H.P. Forest Department

Himachal Pradesh

Management Plan

KUGTI WILDLIFE SANCTUARY

(2021-22 to 2030-31)

Divisional Forest Officer
Wildlife Division Chamba (H.P.)

Approved

Pr. Chief Conservator of Forests (WL)
and Chief Wildlife Warden, HP, Shimla

Office of the Principal Chief Conservator of
Forests (Wildlife) and Chief Wildlife Warden,
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H.P. FOREST DEPARTMENT, ARANAYA BHAWAN, TALLAND, SHIMLA-171001

No. WLM/Management Plan/Vol-III/ 2277 Dated/ 5-8-2021

To:

Divisional Forest Officer,
Wildlife Division, Chamba.

Sub: Draft Management Plan of Kugti Wildlife Sanctuary-regarding…..

Memo:

Kindly refer to your office Memo No. 1134 dated 15.07.2021 on the subject cited above.

2. The approved copy of the Management Plan of Kugti Wildlife Sanctuary for the period 2021-22 to 2030-31 is sent herewith for information and further necessary action. This may be got printed and ***hard bound three copies*** thereof may be sent to this office for record.

Encl: As above.

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

Endst. No. As above/_____ Dated/_____

Copy is forwarded to CCF Wildlife (N) Dharamshala for information and necessary action..

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

I/ Misc/ 10/8/21

PREFACE

Kugti wildlife sanctuary located in the South – East of Chamba District sharing its boundary with Lahaul & Spiti and Kangra district is an important range for the wildlife, prominent of which are Snow Leopard, Ibex, Musk Deer, Himalayan Brown Bear, Asiatic Black Bear, Himalayan Tahr, Goral etc. among the mammals and Cheer, Monal, Koklas, Snow cock etc. among the birds and also threatened floral species. The control of this area was with the Wildlife Division, Chamba from 1987 to 1997. During 1997 the administrative control of sanctuary was transferred to Bharmour Forest Division (T). First management plan for this sanctuary was prepared by Sh. T.D. Sharma, IFS, the then D.F.O. Wildlife, Chamba for a period of 10 years w.e.f. 1994-95 to 2003-04. Most of the works prescribed in the above management plan could not be executed for want of sufficient funds. The present management plan has been compiled following the manual for planning wildlife management in protected areas and managed forests by Wildlife Institute of India.

The present plan has been prepared to improve the habitat of wild animals in the sanctuary and to provide better protection to the wildlife in the area. At the same time, participation of the local habitants will be ensured for the better management of wildlife. It has also been emphasized to increase the awareness for wildlife conservation values among lakhs of pilgrims / tourists who visit Mani Mahesh lake/ Dal (which is situated at an altitude of 4200 Mtrs in the Northern fringe outside the Kugti Wildlife Sanctuary) and Kailing Wazeer Temple (which is on the way to Kugti pass) every year. In this way, Eco-Tourism as well as conservation and protection of wildlife will be popularized among the visitors. This will also enhance the income of the local people living around the sanctuary area.

In addition to this, the emphasis is also on Eco-development activities, monitoring protocol, Eco system services and landscape approach to wildlife management. The Plan has been prepared to provide better habitat for conservation of wild animals and prescribing different operations for improvement of existing habitats which can be modified/ improved in the coming years depending upon the results obtained from monitoring and evaluation processes in the field on year to year basis. The period of this plan would be for 10 years i.e. from 2021-22 to 2030-31.

I would like to express my sincere thanks to Smt. Archana Sharma IFS, PCCF Wildlife-cum-Chief Wildlife Warden H.P, Sh. Anil Thakur IFS, Additional Principal Chief Conservator of Forests, Smt. Upasana Patial IFS, Chief Conservator of Forests, Wildlife Circle (North) Dharamshala, Sh. D.S. Dadhwal HPFS DFO (HQs) ,Sh. Nishant Mandhotra IFS, Sh. Gajinder Verma, Forest Guard, frontline staff of Kugti wildlife sanctuary and other seniors as well as field functionaries for their practical and valuable guidance in completion of this plan. The process of writing the Management Plan started by Sh. Sanjeev Singh ACF wildlife division Chamba. The draft documents were of great help and I duly acknowledge his contribution.

