S.O. 1533(E), dated the 14th September, 2006 and are falling in the Eco-sensitive Zone, except for the prohibited activities as specified in the Table under paragraph 4 thereof, shall be scrutinised by the Monitoring Committee based on the actual site-specific conditions and referred to the concerned Regulatory Authorities.
- 5. The Member Secretary of the Monitoring Committee or the concerned Commissioner shall be competent to file complaints under section 19 of the Environment (Protection) Act, 1986 (29 of 1986) against any person who contravenes the provisions of this notification.
- 6. The Monitoring Committee may invite representatives or experts from concerned Departments, representatives from Industry Associations or concerned stakeholders to assist in its deliberations depending on the requirements on issue to issue basis.



ECO SENSITIVE ZONE

- 7. The Monitoring Committee shall submit the annual action taken report of its activities as on 31st March of every year by 30th June of that year to the Chief Wild Life Warden of the State under intimation to this Ministry as per proforma appended at Annexure III of the final notification.
- 8. The Central Government in the Ministry of Environment, Forest and Climate Change may give such directions, as it deems fit, to the Monitoring Committee for effective discharge of its functions



PART TWO THE PROPOSED MANAGEMENT

CHAPTER - XII
THE BUDGET

12.1 Budget Summary of the fund received since five years

12.1.1 State Plan

Sr.No	Name of Work	2016-17		2017-18		2018-19		2019-20		2020-21	
		Ph y	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)
1	Construction of check Dam	Nil			300000	Nil		Nil		Nil	
2	Maintenance of path	_		Nil		Km	28700				
3	Churat nry at Seog					Nil		-		1	50000
4	Special repair & white of FRH Seog	-								1	100000
5	Landscaping work at Seog									1	50000
6	Development of view-point.									1	10000

12.1.2 Centrally Sponsored Schemes

Sr.No	Name of Work		2016-17		2017-18		2018-19		2019-20		2020-21	
		Ph y	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)	
Non Rec	curring activities											
1	Construction of Guard hut at Chharabra	Nil		1	300000							
Recurrin	g activities											
1	Maint of staff quarter & Range office building			2	100000	3	225000					
2	Providing & fixing of iron Railing and benches in Seog			L/S	100000							



Sr.No	Name of Work	2	016-17	20)17-18	20	18-19	20	019-20	2	020-21
		Phy	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)	Phy	Fin (Rs)
3	Repair and maint of public toilet at SWC Dhalli	0		0		0		1	100000	0	0
4	Maintenance and Repair of wooden bridges	0		0		0		L/S	50000	5	100000
5	Maintenance of road	0		0		0		14 KM	150000	0	0
6	Maintenance of store shed of Churat nursery at Seog	0		0		0		0		1	80000
7	Maintenance of watch tower	0		0		0		0		1	50000
8	Repair of I/L Chain fencing	0		0		0		0		L/S	75000
9	Removal of garbage	0		0		0		0		L/S	50000
10	Anti poaching and maintenance of fire line	0		L/S	128025	L/S	150000	L/S	25000	L/S	150000

12.1.3 Expenditure under CAMPA in Shimla Water Catchment Sanctuary from 2016-17 to 2020-21.

Sr.No	Particular	2016-17	2017-18	2018-19	2019-20	2020-21
1	Wildlife Week Celebration	50000	0	0	0	0
2	Wages	0	21000	0	75978	179066
3	Office Expenses	34175	13199	0	22150	0
4	Maintenance of Fire Line	0	0	0	50000	0
5	Maintenance of Cycle	0	0	0	21780	36896
6	Construction of Cycle Stand	0	0	0	73230	13104
7	Soil and conservation activity	0	0	0	200000	0
8	Maintenance of Road	150000	120000	200000	200000	189516



C N		201/-17	0017.10	0010.70	2010-00	0000.03
Sr.No	Particular	2016-17	2017-18	2018-19	2019-20	2020-21
9	Maintenance of Path	100000	200000	400000	125000	310000
10	Up gradation/Improvement of Nursery	150000	54316	49941	5100	34337
11	Interlink Chain fencing	500000	29647	509990	32551	0
12	Habitat Enrichment	0	0	0	50000	0
13	POL/Motor Vehicle	1768	3851	0	1453	3455
14	Awareness/Signages	0	0	0	0	81608
15	Construction of Check Dam/ Check wall/ B. Wall/ R.wall	620000	50000	50000	0	50000
16	Augment of Salt Lick/water hole	50000	29590	10000	0	5000
17	Engagement of fire Watcher	20000	19320	0	0	27500
18	Engagement of anti Poacher/ anti grazer	40000	10000	11250	0	27500
19	Maintenance of Fire Line	0	0	18325	0	25000
20	Approach path to Watch Tower	0	0	150000	0	121481
21	Maintenance of FRH Compound	0	297960	0	0	299600
22	Training and Exposure Visit	0	0	0	0	10000
23	Construction of Parking	0	0	700000	0	400000
24	Construction of Rain Shelter	0	0	0	0	249987
25	Improvement of Office Compound	0	0	0	0	171235
26	Patrolling	0	0	0	0	9900
27	CCTV installation	0	0	0	0	38973
28	C/O breast wall	0	0	156600	0	0



Sr.No	Particular	2016-17	2017-18	2018-19	2019-20	2020-21
29	C/O Water hole	0	0	11000	0	0
30	C/o Railing	0	0	150000	0	0
31	C/o Souvenior shop	0	0	200000	0	0
32	M/o Public toilet	0	0	700000	0	0
33	Enrichment/ plantation	100000	58859	50000	0	0
34	Mobile connectivity/ Amenity	50000	13400	0	0	0
35	Repair of boundary piller	5150	0	0	0	0
36	Publicity awareness	100000	0	0	0	0
	Total	1971093	921142	3367106	857242	2284158

12.1.4 Expenditure under Seog Ecetourism Society in Shimla Water Catchment Sanctuary from 2016-17 to 2020-21.

Sr.No	Particular	2016-17	2017-18	2018-19	2019-20	2020-21
1	Garbage Collection	9999	0	3927	24289	0
2	Repair of Cycle	21865	10310	24304	19686	0
3	Refreshment	42151	6825	4860	15392	0
4	Office Expenses	50180	18820	65916	29340	23461
5	Wages	63930	51205	34590	0	0
6	Motor Vehicle/POL	5383	8271	4390	20605	647
7	FRH Expens.	767	11013	280	15500	1895
8	Maint. of Road /Path	0	81361	0	0	0
9	Maint of pipeline	0	6772	0	0	0
10	Awareness/Signage	0	42536	0	5753	0
11	Miscellaneous	0	24180	2150	0	8850
12	Census	0	0	36125	0	0
13	CCTV Networking	0	0	0	18000	0
14	Construction of Toilet	0	0	0	0	144000



Sr.No	Particular	2016-17	2017-18	2018-19	2019-20	2020-21
15	Maintenance of Range Office/Compound	0	0	0	0	24569
16	Maintenance of I/L Chain fencing	0	0	0	0	10572
17	Preparation of entry gate	40137	0	0	0	0
18	Maintenance of FRH	9900	0	12984	47286	62113
	Total	244312	261293	189526	195851	276107



BUDGET SHEET

12.2 Proposed Year-wise Budget Summary For The Next 10 Years 2021-2032

S. Na	Name of work	202	2-23	202	3-24	202	4-25	202	5-26	202	26-27	202	7-28	202	8-29	202	9-30	203	30- 3 1	203	1-32	Remarks
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	
A. Habit	tat Improvement																					
1	Fodder, fruit, shrub and Nirgal Plantation	-	-	-	-	-	-	2На	2.30	-		-	-	-	-	-	-	-		-	-	
2	Rehabilitation of areas infested with Invasive / Exotic Species with native grass species	•	•	1.5	0.75	1.5	0.75			-		•	-	5	-	•	-	-	-	٠	٠	
B. Fores	t Protection																					
1	Survey and Demarcation	•		L/\$	0.75	•		•	-	-	-			•	•		•		-	•		Survey will be done with the help of revenue department to demarcate missing boundary pillar
2	Construction of missing boundary pillar	-	-	-	-	-	-	15	2.25	17	2.55	-	-	-	-	-	-	15	2.25	17	2.55	
3	Create new fire lines	-	-	-	-	1km	0.30	1km	0.30	-	-	-	-	-	-	-	-	-	-	-	-	Kufri Beat
4	Maintenance of fire lines and fire paths	2.5 km	0.20	2.5 km	0.20	2.5 km	0.20	3.5 km	0.25	4.5 km	0.30	4.5 km	0.30	4.5 km	0.30	4.5 km	0.30	4.5 km	0.30	4.5 km	0.30	
5	Anti-pouching activities	300 Man days	1.05	300 Man days	1.10	300 Man days	1.15	300 Man days	1.20	300 Man days	1.25	300 Man days	1.30	300 Man days	1.35	300 Man days	1.40	300 Man days	1.45	300 Man days	1.50	
6	Fire watchers	L/S	0.80	L/S	0.90	L/S	1.0	L/S	1.1	L∕S	1. 20											
7	Maintenance of patrolling paths	L/S	2.00	L/S	2. 00	L/S	2.50	L/S	2.5 0	L/S	2. 50	L/S	3.00	L/S	3.00	L/S	3.00	L/S	3.50	L/S	3.50	
8	Interlinked chain fencing		-	-	-	200 mtr	5.00	20 0 mtr	5.0 0	25 0 mtr	7. 00	250 mtr	7.00	100 mtr	4.00	*	7.	•	÷	•	-	Fencing at Charrabra, Near Entrance Gate
9	Maintenance of Inter Link Chain Fencing	-	-	L/S	1.00	•	•	L/S	1.0 0		•		-	L/S	1.5	•		•	-	L/S	1.5	
10	Maintenance of Watch tower	-	-	1 No	3.00	-	-	-	-	1 No	3. 5	-	-	-	-	-	-	-	-	-	-	
11	Cleanliness Drive	L/S	030	L/S	030	L/S	0.30	L/S	0.5	L/S	0. 50	L/S	0"50	L/S	0'50	L/S	0.75	L/S	0'75	L/S	0'75	



12.2 Proposed Year-wise Budget Summary For The Next 10 Years 2021-2032

														i icui v				,	i ilic i			
S. No	Name of work	20	22-23	20	123-24	202	24-25	202	25-26	202	26-27	2027-	28	20)28- 29	202	9-30	20	30-31	2031	-32	Remarks
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	
C. S	oll and water cons	ervatio	on work	(S																		
1	Water Retention Structures	L/S	1.00	L/S	2.25	L/S	2.25	L/S	2.50	L/S	2.50	L/S	2.50	L∕S	2.50	L/S	2.50	L/S	3.00	L/S	3.00	
2	Construction of Water Ponds	1	0.50	1	0.50	1	0.50	1	0.50	1	0.50	1	0.50	1	0.50	1	0.50	1	0.50	1	0.50	In Each
3	De-silting of water ponds	3	0.50	3	0.50	3	0.50	3	0.50	3	0.50	3	0.60	3	0.60	4	0.80	4	0.80	4	0.80	
4	Construction of Dry Stone check Dam	10	4.00	10	4.00	10	4.00	12	5.00	12	5.00	15	6.00	15	6.00	15	6.00	15	6.00	15	6.00	
5	Bioengineering works	∟∕s	1.20	L/S	1.20	L/S	1.40	L/S	1.60	L/S	1.80	L/S	1.80	L∕S	1.80	L/S	1.80	L/S	1.80	L/S	1.80	
6	Construction of Water Harvesting Structure	-	-	-	•	L/S	6.00	-		-	•	L/S	6.00	•	•	-	•	L/S	6.00		-	
D.Tr	aining and Worksh	IODS								1						l						
1	Exposure visit for staff within and outside state	•	-	L/S	3.0	L/S	2.00	-	•	L/S	3.00	•	-	-	-	L/S	4.00	-	•	L/S	4.00	
2	Education and Awareness	L/S	1.50	L/S	1.50	L/S	1.50	L/S	2.00	L/S	2.00	L/S	2.00	L/S	2.50	L/S	2.50	L/S	3.00	L/S	3.00	
3	Wildlife week celebration	L/S	1.00	L/S	1.00	L/S	1.00	L/S	1.00	L/S	1.50	L/S	1.50	L/S	1.50	L/S	1.50	L/S	2.00	L/S	2.00	
4	Training & Refreshment of trainees of IFS, SFS, Range Officers & Others	L/S	1.5	L/S	1.5	L/S	1.5	L/S	1.75	L/S	1.75	L/S	1.75	L/S	1.75	L/S	2.0	L/S	2.0	L/S	2.0	



	Name of work	2022	-23	202	3-24	2024	-25	2025	-26	202	6-27	2027	7-28	202	8-29	2029	-30	203	0-31	2031	L-32	Remarks
		Phy	Fin	Phy	Fin	Phy	Fin I	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	
itaf	Welfare activities									I.	1						1	1		1		
	Amenities of staff	L/S	0.75	L/S	0.75	L/S	0.75	L/S	1.00	L/S	1.00	L/S	1.00	L/S	1.25	L/S	1.25	L/S	1.50	L/S	1.50	
	Connectivity Charges to Staff	∟⁄s	0.30	∟∕s	0.30	⊔s	0.30	L/S	0.40	L/S	0.40	L/S	0.40	L/S	0.50	L/S	0.50	L/S	0.50	⊔s	0.50	
	Provision of		0.50	L/S	0.50	L/S	0.50	L/S	0.60	L/S	0.60	L/S	0.60	L/S	0.75	L/S	0.75	L/S	0.75	L/S	0.80	
	ration for patrolling parties																					
ıfra	structure																					
	RO Residence at SWC Dhalli	-	-	-	-	1	30.0	-	-	-	-		•		-	-	•			-	*	
2	Construction of store shed near	*	-	1	5.0	-	-	-	-	-	-	-	•	-	-	-	-	•	-	-	-	
3	cycle stand. Construction of	1	15.	-	-	-	-):	-	-	-	-	-	(÷	-	-	-	-:	-	-	-		
	BO Quarter Charabara		0																			
4	Construction of Guard Quarter Churat	-	•	•	•		-	1.0	20. 0	•	-	-	•	-	•	-	-	-	-	-	•	
5	Constriction of Guard Quarter at	-	-	-	-	-	-	-	-	1.0	20.	-	-	-	-	-	-	-	-	-	•	
6	Seog Maintenance of Road from	7km	2.0	7km	2.0	7km	2.50	7km	2.50	7km	2.50	7km	2.50	7km	2.50	7km	2.50	7km	2.50	7km	3.00	
	Entrance Gate to Seog Tank																					
7	Maintenance of Staff Quarters and Range office	L/S	0	L/S	0	L/S	2.50	L/S	2.50	⊔s	2.50	L/S	3.00									
8	Maintenance of bridges and railing in dangers point	L/S	1.0	L/S	1.0	L/S	1.50	L/S	1.50	L/S	1.50	L/S	2.00	L/S	2.00	L/S	2.00	L/S	2.00	L/S	2.50	
9	Maintenance of View point			-	-	1 Na.	1.00	-		2.	-	-	•	1 No	1.50	-	-	-	-	-	-	
10	Maintenance of Path from kufri to Chini Bangla.	-	•	L/s	1.0	9	-	L/S	1.00	•	-	L/S	1.00	-	-	∟⁄S	1.25	Ē	-	L∕S	1.50	
11	Provision of Interlock tiles at SWC Range	-	-	-	-	L/S	3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	•	
12	Office compound Maintenance of pipeline road	L/S	1.0	5		⊔s	2.50	7	-	L/S	2.50	-	-	L/S	3.0	-	-	L/S	3.00	-	-	
	from Seog Tank to end of Sanctuary					- 4																
13	Provision of Interlock Tiles/ stone in approach	L/S	2.0	-	-	-	•		-	-	-		•	•	•	•	•	•	•		•	
	path from BO Quarter to Seog FRH																					
4	Fencing of BO Quarter Seog	-		L/S	2.5	-	-	-	-	-	-		•		-			•	•		-	
5	Maint. of main entrance gate at Dhalliand entrance gate at Seog	1 No	2.0	-	•	1 No	1.00		•	•	-	1 No	1.50	-	-	-	•	1 No	1.50	-	•	
						L/S	2.50	_	-				-			_		_				
16	Fencing of Guard		7	-	-	1 43	Z.JU	-	-	-				-	-	-	-	-	-	-	-	

i. No	Name of work	202	2-23	202	3-24	2024	l-25	2025	i-26	202	26-27	202	7-28	202	8-29	2029	-30	20	30-31	20	31-32	Remarks
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	
Equi	pment																	1	1			
1	Purchase of Binoculars	5no	0.50	5no	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	Purchase of GPS/PDA	5no	1.00	5no	1.00	-	-	-	-	-	-	-	-	-	-	-	-	5no	1.25	÷	-	
1	Purchase of camera	•	•	•		1no.	1.50	•	-	•				•	•	-	-	1no	2.50	0	•	
5	Trap cameras	4	1.00	-	-	4	1.0	1-	-	5	1.50	-	-	5	1.50	-	-	-	-	5no	1.5	
	Fire Fighting Equipment	70	-	L/S	1.00	-	-	L/S	1.00	-	-	L/S	1.00	-	-	L/S	1.25	7	-	L/S	1.25	
Eco	Tourism Developn	nent			ı					ı												1
1	Development and implementation of signage system	∟∕S	1.5	L/S	1.75	∟∕s	2.0	L/S	2.0	L/S	2.0	IJS	2.25	L/S	2.25	L/S	2.25	L/S	2.5	IJS	2.50	
2	Printing Sanctuary publicity literature	L/S	1.00	L/S	1.00	L/S	1.0	L/S	1.25	L/S	1.25	L/S	1.5	L/S	1.5	L/S	1.5	L/S	1.5	L/S	1.5	
3	Development/ Improvement of Souvenir shop	•	-	1 No	5.00		•	-				-	-	-	-	•	•		-	•	•	
3	Special repair of Forest Rest House at Seog	L/S	2.00	•	•	L/S	2.0	-	-	-	•	L/S	2.00	-	-	-	•	L/S	3.50	-	•	
7	Periodic Maintenance of Patrolling Paths.	L/S	2.00	L/S	2.00	L/S	2.50	L/S	2.50	L/S	2.60	L/S	2.60	L/S	3.00	L/S	3.00	L/S	3.00	L/S	3.50	
8	Land Scaping work at Seog	∟∕S	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	Development of entrance gate for the staff quarter at Chharabra	•	•	L/S	2.00	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	Landscapping at Churat	1	-	-	5	-	-	L/S	2.00	•	-	-	-	-	-	-	-	-	-	-1	-	
11	Installation of Iron gate including Toe wall near Helipad(1No.in C-1a,1No in C- 2a)		-	1No	2.50	-		-	-	~		1No	3.00	-	-	-	-	-		-		



. No	Name of work	202	2-23	202	3-24	2024	-25	2025	-26	202	6-27	202	7-28	20	28-29	2029	-30	203	30-31	20	31-32	Remarks
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	
lon	itoring and Popula	tion E	stimati	on																		
	Annual population monitoring exercise	L/S	0.75	L/S	0.75	L/S	1.0	L/S	1.00	L/S	1.00	L/S	1.25	L/S	1.25	L/S	1.50	L/S	1.50	L/S	1.50	
	Printing of Annual Report of the activities of the sanctuary	L/S	0.30	L/S	0.30	L/S	0.30	L/S	0.40	L/S	0.40	L/S	0.40	L/S	0.50	L/S	0.50	L/S	0.50	L/S	0.50	
3	Carbon sequestration potential of water Catchment area and water absorption capacity studies and other related studies	•		•	•		-	1 No	2.0	•				1 No	2.0	-	-					
	Study on hydrology of area and revival of non-functional stream	•	-	٠	•	1 No	2.5	-	•	-	-	-	-	•		1 No	2.5	-	-	•	-	
i i	Evaluation and review of management plan		•		*	*	-	-	-	1 No	0.75	-	-	-	-	-	-	-	-	-	-	
i	Periodic Survey of Flora On Trees, Herbs, Shrubs & Grasses and publication of reports	-	-	-	-	-	-1	1 No	1.50	•	-	-	-	-	-	-	-	1 No	2.00	-	-	
,	Periodic Survey of Medicinal Plants and publication of reports	-	-	1 No	1.00	-	-	-	-	-	-	-	-	-	-	1 No	1.5	-	-		-	
3	Periodic Survey of Orchids and publication of reports	-	-	•	-	1 No	1.00	-	•	*	•			1 No	1.5			•	•	•		
9	Periodic Survey of Ferns and publication of reports	•	•	•	•	•	-	•	•	1 No	1.00	3	•	-	-	-	-	-	•	1 No	1.5	
0	Periodic Survey of Mammals and publication of reports	-	-		-	-	-	1 No	1.00	-		•	•	•	-	•	-	1 No	1.5	•	-	
1	Periodic Survey of Avi-Fauna and publication of reports	-	-	1 No	1.0	-	-	-	-	•	•	•	•	•	-	1 No	1.5	-	-	-	•	



12.2 Proposed Year-wise Budget Summary For The Next 10 Years 2021-2032

S. No	Name of work	2022-23		2023-24		2024-25		2025-26		2026-27		202	2027-28 2		2028-29 2029		J-30 203		30-31		31-32	Remarks
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin									
12	Periodic Survey of Avi-Fauna and publication of reports		-	-		1 No	1.00	-	÷	-	-2	-	-	-	-	_	-	1 No	1.5	-	-	
13	Periodic Survey of reptiles & amphibians and publication of reports																					
Offic	ce contingencies																'					'
1	Purchase of furniture articles to FRH,Range office	•		L/S	2.00	-		3	2	6		•	-	L/S	2.0	-	-	-	-	-	•	
2	Stationary, Electricity bills etc	L/s	0.70	L/s	0.70	L∕s	0.80	L∕s	0.80	L∕s	0.90	L/s	0.90	L/s	0.90	L/s	0.90	L/s	1.0	L∕s	1.0	
3	New/Repair & maintenance of Computer/ Laptop Tablet/ Printer	L/s	1,0	-	-	-	-	•	-	L/S	1.5	-	-	-	-	-	-	L/S	2.0	-	-	
4	Maintenance of vehicle/POL/	∟⁄s	0.30	L/S	0.30	L/S	0.30	L/S	0.30	∟⁄s	0.40	L/S	0.40	L/S	0.40	L/S	0.40	L/S	0.50	∟∕S	0.50	



APPENDICES

Appendix-1

Notification under Wildlife (Protection) Act in 1999

(Authorative English Text of this Department Notification Number FFE-B-F(6)-20/99-dated 23- 10- 1999 as required under clause (3) of Article 348 of the Constitution of India.)

GOVERNMENT OF HIMACHAL PRADESH DEPARTMENT OF FOREST No.FFE-B-F(6)20/99-Dated Shimla-2, the 23/10/99

NOTIFICATION

Whereas Notification under section 18 of the Wildlife (Protection) Act, 1972 was issued vide Govt. Notification No. 6-2/73-SF-III dated 14/12/1982 declaring its intention to constitute Water Supply Catchment Sanctuary in District Shimla.

AND whereas proclamation as required under section 21 of the said Act was published in the regional language and circulated in every Town and Village covered by the above Notification on 22/12/1997. No objections whatsoever were received from the public within the prescribed period. It is therefore, felt that there is no need either to exclude or include any land from the limits of the sanctuary and consequently no action is required to be taken under Sections 24 & 25 of the Act;

AND whereas the Governor, Himachal Pradesh considers that Water Supply Sanctuary is of adequate ecological, faunal geomorphologic natural or zoological significance;

NOW, therefore, the Governor Himachal Pradesh in exercise of the powers vested in her under section (26A) of the said Act is pleased to declare Water Supply Catchment Area as Sanctuary with immediate effect for the purpose of protecting, propagating or developing wildlife or its environment.