Rajeev Kumar HPFS,
Divisional Forest Officer,
Wildlife Division, Chamba.
Chamba-176310.

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CHAPTER – I

1. INTRODUCTION

Himachal Pradesh with its varied terrain and topography exhibits an ideal cross section of floral and faunal heritage distributed right from Shiwaliks to Alpine areas. Likewise, the socio-economic fabric of the state is not only multifaceted but also intricately linked with the forests and wildlife therein. In the wake of reasonably fast pace of development in the state, wildlife initially did not attract much attention but in the recent years, there has been a growing awareness in the masses regarding its significance and conservation.

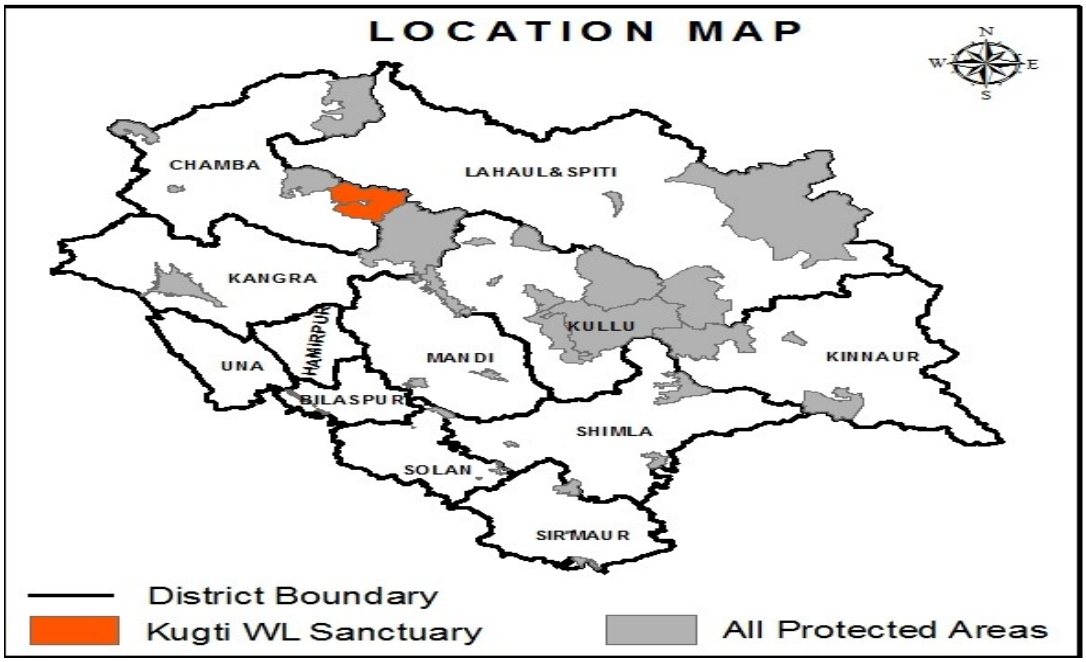
The subject has carved out a definite niche in the whole gamut of various developmental works and involves various state as well as centrally sponsored Wildlife Schemes. In this respect Distt. Chamba has a unique place for being a total representative of biogeographically diversity of the state.

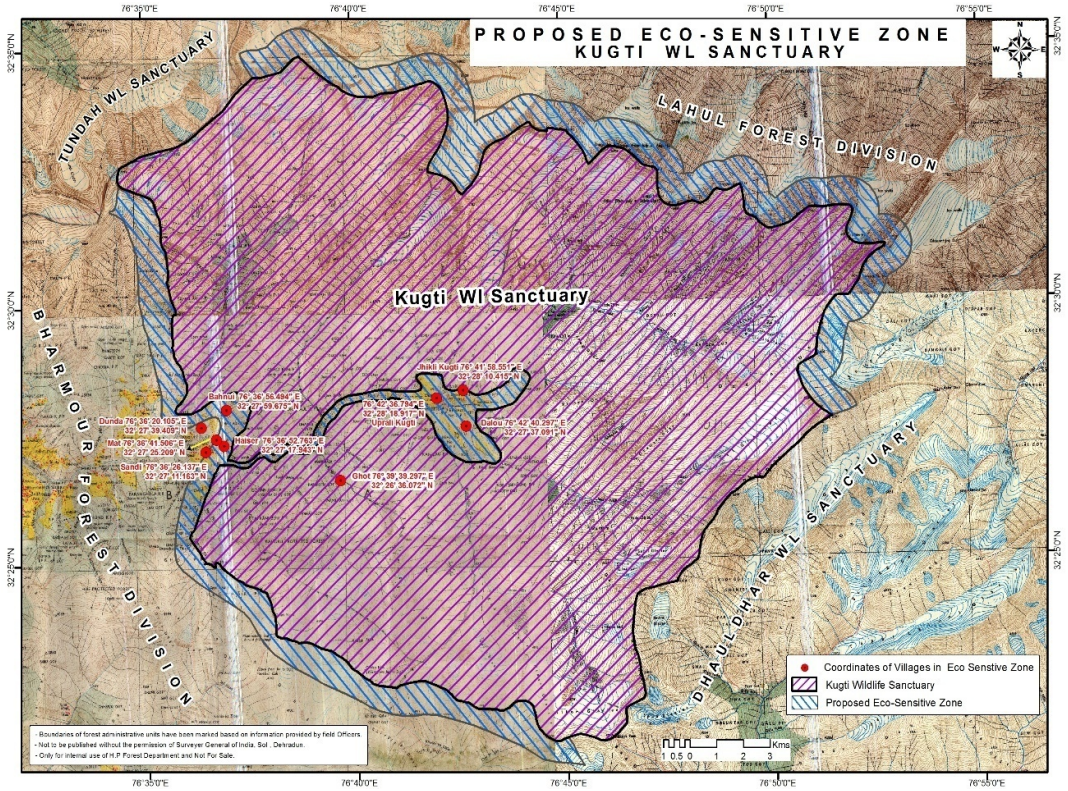
1.1. NAME, LOCATION, CONSTITUTION AND EXTENT of AREA

Kugti Wildlife Sanctuary is named after the Kugti village which falls in Bharmour Sub-Division a tribal area. The sanctuary is situated within the Geo-coordinates: **North** latitude 32^0- 35'-00" N and longitude 76^0-38'-59" E, **East** latitude 32^0- 31'-12" N and longitude 76^0-53'-02" E, **South** latitude 32^0- 21'-32" N and longitude 76^0-46'-15" E, **West** latitude 32^0- 32'-37" N and longitude 76^0-34'-23" E. It falls in Bharmour Sub Division of District Chamba Himachal Pradesh.

This sanctuary was originally notified vide Notification No. Ft. 43-51/50-VI dated 19-09-62, further revised vide No. 5-11/70-SF dated 27-03-1974(Enclosed as Annexure-I). Intention notification under section 18(1) of the Wildlife (Protection) Act, 1972 was issued vide Notification No. FFE/B /F(6) 11/2005 dated 28th July 2010 to include an area of 90.00 sq.km to the existing on ground area of 324.30 sq.km. (Enclosed as Annexure-IA). As a consequence of rationalization of the boundaries of the sanctuaries, an additional area of 90.00 sq.km area was included and 8.81 sq.km area was excluded (comprising 2 villages namely Upper Kugti and Lower Kugti) from the existing area on ground i.e. 324.30 sq.km. Hence, the total area of the sanctuary becomes (324.30+90.00-8.81) = 405.49 sq.km. vide