The limits of the area of the Sanctuary shall be as under:

North: Ridge commencing from DhalliTellbar about Hindustan Tibet Road and Mule road to Charabra water works chowki, then H.T. road upto Kufri Bazar.

East: Kufri Bazar to Cast Iron Pillar No. 35 along Kufri Chail Road.

South: Cast Iron Pillar No. 35 along Kiral, Malana, Cast Iron Pillar No. 60 to 79 upto village Bandi. West:

From Cast Iron Pillar No. 79 Village Bandi to village Garog along DhalliGarog Ridge.

Area: 10 Sq. Kms.

By order Commissioner-cum-secretary (Fts.) to the Government of Himachal Pradesh Endst. No. FFE-B-F(6)-Dated Shimla-2, the 23/10/99

Copy forwarded for favour of information and necessary action to:

- 1. All the Administrative Secretaries to the Govt. Of Himachal Pradesh, Shimla-171002.
- 2. All the Divisional Commissioners in Himachal Pradesh.
- 3. All the Heads of Departments in Himachal Pradesh.
- 4. The Principal Chief Conservator of Forests, Himachal Pradesh, Shimla-171001.
- 5. The Chief Wildlife Warden, Himachal Pradesh, Shimla-2.
- 6. All the Deputy Commissioners in Himachal Pradesh.
- 7. The Controller, Printing & Stationary Department, H.P. Shimla 171005 for publication in the Rajpatra. Five copies of the Rajpatra be sent to this Department.
- 8. Chief Conservator of Forests in Himachal Pradesh.
- 9. All the Divisional Forest Officers (Wildlife) in Himachal Pradesh.
- 10. Guard File. (100 copies spare)

Addl. Secretary (Forests) to the Government of Himachal Pradesh.

Appendix-2

(Authoritative English Text of this Department Notification No. FFE-B-F (6)11/2005-II, Dated 7'h June, 2013 as required under Articles 348 (3) of the Constitution of India).

GOVERNMENT OF HIMACHAL PRADESH DEPARTMENT OF FOREST

No. FFE-B-F (6)-11/2005-li/Shimla Water Catchment Dated Shimla-2, the7th June, 2013

NOTIFICATION

Whereas a Notification under Section 26A of the Wildlife (Protection) Act 1972 (53 of 1972) was issued by the Government vide Notification No. FFE-B-F (6)-20/99 dated 23.10.1999 to declare Shimla Water Catchment as Wildlife Sanctuary comprising an area of 10 sq. km;

And whereas, matter with regard to rationalization of Wildlife Sanctuaries and National Parks in Himachal Pradesh was under consideration of the Hon'ble Supreme Court in IA No. 189/2010 in Writ Petition Civil No. 337 of 1995 titled Centre for Environmental Law, WWF-I Versus Union of India & Others;

And whereas, in pursuance to the Hon'ble Supreme Court order dated 7 May 2010, the State Government issued intention Notifications under Section 18 of the Wildlife (Protection) Act, 1972, in respect of the Wildlife Sanctuaries and National Parks for which rationalization had been proposed; And whereas, the Hon'ble Supreme Court vide order dated 05/08/2011, further directed the State Government to follow the procedure laid down under Section 18 to 26A and 35 of the Wildlife (Protection) Act, 1972 before issuance of final Notifications under Section 26A of the Wildlife (Protection) Act, 1972, which procedure was duly followed;

And whereas the Hon'ble Supreme Court vide order dated 01/02/2013, passed in IA No. 155 (earlier IA No. 139/2010), has permitted the State Government to issue final Notifications under Sections 26A, 35(4) & 36A of the Wildlife (Protection) Act, 1972, with regard to the proposed rationalization of boundaries of Wildlife Sanctuaries and National Parks in Himachal Pradesh;

Now, therefore, the Governor, Himachal Pradesh in exercise of the powers vested in her under Section 26A of the Act ibid is pleased to declare an area of 10.00 sq. km of Shimla Water Catchment as 'Shimla Water Catchment Wildlife Sanctuary' with immediate effect for the purpose of protecting, propagating and developing wildlife and its environment, in supersession of earlier notification No. FFE-B-F(6)-20/99-11 dated 23.10.1999.

Sr.No	Name of the Wildlife Sanctuary	Constituents i)District ii)Forest Division	Boundaries of Shimla Water Catchment Wildlife Sanctuary			
1			NORTH: Starts from entry point to water catchment near Dhalli and water works chowki/pumping station on Hindustan Tibet Road NH 22then along same NH downside via Chharabraupto Kufri Bazar.			
2	Shimla		EAST: Kufri Bazar to cast iron pillorNo.35 along Kufri Chail road up to point 2632 mtr.			
3	Water Catchment	i)Shimla ii)Shimla WL Division	SOUTH: From point 2632 mtr then separating Nahr PF inside and Patgaihar PF outside excluding the private land of villages in nalla flowing from Kufri and Seog up to boundary of water works catchment and Tipra village private land.			
4			WEST: From boundary of water works Catchment and Tipra village private land via cast iron pillar No. 79 village excluding private land of Tipra, Garhog and Bareha village upto starting point of Northern Boundaries.			

This area is situated within the Geo-coordinates North Lat.31007'08"N & Long.77014'00"E East Lat.31 05'32"N&Long.77 16'04"E, South Lat.31 05'11"N & Long.77 15'41"E West Lat.31006'36"N & Long.77^13'00"E which falls on Survey of India topo sheet No. 53 E/4 and 53 E/8 on scale 1: 50,000. Area of Shimla Water Catchment Wildlife Sanctuary= 10.00 sq. km

By Order Principal Secretary (Forests) to the Government of Himachal Pradesh.

Endst. No As above Dated Shimla-2 the 7th June, 2013

Copy forwarded to:-

- 1. All the Administrative Secretaries to the Govt. of H.P. Shimla-2.
- 2. All the Divisional Commissioners, Shimla, Mandi & Dharamshala, H.P.
- 3. All the Heads of Departments of H.P.
- 4. The Principal Chief Conservator of Forests, H.P. Shimla-1
- 5. The Principal Chief Conservator of Forests, (Wildlife) H.P. Shimla-1.
- 6. All CCFs/DF0s (Wildlife) in H.P.
- 7. All the Deputy Commissioners in H.P.
- 8. All the GCFs/CFs/DF0s in H.P.
- 9. ALR-cum- Under Secretary Law to the Government of Himachal Pradesh.
- 10. The Commissioner, Municipal Corporation, Shimla.
- 11. The Controller H.P. Printing & Stationary Department Shimla-5 for publication in the Raj-Patra (Extra-ordinary) Five Copies of the Raj-Patra be sent to this Department.
- 12. Guard File.

Under Secretary (Forests) to the Government of Himachal Pradesh.

Compartment wise Area of the Shimla Water Catchment Wildlife Sanctuary

Sr.No	Block	Beat	Compartment No.	Area (ha)
1	Chharabra	Chharabra	1(a)	44.939
2	Chharabra		2(a)	24.291
3			3(a)	17.408
4			4(a)	34.008
5			8	44.129
6			9(a)	25.396
7		Churat	20	21.052
8			21	41.7
9			22	19.838
10			23	38.056
11			24	22.086
12			25	25.101
13			26	21.862
14			27	11.33
15			1(b)	18.623
16			2(b)	6.477
17			3(b)	4.858
18			4(b)	12.145
19			7	45.334
20	Seog	Kufri	9(b)	9.716
21			9(c)	6.477
22			10	19.433
23			11	28.34
24			12	9.716
25			13	17.408
26			14(a)	15.384
27			14(b)	17.813

Sr.No	Block	Beat	Compartment No.	Area (ha)
28			15	49.797
29		Seog	5	25.91
30			6	36.437
31			16(a)	26.315
32			16(b)	22.672
33			17	37.651
34			18	30.769
35			19	68.421
36			28	21.862
37			29	15.384
38			30	13.36
39			31	14.574
40			32	11.74
41			33	14.574
42			34	14.979
43			35	12.955
		Total		1020.32

List of Plants found in Shimla Water Catchment Wildlife Sanctuary

Sr.	Family	Botanical Name	Local Name	Habit
No.				
1	Ranunculaceae	Anemone vitifolia	Agali	Herb
2		Aquilegia pubiflora		Herb
3		Clematis buchananiana		Climber
4		Clematis gourina	Bel Kangu	Climber
5		Thalictrum reniforme		Herb
6		Thallictrum virgatum		Herb
7		Ranunculus diffuses		Herb
8	Berberidaceae	Berberis asiatica	Kashmal	Shrub
9		Berberis lyceum	Kashmal	Shrub
10	Violaceae	Viola serpens	Vanksha	Herb
11	Caryophyllaceae	Dianthus angulatus		Herb
12	Guttiferae	Hypericum choisianum		Shrub
13	Malvaceae	Malvastrumcoromandelianu m	Suchi	Herb
14	Geraniaceae	Geranium nepalensis	Ratnjot	Herb
15		Geranium wallichianum	Lal jari	Herb
16	Oxalidaceae	Oxalis corniculata	Amrit sak	Herb
17		Oxalis latifolia	Trikhada, Kunth	Herb
18	Balsaminaceae	Impatiens edgeworthii		Herb
19		Impatiens sulcata		Herb
20	Rutaceae	Boenninghauseniaalbiflora	Pisso marBooti	Herb
21		Zanthoxylum alatum	Tirmir, Timbal	Shrub
22	Rhamnaceae	Rhamnus virgatus	Chentuli, Chadua	shrub
23	Aquifoliaceae	llex fragilis		Shrub

24		llex dipyrena	Kanderu	Tree
25	Vitaceae	Vitis semicordata	Chhipari	Climber
26	Hippocastanaceae	Aesculus indica Khanor		Tree
27	Coriariaceae	Coriarianepalensis	Masoori plant	Shrub
28	Leguminosae	Acacia mollissima	Casia	Tree
29		Desmodiumfloribundum		Shrub
30		Desmodiummultiflorum		Shrub
31		Indigofera heterantha	Kathi	Shrub
32		Cytisusscoparius		Shrub
33		Lespedeza gerardiana		shrub
34		Oxytropislapponica		Shrub
35	_	Robinia pseudocassia	Rubinia, Rumeunii	Tree
36		Trifolium repense	Trikatra	Herb
37	Rosaceae	Cotoneaster microphyllus	Khilgu	Shrub
38	-	Fragaria nubicola	Budimeva	Herb
39	-	Potentilla atrosanguinea		Herb
40		Potentilla cuneata		Herb
41	-	Prinsepia utilis	Bekhal	Shrub
42	-	Prunus padus	Pajja	Tree
43	-	Pyrus pashia	Kainth	Tree
44	-	Rosa macrophylla	Jangli Gulab	Shrub
45		Rosa moschata	Kinja	Shrub
46		Rubus ellipticus	Aakhe,	Shrub
47		Rubus niveus	Heer,	Shrub
48		Spiraea canescens	JharMairala	Shrub
49	Saxifragaceae	Bergenia ciliata	Pattarchata, PashanBhed	Herb

50		Saxifraga brachypoda		herb
51		Saxifraga jacquimontiana		Herb
52	Hydrangeaceae	Deutzia compacta		Shrub
53		Deutzia staminea		Shrub
54	Crassulaceae	Sedum multicaule		Herb
55	Cucurbitaceae	Zehneriaumbellata		Climber
56	Umbelliferae	Bupleurum tenuf		Herb
57	_	Pimpinella acuminata		Herb
58	_	Pimpinella diversifolia		Herb
59	Araliaceae	Hedera helix		Climber
60	Caprifoliaceae	Diclipterabiplaroides		Herb
61		Leycesteria Formosa		Shrub
62		Lonicera quinquelocularis		Climber
63	Sambucaceae	Sambucus adnata		Shrub
64		Viburnum cotinifolium	Malyash	Shrub
65		Vibuurnum mullah	Mulla	Shrub
66	Rubiaceae	Galium aparine		Herb
67		Hamiltoniasuaveotens		Herb
68		Rubia cordifolia	Majistha	climber
69	Valerianaceae	Valeriana jatamansi	Mansi, Sugandhbala	Herb
70	Dipsacaceae	Diopsacusinermis	Phulee	Herb
71	Asteraceae	Ainsliacea aptera		Herb
72		Anaphalistripiinervis		Herb
73		Artemisia vesttia	Majtari	Herb
74		Aster thomsonii		Herb
75		Biden pilosa	Kumbar	Herb
76		Biden wallichii		Herb

77		Frimanan ballidia daa	Pashaka	Hank
77		Erigeron bellidiodes	Pasnaka	Herb
78		Gerbera gossypina	Kupheru, Jhulu	Herb
79		Duhaldeacuspidata	Jhuri	Herb
80		Senecio chrysanthemoides		Herb
81		Taraxacum officinale	Dudhi, Dudal	Herb
82		Tagetes minuta	Jangligainda, Gaindri	Herb
83	Campanulaceae	Campanula colorata		Herb
84	Ericaceae	Rhododendron arboreum	Brass	Tree
85	Plumbaginaceae	Acantholimon lycopodioides		Herb
86	Primulaceae	Anagalis arvensis	Krishan Neel	Herb
87		Androsace rotundifolia		Herb
88		Androsacesempervivoides		Herb
89		Primula floribunda		Herb
90	Myrsinaceae	Myrsineafricana	Kakhum	Shrub
91	Oleaceae	Jasminum humile	Peeli Chameli	Shrub
92		Jasminum dispermum	Chameli	Shrub
93	Convolvulaceae	Cuscutareflexa	Akashbel, Amarbel	Parasitic shrub
94	-	Ipomoea purpurea	Jharmaric	Climber
95	-	Nicandra physalodes	Popti	Herb
96	Solanaceae	Solanum khasianum	Ban-Bhindi	Herb
97	-	Solanum nigrum	Makoi, Bandakh	Herb
98		Solanum torvum	Bhankatiya	Herb
99	Scrophulariaceae	Lindenbergia grandiflora		Herb
100		Mazus surculosis		Herb
101	Acanthaceae	Aechmantheragossypina		Herb
102		Justicia simplex		Herb

103		Pteracanthesurticifolius		Herb
104	Lamiaceae	Ajuga bracteosa	Neelkanthi	Herb
105		Lamium album		Herb
106		Leucas lanata	Dhurlughaas	Herb
107		Origanum vulgare	Ban tulsi	Herb
108		Salvia lanata	Chakor ka ghaas	Herb
109		Thymus surpyllum	Ban ajvain	Herb
110	Amaranthaceae	Achyranthes aspera	Chirchita	Herb
111		Cythula capitata		Herb
112		Cyathula tomentosa		Herb
113	Polygonaceae	Fagopyrum esculentum		Herb
114		Persicaria capitata		Herb
115		Plantago tibetica	Isabgol	Herb
116		Polygonum amplexicaule		Herb
117		Rumex hastatus	Khatmith	Herb
118		Rumex nepalensis	Janglee Palak	Herb
119	Lauraceae	Actinodaphneobovata		Tree
120		Litseaumbrosa		Tree
121	Thymelaeaceae	Daphne papyracea	Satpura	Shrub
122	Loranthaceae	Viscum album	Chulu-ka-banda, Banda	Parasitic shrub
123	Buxaceae	Buxus wallichiana	Chikri	Tree
124		Sarcococcasaligna	Geru	Shrub
125	Urticaceae	Celtis australis	Khirak	Tree
126		Dabregeasiahypoleuca	Sayaru	Shrub
127		Girardiniadiversifolia	Bichua	Herb
128		Lecanthuspeduncularis		Herb
129		Pilea scripta		Herb

130		Urtica dioca	Bichhu	Herb
131		Girardiniadiversifolia		Herb
132	Moraceae	Ficus pumila Chipkali bel		Woody climber
133	Vitaceae	Parthenocissus semicordata		Creeper
134	Fagaceae	Quercus diltata	Moru	Tree
135		Quercus leucotrichophora	Ban	Tree
136		Quercus semecarpifolia	Kharsu	Tree
137	Salicaceae	Populus deltoids	Poplar	Tree
138	Pinaceae	Abies pindrow	Tosh	Tree
139		Cedrus deodara	Deodar	Tree
140		Piceasmithiana	Rai	Tree
141		Pinus roxburghii	Chil	Tree
142		Pinus wallichiana	Kail	Tree
143	Cupressaceae	Cupressus torulosa	Saru	Tree
144	Тахасеае	Taxus baccata	Rakhal	Tree
145	Zingiberaceae	Cautleya spicata	Jangliadrak	Herb
146		Hedychium spicatum	Kapur kachri	Herb
147		Roscoeaalpina	Safed Musli	Herb
148		Roscoea purpurea		Herb
149	Agavaceae	Agave americana	Ram ban	Shrub
150	Liliaceae	Asparagus racemosus	Shatavar	Shrub
151		Ophiopogon intermedius		Herb
152		Polygonatumcirrhifolium		Herb
153	Commelinaceae	Commelinapaludosa		Herb
154		Cyanotisvaga		Herb
155	Araceae	Arisaema costatum	Naagfani	Herb
156		Arisaema jacquimontii		Herb

157		Arisaema tortosum		Herb
158		Colocasia fallax		Herb
159		Gonatanthuspumilus		Herb
160		Thomsonianepalensis		Herb
161	Cyperaceae	Carexcaricina		Grass
162		Eriophorumcomosum		Grass
163	Pteridaceae	Adiantum raddianum		Herb
164	Athyriaceae	Diplazium esculentum	Lingar	Herb
165	Dryopteridaceae	Dryopteris nigropaleacea		
166	Apocynaceae	Vinca major		

List of Orchids of Shimla Water Catchment Wildlife Sanctuary

Sr. No.	Order	Family	Common Name	BotenicalName
1	Asparagales	Orchadacea	Sword-leaved Helleborine	Cephalanthera longifolia
2			Broad-leaved Helleborine	Epipactishellebrine
3			Broad-lipped Platanthera	Platantheralatilabris
4			Dwarf Rattlesnake Plantain	Goodyera repens
5			Edgeworth's Habenaria	Plantantheraedgeworthii
6			Intermediate Habenaria	Habenaria intermedia
7			Nepal Satyrium	Satyrium nepaiense
8			LanceleafHerminum	Herminiumianceum
9			Chinese Spiranthes	Spiranthessinrnsis
10			Fly Bearing Malaxis	Malaxismuscifera
11			Beaked Widelip Orchid	Liparis rostrata
12			The Veined Liparis	Liparis nervosa
13			Golden Yellow habenaria	Habenaria marginata
14			Monkey Orchid	Calanthe tricarinata
15			Commelina-Leaf Habenaria	Habenariacommelinifolia
16			Narrow-Petal Habenaria	Habenariastenopetala
L7			Small Flowered Oreorchis	Oreorchis micrantha
L8			Gradually Tapering Malaxis	Malaxis acuminata
19			Heart Shaped Slipper	Cypripedium cordigerum
20			Listera-Like Neottia	Neottialisteroides
21			Comb Habenaria	Habenariapectinata

List of Birds of Shimla Water Catchment Wildlife Sanctuary

Sr. No.	Order	Family	Common Name	Zoological Name
1	Galliformes	Phasianidae	Koklass Pheasant	Pucrasiamacrolopha
2			Hill Partridge	Arborophilatorqueola
3			Black Francolin	Francolinusfrancolinus
4			Kalij Pheasant	Lophuraleucomelanos
5			Cheer Pheasant	Catreuswallichii
6	Piciformes	Picidae	Fulvous-Breasted Woodpecker	Dendrocoposmacei
7			Scaly-Bellied woodpecker	Picussquamatus
8			Himalayan woodpecker	Dendrocoposhimalayensis
9			Grey-headed woodpecker	Picuscanus
10			Rufous bellied woodpecker	Dendrocoposhyperythrus
11			Lesser yellownapewoodpeacker	Picuschlorolophus
12			Brown Fronted woodpeacker	Dendrocoptesauriceps
13			Brown capped pygmy woodpecker	Yungipicus nanus
14			Speckled piculet	Picumnusinnominatus
15	Piciformes	Megalaimidae	Great Barbet	Psilopogon virens
16			Blue Throated Barbet	Psilopogon asiaticus
17	Cuculiformes	Cuculidae	Drongo Cuckoo	Surniculuslugubris
18			Common hawk- cuckoo	Hierococcyxvarius
19			Himalayan cuckoo	Cuculussaturatus
20			Eurasian cuckoo	Cuculuscanorus
21			Asian Koel	Eudynamysscolopaceus
22	Psittaciformes	Psittaculidae	Alexandrine Parakeet	Psittaculaeupatria
23			Slaty-Headed Parakeet	Psittaculahimalayana
24			Plum Headed parakeet	Psittaculacyanocephala
25			Rose Ringed parakeet	Psittaculakrameri
26	Strigiformes	Strigidae	Jungle Owlet	Glaucidium radiatum

27			Asian Barred owlet	Glaucidium cuculoides
28			Spotted owlet	Athene brama
29			Brown Wood owl	Strixleptogrammica
30			Collared Owlet	Taenioptynxbrodiei
31			Mountain scops owl	Otus spilocephalus
32	Coloumbiformes	Columbidae	Rock Pigeon	Columba livia
33			Common wood pigeon	Columba palumbus
34			Yellow footed green Pigeon	Treron phoenicopterus
35			Spotted Dove	Spilopelia chinensis
36			Eurassian Collared Dove	Streptopeliadecaocto
37			Oriental Turtle Dove	Streptopeliaorientalis
38	Accipitriformes	Accipitridae	Himalayan Griffon Vulture	Gyps himalayensis
39			Egyptian valture	Neophron percnopterus
40			Black kite	Milvus migrans
41			Crested serpent eagle	Spilornischeela
42			Shikra	Accipiter badius
43	Falconiformes	Falconidae	Common kestrel	Falco tinnunculus
44	Passeriformes	Corvidae	Yellow Billed Blue Magpie	Urocissaflavirostris
45			Red-billed blue magpie	Urocissaerythroryncha
46			Eurasian Jay	Garrulus glandarius
47			Black Headed	Garrulus lanceolatus
48			Grey Treepie	Dendrocittaformosae
49			Rufous treepie	Dendrocittavagabunda
50			Large-billed crow	Corvus macrorhynchos
51			Spotted nutcracker	Nucifragacaryocatactes
52		Campephagidae	Scarlet Minivet	Pericrocotusspeciosus
53			Long tail Minivet	Pericrocotusethologus
54			Spotted Nutcracker	Nucifragacaryocatactes
55		Muscicapidae	Blue Whistling Thrush	Myophonus caeruleus
56			Blue capped rock thrush	Monticolacinaclorhyncha
57			Chestnut-bellied rock thrush	Monticolarufiventris

58		Little forktail	Enicurusscouleri
59		Spotted forktail	Enicurus maculatus
60		Himalayan Bluetail	Tarsigerrufilatus
61		Small Niltava	Niltavamacgrigoriae
62		Rufous bellied niltava	Niltavasundara
63		Blue Capped Redstart	Phoenicuruscoeruleocephala
64		Blue fronted redstart	Phoenicurus frontalis
65		Grey Bushchat	Saxicola ferreus
66		Pied Bushchat	Saxicola caprata
67		Ultramarine Flycatcher	Ficedulasuperciliaris
68		Verditer Flycatcher	Eumyiasthalassinus
69	Leiothrichidae	Streaked Laughingthrush	Trochalopteronlineatum
70		Striated Laughingthrush	Grammatoptila striatus
71		White Throated Laughingthrush	Pterorhinusalbogularis
72		Variegated Laughingthrush	Trochalopteron variegatum
73		White-crested Laughingthrush	Garrulaxieucolophus
74		Chestnut crowned Laughingthrush	TrochalopteronErythrocephal um
75		Rufous-chinned laughingthrush	Lanthocinclarufogularis
76		Jungle Babbler	Argya striatus
77		Rufous Sibia	Heterophasiacapistrata
78		Red billed leiothrix	Leiothrix lutea
79		Bar Throated minla	Actinodura strigula
80	Sturnidae	Common Myna	Acridotheres tristis
81	Certhiidae	Bar Tailed Tree Creeper	Certhiahimalayana
82		Eurasian treecreeper/ common treecreeper	Certhiafamiliaris
83		Hodgson's treecreeper	Certhiahodgsoni
84	Paridae	Fire – capped Tit	Cephalopyrusflammiceps
85		Great Tit	Parus major
86		Green Backed Tit	Parus monticolus
87		Spot Winged Tit	Parus melanolophus

88		Black Throated Tit	Aegithalasconcinnus
00			-
89		Yellow – browed Tit	Sylviparusmodestus
90		Himalayan Black Lored tit	Machiolophusxanthogenys
90		Cinereous Tit	Parus cinereus
91		Coal Tit	Periparusater
92	Pycnonotidae	Himalayan Bulbul	Pycnonotusieucogenys
93		Black Bulbul	Hypsipetes leucocephalus
94		Red-vented bulbul	Pycnonotuscafer
95	Zosteropidae	Oriental White Eye	Zosteropspalpebrosus
96	Cisticolidae	Common Tailorbird	Orthotomoussutorius
97	Phylloscopidae	Grey Hooded Warbler	Phylloscopusxanthoschistas
98		Tickell's Leaf Warbler	Phylloscopusaffinis
99		Hume's leaf warbler	Phylloscopushumei
100		Lemon-rumped warbler	Phylloscopuschloronotus
101		Blyth's leaf warbler	Phylloscopusreguloides
102	Cettiidae	Brown-flanked bush warbler	Horornisfortipes
103	Turdidae	Grey winged Blackbird	Turdus boulboul
104		White collard blackbird	Turdus albocinctus
105		Mistle thrush	Tusdusviscivorus
106		Tickell's thrush	Turdus unicolor
107		Black-throated thrush	Turdus atrogularis
108		Long-tailed thrush	Zootheradixoni
109		Dark Throated Thrush	Turdus ruficollis
110		Pied Thrush	Geokichlawardii
111	Timaliidae	Rusty Cheaked Scimitar Babbler	Erythrogenyserythrogenys
112	Passeridae	House Sparrow	Passer domesticus
113		Russet Sparrow	Passer Cinnamomeus
114	Prunellidae	Rufous-Breasted Accentor	Prunella strophiata
115		Alpine accentor	Prunella collaris
116	Fringillidae	Fire Fronted Serin	Serinuspusillus
117		Common Rosefinch	Carpodacus erythrinus

118			Spectacled finch	Callacanthisburtinoni
119			European goldfinch	Carduelis carduelis
120			Plain mountain finch	Leucosticte nemoricola
121			Pink-Browed rosefinch	Carpodacus rodochroa
122			Yellow-breasted greenfinch	Chloris spinoides
123			Spot Winged Grosbeak	Mycerobasmelanozanthos
124			Black and yellow grosbeak	Mycerobasicterioides
125			Collard grosbeak	Mycerobasaffinis
126		Emberizidae	Rock Bunting	Emberizacia
127			White capped Bunting	Emberizastewarti
128			Crested bunting	Emberizalathami
129		Zosteropidae	Whiskered yuhina	Yuhina flavicollis
130		Dicruridae	Ashy Drongo	Dicrurusleucophaeus
131			Black Drongo	Dicrurusmacrocercus
132			Hair-crested drongo	Dicrurushottentottus
133		Vireonidae	Himalyan shrike-babbler	Pteruthiusripleyi
134		Vangidae	Common woodshrike	Tephrodornis pondicerianus
135	Caprimulgiformes	Caprimulgidae	Grey nightjar	Caprimulgus jotaka
136		Cisticolidae	Grey-breasted prinia	Priniahodgsonii
137			Himalayan prinia	Priniacrinigera
138		Hirundinidae	Dusky crag martin	Ptyonoprogne concolor
139		Motacillidae	Grey wagtail	Motacilla cinerea
140			White wagtail	Motacilla alba
141		Nectariniidae	Crimson sunbird	Aethopyga siparaja
142			Purple sunbird	Cinnyris asiaticus
143		Sittidae	Chestnut-bellied nuthatch	Sitta cinnamoventris
144			Velvet-fronted nuthatch	Sitta frontalis
145			White-tailed nuthatch	Sitta himalayensis
146		Dicaeidae	Fire-breasted Flowerpecker	Dicaeumignipectus

List of Reptiles and Amphibians of Shimla Water Catchment Wildlife Sanctuary

Sr. No.	Order	Family	Common Name	Zoological Name
1	Squamata	Viperidae	Himalayan pit Viper	Gloydiushimalayanus
2			Northern white-lipped pit viper	Trimeresurusseptentrionalis
3		Colubridae	Mountain keelback	Hebiusatemporalis
4			Himalayan wolf snake	Lycodonmackinnoni
5			Himalayan trinket	Orthriophishodgsoni
6			Many banbded Cat Snake	Boiga multifasciata
7			Collard black headed Snake	Sibynophiscollaris
8		Agamidae	Western Himalayan rock agama	Laudakiatuberculatae
9		Scincidae	Himalayan ground skink	Ablepharus himalayanus

List of Butterflies of Shimla Water Catchment Wildlife Sanctuary

Sr.	Order	Family	Common Name	Zoological Name
No.				
1	Lepidoptera	Hesperiidae	Spotted Demaon	Notocryptafeisthamelli
2			Himalayan Spotted flat	Celaenorrhinusmunda
3		Nymphalidae	Common sailor	Neptishylas
4			Great Eggfly	Hypolimnasbolina
5			Poponjay	Stibochionanicea
6			Grand Duchess	Euthalia patala
7			Golden emperor	Dilipa morgiana
8			Yellow Coaster	Acraea issoria
9			Common Beak	Libythealepita
10			Indian Red Admiral	Vanessa indica
11			Common Leopard	Phalantaphalantha
12			Large tortoiseshell	Nymphalispolychloros
13			Indian tortoiseshell	Aglaiscashmiriensis
14			Chocolate pansy	Junoniaiphita
15			Blue pansy	Junoniaorthiya
16			Yellow Pansy	Junoniahierta
17			Lemon Pansy	Junonialemonias
18			Peacock pansy	Junoniaalmana
19			Queen of Spain Fritillary	Issorialathonia
20			Common Wall	Lasiommataschakra
21			Common Jester	Symbrenthialilaea
22			Blue Admiral	Kaniska canace
23			Common Satyr	Auloceraswaha
24			Common Tiger	Danaus genutia
25			Painted Lady	Vanessa cardui
26			Himalayan five-ring	Ypthimasakra
27			Large Three-ring	Ypthimanareda

28		Orange oakleaf	Lallimainachus
29		Plain tiger	Danaus chrysippus
30		Glassy tiger	Paranticaaglea
31	Lycaenidae	Common copper	Lycaenaphlaeas
32		Common silverline	Cigaritisvalcanus
33		Pea Blue	Lampidesboeticus
34		Zebra Blue	Leptotesplinius
35		Sorrel Sapphire	Heliophorus sena
36		Purple Sapphire	Heliophorusepicles
37		White bordered Copper	Lycaenapavana
38	Papilionadae	Common Mime	Papilio clytia
39		Commaon Peacock	Papilio polyctor
40		Common Bluebottle	Graphiumsarpedon
41		Common Mormon	Papilio polytes
42		Lime Butterfly	Papilio demoleus
43		Spot Swordtail	Graphiumnomius
44	Pieridae	Bath White	Pontiadaplidice
45		Common Brimstone	Gonepteryxrhamni
46		Large Cabbage White	Pieris brassicae
47		Indian Cabbiage White	Pieris canidia
48		Coomon Jezebel	Delias eucharis
49		Common Grass Yellow	Euremahecabe
50		Mottled Emigrant	Catopsiliapyranthe
51		Pale Clouded yellow	Coliashyale
52	Lepidoptera	Ringed Argus	Callerebiaananda
53		Pallid Argus	Callerebiascanda
54	Riodinidae	Common Punch	Dodona durga

Offence Cases in the past ten years

Year	Description	No. of cases	Status
2011-12	Illicit grazing	02	Compounded
2011-12		02	Compounded
	Illicit cutting of grass	04	Compounded
	Illicit lopping	01	Compounded
	Illegal collection of loose stones	01	Compounded
	Illicit felling	01	Un-Traced
2012-13	Illegal grazing	01	Compounded
2013-14	Illegal collection of loose stones	01	Compounded
	Illegal lopping	02	Compounded
	Illegal collection of dry timber	08	Compounded
2014-15	Illegal cutting of grass	02	Compounded
	Illegal grazing	03	Compounded
2015-16	Illegal collection of dry fuel wood	01	Compounded
	Illicit felling	01	Un- traced
2016-17	Nil	-	
2017-18	Nil		-
2018-19	Illicit lopping of Ban leaves	01	Compounded
	Illicit felling	01	Un- traced
2019-20	Illegal grazing	13	Compounded
2020-21	Illegal grazing	18	Compounded
	Illegal dumping	02	Compounded
	Cutting of dry fuel wood	03	Compounded
	Illegal lopping	02	Compounded
	Illegal cutting of grass	01	Compounded

List of Boundary Pillars in Sanctuary

Boundary	GPS Location	Block	Beat
Pillar No.	Of O Location	Biock	Deat
1	N-31 ⁰ 07'19.31"	Chharabra	Chharabra
	E-77 ⁰ 14'34.923"		
	Elevation- 2519m		
2	N-31 ⁰ 07′59.846″	Chharabra	Chharabra
	E-77 ⁰ 14'35.950"		
2	Elevation- 2524m	Ohharahiia	Ohharahaa
3	Missing N-31°06′54.970″	Chharabra Chharabra	Chharabra
4	E-77°14'41.516"	Crinarabra	Chharabra
	Elevation - 2534m		
5	Missing	Chharabra	Chharabra
6	Missing	Chharabra	Chharabra
7	N-31 ⁰ 06'49.806"	Chharabra	Chharabra
	E-77 ⁰ 14'46.601"	Omiarabia.	oma dora
	Elevation- 2538m		
8	N-31 ⁰ 06'47.894"	Chharabra	Chharabra
	E-77 ⁰ 14'50.610"		
	Elevation- 2561m		
9	N-31 ⁰ 06'44.552"	Chharabra	Chharabra
	E-77 ⁰ 14'50.610"		
- 10	Elevation- 2561m	011	011
10	N-31 ⁰ 06'39.782" E-77 ⁰ 14'51.419"	Chharabra	Chharabra
	Elevation - 2596m		
11	N-31 ⁰ 06'36.155"	Chharabra	Chharabra
	E-77 ⁰ 14'53.968"	Officialita	Omarabra
	Elevation- 2579m		
12	N-31 ⁰ 06'36.155"	Chharabra	Chharabra
	E-77 ⁰ 14'58.36"		
1	Elevation- 2576m		
13	N-31 ⁰ 06'36.656"	Chharabra	Chharabra
	E-77 ⁰ 15'2.286"		
	Elevation- 2582m	Ohh. I	0.5.5
14	N-31°06′37.185″ E-77°15′2.476″	Chharabra	Chharabra
	E-// 15 2.4/6" Elevation- 2554m		
15	N-31 ⁰ 06'31.947"	Chharabra	Chharabra
13	E-77 ⁰ 15'2.362"	Officiality	Omalasia
	Elevation- 2582m		
16	N-31 ⁰ 06'24.875"	Chharabra	Chharabra
	E-77 ⁰ 15'5.575"		
	Elevation- 2565m		
17	N-31 ⁰ 06'24.848"	Chharabra	Chharabra
	E-77 ⁰ 15'11.681"		
	Elevation- 2534m		

18MissingChharabraChharabra19MissingChharabraChharabra20MissingChharabraChharabra21MissingSeogKufri22MissingSeogKufri23MissingSeogKufri24MissingSeogKufri25MissingSeogKufri26MissingSeogKufri	Chharabra Chharabra Kufri Kufri Kufri Kufri Kufri	Chharabra Chharabra Seog Seog Seog Seog	Missing Missing Missing Missing Missing Missing	19 20 21
20MissingChharabraChharabra21MissingSeogKufri22MissingSeogKufri23MissingSeogKufri24MissingSeogKufri25MissingSeogKufri	Chharabra Kufri Kufri Kufri Kufri Kufri Kufri Kufri Kufri Kufri	Chharabra Seog Seog Seog Seog Seog Seog	Missing Missing Missing Missing Missing	20 21
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24MissingSeogKufri25MissingSeogKufri	Kufri Kufri Kufri Kufri	Seog Seog		72
25 Missing Seog Kufri	Kufri Kufri Kufri	Seog		
	Kufri Kufri			
26 Missing Seng Kufri	Kufri	Seog	Š	
	Kufri			
		Seog		28
E-77 ⁰ 15'43.4"				
Elevation- 2672m				
29 N-31 ⁰ 05'47.7" Seog Kufri	Kufri	Seog		29
E-77 ⁰ 15'43.4"				
Elevation- 2670m	77. 0.			
30 N-31 ⁰ 05'44.484" Seog Kufri	Kufri	Seog		30
E-77 ⁰ 15'43.133"				
Elevation- 2667m	TZ C'	0		24
31 N-31 ⁰ 05'38.608" Seog Kufri E-77 ⁰ 15'51.298"	Kufri	Seog		31
Elevation- 2659m 32 N-31 ^o 05'32.757" Seog Kufri	TZ C:	0		
32 N-31°05'32.757" Seog Kufri E-77°15'55.007"	Kuiri	Seog		32
Elevation - 2634m 33 N-31°05'29.084" Seog Kufri	IZ C-:	0		22
33 N-31°05′29.084" Seog Kufri E-77°15′57.129"	Kum	Seog		33
Elevation- 2633m				
	Varferi	Sana		2/
34 N-31°05′23.836" Seog Kufri E-77°15′57.999"	Kum	Seog		34
Elevation- 2615m				
35 N-31°05′20.716″ Seog Kufri	Kufri	Seog		25
E-77 ⁰ 15'57.484"	Kulli	Scog		33
Elevation- 2592m				
36 N-31°05'19.555" Seog Kufri	Kufri	Seng		36
E-77 ⁰ 15'53.709"	ikumi	5005	1 .	30
Elevation- 2618m				
37 N-31 ⁰ 05'17.374" Seog Kufri	Kufri	Seog		37
E-77 ⁰ 15'49.209"	1	3338		
Elevation- 2612m			Elevation- 2612m	
38 N-31 ⁰ 05'12.893" Seog Kufri	Kufri	Seog	N-31 ⁰ 05'12.893"	38
E-77 ⁰ 15'44.319"			E-77 ⁰ 15'44.319"	
Elevation- 2622m			Elevation- 2622m	
39 N-31 ⁰ 05'11.016" Seog Kufri	Kufri	Seog	N-31 ⁰ 05'11.016"	39
E-77 ⁰ 15'39.491"			E-77 ⁰ 15'39.491"	
Elevation- 2515m			Elevation- 2515m	
40 N-31 ⁰ 05'09.650" Seog Kufri	Kufri	Seog	N-31 ⁰ 05'09.650"	40
E-77 ⁰ 15'35.696"			E-77 ⁰ 15'35.696"	
Elevation- 2623m			Elevation- 2623m	
41 N-31 ⁰ 05'11.251" Seog Kufri	Kufri	Seog		41
E-77 ⁰ 15'34.058"			E-77 ⁰ 15'34.058"	

	Elevation- 2604m		
42	N-31 ⁰ 05'12.404"	Seog	Kufri
1	E-77 ⁰ 15'30.132"	5005	TX4111
	Elevation- 2577m		
43	N-31 ⁰ 05'14.1"	Seog	Kufri
75	E-77 ⁰ 15'23.1"	Scog	Kuiii
	Elevation- 2507m		
44	N-31 ⁰ 05'16.8"	Seog	Kufri
	E-77 ⁰ 15'19.9"	Seog	Kum
	Elevation - 2453m		
45	N-31 ⁰ 05'18.01"	Saag	Kufri
45	E-77 ⁰ 15'15.6"	Seog	Kuiri
	Elevation - 2526m		
4.5	N-31 ⁰ 05'19.1"	0	TZC-:
46	N-31°05′19.1″ E-77°15′12.09″	Seog	Kufri
	Elevation- 2402m	a a	TZ C'
47	N-31 ⁰ 05′20.9″	Seog	Kufri
	E-77 ⁰ 15'08.7"		
	Elevation- 2381m		77. 0:
48	Missing	Seog	Kufri
49	N-31 ⁰ 05'24.5"	Seog	Kufri
	E-77 ⁰ 15'02.7"		
	Elevation- 2350m		
50	Missing	Seog	Kufri
51	Missing	Seog	Kufri
52	Missing	Seog	Kufri
53	Missing	Seog	Kufri
54	N-31 ⁰ 05′35.5″	Seog	Kufri
	E-77 ⁰ 14'47.7"		
	Elevation- 2165m		
55	N-31 ⁰ 05'36.4"	Seog	Kufri
	E-77 ⁰ 14'47.2"		
	Elevation- 2148m		
56	Missing	Seog	Kufri
57	N-31 ⁰ 05'39.3"	Seog	Kufri
	E-77 ⁰ 14'46.0"		
	Elevation- 2119m		
58	N-31 ⁰ 05'41.2"	Seog	Kufri
	E-77 ⁰ 14'46.5"	2008	
	Elevation- 2075m		
59	N-31 ⁰ 05'44.7"	Seog	Kufri
	E-77 ⁰ 14'46.7"	Seeg	TXUIII
	Elevation- 2015m		
60	N-31 ⁰ 05'46.1"	Seog	Seog
00	E-77 ⁰ 14'46.6"	Beog	Scog
	Elevation- 1984		
	Lievation- 1904		

	Mind	C	g
61	Missing	Seog	Seog
62	N-31 ⁰ 05'42.9"	Seog	Seog
-	E-77 ⁰ 14'36.9"	5005	5008
	Elevation- 2012		
63	Missing	Seog	Seog
64	N-31 ⁰ 05'44.6"	Seog	Seog
	E-77 ⁰ 14'41.31"		
	Elevation- 2073m		
65	N-31 ⁰ 05'49.4"	Seog	Seog
	E-77 ⁰ 14'28.4"		
4	Elevation- 2168m		
66	N-31 ⁰ 06′6″	Seog	Seog
	E-77 ⁰ 14'52.4"		
	Elevation- 2193m		
67	N-31 ⁰ 05'48.282"	Seog	Seog
	E-77 ⁰ 14'13.689"		
50	Elevation - 2253m	0	Second
68	N-31 ⁰ 05'51.576" E-77 ⁰ 14'05.958"	Seog	Seog
	Elevation - 2256m		
69	N-30 ⁰ 05'51.576"	Sana	Soog
09	E-77 ⁰ 14'5.958"	Seog	Seog
	Elevation- 2256m		
70	N-31 ⁰ 05'40.242"	Seog	Seog
/5	E-77 ⁰ 14'7.338"	Scog	Scog
	Elevation- 2236m		
71	N-31 ⁰ 05'36.228"	Seog	Seog
	E-77 ⁰ 14'10.866"	2118	2338
	Elevation- 2265m		
72	N-31 ⁰ 05'33.612"	Seog	Seog
	E-77 ⁰ 14'9.540"		
	Elevation- 2261m		
73	N-31 ⁰ 05'30.474"	Seog	Seog
	E-77 ⁰ 14'6.975"		
	Elevation- 2248m		
74	N-31 ⁰ 05'21.570"	Seog	Seog
	E-77 ⁰ 14'0.654"		
	Elevation- 2127m		
75	N-31 ⁰ 05'21.120"	Seog	Seog
	E-77 ⁰ 13'58.644"		
76	Elevation- 2144m N-31 ⁰ 05'20.346"	0	Second
76		Seog	Seog
	E-77 ⁰ 13'54.340"		
77	Elevation - 2087m N-31 ⁰ 05'21.012"	Coor	Coor
77	N-31'05'21.012" E-77 ⁰ 13'49.146"	Seog	Seog
	Elevation - 2018m		
	Fieration- 2019tti		

=c	N 24 05/20 550"	0	C
78	N-31 ⁰ 05'20.658"	Seog	Seog
	E-77 ⁰ 13'47.262"		
	Elevation- 2009m	0	9
79	N-31 ⁰ 05'20.664"	Seog	Seog
	E-77 ⁰ 13'46.590"		
	Elevation- 1973m	0	9
80	N-31 ⁰ 05′51.210″	Seog	Seog
	E-77 ⁰ 13'26.310"		
04	Elevation- 1930m N-31 ⁰ 05'52.554"	0	9
81	E-77 ⁰ 13'26.070"	Seog	Seog
	Elevation- 1943m	0	9
82	N-31 ⁰ 05'54.036" E-77 ⁰ 13'26.138"	Seog	Seog
00	Elevation- 1946m	Cons	Coop
83	Missing	Seog	Seog
84	N-31 ⁰ 05'58.529"	Chharabra	Churat
84	E-77 ⁰ 13'22.216"	Ciliaraora	Churat
	Elevation- 1801m		
85	Missing	Chharabra	Churat
65	Wiissing	Cilliarabra	Churat
86	N-31 ⁰ 06'6.974"	Chharabra	Churat
80	E-77 ⁰ 13'26.656"	Ciliarabia	Churat
	Elevation- 1877m		
87	N-31 ⁰ 06'7.786"	Chharabra	Churat
0,	E-77°13'23.784"	Ciniarabra	Charat
	Elevation- 1868m		
88	N-31 ⁰ 06'7.562"	Chharabra	Churat
33	E-77 ⁰ 13'21.433"	Cimaraora	Charat
	Elevation- 1927m		
89	N-31 ⁰ 06'8.630"	Chharabra	Churat
	E-77 ⁰ 13'19.33"		
	Elevation- 1984m		
90	N-31 ⁰ 06'8.556"	Chharabra	Churat
	E-77 ⁰ 13'18.4155"		
	Elevation- 1988m		
91	N-31 ⁰ 06'8.799"	Chharabra	Churat
	E-77 ⁰ 13'16.773"		
	Elevation- 2007m		
92	N-31 ⁰ 06'11.458"	Chharabra	Churat
	E-77 ⁰ 13'41.970"		
	Elevation- 2023m		
93	N-31 ⁰ 06′15.825″	Chharabra	Churat
	E-77 ⁰ 13'13.322"		
	Elevation- 2035m		
94	N-31 ⁰ 06'15.033"	Chharabra	Churat
	E-77 ⁰ 13'11.134"		
	Elevation- 2073m		

		T 61.1 1	
95	N-31 ⁰ 06'16.290"	Chharabra	Churat
	E-77 ⁰ 13'8.132"		
	Elevation- 2091m		
96	N-31 ⁰ 06'17.420"	Chharabra	Churat
	E-77 ⁰ 12'6.467"		
	Elevation- 2091m		
97	N-31 ⁰ 06′19.701″	Chharabra	Churat
	E-77 ⁰ 12'4.325"		
	Elevation- 2153m		
98	N-31 ⁰ 06'24.938"	Chharabra	Churat
	E-77 ⁰ 12'13.944"		
	Elevation- 2210m		
99	N-31 ⁰ 06'24.938"	Chharabra	Churat
33	E-77 ⁰ 12'13.944"	Jiiiuiuoiu	CITATAL
	Elevation- 2210m		
100	N-31 ⁰ 06'26.151"	Chharabra	Churat
100	E-77 ⁰ 12'59.917"	Ciniarabia	Citutat
	Elevation - 2241m		
101	N-31 ⁰ 06'27.640"	Chharabra	Churat
101	E-77 ⁰ 12'58.414"	Ciliaratia	Cilurat
	Elevation - 2268m		
102	N-31 06'28.587"	Chharabra	Chymat
102	N-31 ⁻ 06'28.587" E-77 ⁰ 12'57.565"	Cimarabra	Churat
400	Elevation- 2268m	C1.1 1	CI 4
103	N-31 ⁰ 06′30.932″	Chharabra	Churat
	E-77 ⁰ 12'57.565"		
	Elevation- 2251m	611 1	CII
104	N-31 ⁰ 06′31.153″	Chharabra	Churat
	E-77 ⁰ 12′52.816″		
	Elevation- 2257m		
105	N-31006'31.213"	Chharabra	Churat
	E-77 ⁰ 12'52.694"		
	Elevation- 2255m		
106	Missing	Chharabra	Churat
107	Missing	Chharabra	Churat
108	Missing	Chharabra	Churat
109	Missing	Chharabra	Churat
110	Missing	Chharabra	Churat
110	IVIISSIIIE	- Initiation	Citatat
111	N-31 ⁰ 06'30.262"	Chharabra	Churat
111	E-77 ⁰ 12'50.300"	Ciliarabia	Citutat
	Elevation - 2246m		
	Elevation- 2240m		