Notification No.FFE-B-F(6)-11/2005-II/Kugti dated 18th September,2013 (Attached as Annexure- IB)





MAP OF KUGTI WILDLIFE SANCTUARY ALONGWITH ITS ESZ

The sanctuary comprises of high lying areas with the following land use break up:

Sr. No	Classification of Land.	Area in (Ha.)	Land Use.
1.	Reserve Forests	1277.63	Forest Area
2.	Demarcated Protected Forests	1571.44	Forest area
3.	Dhars(NDPFs)	37700.83	Alpine pastures including permanent snow bound area.
	Total	**40549.90 Hac.** **405.49 sq.km**	**-**

The forest wise detail of the existing area in the sanctuary is given in Annexure-II.

1.2 APPROACH AND ACCESS.

The sanctuary is situated in the extreme South - East of Chamba District. The sanctuary can be approached through Pathankot- Chamba – Bharmour- Hadsar- Kugti motorable road. The distance covered by this road is 230 kms. The nearest railhead is at Pathankot in Punjab and airport is at Gaggal,(Kangra airport) and Pathankot. The road from Harsar to Kugti and bridle path from Kugti to KeylongBazir along with Upper and lower Kugti villages, KeylongBazir temple have been excluded from the sanctuary area during the process of rationalization in the year 2013. The sanctuary area starts from Chouli Mata temple on the right bank of Budhil Nallah which is app. two kms from Hadsar. The bridle path runs beyond Kugti village up to Kugti pass (16 kms via KeylongBazir temple, Dughi) beyond which the boundary of Lahaul&Spiti district starts. The graziers have been using this pass for their journey along with their sheep and goats during the migration. This path is also used by trekkers and pilgrims coming from Lahaul to Manimahesh.

The sanctuary cannot be approached during the winter season due to heavy snow along the path and in the higher reaches. The best season to visit the sanctuary is May- October.

1.3 STATEMENT OF SIGNIFICANCE

The sanctuary is located in the east of Bharmour in the catchment of Budhil nallah (a tributary of Ravi River) away from habitation and in the remote area. The landscape of the sanctuary varies, and it is blessed with abundance of flora and fauna. Thus the significance can be attributed to the ideal habitat of the sanctuary, which harbors Goral *(Nemorhaedus goral)*, Himalayan Brown Bear (*Ursus arctos)*, Asiatic Black Bear *(Ursus thibetanus)*, Ibex *(Capra ibex)*, Himalayan Tahr *(Hemitragusjemlahicus)*, Himalayan Blue sheep *(Pseudoisnayaur)* , Common Leopard *(Panthera pardus)*, Red Fox (*Vulpes vulpes)*, Himalayan Grey Langur (*Semnopithecus ajax),* Himalayan Weasel (*Mustela sibirica)*, Jungle Cat (*Felis chaus)*, Yellow-throated Marten (*Martes flavigula)*, Himalayan Palm Civet (*Paguma larvata)*, Indian Porcupine (*Hystrix indica)* and Common Giant Flying Squirrel (*Petaurista petaurista)*. The sighting of the snow leopard, the first ever record in the year 2010 adds much more value to this sanctuary in terms of possessing the top predator of the trans Himalaya.

This sanctuary is a heaven for more than 100 bird species which includes three species of pheasants, including one globally threatened species Cheer Pheasant (*Catreuswallichii*) and two comparatively common ones Himalayan Monal (*Lophophorus impejanus)* and Koklass (*Pucrasiamacrolopha*). It is an important Wildlife Sanctuary for the conservation of globally threatened pheasants and many high altitude bird species. There is a good interface of wooded areas and vast extensive of pastures that forms an ideal habitat for animals as well as birds. Apart from wildlife, the panoramic valley provides an adventurous trekking route for nature enthusiasts.