112	N-31 ⁰ 06'32.535"	Chharabra	Churat
	E-77 ⁰ 12'50.475"		
	Elevation- 2271m		
113	N-31 ⁰ 06'32.535"	Chharabra	Churat
	E-77 ⁰ 12'51.601"		
J.	Elevation- 2272m		
114	N-31 ⁰ 06'32.109"	Chharabra	Churat
	E-77 ⁰ 12'53.080"		
	Elevation- 2302m		
115	N-31 ⁰ 06'32.464"	Chharabra	Churat
	E-77 ⁰ 12'57.507"		
	Elevation - 2306m		
116	N-31 ⁰ 06'32.535"	Chharabra	Churat
	E-77 ⁰ 12'50.475"		
	Elevation- 2271m		
117	Missing	Chharabra	Churat
118	N-31 ^a 06'37.884"	Chharabra	Churat
	E-77 ⁰ 13'13.860"		
	Elevation- 2284m		
119	N-31 ⁰ 06'40.657"	Chharabra	Churat
	E-77 ⁰ 13'7.010"		
	Elevation- 2286m		
120	N-31 ⁰ 06'42.056"	Chharabra	Churat
	E-77 ⁰ 13'7.887"		
	Elevation- 2299m		
121	N-31 ⁰ 06'43.367"	Chharabra	Churat
	E-77 ⁰ 13'9.788"		
	Elevation- 2303m		
122	N-31 ⁰ 06'44.711"	Chharabra	Churat
	E-77 ⁰ 13'11.927"		
	Elevation- 2323m		
123	N-31 ⁰ 06'46.558"	Chharabra	Churat
	E-77 ⁰ 13'11.705"		
	Elevation- 2331m		
124	N-31 ⁰ 06'47.594"	Chharabra	Churat
	E-77 ⁰ 13'11.705"		
	Elevation- 2331m		
125	N-31 ⁰ 06'47.013"	Chharabra	Churat
	E-77 ⁰ 13'12.698"		
	Elevation- 2332m		
126	N-31 ⁰ 06'47.795"	Chharabra	Churat
	E-77 ⁰ 13'6.606"		
	Elevation- 2327m		
127	N-31 ⁰ 06'47.454"	Chharabra	Churat
	E-77 ⁰ 13'14.967"		
	Elevation- 2308m		
128	N-31 ⁰ 06'49.219"	Chharabra	Churat
	E-77 ⁰ 13'17.779"		
	Elevation- 2323m		

			1 24
129	N-31 ⁰ 06′50.550″	Chharabra	Churat
	E-77 ⁰ 13'21.638"		
	Elevation- 2323m		
130	N-31 ⁰ 06'9.08"	Chharabra	Churat
	E-77 ⁰ 13'4.5"		
	Elevation- 2430m		
131	N-31 ⁰ 06'944"	Chharabra	Churat
	E-77 ⁰ 13'43"		
	Elevation- 2363m		
132	Missing	Chharabra	Churat
	1.2.2.2.2.8	0.22.02.002.00	0.1.0.1
133	N-31 ⁰ 06′967″	Chharabra	Churat
	E-77 ⁰ 13'436"	Cimarabia	Charat
	Elevation- 2433m		
134	N-31 ⁰ 06′955″	Chharabra	Churat
134	E-77 ⁰ 13'510"	Cilliaratira	Churat
	Elevation - 2419m		
135	N-31 ⁰ 07'038"	Chharabra	Churat
133	E-77 ⁰ 13'510"	Cnnarabra	Cnurai
	Elevation - 2414m		
		C1.1 1	GI .
136	N-31 ⁰ 07′078″	Chharabra	Churat
	E-77 ⁰ 13′552″		
	Elevation- 2436m		
137	N-31 ⁰ 07′082″	Chharabra	Churat
	E-77 ⁰ 13′583″		
	Elevation- 2436m		
138	N-31 ⁰ 07′155″	Chharabra	Churat
	E-77 ⁰ 13'610"		
	Elevation- 2436m		
139	N-31 ⁰ 07'155"	Chharabra	Churat
	E-77 ⁰ 13'656"		
	Elevation- 2459m		
140	N-31 ⁰ 07′178″	Chharabra	Churat
	E-77 ⁰ 13'687"		
	Elevation- 2460m		
141	N-31 ⁰ 07'178"	Chharabra	Churat
	E-77 ⁰ 13'696"		
L.	Elevation- 2475m		
142	N-31 ⁰ 07'204"	Chharabra	Churat
1	E-77 ⁰ 13'734"		
	Elevation- 2505m		
143	N-31 ⁰ 07′210″	Chharabra	Churat
	E-77 ⁰ 13'734"	Ciliaratia	Churat
	Elevation- 2505m		
144	N-31 ⁰ 7'13.4"	Chharabra	Churat
744	E-77 ⁰ 13'45.9"	Cimaratra	Churat
	Elevation- 2500m		
1	N-31 ⁰ 07'204"	Chhamba	Churat
145	N-31 07 204" E-77 13'734"	Chharabra	Churat
	Elevation- 2505m		

	N 24 ⁰ 07/4 4 0"	C1.1 1	C1
	N-31 ⁰ 07'14.0"	Chharabra	Churat
446	E-77 ⁰ 13'48.5"		
146	Elevation- 2508m	011 1	
	N-31 ⁰ 07′14.1″	Chharabra	Churat
	E-77 ⁰ 13'49.4"		
147	Elevation- 2511m		
	N-31 ⁰ 07'14.5"	Chharabra	Churat
	E-77 ⁰ 13'51.2"		
148	Elevation- 2509m		
	N-31 ⁰ 07′15.1″	Chharabra	Chharabra
	E-77 ⁰ 13'52.6"		
149	Elevation- 2516m		
150	N-31 ⁰ 06′52.763″	Chharabra	Chharabra
130	E-77 ⁰ 13'53.915"		
	Elevation- 2527m		
151	N-31 ⁰ 06'13.263"	Chharabra	Chharabra
131	E-77 ⁰ 13'54.831"		
	Elevation- 2538m		
152	N-31 ⁰ 07′16.295″	Chharabra	Chharabra
132	E-77 ⁰ 13'56.86"		
	Elevation- 2549m		
153	N-31 ⁰ 07'16.236"	Chharabra	Chharabra
155	E-77 ⁰ 13'58.430"		
	Elevation- 2552m		
154	N-31 ⁰ 07'16.48"	Chharabra	Chharabra
154	E-77 ⁰ 14'0.233"		
	Elevation- 2552m		
455	N-31 ⁰ 07′15.763″	Chharabra	Chharabra
155	E-77 ⁰ 14'2.056"		
	Elevation- 2553m		
456	N-31 ⁰ 07′15.380″	Chharabra	Chharabra
156	E-77 ⁰ 14'40.705"		
	Elevation- 2508m		
4	N-31°07′15.189″	Chharabra	Chharabra
157	E-77 ⁰ 14'220"		
	Elevation- 2501m		
	N-31°07′14.010″	Chharabra	Chharabra
158	E-77 ⁰ 14'7.881"		
	Elevation - 2549m		
4	N-31°07′13.701″	Chharabra	Chharabra
159	E-77 ⁰ 14'9.250"		
	Elevation- 2560m		
	N-31 ⁰ 07'12.538"	Chharabra	Chharabra
160	E-77 ⁰ 14'13.677"		
	Elevation- 2509m		
	N-31 ⁰ 06'52.763"	Chharabra	Chharabra
161	E-77 ⁰ 13'45.769"	Cinimitatia	Cilitatacia
	Elevation- 2513m		
	N-31 ⁰ 07'8.909"	Chharabra	Chharabra
162	E-77 ⁰ 14'19.372"	Ciniaratra	Ciliarabia
	Elevation- 2498m		
163	Missing	Chharabra	Chharabra
102	MIISSIIIR	Cimaratia	Cilliarabia

	1 0		
164	N-31 ⁰ 07'9.467"	Chharabra	Chharabra
	E-77 ⁰ 14'23.999"		
	Elevation- 2508m		
165	N-31 ⁰ 07′9.0″	Chharabra	Chharabra
103	E-77 ⁰ 14'27.3"		
	Elevation- 2516m		
166	Missing	Chharabra	Chharabra
167	N-31 ⁰ 07′5.765″	Chharabra	Chharabra
167	E-77 ⁰ 14'27.781"		
	Elevation- 2526m		
460	N-31 ⁰ 07'5.641"	Chharabra	Chharabra
168	E-77 ⁰ 14'27.781"		
,	Elevation- 2527m		
460	N-31 ⁰ 07'3.668"	Chharabra	Chharabra
169	E-77 ⁰ 14'30.360"		
	Elevation- 2510m		
470	N-31 ⁰ 07'2.212"	Chharabra	Chharabra
170	E-77 ⁰ 14'31.368"		
	Elevation- 2497m		
171	N-31 ⁰ 07'2.5"	Chharabra	Chharabra
171	E-77 ⁰ 14'31.7"		
	Elevation- 2543m		
172	N-31 ⁰ 07'2.013"	Chharabra	Chharabra
172	E-77 ⁰ 14'32.536"		
J.	Elevation- 2503m		
172	N-31 ⁰ 07′1.8″	Сһһағаһға	Chharabra
173	E-77 ⁰ 14'54.2"		
	Elevation- 2562m		

List of Buildings in Sanctuary

Sr. No.	Name of Building	Location	Department	Year of Construction	No.
1	Forest Rest House	Seog C No. 33	*HPFD	1901	1
2	B. O. quarter	Seog C No. 32	HPFD	-	1
3	Guard Hut			+	
		Kufri C No. 9c	HPFD	1975	1
4	Chowkidar Quarter	Seog C No. 32	HPFD	-	1
5	Card room	Seog C No 32	HPFD		1
6	Mali Quarter/store shed	Seog C No. 32	HPFD	Renovated in 2020- 21	1
7	Rain shelter	Seog C No 32	HPFD	2020-21	1
8	S. D. O. Office	Dhalli C No. 23	^IPH	1889	1
9	CCDU Building	Dhalli C No. 23	IPH	2000	1
10	Lab	Dhalli C No. 23	IPH	2000	1
11	Residential Complex (Key man's quarter)	Dhalli C No. 23	IPH	1905	1
12	Slow sand filter	Dhalli C No. 23	IPH	1901	1
13	Rapid sand filter	Dhalli C No. 23	IPH	1974	1
14	Chemical Treatment House	Dhalli C No. 23	IPH	1974	1
15	Seog Reservoir	Seog C No. 33	IPH	1901	1
16	Staff Quarters	Seog C No. 33	IPH	-	2
17	Inspection Huts	C No. 16	IPH	-	2
18	Pumping Station	Churat C No. 22	IPH	1883	1
19	Residential Complex	Churat C No. 22	IPH	1901	8
20	Residential Complex	Chharabra	Municipal	1895	1
		C No 3A	Corporation		
22	Punjab Governor House	Chharabra C No. 2A		1850-60	1
23	Forest guard hut	Chharabra CNo 2A	HPFD	2019-20	1
24	Public toilet	Churat CNo 23	HPFD	2019-20	
25	Watch towers	Churat CNo 23	HPFD		2

*HPFD- Himachal Pradesh Forest Department

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PART II —Section 3—Subsectioni()

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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 7 जून, 2017

का.आ. 1858(अ).—भारत सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की अधिसूचना सं. का. आ. 3339 (अ), तारीख 9 दिसम्बर, 2015 द्वारा भारत के राजपत्र में एक प्रारूप अधिसूचना प्रकाशित की गई थी जिसमें उन सभी व्यक्तियों से, जिनके उससे प्रभावित होने की संभावना थी, उस तारीख सें, जिसको उक्त अधिसूचना से युक्त राजपत्र की प्रतियां जनता को, उपलब्ध करा दी जाती है, साठ दिन की अवधि के भीतर आक्षेप और सुक्षाव आमंत्रित किए गए थे;

और राजपत्र की प्रतियां जनता को तारीख 9 दिसम्बर, 2015 को उपलब्ध करा दी गई थीं ;

और, प्रारुप अधिसूचना के प्रत्युत्तर में व्यक्तियों और पणधारियों से कोई टीका टिप्पणियां/आक्षेप और सुक्षाव प्राप्त नहीं हुए थे;

और, शिमला जल आवाह वन्यजीव अभयारण्य हिमाचल प्रदेश के शिमला जिले में स्थित है और अक्षांश 31º 05' 08" उ. से 31º 07' 36" उ. तथा देशान्तर 77º 13' 00" पू. से 77º 16' 41" पू. के बीच स्थित है वन्यजीव अभयारण्य 10.20 वर्ग किलोमीटर क्षेत्र में फैला हुआ है |

और जहाँ, इस अभयारण्य की जैविक महत्व की समृद्ध को वनस्पित और जीव दर्शाते हैं। यह क्षेत्र वनस्पित और जीव के मूल्यवान किस्मों का समर्थन करता है। महत्वपूर्ण वनस्पित में डेडोर (केडरूस डेओडारा), ओक (क्यूमरक्यूस स्पा.), सपरूके स्परक(पिसिया स्पा), कैल (पिनस स्पा), पोपलर (पोपुलुस स्पा), रहोदोदेनदरोन (रहोदोदेनदरोन स्पा), टैक्अस (टैक्अस स्पा), कइनथ (पयरूस पसीअ), ब्लैक वोट्टल (अकैशिआ मोलइस्सइमा), आदि सम्मिलित हैं वन्यजीव अभयारण्य में हिमालय क्षेत्र के कई प्रकार के जड़ी-बूटियों, झुंडों और पर्वतारोहियों को भी शामिल किया गया है जिनमें टीक कलावर (डेसमोडीयम स्पा), टर्न इंनडीगो (इंनडीगोफेरा स्पा), विलो (सेलीक स्पा), बरबेरिया (बेरवेरीस स्पा), गुलाब (रोज स्पा), रूबुस स्पा आदि सम्मिलित हैं भूमिगत वनस्पित में भिन्न घास प्रजातियां, विविध प्रकार के फर्नों और संवहनी जड़ी बूटियां सम्मिलित है। अभयारण्य में स्तनधारियों की प्रचुरता है जैसे तेंदुआ (पेन्थेरा पार्डस),) मुंजक (मुनटीअ क्युसमुनतजक), घोरल (नेबमोरहेडूस स्पा), रसस लघु पुच्छ वानर (मक्का मुलाट्टा), सामान्य लंगूर (सेमनापीथेक्युस स्पा.), तेंदुआ बिल्ली (परीओनाइलुरूस बेनगालेसीस), साही (हायस्टीक् इंडीका), और तीतर जैसे कलीज (लोफुरा लेकोमेलनोस) और कोकलाश (पुकरासीआ मकरालोफा) हैं।

अभयारण्य में पक्षी भी जैसे कठफोड़वा (*पीकीडेअ स्पा*.), पैराकिट (*मेलापसीट्टी अनडुलाटेस*), जंगली उल्लू (*गलाक्डीयम रेडीअटूम*), कबूतर (कोलुमबा लीबीअ डोमेसटीका), गिद्ध (गपस इंडिक्स), आदि, सम्मिलित है;

और, शिमला जल आवाह वन्यजीव अभयारण्य के चारों ओर के क्षेत्र को, जिसका विस्तार और सीमाएं इस अधिसूचना के पैरा 1 में विनिर्दिष्ट हैं, पर्यावरण की दृष्टि से पारिस्थितिक संवेदी जोन के रूप में सुरक्षित और संरक्षित करना तथा उक्त पारिस्थितिक संवेदी जोन में उद्योगों या उद्योगों के वर्गो के प्रचालन तथा प्रसंस्करण करने को प्रतिषिद्ध करना आवश्यक है;

अतः, अब, केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उपनियम (3) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उपधारा (1), उपधारा (2) के खंड (v) और खंड (xiv) और उपधारा (3) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, हिमाचल प्रदेश राज्य में शिमला जल आवाह वन्यजीव अभयारण्य की सीमा से चारों ओर के 1.5 किलोमीटर तक के विस्तारित क्षेत्र को शिमला जल आवाह वन्यजीव अभयारण्य पारिस्थितिक संवेदी जोन (जिसे इसमें इसके पश्चात् पारिस्थितिक संवेदी जोन कहा गया है) के रूप में अधिसूचित करती है, जिसका विवरण निम्नानुसार है, अर्थात् :--

- 1. पारिस्थितिक संवेदी जोन का विस्तार और उसकी सीमाएं--(1) पारिस्थितिक संवेदी जोन का विस्तार शिमला जल आवाह वन्यजीव अभयारण्य की सीमा 0.08 किलोमीटर से 1.455 किलोमीटर तक भिन्न है और पारिस्थितिक संवेदी जोन का क्षेत्र 7.71 वर्ग किलोमीटर है।
- (2) शिमला जल आवाह वन्यजीव अभयारण्य के सीमांकन के भू-निर्देशांक के साथ पारिस्थितिक संवेदी जोन का मानचित्र उपाबंध I के रुप में उपाबद्ध है ।
 - (3) पारिस्थितिक संवेदी जोन के भीतर आने वाले ग्रामों की सूची प्रमुख बिन्दुओं के निर्देशांक उपाबंध II के रूप में उपाबद्ध है।
- 2. पारिस्थितिक संवेदी जोन के लिए आंचलिक महायोजना –(1) राज्य सरकार, पारिस्थितिक संवेदी जोन के प्रयोजन के लिए राजपत्र में इस अधिसूचना के प्रकाशन की तारीख से दो वर्ष की अवधि के भीतर, स्थानीय व्यक्तियों के परामर्श से, इस अधिसूचना में संलग्न अनुबंधों के सामंजस्य से आंचलिक महायोजना तैयार करेगी।
- (2) आंचलिक महायोजना के द्वारा तैयार किए गए अधिसूचना में उल्लेखित शर्त के अनुरूप होंगे और पर्यावरणीय प्रभाव भी शामिल होंगे।
- (3) आचंलिक महायोजना राज्य सरकार के सक्षम प्राधिकारी द्वारा अनुमोदित होगी।
- (4) पारिस्थितिक संवेदी जोन के लिए आचंलिक महायोजना इस अधिसूचना में यथाविनिर्दिष्ट रूप में ऐसी रीति से राज्य सरकार तथा सुसंगत केंद्रीय और राज्य विधियों के सामंजस्य में भी तथा केंद्रीय सरकार द्वारा जारी मार्गनिर्देश का सिद्धांत, यदि कोई हों, द्वारा तैयार होगी।
- (5) आंचलिक महायोजना, राज्य सरकार के सभी संबद्ध विभागों के परामर्श से तैयार होगी, अर्थात्:--
 - (i) पर्यावरण ;
 - (ii) वन ;
 - (iii) नगर विकास ;
 - (iv) पर्यटन ;
 - (v) नगरपालिका;
 - (vi) राजस्व ;
 - (vii) कृषि;
 - (viii) सिंचाई;
 - (ix) लोक निर्माण निभाग; और
 - (x) हिमाचल प्रदेश राज्य प्रदूषण नियंत्रण बोर्ड।
- (6) आंचलिक महायोजना अनुमोदित विद्यमान भू-उपयोग, अवसंरचना और क्रियाकलापों पर कोई निर्बंधन अधिरोपित नहीं करेगी जब तक कि इस अधिसूचना में विनिर्दिष्ट न हो और आचंलिक महायोजना सभी अवसंरचना और क्रियाकलापों में और अधिक दक्षता और पारिस्थितिक अनुकूलता का संवर्धन करेगी।

- (7) आंचलिक महायोजना में अनाच्छादित क्षेत्रों के जीर्णोद्धार, विद्यमान जल निकायों के संरक्षण, आवाह क्षेत्रों के प्रबंधन, जल-संभरों के प्रबंधन, भूतल जल के प्रबंधन, मृदा और नमी संरक्षण, स्थानीय समुदायों की आवश्यकताओं तथा पारिस्थितिक और पर्यावरण से संबंधित ऐसे अन्य पहलुओं, जिन पर ध्यान देना आवश्यक है, के लिए उपबंध होंगे।
- (8) आंचलिक महायोजना सभी विद्यमान पूजा स्थलों, ग्रामों और नगरीय बंदोबस्तों, वनों के प्रकार और किस्मों, जनजातीय क्षेत्रों, कृषि क्षेत्रों, ऊपजाऊ भूमि, हरित क्षेत्र जैसे उद्यान और उसी प्रकार के स्थान, उद्यान कृषि क्षेत्र, फलोउद्यान, झीलों और अन्य जल निकायों का अभ्यकंन करेगी। योजना का मानचित्र में विद्यमान और प्रस्तावित भूमि के उपयोग की विशेषताओं के विवरण किया जाएगा।
- (9) आंचलिक महायोजना स्थानीय समुदायों की जीवकोपार्जन को सुनिश्चित करने के लिए, पारिस्थितिक संवेदी जोन में विकास को पारिस्थितिक अनुकूल विकास के लिए विनियमित करेगी और अधिसूचना में वितिर्दिष्ट प्रतिषिद्ध, विनियम और संवर्धित क्रियाकलापों का अनुसरण करेगी।
- (10) आंचलिक महायोजना इस अधिसूचना में दिए गए उपबंधों के संबंध में अपने कार्यों के बाहर ले जाने के लिए निगरानी समिति के लिए एक संदर्भ दस्तावेज तैयार करेगी।
- 3. राज्य सरकार द्वारा किए जाने वाले उपाय-- राज्य सरकार इस अधिसूचना के उपबंधों को प्रभावी करने के लिए निम्नलिखित उपाय करेगी, अर्थात् :-
- (1) भू-उपयोग पारिस्थितिक संवेदी जोन में वनों, उद्यान-कृषि क्षेत्रों, कृषि क्षेत्रों, आमोद-प्रमोद के प्रयोजन के लिए चिन्हित किए गए पार्कों और ख़ुले स्थानों का वाणिज्यिक और औद्योगिक संबद्ध विकास क्रियाकलापों के लिए उपयोग या संपरिवर्तन नहीं होगा :

परंतु पारिस्थितिक संवेदी जोन के भीतर कृषि भूमि का संपरिवर्तन, मानीटरी समिति की सिफारिश पर और राज्य सरकार के पूर्व अनुमोदन से, स्थानीय निवासियों की आवासीय जरूरतों को पूरा करने के लिए और पैरा 4 की सारणी के स्तंभ (2) के अधीन सूचीबद्ध क्रियाकलापों को पूरा करने के लिए अनुज्ञात होंगे, अर्थात् :-