This sanctuary is real treasure of the rare as well as endangered species of trees, shrubs and herbs. A considerable number of such plants are still available in the sanctuary which makes it rich in biodiversity. Eleven threatened plant species viz; *Betula utilis, Bergenia stracheyi, Jurineadolomiaea, Juniperus communis, Podophyllum hexandrum, Polygonatumverticillatum, Aconitum heterophyllum, Picrohizakurroo, Selinumtenuifolium, Rhododendronecompanulatum*and *Taxus wallichiana.* Other medicinal plants found here are Kour (*Gentiana karru*), Muskwala (*Valerianawallichii*), Banaksha (*Violoaserpens, Viola odorata),* Guchhies (*Morchella esculenta*), shinglimingli (*Dioscoreadeltoidea*), Dhoop (*Jurineamacrocephala).*

There are plenty of water sources here and all of them originate from the glaciers of this area only. The sanctuary has tremendous significance for its watershed value being the only source of perennial water.

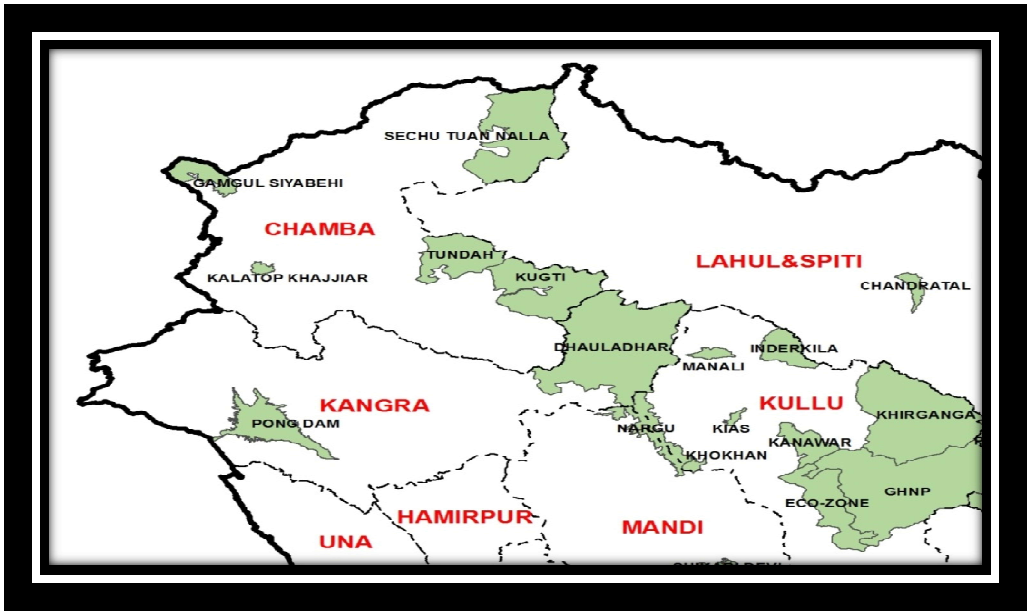
Takseen, Bhagseen Waterfalls

Adjoining villages Kugti, Dharol and Harsar are dependent on the sanctuary for its water source. The sanctuary has several waterfalls like Thanari, Sapper Kinnour, Duggi, Railing, Bharmani, Dhayog, Darati Dug, Baggi, Takseen, Bhagseen, Siya and Karog etc. support good riverine diversity.

Besides this, the temples of "Kailing" and goddess Marali Devi are important representation of the rich religious and cultural heritage. This temple are located on KugtiGrechu pass path and are visited by many pilgrims of H.P. and other states. On the southern fringe of the sanctuary, there is the famous Kailash Mountain and Mani Mahesh Lake where fair is celebrated during August- September every year and is most important from pilgrimage and tourism point of view.The Manimahesh Kailash Peak, 5,653 metres also known as Chamba Kailash, which stands towering high over the Manimahesh Lake, is believed to be the abode of Lord Shiva, the (Hindu deity). It is one of the major pilgrimage sites as well as a popular trekking destination in Himachal Pradesh.