- (i) पारिस्थितिक अनुकूल पर्यटन क्रियाकलापों के लिए पर्यटकों के अस्थायी आवासन के लिए पारिस्थितिक अनुकूल आरामगाह जैसे टेंट. लकड़ी के मकान आदि :
- (ii) विद्यमान सड़कों को चौड़ा करना और उन्हें सुदृढ करना तथा नई सड़कों का सन्निर्माण;
- (iii) प्रदूषण उत्पन्न न करने वाले लघु उद्योग;
- (iv) वर्षा जल संचय; और;
- (v) कुटीर उद्योग जिसके अंतर्गत ग्राम उद्योग, सुविधा भंडार और स्थानीय सुख-सुविधाएं भी हैं:

परंतु यह और भी कि राज्य सरकार के पूर्व अनुमोदन तथा संविधान के अनुच्छेद 244 और तत्समय प्रवृत्त विधि के उपबंधों के अनुपालन के बिना, जिसके अंतर्गत अनुसूचित जनजाति और अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 (2007 का 2) भी है, वाणिज्यिक या उद्योग विकास क्रियाकलापों के लिए जनजातीय भूमि का उपयोग अनुज्ञात नहीं होगा:

परंतु यह और भी कि पारिस्थितिक संवेदी जोन के भीतर भू-अभिलेखों में उपसंजात कोई त्रुटि, मानीटरी समिति के विचार प्राप्त करने के पश्चात् राज्य सरकार द्वारा प्रत्येक मामले में एक बार संशोधित होगी और उक्त त्रुटि के संशोधन की सूचना केंद्रीय सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय को देनी होगी।

परंतु यह और भी कि उपर्युक्त <mark>त्रुटि का संशोधन में इस उप पैरा के अधीन यथा-उपबंधित के सिवाय किसी भी दशा में भू-उपयोग</mark> का परिवर्तन सम्मिलित नहीं होगा ।

परंतु यह और भी कि हरित क्षेत्र में जैसे वन क्षेत्र, कृषि क्षेत्र आदि में कोई पारिणामिक कटौती नहीं होगी और अनप्रयुक्त या अनुत्पादक कृषि क्षेत्रों में पुन: वनीकरण करने के प्रयास किए जाएंगे।

- (2) प्राकृतिक जल स्रोत आचंलिक महायोजना में सभी प्राकृतिक जल स्रोतों के जल आवाह क्षेत्रों की पहचान की जाएगी और उनके संरक्षण और पुनरुद्भूतकरण के लिए योजना सम्मिलित होगी और राज्य सरकार द्वारा जल आवाह क्षेत्रों में विकास क्रियाकलाप प्रतिषिद्ध और निर्बंधित करने के लिए ऐसी रीति से जल आवाह प्रबंधन योजना के मार्गनिर्देश तैयार किए जाएंगे।
- (3) पारिस्थितिक पर्यटन (क) पारिस्थितिक संवेदी जोन के भीतर पर्यटन संबंधी क्रियाकलाप पारिस्थितिक पर्यटन महायोजना के अनुसार होंगे जो कि आंचलिक महायोजना के भाग रूप में होगी।

- (ख) पर्यटन महायोजना पारिस्थितिक पर्यटन विभाग, द्वारा हिमाचल प्रदेश सरकार के राजस्व और वन विभाग के परामर्श से तैयार होगी।
- (ग) पर्यटन महायोजना आंचलिक महायोजना के एक घटक के रूप में जाना जायेगा।
- (घ) पर्यटन संबंधी क्रियाकलाप निम्नलिखित के अधीन विनियमित होंगे, अर्थात् :-
 - (i) शिमला जल आवाह वन्यजीव अभयारण्य की सीमा से एक किलोमीटर तक या पारिस्थितिक संवेदी जोन के विस्तार तक इनमें जो भी निकट है, नये वाणिज्यिक होटल और रिसोर्ट का निर्माण अनुज्ञात नहीं होगा। वन्यजीव अभयारण्य की सीमा से 1 कि.मी. परे से पारिस्थितिक संवेदी जोन के विस्तार तक, नए होटर और रिसोर्ट का स्थापन केवल पूर्व निश्चित तथा पूर्व अभिहित क्षेत्रों में पारिस्थितिक पर्यटन सुविधाओं के लिए अनुज्ञात पर्यटन महायोजना के अनुसार होगा;
 - (ii) पारिस्थितिक संवेदी जोन के भीतर सभी नए पर्यटन क्रियाकलापों या विद्यमान पर्यटन क्रियाकलापों का विस्तार केंद्रीय सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय के मार्गदर्शक सिद्धांतों के द्वारा तथा राष्ट्रीय व्याघ्र संरक्षण प्राधिकरण, द्वारा जारी पारिस्थितिक पर्यटन मार्गदर्शक सिद्धांतों (समय-समय पर यथा संशोधित) के अनुसार, पारिस्थितिक पर्यटन, को महत्व देते हुए होगा;
 - (iii) आंचलिक महायोजना का अनुमोदन किए जाने तक, पर्यटन के लिए विकास और विद्यमान पर्यटन क्रियाकलापों के विस्तार को वास्तविक स्थल विनिर्दिष्ट संवीक्षा तथा मानीटरी समिति की सिफारिश पर आधारित संबंधित विनियामक प्राधिकरणों द्वारा अनुज्ञात किया होगा।
- (4) नैसर्गिक विरासत -- पारिस्थितिक संवेदी जोन में महत्वपूर्ण नैसर्गिक विरासत के सभी स्थलों जैसे सभी जीन कोश आरक्षित क्षेत्र, शैल विरचनाएं, जल प्रपातों, झरनों, घाटी मार्गों, उपवनों, गुफाएं, स्थलों, भ्रमण, अश्वरोहण, प्रपातो आदि की पहचान की जाएगी और उन्हें संरक्षित किया जाएगा तथा उनकी सुरक्षा और संरक्षा के लिए इस अधिसूचना के प्रकाशन की तारीख से छह मास के भीतर, योजना बनाएगी और ऐसी योजना आंचलिक महायोजना का भाग होगा।
- (5) मानव निर्मित विरासत स्थलों पारिस्थितिक संवेदी जोन में भवनों, संरचनाओं, शिल्प-तथ्य, ऐतिहासिक, कलात्मक और सांस्कृतिक महत्व के क्षेत्रों की पहचान की जाएगी और इस अधिसूचना के प्रकाशन की तारीख से छह माह के भीतर उनके संरक्षण की योजनाएं तैयार की जाएगी तथा आंचलिक महायोजना में सम्मिलित की जाएगी।
- (6) ध्वनि प्रदूषण पारिस्थितिक संवेदी जोन में ध्वनि प्रदूषण के नियंत्रण के लिए राज्य सरकार का पर्यावरण विभाग या राज्य प्रदूषण नियंत्रण बोर्ड ध्वनि प्रदूषण (विनियमन और नियंत्रण) नियम, 2000 के अनुसार पर्यावरणीय (संरक्षण) अधिनियम, 1986, के अधीन में नियत उपबंधों के अनुसार ध्वनि प्रदूषण के नियंत्रण के विनियमों को कार्यान्वित करेगा।
- (7) वायु प्रदूषण पारिस्थितिक संवेदी जोन में, वायु प्रदूषण के नियंत्रण के लिए विनियम वायु (प्रदूषण निवारण और नियंत्रण) अधिनियम, 1981 (1981 का 14) और उसके अधीन बनाए गए नियमों के उपबंधों के अनुसार होंगे।
- (8) बहिस्नाव का निस्सारण पारिस्थितिक संवेदी जोन में उपचारित बहिस्नाव का निस्सारण सामान्य मानकों के लिए पर्यावरणीय प्रदूषित आच्छादित के निस्सारण के अंतर्गत पर्यावरणीय (संरक्षण) अधिनियम, 1986 और उसके अधीन बनाए गए नियमों के उपबंधों के अनुसार होगा।
- (9) ठोस अपशिष्ट -- ठोस अपशिष्टों का निपटान निम्नलिखित रूप में होगा--
 - (i) पारिस्थितिक संवेदी जोन में ठोस अपशिष्ट का व्ययन समय-समय पर ब्रथा संशोधित ठोस अपशिष्ट प्रबंधन नियम, 2016, जो भारत सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की अधिसूचना सं. का.आ. 1357(अ), तारीख 8 अप्रैल, 2016 द्वारा प्रकाशित किए गए थे, के उपबंधों के अनुसार किया जाएगा;
 - (ii) अकार्बनिक सामग्री का निपटान पारिस्थितिक संवेदी जोन के बाहर पहचान किए गए स्थल पर किसी पर्यावरणीय स्वीकृत रीति में होगा;
 - (iii) पारिस्थितिक संवेदी जोन में ठोस अपशिष्टों को जलाना या भष्मीकरण और कचरा स्थल की स्थापना अनुज्ञात नहीं होगी।

- (10) जैव चिकित्सीय अपशिष्ट.- पारिस्थितिक संवेदी जोन में जैव चिकित्सीय अपशिष्टों का व्ययन भारत सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की समय-समय पर यथासंशोधित अधिसूचना सं. सा.का.नि. 343(अ), तारीख 28 मार्च 2016 द्वारा प्रकाशित जैव चिकित्सीय अपशिष्ट प्रबंध नियम, 2016 के उपबंधों के अनुसार किया जाएगा।
 - (i) पारिस्थितिक संवेदी जोन में कोई सामान्य उपचार सुविधा या जलाया जाना अनुज्ञात नहीं किया जाएगा ।
- (ii) पारिस्थितिक संवेदी जोन के भीतर पहले से विद्यमान पृथक चिकित्सालय या प्राइवेट स्वास्थय केन्द्र को संरक्षित क्षेत्र में प्रतिकूल समाधात से बचने के लिए पर्याप्त अपशिष्ट उपचार प्रणाली उपलब्ध करनी होगी।
- (11) प्लास्टिक अपशिष्ट प्रबंधन: पारिस्थितिक संवेदी जोन में प्लास्टिक अपशिष्ट प्रबंध भारत सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की समय-समय पर यथासंशोधित अधिसूचना सं. सा.का.िन. 340(अ), तारीख 18 मार्च, 2016 द्वारा प्रकाशित प्लास्टिक अपशिष्ट प्रबंध नियम 2016 के उपबंधों के अनुसार किया जाएगा।
- (12) निर्माण और विध्वंस अपशिष्ट प्रबंधन: पारिस्थितिक संवेदी जोन में संनिर्माण और विध्वंस अपशिष्ट प्रबंध का निपटान भारत सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की समय-समय पर यथासंशोधित अधिसूचना सं. सा.का.नि. 317(अ), तारीख 29 मार्च, 2016 द्वारा प्रकाशित संनिर्माण और विध्वंस प्रबंध नियम, 2016 के उपबंधों के अनुसार किया जाएगा।
- (13) ई–अपशिष्ट:- पारिस्थितिक संवेदी जोन में ई–अपशिष्ट प्रबंध का निपटान भारत सरकार के पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की समय-समय पर यथासंशोधित द्वारा प्रकाशित ई–अपशिष्ट प्रबंध नियम, 2016 के उपबंधों के अनुसार किया जाएगा।
- (14) यानीय परिवहन: परिवहन की यानीय गतिविधियां आवास अनुकूल रीति से विनियमित होंगी और इस संबंध में आंचलिक महायोजना में विनिर्दिष्ट उपबंध आंचलिक महायोजना में सम्मिलित किए जाएंगे और आंचलिक महायोजना के तैयार होने और राज्य सरकार के सक्षम प्राधिकारी द्वारा के अनुमोदित होने तक, मानीटरी समिति सुसंगत अधितियमों और उनके अधीन बनाए गए नियमों और विनियमों के अनुसार यानीय गतिविधियों के अनुपालन को मानीटर करेगी।
- (15) औद्योगिक ईकाइयां: (क) प्रस्तावित पारिस्थितिक संवेदी जोन के भीतर विधि के अनुसार स्थापित विद्यमान काष्ठ आधारित उद्योगों के सिवाय किसी नवीन काष्ठ आधारित उद्योगों की स्थापना की अनुमति नहीं दी जाएगी।
- (ii) प्रस्तावित पारिस्थितिक संवेदी जोन के भीतर जल, वायु, मृदा, ध्विन प्रदूषण फैलाने वाले किसी नवीन उद्योग की स्थापना की अनुमित नहीं दी जाएगी।
- 16. यदि वह आवश्यक समझती है, इस अधिसूचना के उपबंधों को प्रभावी करने में केन्द्रीय अन्य उपायों निर्दिष्ट करेगी।
- 4. पारिस्थितिक संवेदी जोन में प्रतिषिद्ध या विनियमित किए जाने वाले क्रियाकलापों की सूची पारिस्थितिक संवेदी जोन में सभी क्रियाकलाप पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) के उपबंधों द्वारा शासित होंगे और नीचे दी गई सारणी में विनिर्दिष्ट रीति में विनियमित होंगे, अर्थात् :--

सारणी क्रियाकलाप क्रम सं. टीका-टिप्पणी (1)(2) (3) प्रतिषिद्ध क्रियाकलाप वाणिज्यिक खनन, पत्थर उत्खनन और अपघर्षण (क) सभी प्रकार के नए और विद्यमान खनन (लघु और वृहत 1. इकाईया। खनिज), पत्थर की खानें और उनको तोड़ने की इकाइयां वास्तविक स्थानीय निवासियों की घरेलू आवश्यकताओं जिसमें मकानों के संनिर्माण या मरम्मत के लिए धरती को खोदना और मकान बनाने के लिए देशी टाइल्स या ईंटों का निर्माण करना भी सम्मिलित है, के सिवाय नहीं होंगी: (ख) खनन संक्रियाएं, माननीय उच्चतम न्यायालय की रिट याचिका (सिविल) सं. 1995 का 202 टी.एन. गौडाबर्मन थिरुमूलपाद बनाम भारत सरकार के मामले में आदेश तारीख 4 अगस्त, 2006 और रिट 1491िचका (सी) सं. 2012 का 435 गोवा फाउंडेशन बनाम भारत

		सरकार के मामले में तारीख 21 अप्रैल, 2014 के अंतरिम आदेश के
		अनुसरण में सर्वदा प्रचालन होगा ।
2.	नई आरा मिलों की स्थापना।	पारिस्थितिक संवेदी जोन के भीतर नई और विद्यमान आरा मिलों का विस्तार अनुज्ञात नहीं होगा।
3.	किसी परिसंकटमय पदार्थों का उपयोग या उत्पादन ।	लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपबंधित के सिवाय) होंगे।
4.	जल या तायु या मृदा या ध्वनि प्रदूषण कारित करने वाले उद्योगों की स्थापना।	पारिस्थिविक संवेदी जोन में कोई नई प्रदूषण फैलाने वाले उद्योगों या उसके विस्तार की अनुमति दी जाएगी।
		पारिस्थितिक संवेदी जोन में जब तक कि इस अधिसूचना में विनिर्दिष्ट न हो केंद्रीय प्रदूषण नियंत्रण बोर्ड द्वारा फरवरी, 2016 जारी मार्गदर्शी सिद्धांतों में उद्योगों के वर्गीकरण के अनुसार गैर प्रदूषित उद्योग अनुज्ञात होंगे। इसके अतिरिक्त गैर प्रदूषित कुटीर उद्योग का संवर्धन किया जाएगा।
5.	नवीन मुख्य तापीय और जल विद्युत परियोजना की स्थापन।	लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपबंधित के सिवाय) होंगे।
6.	पहाड़ी ढालों और नदी तटों का संरक्षण ।	1 से 10 से अधिक ढलानों वाली पहाड़ी पर और किसी नदी और
		प्राकृतिक नालों के किनारों से 100 मीटर तक आंचलिक महायोजना के अधीन अनुज्ञात के सिवाए कोई सन्निर्माण क्रियाकलाप नहीं किया जाएगा
7.	जलने वाली लकड़ी का वाणिज्यिक उपयोग ।	लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपबंधित के सिवाय) होंगे ।
8.	प्लास्टिक के थैलों का उपयोग।	लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपवंधित के सिवाय) होंगे ।
9.	पर्यटन से संबंधित क्रियाकलाप जैसे गर्म वायु गुब्बारों, हेलीकाप्टर, ड्रोन, माइक्रालाइट, आदि द्वारा पारिस्थितिक संवेदी जोन क्षेत्र के ऊपर से उड़ना जैसे	लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपबंधित के सिवाय) होंगे।
	क्रियाकलाप करना।	
10.	वाणिज्यिक मत्स्य पालन।	लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपबंधित के सिवाय) होंगे।
11.	प्राकृतिक जल निकायों या भूमि क्षेत्र में अनुपचारित प्रवाह के निर्वहन ।	लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपबंधित के सिवाय) होंगे।
12.	ठोस अपशिष्ट निपटान स्थल की स्थापना और सामान्य जलाए जाने की सुविधा के लिए ठोस और जैव चिकित्सा अपशिष्ट।	पारिस्थितिक संवेदी जोन में ठोस अपशिष्ट निपटान की कोई नई ठोस अपशिष्ट निपटान स्थल और अपशिष्ट उपचारित/प्रसंस्करण सुविधा की अनुमति नहीं है । औद्योगिक प्रक्रिया और स्वास्थ्य प्रतिष्ठान/अस्पतालों आदि से उत्पन्न किसी भी ठोस अपशिष्ट के उपचार के लिए सामान्य या व्यक्तिगत जलावतरण की सुविधा की अतिरिक्त स्थापना प्रतिषिद्ध है।
13.	फर्मों, कॉर्पोरेट, कंपनियों द्वारा बड़े पैमाने पर वाणिज्यिक पशुधन संपदा और कुक्कुट फार्मों की स्थापना।	स्थानीय जरूरतों को पूरा करने के लिए लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपबंधित के सिवाय) होंगे।
14.	ईंट भट्टों की स्थापना करना।	लागू विधियों के अनुसार प्रतिषिद्ध (अन्यथा उपबंधित के सिवाय) होंगे।
	- विनियमित	क्रियाकलाप
15.	होटलों और रिसोर्टों की स्थापना ।	पारिस्थितिक पर्यटन क्रियाकलापों संबंधी पर्यटकों की लघु संरचनाओं के लिए संरक्षित क्षेत्र की सीमा से एक किलोमीटर तक या पारिस्थिविक संवेदी जोन के विस्तार तक, इनमें जो भी निकट है, नए वाणिज्यिक होटल और रिसोर्ट अनुज्ञात होंगे, अन्यथा नहीं : परंतु, संरक्षित क्षेत्र की सीमा के एक किलोमीटर के पश्चात् या
		189 न्तार तक पारिस्थितिक संवेदी जोन के विस्तार तक सभी नए

		पर्यटक क्रियाकलाप या विद्यमान क्रियाकलाप का विस्तार पर्यटन महायोजना और यथा लागू मार्गदर्शी सिद्धांतों के अनुरुप होगा।
16.	संनिर्माण क्रियाकलाप ।	(क) संरक्षित क्षेत्र को सीमा से एक किलामीटर के भीतर या पारिस्थितिक संवेदी जोन के विस्तार तक जो भी निकट हो, किसी भी प्रकार का वाणिज्यिक संनिर्माण अनुज्ञात नहीं किया जाएगा:
		परंतु स्थानीय लोगों को पैरा 6 के उप पैरा (1) में सूचीबद्ध क्रियाकलापों सहित उनके आवासीय उपयोग के लिए उनकी भूमि में संनिर्माण करने की अनुमति भवन उपविधियों के अनुसार दी जाएगी।
		(i) विद्यमान सड़कों को चौड़ा करना और उन्हें सुदृढ करना तथा नई सड़कों का संनिर्माण;
		(ii) बुनियादी ढांचों और नागरिक सुविधाओं का संनिर्माण और नवीकरण;
		(iii) कुटीर उद्योगों जिसके अंतर्गत ग्रामीण उद्योग हैं; सुविधाजनक भण्डार और स्थानीय सुख सुविधाओं जो पारिस्थितिक पर्यटन जिस में सहायक हो ग्रह वास; और
		(iv) इस अधिसूचना में संवर्धित क्रियाकलापों की सूची :
17.	खाई का मैदान।	नए खाई खोदने के मैदान का स्थापित किया जाना प्रतिषिद्ध है। पुराने खाई के मैदान लागू विधियों के अधीन विनियमित किए जाएं।
18.	प्राकृतिक जल निकायों या सतही क्षेत्र में उपचारित बहिर्स्राव का निस्सारण ।	उपचारित बहिर्स्नाव के पुनर्चक्रण को प्रोत्साहित करने और अवमल या ठोस अपशिष्टों के निपटान के लिए विद्यमान विनियमों का
		अनुपालन किया जाएगा । उपचारित अपशिष्ट जल के पुन:चक्रण और
		पुन:उपयोग के लिए प्रयास किए जाएंगे अन्यथा लागू विधियों के अनुसार उपचारित बहिर्स्नाव के पुनर्चक्रण/प्रवाह के निर्वहन को विनियमित किया जाएगा।
19.	वायु और यानीय प्रदूषण।	लागू विधियों के अधीन विनियमित होंगे ।
20.	सतह और भूजल के वाणिज्यिक निष्कर्षण ।	लागू विधियों के अधीन विनियमित होंगे ।
21.	वृक्षों की कटाई ।	(क) राज्य सरकार में सक्षम प्राधिकारी की पूर्व अनुमिन के बिना वन, सरकारी या राजस्व या निजी भूमि पर या वनों में वृक्षों की कटाई नहीं होगी।
		(ख) वृक्षों की कटाई संबंधित केंद्रीय या राज्य अधिवियम या उसके अधीन बनाए गए नियमों के उपबंध के अनुसार विनियमित होगी।
22.	प्रवासी चरवाहे।	लागू विधियों और आंचलिक महायोजना के अनुसार विनियमित होंगे।
23.	मौजूदा प्रतिष्ठान।	लागू विधियों के अधीन विनियमित होंगे ।
24.	विद्युत केबलों और दूरसंचार टावरों का परिनिर्माण और केबल बिछाना और अन्य बुनियादी ढांचे।	लागू विधियों के अधीन विनियमित होंगे। भूमिगत केबलों को बढ़ावा दिया जाएगा। आंचलिक महायोजना के अंतर्गत गुजरने वाली सभी विद्यमान विद्युत केबलों को पारिस्थितिक संवेदी जोन में निर्धारित समय सीमा में पर्याप्त रूप से पृथक किया जाएगा।
25.	विद्यमान सड़कों को चौड़ा करना और उन्हें सुदृष्ट करना तथा नवीन सड़कों का संनिर्माण।	लागू विधियों के अनुसार न्यूनीकरण की उपायों के साथ, नियम और विनियमन और उपलब्ध दिशानिर्देश विनियमित होंगे।
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26.	होटलों और लॉज के विद्यमान परिसरों में बाड	लागू विधियों के अधीन विनियमित होगा ।
	लगाना ।	वन्यजीव के मुक्त संचलन को अनुज्ञात करने के लिए पारिस्थितिक संवेदी जोन के भीतर होटलों या अन्य वाणिज्यिक स्थापन अपनी परिसंपत्तियों में काटेदार से बाड नहीं लगाएंगे और कोई भी बाड़
		एक मीटर से ऊंची नहीं होगी। कोई विद्यमान बाड़, जो इस उपदर्श का अनुपालन नहीं करती है, को आंचलिक महायोजना में वर्णित
	9.11	समय-सीमा के अनुसार उपांतरित किया जाएगा ।
27.	टिम्बर वितरण(टी.डी.) अधिकार।	लागू विधियों के अधीन विनियमित होंगे ।
28.	लघु चारा संग्रहण।	लागू विधियों के अधीन विनियमित होंगे ।
29.	कूड़े का ढेर लगाना।	लागू विधियों के अधीन विनियमित होंगे ।
30.	कृषि प्रणाली में प्रबल बदलावा	लागू विधियों के अधीन विनियमित होंगे ।
31.	प्राकृतिक जल संसाधनों का वाणिज्यिक उपयोग जिसमें भूमिगत जल संचयन भी सम्मिलित है	लागू विधियों के अधीन विनियमित होंगे ।
32.	रात्रि में यानिक यातायात का संचलन।	लागू विधियों के अधीन वाणिज्यिक प्रयोजन के लिए विनियमित होंगे।
33.	विदेशी प्रजातियों को लाना।	लागू विधियों के अधीन निनियमित होंगे ।
34.	वाणिज्यिक साइनबोर्ड और होर्डिंग।	लागू विधियों के अधीन निनियमित होंगे ।
35.	वन उत्पादों और गैर काष्ठ वन उत्पादों का संग्रहण ।	लागू विधियों के अधीन विनियमित होंगे ।
36.	नागरिक सुविधाओं सहित बुनियादी ढांचे।	लागू विधियों के अनुसार न्यूनीकरण की उपायों के साथ, नियम और विनियमन और उपलब्ध दिशानिर्देश विनियमित होंगे।
37.	खुले कुआ, बोर कुआ, आदि के लिए कृषि और अन्य उपयोग।	विनियमित और उपयुक्त प्राधिकारी द्वारा क्रियाकलापों की सख्ती से मानीटरी की जाएगी।
38.	ठोस अपशिष्ट प्रबंधन।	लागू विधियों के अधीन विनियमित होंगे ।
39.	पारिस्थितिक पर्यटन।	लागू विधियों के अधीन विनियमित होंगे ।
	संवर्धित र्ग	क्रेयाकलाप क्रेयाकलाप
40.	स्थानीय समुदायों द्वारा चल रही कृषि और बागवानी	लागू विधियों के अधीन अनुज्ञात होंगे ।
	प्रथाओं के साथ पशुपालन, पशुपालन कृषि और	
	मछली पालन ।	
41.	जैविक खेती।	सक्रिय रूप से बढ़ावा दिया जाएगा ।
42.	सभी गनिविधियों के लिए हरित प्रौद्योगिकी को ग्रहण करना।	सक्रिय रूप से बढ़ावा दिया जाएगा ।
43.	प्रदूषण उत्पन्न न करने वाले लघु उद्योग ।	पारिस्थितिक संवेदी जोन में फरवरी, 2016 केंद्रीय प्रदूषण नियंत्रण बोर्ड द्वारा जारी उद्योगों के वर्गीकरण के अनुसार व्हाइट के रूप में परिभाषित गैर प्रदूषित उद्योगों को और गैर परिसंकटमय कुटीर उद्योग और सेवा उद्योग, कृषि, पुष्पोत्पादन, बागवानी या कृषि आधारित उद्योग जो देशज सामग्री से बने उत्पादन का उत्पादन करते है को सक्षम प्राधिकारी द्वारा अनुज्ञात किया जाएगा।
44.	वर्षा जल संचयन ।	सक्रिय रूप से बढ़ावा दिया जाएगा ।
45.	कुटीर उद्योगों जिसके अंतर्गत ग्रामीण कारीगर आदि भी हैं।	सक्रिय रूप से बढ़ावा दिया जाएगा ।
46.	नवीकरणीय ऊर्जा स्रोत का उपयोग ।	बायोगैस, सौर प्रकाश इत्यादि को बढ़ावा दिया जाना है।
47.	कृषि वानिकी ।	सक्रिय रूप से बढ़ावा दिया जाएगा ।
48.	पारिस्थितिक अनुकूल परिवहन का उपयोग ।	सक्रिय रूप से बढ़ावा दिया जाएगा ।
49.	कौशल विकास ।	सक्रिय रूप से बढ़ावा दिया जाएगा ।
50.	निम्नीकृत भूमि या वन या आवास की बहाली ।	सक्रिय रूप से बढ़ावा दिया जाएगा ।
51.	पर्यावरणीय जागरुकता ।	स्भिन्नय रूप से बढ़ावा दिया जाएगा।
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5. मानीटरी समिति- (1) केंद्रीय सरकार, पारिस्थितिक संवेदी जोन के प्रभावी मानीटरी की लिए एक मानीटरी समिति का गठन करेगी जो निम्नलिखित से मिलकर बनेगी, अर्थात् :-

(i) उपायुक्त, शिमला -अध्यक्ष;

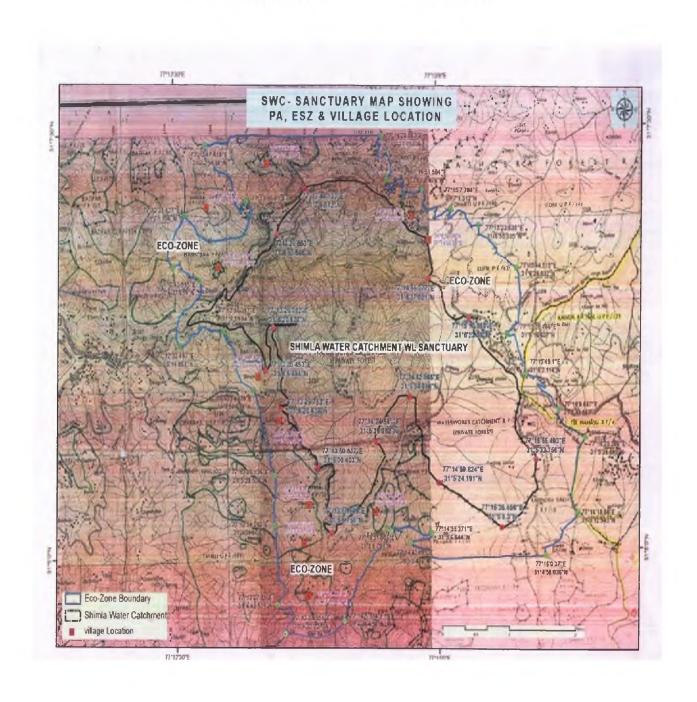
- (ii) हिमाचल प्रदेश सरकार द्वारा नामनिर्दिष्ट तीन वर्ष की अवधि के लिए पारिस्थितिक —सदस्य; और पर्यावरण क्षेत्र का एक विशेषज्ञ
- (iii) पर्यावरण के क्षेत्र में कार्य करने वाले गैर सरकारी संगठनों (जिसके अंतर्गत विरासत —सदस्य; संरक्षण भी है) का तीन वर्ष की अवधि के लिए भारत सरकार द्वारा नामनिर्दिष्ट एक प्रतिविधि
- (iv) सदस्य सचिव या सदस्य, हिमाचल प्रदेश राज्य जैव विविधता बोर्ड, -सदस्य;
- (v) कार्यकारी इंजीनियर, हिमाचल प्रदेश प्रदूषण नियंत्रण बोर्ड -सदस्य;
- (vi) वरिष्ठ नगर योजनाकार –सदस्य:
- (vii) प्रभागीय वन अधिकारी (वन्यजीव), शिमला -सदस्य;
- (viii) प्रभागीय वन अधिकारी (प्रादेशिक), शिमला –सदस्य-सचिव।
- 6. निर्देश निबंधन -
- (1) मानीटरी समिति का कार्यकाल अधिसूचना जारी करने की तारीख से तीन वर्ष की अवधि के लिए होगा।
- (2) मानीटरी समिति इस अधिसूचना के उपबंधों के अनुपालन को मानीटर करेगी।
- (3) मानीटरी समिति पारिस्थितिक संवेदी जोन में भारत सरकार के तत्कालीन पर्यावरण और वन मंत्रालय की अधिसूचना सं. का.आ. 1533(अ) तारीख 14 सितंबर, 2006 की अनुसूची में के अधीन सिम्मिलित क्रियाकलापों और इस अधिसूचना के पैरा 4 के अधीन सारणी में विनिर्दिष्ट प्रतिषिद्ध क्रियाकलापों को भी अनुज्ञात नहीं करेगा केवल श्वेत उद्योग प्रवर्ग को केन्द्रीय प्रदूषण नियंत्रण बोर्ड (उद्योगों का वर्गीकरण), 2016 द्वारा जारी मार्गदर्शकों ने यथा विनिर्दिष्ट माना जाएगा।
- (4) इस अधिसूचना के पैरा 4 के अधीन यथा विनिर्दिष्ट प्रतिषिद्ध क्रियाकलापों के सिवाय, भारत सरकार के तत्कालीन पर्यावरण और वन मंत्रालय की अधिसूचना संख्यांक का.आ. 1533(अ) तारीख 14 सितंबर, 2006 की अधिसूचना के अनुसूची के अधीन ऐसे क्रियाकलापों, जिन्हें सम्मिलित नहीं किया गया है, परंतु पारिस्थितिक संवेदी जोन में आते हैं, ऐसे क्रियाकलापों की वास्तविक विनिर्दिष्ट स्थलीय दशाओं पर आधारित मानीटरी समिति द्वारा संवीक्षा की जाएगी और उसे संबद्ध विनियामक प्राधिकरणों को निर्दिष्ट किया जाएगा।
- (5) मानीटरी समिति का सदस्य-सचिव या संबद्ध कलक्टर या संरक्षित क्षेत्र का प्रभारी ऐसे व्यक्ति के विरूद्ध, जो इस अधिसूचना के किसी उपबंध का उल्लंघन करता है, पर्यावरण (संरक्षण) अधिनियम, 1986 की धारा 19 के अधीन परिवाद फाइल करने के लिए सक्षम होगा।
- (6) मानीटरी समिति मुद्दों के आधार पर अपेक्षाओं पर निर्भर रहते हुए संबद्ध विभागों के प्रतिनिधियों या विशेषज्ञों, औद्योगिक संगमों या संबद्ध पणधारियों के प्रतिनिधियों को अपने विचार-विमर्श में सहायता के लिए आमंत्रित कर सकेगी।
- (7) मानीटरी समिति प्रत्येक वर्ष 31 मार्च तक की अपनी वार्षिक कार्रवाई रिपोर्ट राज्य के मुख्य वन्यजीव वार्डन को उपाबंध III में उपबंधित रूप विधान के अनुसार उस वर्ष के 30 जून तक प्रस्तुत करेगी।
- (8) केन्द्रीय सरकार का पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय मानीटरी समिति को उनके कृत्यों के प्रभावी निर्वहन के लिए समय-समय पर ऐसे निदेश दे सकेगा, जो वह ठीक समझे।
- इस अधिसूचना के उपबंधों को प्रभाव देने के लिए केंद्रीय सरकार और राज्य सरकार अतिरिक्त उपाय, यदि कोई हों, विनिर्दिष्ट कर सकेंगे।

8. भारत के माननीय उच्चतम न्यायालय या उच्च न्यायालय या राष्ट्रीय हरित अधिकरण द्वारा पारित या पारित होने वाले किसी आदेश, यदि कोई हो, के अधीन, इस अधिसूचना के उपबंध होंगे।

[फा. सं. 25/47/2015-ईएसजेड-आरई]

ललित कपूर, वैज्ञानिक 'जी'

उपाबंध – I शिमला जल आवाह वन्यजीव अभयारण्य, हिमाचल प्रदेश का मानचित्र



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<u>उपाबंध-I (क)</u>

शिमला जल शिमला आवाह वन्यजीव अभयारण्य की सीमा के भू- निर्देशांक

क्र.सं	अक्षांश	देशांतर
1.	31º7'27.753" ਚ	77º13'44.133''पू
2.	31º6'36.021"ਤ	77º14'55.377''पू
3.	31º6'23.08"ਂਤ	77º15′17.859''पू
4.	31º5'32.156"ਤ	77º15′55.493''पू
5.	31º5'8.3"ਤ	77º15'35.456''पू
6.	31º5'24.191"ਤ	77º14'59.824''पू
7.	31º5'54.986"ਤ	77º14'42.856''पू
8.	31º5'39.262"ਤ	77º14'24.591"पू
9.	31º5'6.758"ਤ	77º13'57.599''पू
10.	31º5'30.403"ਰ	77º13'50.637''पू
11.	31º6'20.638"ਤ	77º13'25.752''पू
12.	31%'5.484"ਰ	77º13'20.453''पू
13.	31º6'20.638"ਤ	77º13'25.752''पू
14.	31º6'53.646"ਤ	77º13'28.663''पू

पारिस्थितिक संवेदी जोन में शिमला जल शिमला आवाह वन्यजीव अभयारण्य की सीमा के भू- निर्देशांक

क्र.सं	अक्षांश	देशांतर
1.	31º7'27.753" उ	77º14'28.083''ਧ੍ਰ
2.	31º7'12.275" उ	77º14'30.717"पू
3.	31º7'8.476"ਤ	77º14'51.504"प੍
4.	31º7'1.312"ਤ	77º15′7.784"पू
5.	31º6'55.335"ব	77º15'23.635"पू
6.	31º6'39.932"ব	77º15'44.515"पू
7.	31º6'16.637"ব	77º15'39.166"पू
8.	31º6'2.144"ਤ	77º15'49.1"पू
9.	31º5'49.685"उ	77º16'8.687''पू
10.	31º5'39.695"ব	77º16'23.286''पू
11.	31º5'12.943"उ	77º16'18.88"पू
12.	31º4'58.036"ব	77º16'0.37''पू
13.	31º5'3.416"ਂਤ	77º14'43.191"पू
14.	31º5'6. 644"ਤ	77º14'55.371"पू
15.	31º5'8.781"उ	77º14'31.005"पू
16.	31º4'36.458"ভ	77º14'5.334''पू
17.	31º4'32.227"ਰ	77º13'31.551"पू
18.	31º4'42.525"उ	77º13'27.11"पू

19.	31º4'54.074''ਰ	77º12'54.262''पू
20.	31º5'58.536'' ਰ	77º13'26.126"ਖ੍ਰ
21.	31º5'58.718'' ਤ	77⁰13'14.179"पू
22.	31º6'19.84"ਤ	77º12'57.397''पू
23.	31º6'14.863"ਤ	77º12'32.497''पू
24.	31º3'7.859"ਤ	77º12'43.995''ਧ੍ਰ
25.	31º7'1.196"ਤ	77º12'35.627''पू
26.	31º7'5.503"ਤ	77º13'10.91"पू
27.	31º7'25.658'' ਤ	77º12'47.618''पू

उपाबंध – II शिमला जल शिमला आवाह वन्यजीव अभयारण्य, के पारिस्थितिक संवेदी जोन के भीतर आने वाले ग्रामों की सूची

क्र. सं.	वन प्रभाग	वन श्रेणी का नाम	ग्राम का नाम	क्षेत्र	अक्षांश	देशान्तर
	का नाम			(हेक्टेयर		
				में)		
1.	शिमला	मशोवरा	बदहा	7.34	31º6'3.418"उ	77º13'17.06"पू
2.	शिमला	मशोवरा	सरूलीआ	21.13	31º7'3.542"उ	77º12'48.165"पू
			बरोलिया			
3.	शिमला	मशोवरा	अजादहर	10.60	31º07'18.685 " ਤ	77º13'23.169"पू
4.	शिमला	मशोवरा	लिनदीधर	4.00	31º6'42.357"ਤ	77º12'54.962"पू
5.	शिमला	मशोवरा	छारावरा	32.50	31º6'59.19"ਤ	77º14'45.03"पू
6.	शिमला	मशोवरा	वाइल्डफालवर	5.00	31º6'50.038"ਤ	77º14'55.08"पू
		4	हाल			
7.	शिमला	कोटी	गरहोग	1.00	31º5'47.708"ਤ	77º13'29.026"पू
8.	शिमला	कोटी	तीपेरा	7.35	31º5'17.6"ਤ	77º13'45.659"पू
9.	शिमला	कोटी	कलाली	4.25	31º5'4.117"ਚ	77º13'42.759"पू
10.	शिमला	कोटी	मलुथी	12.56	31º4'45.445"ਤ	77º13'44.928"पू
11.	शिमला	कोटी	करयाली	2.00	31º5'14.61"ਂਤ	77º14'423.568"पू
			कुल	107.73		

<u>उपाबंध III</u>

पारिस्थितिक संवेदी जोन मानीटरी समिति - की गई कार्रवाई की रिपोर्ट का रूप विधान

- 1. बैठकों की संख्या और तिथि।
- 2. बैठकों का कार्यवृत : कृपया मुख्य उल्लेखनीय बिंदुओं का वर्णन करें । बैठक के कार्यवृत्त को एक पृथक अनुबंध में उपाबद्ध करें ।
- 3. आंचलिक महायोजना की तैयारी की प्रास्थिति जिसके शुंहर्गत पर्यटन महायोजना।

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- भू-अभिलेख में सदृश्य त्रुटियों के सुधार के लिए ब्यौहार किए गए मामलों का सारांश ।
- पर्यावरण समाघात निर्धारण अधिसूचना, 2006 के अधीन आने वाली गतिविधियों की संविक्षा के मामलों का सारांश।
 ब्यौरे एक पृथक् उपाबंध के रूप में उपाबद्ध किए जा सकते हैं।
- 6. पर्यावरण समाघात निर्धारण अधिसूचना, 2006 के अधीन न आने वाली गतिविधियों की संविक्षा के मामलों का सारांश। ब्यौरे एक पृथक् उपाबंध के रूप में उपाबद्ध किए जा सकते हैं।
- 7. पर्यावरण (संरक्षण) अधिनियम, 1986 की धारा 19 के अधीन दर्ज की गई शिकायतों का सारांश।
- 8. कोई अन्य महत्वपूर्ण विषय।

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE NOTIFICATION

New Delhi, the 7th June, 2017 (Shimla Water Catchment Wildlife Sanctuary, Himachal Pradesh)

S.O. 1858(E).—WHEREAS, a draft notification was published in the Gazette of India, Extraordinary, vide notification of the Government of the India in the Ministry of Environment, Forest and Climate Change wide number S.O. 3339 (E) dated the 9th December, 2015, inviting objections and suggestions from all persons likely to be affected thereby within the period of sixty days from date on which copies of the Gazette containing the said notification were made available to the public;

AND WHEREAS, the copies of the Gazette were made available to the public on dated the 9th December, 2015;

AND WHEREAS, no comments/objections and suggestions were received from persons and stakeholders in response to the draft notification;

AND WHEREAS, the Shimla Water Catchment Wildlife Sanctuary is located in Shimla District, Himachal Pradesh and lies between 31° 05′ 08″ N to 31° 07′ 36″ N latitudes and 77° 13′ 00″ E to 77° 16′ 41″ E longitudes. The wildlife sanctuary is spread over an area of 10.20 sq. km;

AND WHEREAS, the flora and fauna represent rich biological significance of this Sanctuary. The area supports rich variety of flora and fauna. Important flora include deodar (Cedrus deodara), Oak (Quercus sp.), Spruce (Picea sp.), kail (Pinus sp.), poplar (Populus sp.), rhododendron (Rhododendron sp.), taxus (Taxus sp.), kainth (Pyrus pashia), Black wattle (Acacia molissima), etc. The Wildlife Sanctuary also bears a large variety of herbs, shrubs and climbers of the Himalayan region which includes Tick clover (Desmodium sp.), True indigo (Indigofera sp.), Willow (Salix sp.), Barberry (Berberis sp.), Rose (Rosa sp.), Rubus sp., etc. The ground flora includes various grass species, variety of ferns and vascular herbs. The sanctuary is rich in mammals such as leopard (Panthera pardus), barking deer (Muntia cusmuntjak), ghoral (Naemorhedus sp.), Rhesus macaque (Macaca mulatta), common langur (Semnopithecus sp.), leopard cat (Prionailurus bengalensis), porcupine (Hystrix indica), and pheasants such as kalij (Lophura leucomelanos) and koklash (Pucrasia macrolopha). The sanctuary also includes birds such as woodpeckers (Picidae sp.), parakeet (Melopsittacus undulates), jungle owlet (Glaucidium radiatum), pigeon (Columba livia domestica), vultures (Gyps indicus), etc.

AND WHEREAS, it is necessary to conserve and protect the area, the extent and boundaries of which is specified in paragraph 1 of this notification around the protected area of the Shimla Water Catchment Wildlife Sanctuary

as Eco-sensitive Zone from ecological and environmental point of view and to prohibit industries or class of industries and their operations and processes in the said Eco-sensitive Zone;

NOW THEREFORE, in exercise of the powers conferred by sub-section(1) and clauses (v) and (xiv) of sub-section (2) and sub-section (3) of section 3 of the Environment (Protection) Act 1986 (29 of 1986) read with sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby notifies an area with an extent upto 1.5 kilo meter meters around the boundary of Shimla Water Catchment Wildlife Sanctuary in the State of Himachal Pradesh as the Shimla Water Catchment Wildlife Sanctuary Eco-sensitive Zone (herein after referred to as the Eco-sensitive Zone) details of which are as under, namely:-

- 1. Extent and boundaries of Eco-sensitive Zone.-(1)The extent of Eco-sensitive Zone varies from 0.08 kilometre to 1.455 kilometres from the boundary of the Shimla Water Catchment Wildlife Sanctuary. The area of the Eco-sensitive Zone is 7.71 square kilometer.
- (2) The map of Shimla Water Catchment Wildlife Sanctuary demarcating the Eco-sensitive Zone along with the geo co-ordinates are appended as Annexure I.
- (3) The list of villages falling within Eco-sensitive Zone along with geo coordinates of the prominent points is appended as Annexure II.
- 2. Zonal Master Plan for the Eco-sensitive Zone.- (1) The State Government shall, for the purpose of the Eco-sensitive Zone prepare, a Zonal Master Plan, within a period of two years from the date of publication of this notification in the Official Gazette, in consultation with local people and adhering to the stipulations given in this notification.
- (2) The Zonal Master Plan so prepared shall commensurate with the stipulation specified in the Notification and include the environmental implications.
- (3) The Zonal Master Plan shall be approved by the Competent Authority in the State Government.
- (4) The Zonal Master Plan for the Eco-sensitive Zone shall be prepared by the State Government in such manner as is specified in this notification and also in consonance with the relevant Central and State laws and the guidelines issued by the Central Government, if any.
- (5) The Zonal Master Plan shall be prepared in consultation with all concerned State Departments, namely:-
- (I) Environment;
- (ii) Forest;
- (iii) Urban Development;
- (iv) Tourism;
- (v) Municipal;
- (vi) Revenue;
- (vii) Agriculture;
- (viii) Irrigation;
- (ix) Public Works Department; and
- (x) Himachal Pradesh State Pollution Control Board.
- (6) The Zonal Master Plan shall not impose any restriction on the approved existing land use, infrastructure and activities, unless so specified in this notification and the Zonal Master Plan shall factor in improvement of all infrastructure and activities to be more efficient and eco-friendly.
- (7) The Zonal Master plan shall provide for restoration of denuded areas, conservation of existing

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water bodies, management of catchment areas, watershed management, groundwater management, soil and moisture conservation, needs of local community and such other aspects of the ecology and environment that need attention.

- (8) The Zonal Master Plan shall demarcate all the existing worshipping places, villages and urban settlements, types and kinds of forests, tribal areas, agricultural areas, fertile lands, green areas such as parks and like places, horticultural areas, orchards, lakes, wetlands and other water bodies and also with supporting maps. The Plan shall be supported by Maps giving details of existing and proposed land use features.
- (9) The Zonal Master Plan shall regulate development in Eco-sensitive Zone and shall follow prohibited, regulated and promoted activities specified in the Notification so as to ensure Eco-friendly development for livelihood security of local communities.
- (10) The Zonal Master Plan shall be a reference document for the Monitoring Committee for carrying out its functions with respect to the provisions given in this notification.
- 3. Measures to be taken by State Government.-The State Government shall take the following measures for giving effect to the provisions of this notification, namely:-
- (1) Landuse.- Forests, horticulture areas, agricultural areas, parks and open spaces earmarked for recreational purposes in the Eco-sensitive Zone shall not be used or converted into areas for commercial or industrial related development activities:

Provided that the conversion of agricultural lands within the Eco-sensitive Zone may be permitted on the recommendation of the Monitoring Committee, and with the prior approval of the State Government, to meet the residential needs of local residents, and for the activities listed in column (2) of the Table in paragraph 4, namely:-

- (i) Eco-friendly cottages for temporary occupation of tourists, such as tents, wooden houses, for Eco-friendly tourism activities;
- (ii) Widening and strengthening of existing roads and construction of new roads;
- (iii) Small scale industries not causing pollution;
- (iv) Rainwater harvesting; and
- (v) Cottage industries including village industries, convenience stores and local amenities;

Provided further that no use of tribal land shall be permitted for commercial and industrial development activities without the prior approval of the State Government and without compliance of the provisions of article 244 of the Constitution or the law for the time being in force, including the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (2 of 2007):

Provided also that any error appearing in the land records within the Eco-sensitive Zone shall be corrected by the State Government, after obtaining the views of the Monitoring Committee, once in each case and the correction of said error shall be intimated to the Central Government in the Ministry of Environment, Forest and Climate Change:

Provided also that the above correction of error shall not include change of land use in any case except as provided under this sub-paragraph:

Provided also that there shall be no consequential reduction in green area, such as forest area and agricultural area and efforts shall be made to reforest the unused or unproductive agricultural areas.

(2) Natural Springs.- The catchment areas of all natural springs shall be identified and plans for their conservation and rejuvenation shall be incorporated in the Zonal Master Plan and the catchment

management plan shall be drawn up by the State Government in such a manner as to prohibit or and restrict development activities within the catchment areas.

- (3) Eco-Tourism.-(a) The activity relating to tourism within the Eco-sensitive Zone shall be as per Eco-Tourism Master Plan, which shall form part of the Zonal Master Plan.
- (b) The Eco-Tourism Master Plan shall be prepared by the Department of Tourism, Government of Himachal Pradesh in consultation with Department of Revenue and Forests, Government of Himachal Pradesh.
- (c) The Tourism Master Plan shall form a component of the Zonal Master Plan.
- (d) The activities relating to tourism shall be regulated as under, namely.-
- (i) No new construction of hotels and resorts shall be allowed within 1 km from the boundary of the Shimla Water Catchment Wildlife Sanctuary or upto the extent of the ESZ whichever is nearer. However, beyond the distance of 1 km from the boundary of the Wildlife Sanctuary till the extent of the Eco-Sensitive Zone, the establishment of new hotels and resorts shall be allowed only in pre-defined and designated areas for Eco-tourism facilities as per Tourism Master Plan.
- (ii) All new tourism activities or expansion of existing tourism activities within the Eco-sensitive Zone shall be in accordance with the guidelines issued by the Central Government in the Ministry of Environment, Forest and Climate Change and the eco-tourism guidelines issued by National Tiger Conservation Authority (as amended from time to time) with emphasis on eco-tourism;
- (iii) until the Zonal Master Plan is approved, development for tourism and expansion of existing tourism activities shall be permitted by the concerned regulatory authorities based on the actual site specific scrutiny and recommendation of the Monitoring Committee.
- (4) Natural Heritage.- All sites of valuable natural heritage in the Eco-sensitive Zone such as the gene pool reserve areas, rock formations, waterfalls, springs, gorges, groves, caves, points, walks, rides, cliffs, etc. shall be identified and preserved and plan shall be drawn up for their protection and conservation, within six months from the date of publication of this notification and such plan shall form part of the Zonal Master Plan.
- (5) Man-made heritage sites.- Buildings, structures, artefacts, areas and precincts of historical, architectural, aesthetic, and cultural significance shall be identified in the Eco-sensitive Zone and plans for their conservation shall be prepared within six months from the date of publication of this notification and incorporated in the Zonal Master Plan.
- (6) Noise pollution.- The Environment Department of the State Government shall implement the regulations for control of noise pollution in the Eco-sensitive Zone in accordance with the provisions stipulated of The Noise Pollution (Regulation And Control) Rules, 2000 under the Environment (Protection) Act, 1986.
- (7) Air pollution.- Regulations for the control of air pollution in the Eco-Sensitive Zone in accordance with the provisions of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) and rules made thereunder shall be complied with.
- (8) Discharge of effluents.-The discharge of treated effluent in Eco-sensitive Zone shall be in accordance with the provisions of the General Standards for Discharge of Environmental Pollutants covered under Environmental (Protection) Act, 1986 and rules made therein.
- (9) Solid wastes. Disposal of solid wastes shall be as under:-
- (I) the solid waste disposal in Eco-sensitive Zone shall be carried out as per the provisions of the Solid Waste Management Rules, 2016 published by the Government of India in the Ministry of

SI. No.	Activity	Remarks
(1)	(2)	(3)
	Prohibite	d Activities
1.	Commercial Mining, stone quarrying and crushing units.	(a) All new and existing (minor and major minerals), stone quarrying and crushing units are prohibited with immediate effect except for meeting the domestic needs of bona fide local residents including digging of earth for construction or repair of houses and for manufacture of country tiles or bricks for housing and for other activities. (b) The mining operations shall be carried out in accordance with the order of the Hon'ble Supreme Court dated the 4 th August, 2006 in the matter of T.N. Godavarman Thirumulpad Vs. UOI in W.P.(C) No.202 of 1995 and dated the 21 st April, 2014 in the matter of Goa Foundation Vs. UOI in W.P.(C) No.435 of 2012.
2.	Setting of new saw mills.	No new or expansion of existing saw mills shall be permitted within the Eco-sensitive Zone.
3.	Use or production of any hazardous substances.	Prohibited (except as otherwise provided) as per applicable laws.
4.	Setting up of industries causing water or air or soil or noise pollution.	No new industries and expansion of existing polluting industries in the Eco-sensitive zone shall be permitted. Only non-polluting industries shall be allowed within Eco-Sensitive Zone as per classification of Industries in the Guidelines issued by Central Pollution Control Board in February 2016, unless so specified in this notification. In addition, non-polluting cottage industries shall be promoted.
5.	Establishment of new major thermal and hydro-electric projects.	Prohibited (except as otherwise provided) as per applicable laws.
6.	Protection of hill slopes and river banks	No construction activity unless otherwise permitted by State Level Committee shall be undertaken on the hill with slopes more than 1 to 10 and also upto 100 meters from the banks of any river, and natural nallah.
7.	Commercial use of firewood.	Prohibited (except as otherwise provided) as per applicable laws.
8.	Use of plastic bags	Prohibited (except as otherwise provided) as per applicable laws.
9.	Under taking other activities related to tourism like over flying the Eco-Sensitive Zone area by hot air balloon, helicopter, drones, Microlites, etc.	Prohibited (except as otherwise provided) as per applicable laws.
10.	Commercial Fishing	Prohibited (except as otherwise provided) as per applicable laws.
11.	Discharge of untreated effluents in natural water bodies or land area.	Prohibited (except as otherwise provided) as per applicable laws.
12.	Establishment of solid waste disposal site and common incineration facility for solid and bio medical waste	No new solid waste disposal site and waste treatment/processing facility of solid waste is permitted within Eco sensitive zone. Further installation of common or individual incineration facility for treatment of any form of solid waste generated from industrial process and health establishment/hospitals etc. is Prohibited.
13.	Establishment of large-scale commercial livestock and poultry farms by firms, corporate, companies.	Prohibited (except as otherwise provided) as per applicable laws except for meeting local needs.

П (ii) 17

Environment, Forest and Climate Change vide notification number S.O. 1357 (E), dated the 8th April, 2016 as amended from time to time;

- (ii) the inorganic material may be disposed in an environmental acceptable manner at site identified outside the Eco-sensitive Zone;
- (iii) no burning or incineration of solid wastes and establishment of landfills shall be permitted in the Ecosensitive Zone.
- (10) Bio-medical waste.-The bio-medical waste disposal in the Eco-sensitive Zone shall be carried out as per the provisions of the Bio-Medical Waste Management Rules, 2016 published by the Government of India in the Ministry of Environment, Forest and Climate Change vide notification number G.S.R 343 (E), dated the 28th March, 2016, as amended from time to time.
- (i) No common treatment facility or incineration shall be permitted within the Eco-Sensitive Zone;
- (ii) Individual hospitals or private health centres already existing within the Eco-Sensitive Zone should provide adequate waste treatment system to avoid adverse impact on the Protected Area.
- (11) Plastic Waste Management.- The Plastic Waste Management in the Eco-sensitive Zone shall be carried out as per the provisions of the Plastic Waste Management Rules, 2016 published by the Government of India in the Ministry of Environment, Forest and Climate Change vide notification number G.S.R 340 (E), dated the 18th March, 2016, as amended from time to time.
- (12) Construction and Demolition Waste Management.- The Construction and Demolition Waste Management in the Eco-sensitive Zone shall be carried out as per the provisions of the Construction and Demolition Waste Management Rules, 2016 published by the Government of India in the Ministry of Environment, Forest and Climate Change vide notification number G.S.R 317(E), dated the 29th March, 2016, as amended from time to time.
- (13) E-waste.- The E- Waste Management in the Eco-sensitive Zone shall be carried out as per the provisions of the E- Waste Management Rules, 2016 published by the Government of India in the Ministry of Environment, Forest and Climate Change and as amended from time to time.
- (14) Vehicular traffic. The vehicular movement of traffic shall be regulated in a habitat friendly manner and specific provisions in this regard shall be incorporated in the Zonal Master Plan and till such time as the Zonal Master plan is prepared and approved by the Competent Authority in the State Government, the Monitoring Committee shall monitor compliance of vehicular movement under the relevant Acts and the rules and regulations made thereunder.
- (15) Industrial units.- (a) No establishment of new wood based industries within the proposed Ecosensitive zone shall be permitted except the existing wood based industries set up as per the law.
- (b) No establishment of any new industry causing water, air, soil, noise pollution within the proposed Ecosensitive Zone shall be permitted.
- (16) The Central Government and the State Government shall specify other measures, if it considers necessary, in giving effect to the provisions of this notification.
- 4. List of activities prohibited or to be regulated or promoted within the Eco-sensitive Zone.- All activities in the Eco-sensitive Zone shall be governed by the provisions of the Environment (Protection) Act, 1986 (29 of 1986) and the rules made thereunder and shall be regulated in the manner specified in the Table below, namely:

14.	Setting up of brick kilns.	Prohibited (except as otherwise provided) as per applicable laws.
	Regulate	d Activities
15.	Commercial establishment of hotels and resorts.	No new commercial hotels and resorts shall be permitted within one kilometre of the boundary of the Protected Area or upto the extent of Eco-sensitive zone, whichever is nearer, except for small temporary structures for Ecotourism activities: Provided that, beyond one kilometre from the boundary of the protected Area or upto the extent of Eco-sensitive zone whichever is nearer, all new tourist activities or expansion of existing activities shall be in conformity with the Tourism Master Plan and guidelines as applicable.
16.	Construction activities	No new commercial construction of any kind shall be permitted within one Kilometre from the boundary of the Protected Area or upto extent of the Eco-sensitive Zone whichever is nearer: Provided that, local people shall be permitted to undertake construction in their land for their use including the activities listed in sub paragraph (1) of paragraph 6 as per building byelaws to meet the residential needs of the local residents such as: (i) Widening and strengthening of existing roads and construction of new roads; (ii) Construction and renovation of infrastructure and civic amenities; (iii) Cottage industries including village industries; convenience stores & local amenities supporting ecotourism including home stays; and
17.	Trenching ground	(iv) Promoted activities listed in this Notification. Establishing of new trenching ground is prohibited. Old trenching grounds are to be regulated under applicable laws.
18.	Discharge of treated waste water/effluents in natural water bodies or land area.	The discharge of treated waste water/effluents shall be avoided to enter into the water bodies. Efforts to be made for recycle and reuse of treated waste water. Otherwise the discharge of treated waste water/effluent shall be regulated as per applicable laws.
19.	Air and Vehicular Pollution	Regulated under applicable laws.
20.	Commercial extraction of surface and ground water.	Regulated under applicable law.
21.	Felling of Trees	 (a) There shall be no felling of trees on the forest or Government or revenue or private lands without prior permission of the competent authority in the State Government. (b) The felling of trees shall be regulated in accordance with the provisions of the concerned Central or State Act and the rules made thereunder.
22.	Migratory graziers	Regulated under applicable laws and as per Zonal Master Plan.
23.	Existing establishments.	Regulated under applicable laws

24.	Erection of electrical and communication	Regulated under applicable law. Underground cabling may
	towers and laying of cables and other	be promoted. All existing electric lines passing through the
	infrastructures	ESZ shall be adequately insulated in the time frame
		prescribed under the Zonal Master Plan.
25.	Widening and strengthening of existing	Shall be done with mitigation measures, as per applicable
	roads and construction of new roads.	laws, rules and regulation and available guidelines.
26.	Fencing of existing premises of hotels and	Regulated under applicable laws.
	lodges.	In order to allow free movement of wildlife, hotels or other
		commercial establishments within the ESZ shall not fence
		their properties with barbed wire and no fence shall be
		higher than 1 meter. Any existing fence not complying
		with this stipulation shall be modified as per the time lines
27	Timbon Distribution (TD) Bights	mentioned in the Zonal Master Plan.
27. 28.	Timber Distribution (TD) Rights. Collection of small Fodder.	Regulated under applicable laws
29.	Muck Dumping.	Regulated under applicable laws Regulated under applicable laws
	1 0	T
30.	Drastic change of Agriculture system Commercial use of Natural water	Regulated under applicable laws Regulated under applicable laws
31.	Commercial use of Natural water Resource including Ground water	Regulated under applicable laws
	Harvesting.	
32.	Movement of vehicular traffic at night.	Regulated for commercial purpose under applicable laws.
33.	Introduction of Exotic species.	Regulated under applicable laws.
34.	Commercial Sign boards and hoardings.	Regulated under applicable laws.
35.	Collection of Forest produce or Non-	Regulated under applicable laws.
] 33.	Timber Forest Produce (NTFP).	Regulated under applicable laws.
36.	Infrastructure including civic amenities.	Shall be done with mitigation measures, as per applicable
]	minustration including civic amountees.	laws, rules and regulation and available guidelines.
37.	Open Well, Bore Well etc. for agriculture	Regulated and the activity should be strictly monitored by
	or other usage	the appropriate authority.
38.	Solid Waste Management.	Regulated under applicable laws
39.	Eco-tourism.	Regulated under applicable laws
	Promote	d Activities
40.	Ongoing agriculture and horticulture	Permitted under applicable laws for use of locals.
	practices by local communities along	
	with dairies, dairy farming, aquaculture	
	and fisheries.	
41.	Organic farming	Shall be actively promoted.
42.	Adoption of green technology for all	Shall be actively promoted.
	activities	
43.	Small scale non polluting industries.	Non polluting industries termed as White Category as per
		classification of industries issued by the Central Pollution
		Control Board in February 2016 and non-hazardous, small-
		scale and service industry, agriculture, floriculture,
		horticulture or agro-based industry producing products
		from indigenous materials from the Eco-sensitive Zone
44	Dain mater homesting	shall be permitted by the competent Authority.
44.	Rain water harvesting	Shall be actively promoted.
45.	Cottage industries including village artisans, etc.	Shall be actively promoted.
46.	Use of renewable energy and fuels.	Bio gas, solar light etc. to be actively promoted.
47.	Agro-Forestry	Shall be actively promoted.
48.	Use of eco-friendly transport	Shall be actively promoted.
49.	Skill Development	Shall be actively promoted.
50.	Restoration of Degraded Land/ Forests/	Shall be actively promoted.
	Habitat	Same and the brownings
51.	Environmental Awareness	Shall be actively promoted.

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5. Monitoring Committee.- The Central Government hereby constitutes a Monitoring Committee for effective monitoring of the Eco-sensitive Zone, which shall comprise of the following, namely:-

- (i) Deputy Commissioner, Shimla —Chairman;
- (ii) An expert in the area of ecology & environment to be nominated for 3 years by the Government of Himachal Pradesh —Member;
- (iii) One Representative of Non-Governmental Organisation (working in the field of environment including heritage conservation) to be nominated for three years by the Government of India—Member;
- (iv) Member Secretary or Member, Himachal Pradesh State Biodiversity Board Member;
- (v) Executive Engineer, Himachal Pradesh Pollution Control Board —Member;
- (vi) Senior Town Planner Member;
- (vii) Divisional Forest Officer (Wildlife), Shimla Member
- (viii) Divisional Forest Officer (Territorial), Shimla Member-Secretary
- 6. Terms of Reference: (1) The tenure of the Monitoring Committee shall be for a period of three years from the date of issue of Notification.

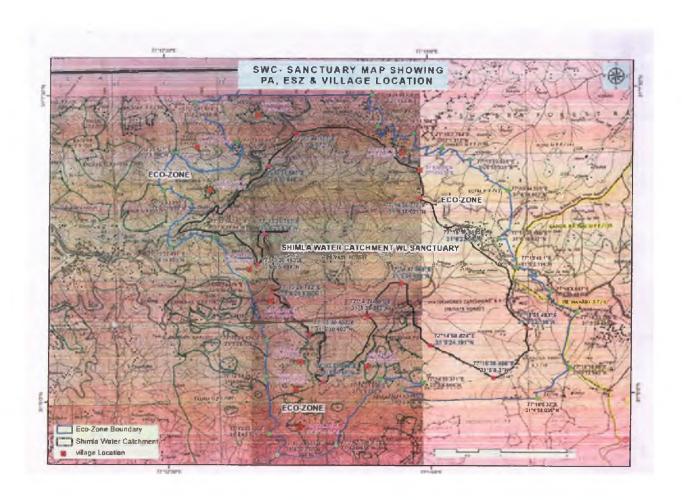
The Monitoring Committee shall monitor the compliance of the provisions of this Notification.

- (2) The Monitoring Committee shall not allow the activities that are covered in the Schedule to the notification of the Government of India in the erstwhile Ministry of Environment and Forests number S.O. 1533 (E), dated the 14th September, 2006, and are falling in the Eco-sensitive Zone, including the prohibited activities as specified in the Table under paragraph 4 thereof. Only white categories of industries shall be considered as specified in the guidelines issued by the Centre Pollution Control Board for "classification of Industries, 2016".
- (3) The activities that are not covered in the Schedule to the notification of the Government of India in the erstwhile Ministry of Environment and Forests number S.O. 1533(E), dated the 14th September, 2006 and are falling in the Eco-sensitive Zone, except for the prohibited activities as specified in the Table under paragraph 4 thereof, shall be scrutinised by the Monitoring Committee based on the actual site-specific conditions and referred to the concerned Regulatory Authorities.
- (4) The Member Secretary of the Monitoring Committee or the concerned Commissioner shall be competent to file complaints under section 19 of the Environment (Protection) Act, 1986 (29 of 1986) against any person who contravenes the provisions of this notification.
- (5) The Monitoring Committee may invite representatives or experts from concerned Departments, representatives from Industry Associations or concerned stakeholders to assist in its deliberations depending on the requirements on issue to issue basis.
- (6) The Monitoring Committee shall submit the annual action taken report of its activities as on 31st March of every year by 30th June of that year to the Chief Wild Life Warden of the State under intimation to this Ministry as per proforma appended at Annexure III.
- (7) The Central Government in the Ministry of Environment, Forest and Climate Change may give such directions, as it deems fit, to the Monitoring Committee for effective discharge of its functions.
- 1. The Central Government and State Government may specify additional measures, if any, for giving effect to provisions of this notification.
- 2. The provisions of this notification shall be subject to the orders, if any, passed, or to be passed, by the Hon'ble Supreme Court of India or the High Court or National Green Tribunal.

[F. No. 25/47/2015-ESZ-RE] LALIT KAPUR, Scientist 'G'

<u>Annexurel</u>

Map of Shimla Water Catchment Wildlife Sanctuary, Himachal Pradesh



Annexurel (A)

Geo Coordinates of boundary of Shimla Water Catchment WLS

	COC COSTATILATOS OF BOATTAGE OF CHILDREN THE PARTY OF CHILDREN THE				
SI. No	Latitude	Longitude			
1.	31°7′27.753′′N	77 ° 13'44.133''E			
2.	31° 6'36.021''N	77 ° 14'55.377''E			
3.	31° 6'23.08''N	77 [°] 15'17.8 5 9''E			
4.	31° 5'32.156''N	77 [°] 15'55.493''E			
5.	31° 5'8.3''N	77 15'35.456''E			
6.	31° 5'24.191''N	77 [*] 14'59.824''E			
7.	31° 5'54.986''N	77 ° 14'42.856''E			
8.	31° 5'39.262''N	77 [°] 14 '2 4.591''E			
9.	31° 5'6.758''N	77 * 13'57.599''E			
10.	31° 5'30.403''N	77 [°] 13'50.637''E			
11.	31° 6'20.638''N	77 [°] 13'25.7 5 2''E			
12.	31° 6′5.484′′N	77 [†] 13'20.453''E			
13.	31 6'20.638''N	77 ° 13'25.752''E			
14.	31 6'53.646''N	77 13'28.663''E			

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Geo Coordinates of Eco Sensitive ZorfeShimla Water Catchment WLS

SI. No Latitude Longitude					
	Latitude	Longitude			
1.	31" 7'27.753"N	77 14'28.083''E			
2.	31 7'12.275''N	77 14'30.717''E			
3.	31* 7'8.476''N	77 14'51.504''E			
4.	31 7'1.312''N	77 15'7.784''E			
5.	31 [*] 6'55.335''N	77 ° 15'23.635''E			
6.	31 6'39.932''N	77 [*] 15'44.515''E			
7.	31 [*] 6'16.637''N	77 15'39.166''E			
8.	31 [*] 6'2.144''N	77 [*] 15'49.1''E			
9.	31° 5'49.685''N	77 * 16'8.687''E			
10.	31 [*] 5'39.695''N	77 [*] 16'23.286''E			
11.	31° 5'12.943"N	77 16'18.88''E			
12.	31* 4'58.036''N	77 [°] 16'0.37''E			
13.	31 [°] 5'3.416''N	77 14'43.191''E			
14.	31 5'6. 644''N	77 14'55.371''E			
15.	31 [°] 5'8.781''N	77 14'31.005''E			
16.	31" 4'36.458''N	77 [*] 14'5.334''E			
17.	31 [*] 4'32.227''N	77 13'31.551''E			
18.	31" 4'42.525"'N	77 * 13'27.11''E			
19.	31" 4'54.074''N	77 12'54.262''E			
20.	31" 5'58.536"'N	77 13'26.126''E			
21.	31 [*] 5'58.718''N	77 13'14.179''E			
22.	31 [*] 6'19.84''N	77 12'57.397''E			
23.	31° 6'14.863''N	77 12'32.497''E			
24.	31 [*] 3'7.859''N	77 12'43.995''E			
25.	31 [°] 7'1.196''N	77 12'35.627''E			
26.	31 [*] 7'5.503''N	77 [*] 13'10.91''E			
27.	31° 7'25.658''N	77 12'47.618''E			

Annexure II

<u>List of Villages Falling In Ecsensitive Zone of Shimla Water Catchment Wildlife Sanc</u>tuary

SI. No	Name of Forest Division	Name of Forest Range	Name of Village	Area (Hectares)	Latitude	Longitude
1.	Shimla	Mashobra	Badah	7.34	31°6'3.418"N	77 13'17.06"E
2.	Shimla	Mashobra	Saruila Baruila	21.13	31 ° 7'3.542"N	77 ° 12 '48.165 "E
3.	Shimla	Mashobra	Ajadhar	10.60	31 ° 07'18.685"N	77° 13'23.169"E
4.	Shimla	Mashobra	Lindidhar	4.00	31 ° 6'42.357"N	77° 12'54.962"E
5.	Shimla	Mashobra	Chharabra	32.50	31 °6'59.19"N	77° 14'45.03"E
6.	Shimla	Mashobra	Wildflower Hall	5.00	31 ° 6'50.038"N	77°14'55.08"E
7.	Shimla	Koti	Gharog	1.00	31 ° 5'47.708"N	77 13'29.026"E
8.	Shimla	Koti	Tipra	7.35	31 ° 5 '17.6"N	77 13'45.659"E
9.	Shimla	Koti	Kalali	4.25	31°5'4.117"N	77°13'42.759"E
10.	Shimla	Koti	Maluthi	12.56	31 4'45.445"N	77 13'44.928"E
11.	Shimla	Koti	Karyali	2.00	31 ° 5 '14.61"N	77 14'423.568"E
			Total	107.73		

Annexure III

Proforma of Action Taken Report: - Eco-sensitive Zone Monitoring Committee.-

- 1. Number and date of Meetings
- 2. Minutes of the meetings: Mention main noteworthy points. Attach Minutes of the meeting as separate Annexure.
- 3. Status of preparation of Zonal master Plan including Tourism Master Plan.
- 4. Summary of cases dealt for rectification of error apparent on face of land record (Eco-sensitive Zone wise). Details may be attached as Annexure
- 5. Summary of cases scrutinised for activities covered under the Environment Impact Assessment Notification, 2006. Details may be attached as separate Annexure.
- 6. Summary of cases scrutinised for activities not covered under the Environment Impact Assessment Notification, 2006. Details may be attached as separate Annexure.
- 7. Summary of complaints ledged under Section 19 of the Environment (Protection) Act, 1986.
- 8. Any other matter of importance.

CONTROL FORM

CONTROL FORMS FORM WM-1 CREATION OF NEW ARTIFICIAL WATERHOLES

Sr.No.	Category	Year	Location	Cost	Performance
1	2	3	4	5	6

Note:

Category: Masonry anicut, earthen bund, lined depression, borewell and pump, reservoir, spring fed,

tanker fed, guzzler, aquifer; permanent or temporary

Location: By compartment or by a named feature and name given if any

Performance: Successful, partially successful, failure (given reasons for the latter two)

FORM WM-1.1 MAINTENANCE OF WATERHOLES: NATURAL

Sr.No.	Category	Perennial/Seasonal	Location	Year	Nature of work	Cost	Performance
1	2	3	4	5	6	7	8

Note:

Category: Spring, seep, natural depression, a flowing stretch, reservoir Location: By compartment or by a named feature and name given if any

Nature of work: Desilting, provision of apron, any other category

Performance: Successful, partially successful, failure (reasons for the last two)

FORM WM- 1.2 MAINTENANCE OF WATERHOLES: ARTIFICIAL

Sr.No.	Category	Perennial/Seasonal	Location	Year	Nature of work	Cost	Performance
1	2	3	4	5	6	7	8

Note:

Category: Masonry anicut, earthen bund, lined depression, borewell and pump, spring fed, tanker fed, guzzler, aquifer

Location: By compartment or by a named feature and name given if any

Year: Year of maintenance, with year of establishment in parenthesis

Nature of work: Desilting, grouting, repairing leaks, repair to mechanical parts, closing anicut

openings, any other work

Performance: Successful, partially successful, failure (reasons for the latter two)

FORM WM- 2 RESTORATION OF HABITAT: CONTROL OF REGENERATION OF WOODY SPECIES IN GRASSLANDS

Sr.No.	Location/name	Year	Extent of area	Species	Operation	Total Cost	Cost/ha	Remarks
	of site		(ha)	controlled				
1	2	3	4	5	6	7	8	9

Note:

Location: By compartment, site name, etc.

Species controlled: List the species

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

Remarks: The measures of success, suitability of methods,

FORM WM- 2.1 RESTORATION OF HABITAT: SOIL CONSERVATION MEASURES- INITIAL OPERATIONS AND SUBSEQUENT MAINTENANCE

Sr.No.	Location/name of site		Extent of area (ha)	Area treated	Operations	Total Cost	Cost/ha	Remarks
1	of site	3	4	5	6	7	8	9

Note:

Location: By compartment, name of site or landmarks.

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

Area treated: If linear features then quote length; otherwise area.

Operation : Structures involved such as gully plugs, trench-cum-mound, spurs and bunds etc.

quote quantity nos. and cmt. Of earthwork.

Remarks: Mention if initial work or maintenance.

FORM WM- 2.2 RESTORATION OF HABITAT: PLANTING, SOWING-INITIAL OPERATION

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

Note:

Location: By compartment, or landmarks.

Casualty replacement: Mention planting stock by species, number and kind (polythene bag,

root shoot, rhizome etc).

Operations: Planting, sowing technique, protection measures.

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

Assess & mention survival percentage & growth before taking up casualty replacement

FORM WM- 3 ANIMALS: MEASURES TRENDS IN POPULATION (YEAR)

Sr.No.	Species	Population estimation	Adul	t	Sub-ad	dults	Operations	Total Cost	Cost/ha	Remarks
	3,555,53	methodology	Male	Female	Male	Female	. 555.23.3113	. 514. 555	3554.1.3	
1	2	3	4	5	6	7	8	9	10	11

Note:

Population: e.g. pugmark, line transact, scan, roadside counts etc., area covered, sampling intensity

Estimation: data treatment, extrapolation where involved. In case of indices of density or dung, count mention those figures under the remarks' column; protection problems, any other useful information.

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

FORM WM- 3.1 ANIMALS: NEW RECORDS

Species	Location	Year	How discovered	Details of number, age, sex	Habitat description	Remarks
2	3	4	5	6	7	8
					age, sex	age, sex

Note:

Animals will include vertebrates and invertebrates

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

Number, age, sex etc: As applicable to vertebrates

Habitat description: Broad habitat description such as vegetation, and elements such as water, large old trees, snags, down log material. Use microhabitat descriptors only if relevant Remarks: Any other useful information.

FORM WM- 3.2 ANIMALS: MORTALITY OTHER THAN THAT ATTRIBUTABLE TO AN OFFENCE

Sr.No.	Species	Location	Year	Sex and age	Number	Discovered in what condition	Cause of mortality	Remarks
1	2	3	4	5	6	7	8	9

Note:

Location: By compartment, landmark etc.

Sex and age: As per parameters for age class. Sex, if possible, to identify Discovered in what condition: carcass, complete or partial. Skull or any other recognisable remains collected where only some remains of an animal are found.

Cause of mortality: If known e.g. territorial fight, accident, possible disease (following

post-mortem results) , old age, cause difficult to determine, predation etc.

Remarks: Any other useful information..

FORM WM- 3.3 ANIMALS: MORTALITY ATTRIBUTED TO POACHING OR AN ACT OF VANDALISM

Sr.No.	Species	Location	Cause	of morta	lity		Remarks
31.110.	Species	Location	Number	Sex	age	Class	Remarks
1	2	3			4	1	5

Note:

Location: By compartment, landmark etc.

Sex and age: As per parameters for age class. Sex, if possible, to identify Discovered in what condition: carcass, complete or partial. Skull or any other recognisable remains collected where only some remains of an animal are found.

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

Remarks: Any other useful information.

FORM WM-4 PLANTS: NEW RECORDS

Sr.No.	Family	Species	Year	Location	Habitat	Status	Remarks
1	2	3	4	5	6	7	8

Note:

Habitat: Description by vegetation associates at various levels, % canopy closure if relevant, soil/site, microhabitat elements such as higher level of moisture, woody debris or humus etc.

Status: A broad idea on its frequency, national status e.g. endangered, rare, endemic etc. Remarks: Any specific information.

FORM WM-4.1 PLANTS: DISEASE AND MORTALITY

Sr.No.	Species	Location	Year	Particulars of disease morbidity and mortality	Area affected	Remarks
1	2	3	4	5	6	

Note:

Location: By compartment or landmarks.

Particulars of disease: In case of trees, the mortality by diameter classes and number, symptoms, insect pest activity or

any other external indicators if visible, none if not seen. No mortality but infestation detected, mention that as morbidity.

Area affected: In hectares.

Remarks: Any specific environmental condition, or site factors you may suspect as being related to the problem or any other useful information.

FORM WM-4.2 PLANTS: ILLEGAL AND LEGAL COLLECTION

Sr.No.	Year	Species	Location	Details of materials	Quantity	Trade particulars	Remarks
1	2	3	4	5	6	7	8

Note:

Location: By compartment or landmarks.

Details of materials: To include timber, firewood, bamboo, NWPs. Plants collected could be of local significance or of trade significance on a national or international scale. Distinguish between legal and illegal activity in the remarks' column.

Quantity: In appropriation units

Trade particulars: What is traded? Portions, partially processed or processed material and where are the major trade centres, known or suspected to be?

Remarks: Any other useful information.

Legal collection applies to PA, if permitted for research; to TUZ or to the buffer zone.

FORM WM-5 GRAZING OF DOMESTIC LIVESTOCK

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

Note:

Remarks: (1) Mention number of cattle immunised against FMD, RP, anthrax as the case might be and the number of cattle without the prophylactic cover.

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

FORM WM-6 INTER -AGENCY PROGRAMMES: AGENCIES AND SCHEMES (GOVERNMENT) YEAR

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

Note:

Name of scheme: To include all activities in the Govt. sector, i.e. construction, use of resources, development processes etc. mention names of schemes, projects or normal operations. This will address all departments in the management area and those activities outside but capable of influencing the management area.

Remarks : Success, adverse impacts, incompatibility with PA management objectives or failures should be mentioned. Detailed notes to go in the PA book

FFORM WM-6.1 PROGRAMMES OF NGOS YEAR

Sr.No.	Name of agency	HQ location	Nature of scheme operated	Physical and fin	ancial targets	Area and location	Remarks
				Given	Achieved	-	
1	2	3	4	5	6	7	8

Note:

Remarks: Success or adverse impacts, incompatibility with PA management objectives or failures should be mentioned. Detailed notes to go in the PA book. These programmes and activities could

FORM WM-7 CONSTRUCTION*/MAINTENANCE* OF INFRASTRUCTURE: ROADS &BRIDGES (*EXISTING/NEW) YEAR

Sr.No.	Category	Range	Surface	Name or number	Length covered(km)	Cross drainage works, bridges or culverts with types	Total cost and status
1	2	3	4	5	6	7	8
1		3	4	3	0	/	- °

Note:

Category of road :National highway, State highway, district road etc. Public road, forest road or open only to managers should be stated.

Surface type: Black topped, metal, earth etc. Applies to roads. Name or number: As the case may be.

Cross drainage type: e.g. for culverts-box, Hume pipe culverts etc.

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

Status: Work completed or ongoing. State also the agency responsibility; state whether operational or non-operational Strike out which is not applicable. Use separate forms as required; for construction & for maintenance details

FORM WM-7.1 CONSTRUCTION */MAINTENANCE* OF INFRASTRUCTURE: BUILDING (*EXISTING/NEW) YEAR

Sr.No.	Range	Nature of the building	Location	Type of construction	Numbers	Total cost	Remarks
1	2	3	4	5	6	7	8

Note:

Nature of building: e.g. residential, office, store, chauki, watch tower, tourist facility, hide, barrier, patrolling camp (temporary or permanent) etc.

Location: By compartment or village or landmark as appropriate.

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

Status: Completed or ongoing.

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

FORM WM-7.2 DEVELOPMENT*/ MAINTENANCE* OF INFRASTRUCTURE: COMMUNUICATION (EXISTING/NEW) YEAR

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

Note:

Type of facility: e.g. telephone, wireless

Location: Staff Hq location, village, landmark etc.

Advantage gained: Area served, staff locations connected etc.

Remarks: Record status- complete. Ongoing, functional, non-functional

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

maintenance.

FORM WM-7.3 DEVELOPMENT*/ MAINTENANCE* OF INFRASTRUCTURE: VEHICLES (*EXISTING/ NEW) YEAR

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

Note:

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

Intended use: Management support, patrolling/antipoaching, tourism etc.

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

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

FORM WM-7.4 DEVELOPMENT OF INFRASTRUCTURE: MANPOWER RECRUITMENT*/ EXISTING MANPOWER YEAR

Sr.No.	Category of post	Number	Stat	us	Scale of pay	Intended Deployment/deployed as	Remarks
			Recruited	Vacant			
1	2	3	4 5		6	7	8

Note:

Status: Permanent, temporary, contractual

Intended deployment: State purpose e.g. conservation education, research, antipoaching, etc as applicable..

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

:Strike off that which is not applicable. Accordingly, use additional forms.

One for recruitment and one for the existing manpower.

FORM WM-7.5 DEVELOPINGINFRASTRUCTURE: CONSTRUCTION BOUNDARIES, FENCES, CPTS, EPTS, EXCLOSURES, ENCLOSURES (*EXISTING/NEW) YEAR

Sr.No.	Category of construction	Range	Location	Length (meters)	Numbers	Specifications	Remarks
1	2	3	4	5	6	7	8

Note:

Category: Kind of boundary e.g. compartment, block, zone etc. In case of fences:

power fence, others

Location: By compartment or suitable landmark.

Numbers: In case of enclosures, enclosures, number of pillars etc. as applicable.

Specifications: As applicable to the construction: dry rubble, chain link, local material,

height, area, depth, width etc.

Remarks: Any other relevant information.

: Strike out that is applicable. Use a form each for maintenance of existing features

and for new features

FORM WM-7.6 DEVELOPING INFRASTRUCTURE: FIRELINES (*EXISTING/NEW) YEAR

Sr.No.	Range	Fireline category and width	Name of points connected	Length (meters)	Cost	Remarks
1	2	3	4	5	6	7

Note:

Category: Main or subsidiary etc.

: Strike out that which is inapplicable. Use one from each for maintenance of existing

Fireline and creation of new.

FORM WM-8 TOURISM YEAR

Total number of visitors all categories

Name of complex:

Total revenue earned:

Sr.No.	The ca	ategory o	f visitors by	month and	number	Indian	Indian			No. staying overnight and revenue
		Adult		Children	Foreigners	Rural	Urban	Revenue	_	
	Month Male		Female							
1	2	3	4	5	6	7	8	9	10	11

Note:

: Coulm 2 to 5 will be written in three successive lines for the month pertinent, one below the other.

First line information pertains to foreign tourists. Put a tick () in col.6. Second and third line details rural and urban tourists respectively. Put a tick () in col. 7, column 8 as applicable.

FORM WM-8.1 ECO-TOURISM-PARTNERS YEAR

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

FORM WM-8.2 (A) & (B) ECO-TOURISM-VISITORS ASPIRATIONS YEAR

Visitors categor y	Number			Interested in							
		Plan ts	Bird watching	Animal sighting	Photograph y	Sketchin g	Scenic place	Cultural/historical sites	Pilgrimage	Trekking	Otl er
1	2	3	4	5	6	7	8	9	10	11	12
			•		•		ı	1			

Note:

:8.4 (A) is for urban population

8.4 (B) is for rural population

Create separate forms 8.4 (A) & 8.4 (B) that are otherwise identical

FORM WM-9 OUTBREAK OF FIRES YEAR

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

Note:

Location: By compartments

Reasons: Established or suspected.

Estimated loss: e.g. number of trees damaged, stacked firewood/timber/bamboo

destroyed/damaged by volume and cost, wild animals dead, particulars of sensitive sites

affected, other property or life destroyed

Remarks: State particularly problems encountered in detection and suppression and any other useful information. State also whether the extent of fires has been mapped.

FORM WM-10 OFFENCE CASES DETECTED YEAR

Sr.No.	Range	Category	Numbers	Number of	f cases detected	Number of cases under process		
				Successful	Successful Failure		'	
1	2	3	4	5	6	7	8	9

Note:

Category: e.g. illegal cutting of trees, illegal firewood, illegal NWP, Poaching, encroachment, illegal cattle grazing etc. category should be codified by letters of alphabet Remarks: Any other useful information. This should also include the number of cases pending decision with the department.

: The cases under column 8 pertain to area of non-PA status under management which do not involve an endangered species (schedule-1).

FORM WM-11 INCENTIVES AND REWARDS/AWARDS YEAR

Sr.No.	Range	Number of recipients: incentives/reward for detecting offences	No. of recipients award for outstanding service	Kind of reward	Number of recipients	Remarks
1	2	3	4	5	6	7
						1

Note:

Kind of reward : e.g. a medal like the Shaurya Chakra, any other such awards instituted by the State or Central Government

Remarks: Any other useful information. If an award carries cash, mention the amount.

FORM WM-12 RESEARCH PROJECTS UNDER IMPLEMENTATION THROUGH PA MANPOWER WITH OR WITHOUT COLLABORATION WITH OTHER AGENCIES YEAR

Sr.No.	Tilte	Completed	Ongoing	New	Status	Financial outlay (Rs)	Expenditure	Remarks
1	2	3	4	5	6	7	8	9

Note:

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

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

New: State the date of commencement and duration.

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

Remarks: Any other relevant information. If the project is in collaboration with any other agency or is a contractual arrangement, state the situation and the name of the collaborating agency. If animal/plant specimen are being collected, state authority and where the collection is being housed.

FORM WM-12.1 RESEARCH PROJECTS UNDER IMPLEMENTATION BY OTHER AGENCIES YEAR

Sr.No.	Tilte	Completed	Ongoing	New	Status	Financial outlay (Rs)	Expenditure	Remarks
1	2	3	4	5	6	7	8	9

Note:

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

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

New: State the date of commencement and duration.

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

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

FORM WM-13 SURVEY AND INVENTORIES YEAR

Sr.No.	Tilte of survey, inventory activity	Completed	Ongoing	New	Ву РА	By other agency	Remarks
1	2	3	4	5	6	7	8

Note:

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

Ongoing: State since when the project is under operation and expected to be completed.

New: State the date of commencement and duration.

By PA personnel: Will include collaboration or contractual arrangement. State the case as relevant.

Other agency: State the name of the agency.

Remarks: If specimen of plants/animals are being collected, state where the collection is being housed and authority. Any other useful information.

FORM WM-14 THE MONITORING PROGRAMME YEAR

Sr.No.	Tilte of the programme	Date of initiation	Responsible agency	Technique	Status of collaboration and analysis of data	Remarks
1	2	3	4	5	6	7
1	2	3	4	5		7

Note:

Technique: e.g. PCQ, belt transact, line transact and plots, pugmarks etc. by the

title of the technique

Status of collaboration: write only if applicable.

FORM WM-15 ECODEVELOPMENT PROGRAMME: TARGETS AND IMPLEMENTATION YEAR

Sr.No.	Nature of the programme	Sector (Central/state) or NGO sponsored	Targets set		Achiev	rements	Village (buffer/ enclaved)	Remarks
			Physical	Financial	Physical	Financial	j '	
1	2	3	4	5	6	7	8	9
				'		1		

Note:

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

Village: Site where programmes is being implemented-whether buffer or inside PA Remarks: Site problems, state failures and reasons thereof, reasons for not attaining targets, for non-implementation or deviation etc. Stat whether it is on the right tracks in context of achievement of objectives. State the date of commencement and duration.

FORM WM-16 PROGRESS OF ALL STRATEGIES UNDER THE ZONE AND THEME PLANS YEAR

Sr.No.	Zone/Theme	Nature of strategy	Targets as per the schedule of operations/APO*		Achievements		Location	Remarks
			Physical	Financial	Physical	Financial		
1	2	3	4	5	6	7	8	9

Note:

Zone/Theme plan: Mention title...

Village: e.g. demarcation of boundary, creation of artificial water source, salt lick, maintenance of water sources (desilting), cutting and burning of Fireline, prescribed burning, weed control, immunization of cattle, maintenance of nature trails, setting up wayside exhibits, recruitment of staff, number of villages translocated, settled on new sites etc.

Location: Where pertinent, mention location e.g. weed control in comptt. 105,

111.117. right tracks in context of achievement of objectives. State the date of commencement and duration.

Remarks: State problems, failures and reasons thereof, shortfall and reason, deviations if any and reasons, non-implementation with reasons etc.

*APO: (Annual Plan of operations.) Under Col.4 &5, each column will have two figures. First the figure as per the schedule of operations in the plan and next to it in the same column the figure as per APO. If they differ it amounts to a deviation

FORM WM-17 PROGRESS OF LEGAL SETTLEMENTS UNDER THE WILDLIFE (PROTECTION) ACT 1972 IN CONTEXT OF ATTAINMENT OF THE STATUS OF A WLS/NP YEAR

Sr.No.	Nature of settlement/enquiry §ion under the Act	Progress achieved till the commencement of the year under report	Progress achieved during the year	Remarks
1	2	3	4	5

Note:

Remarks: State the problems encountered and any other useful information such as reasons for inadequate/lack of progress.

FORM WM-18 A SUMMARY OF ALLOTMENT OF FUNDS, REVENUE AND EXPENDITURE YEAR

Sr.No.	Plan/non-plan/any other grant	Sector Central/State/Other	Allotment received		Expenditure	Incurred	Revenue realised	Remarks
			Non-recurrent	Recurrent	Non- recurrent	Recurrent	-	
1	2	3	4	5	6	7	8	9

Note:

Explain under expenditure, over expenditure, savings and surrenders. Stat the extent of demand for the year as per the schedule of operations/APOI in the remark's column.

FORM LS-1 EXISTING CORRIDORS-CONSERVATION INPUTS REQUIRED

Sr.No.	Identity of the corridor	Length/Section	Nature of inputs/treatment	Target	Agency/cies identified	Constraints	Anticipated investment
1	2	3	4	5	6	7	8

Note:

Col.2 : by name ,number, etc.

Col 3: Total length, if only a particular section is relevant, mention the section

FORM LS-2 EXISTING CORRIDORS-CONSERVATION INPUTS ACCOMPLISHED

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

Note:

Col. 10 State success and quality of achievement. Anything else that is significant.

FORM LS-3 EXISTING CORRIDORS-MONITORING HABITAT RECOVERY

Sr.No.	Identity of the corridor	Length/Section monitored	Inputs/ treatment that had been provided	Monitoring technique/process	Indicators of recovery	Nature of progress	Constraints	Remarks
1	2	3	4	5	6	7	8	9
	2	3	4	5	6	7	8	9

Note:

Col 9: Indicate the quality and measure of success

FORM LS-4 POTENTIAL CORRIDORS-CONSERVATION INPUTS REQUIRED

Sr.No.	Identity of the corridor	Length/Section	Nature of inputs/treatment	Target	Agency/cies identified	Constraints	Anticipated investment
1	2	3	4	5	6	7	8

Note:

See from LS-1

FORM LS-5 POTENTIAL CORRIDORS-CONSERVATION INPUTS ACCOMPLISHED: YEAR

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

Note
Note

see form LS-2

FORM LS-6 POTENTIAL CORRIDORS-MONITORING HABITAT RECOVERY YEAR

Sr.No.	Identity of the corridor	Length/section monitored	Inputs/treatment that had been provided	Monitoring technique/process	Indicators of recovery	Nature of progress	Constraints	Remarks
1	2	3	4	5	6	7	8	9

п		
ı	N	OTO

See form LS-3

FORM LS-7 CONNECTING MULTI-AGENCY PROGRAMS IN LANDSCAPE BASED PLANNING PARTNERS DURING YEAR:

Sr.No.	District	Sector Central/state/Other (specify)	Agency &work area/speciality	Program coverage	Agreed input and mechanism	Financial implications/investment &source
1	2	3	4	5	6	7
		1	1			

Note:

Col. 4: Main agency agenda e.g. livestock production, health, education, irrigation Col. 5: Indicate by either administrative unit e.g. tehsil, or number of village i.e. target Col.6: What has the agency agreed on to deliver? Through agency plan/scheme?

FORM LS-8 MONITORING EXTENT AND MULTI-AGENCY PROGRAMS YEAR

Sr.No.	District	Sector/central/State/Other (Specify)	Agency	Objectives &targets	Achievement &standard	Constraints	Extent of investment	Remarks
1	2	3	4	5	6	7	8	9

Note:

:Co.l 6 The standard of achievement to be based on (1) verification of targets (2) perception of satisfaction of people and their own assessment

Col. 7 (1) as reported by agency (2) as perceived by people concerned.

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