In addition to this, various eco system services like Air quality regulation, climate regulation, water regulation, Erosion regulation, water purification, disease regulation, pest regulation, soil quality regulation, pollination, educational and aspirational values are being provided by the sanctuary area.

This area together with the areas to its north side LahulSpiti area, on north western side Tundah Wildlife sanctuary and on south eastern side DhauladharNargu and Khokhan Wildlife sanctuaries form a large contiguous area by a forest corridor which provides good shelter for many rare and endangered wildlife species.



Therefore, conservation value of this area is immense for the conservation of the full range of species found in the Himalayan region.

CHAPTER –II

BACK GROUND INFORMATION AND ATTRIBUTES

2.1 BOUNDARIES

The Kugti Wildlife Sanctuary is situated between Geo-coordinates: **North** latitude 32^0- 35'-00" N and longitude 76^0-38'-59" E, **East** latitude 32^0- 31'-12" N and longitude 76^0-53'-02" E, **South** latitude 32^0- 21'-32" N and longitude 76^0-46'-15" E, **West** latitude 32^0- 32'-37" N and longitude 76^0-34'-23" Ewhich falls on Survey of India toposheet No.52D/10, 52D/11, 52D/14 and 52D/15 on scale1:50,000. The Kugti Wildlife Sanctuary falls under the administrative control of Wildlife Division Chamba. The limits of the Kugti Wildlife Sanctuary as per Govt.of Himachal Pradesh Notification No.FFE-B-F(6)-11/2005-II dated 18th September,2013 under Section 26(A) of the Wildlife(Protection) Act,1972 is as under-

North: - Starting from point 5740 mtr.along the ridge line to point 5723 mtr.to point 5681 to point 5842 mtr.to Dugg ka jot at point 5342 mtr.alongPangi Dhar to point 5861 mtr.to Grechu jot to Kugtigalu at point 5040 mtr.To point 5573 mtr.to point 5700 mtr. to Laihas jot at point 4991 mtr.to point 6070 mtr. all along the Pangidhar.

East: - From point 6070 mtr. to point 5444 mtr. to point 5304 mtr.to point 5702 mtr. along Dhog Dhar to point 5535 mtr.along ridge to point 5416 mtr. to point 5422 mtr.alongNikora Dhar to Nikora Pass to point 4749 mtr.

South: - From Nikora Pass at point 4749 mtr. to point 4759 mtr. to point 5184 mtr. to point 4871 mtr. to Khidalagallu to Chobu Pass along Goarikhad and Dhanchhow nalla up to Dhanchhu got.

West : - From Dhanchhu got along Ghoi nalla up to Budhil nalla then along right bank of Budhil nalla up to point 2500 mtr.to Khesar got to point 3128 mtr.to Chalatu nalla to Chhih got to point 3081 mtr. to point 2941 mtr. to Lahal got along outer boundary of Lahal RF to Dharaul got to point 1974 along the left bank of Budhil nalla to Cheri Behi to Goru Ban to point 2565 mtr. to khapar to point 4018 mtr. to point 4790 mtr. to point 5295 mtr. all along the ridge of Jul Dhar to point 5336 mtr. up to point 5740 mtr.allalong the ridge line.

Total area of the Sanctuary: - 405.49 sq.kms.

2.2 GEOLOGY, ROCK AND SOIL

The hill ranges usually lie in the east west direction with some local variation. Schists are very common and occur in different forms such as shale's, states, gneisses, argillaceous clay etc. Underlying rocks are granite and gneiss almost uniform in character. Rock system in general, is unstable and of fragile nature. Sub soil in the RaviValley is fairly hard, generally argillaceous shale. Soil beads inverse proportion to the slope. On southern aspects soil tends to be shallow and dry with rock out crops.

2.3 TERRAIN

Sanctuary lying in the middle Himalayas has basically a difficult terrain with steeply rising rock precipices interspersed with some moderately steep and occasional plateau like alpine pasture. The lofty peaks with number of ridges and spurs are the characteristic grandeur of the area.

2.4 CLIMATE

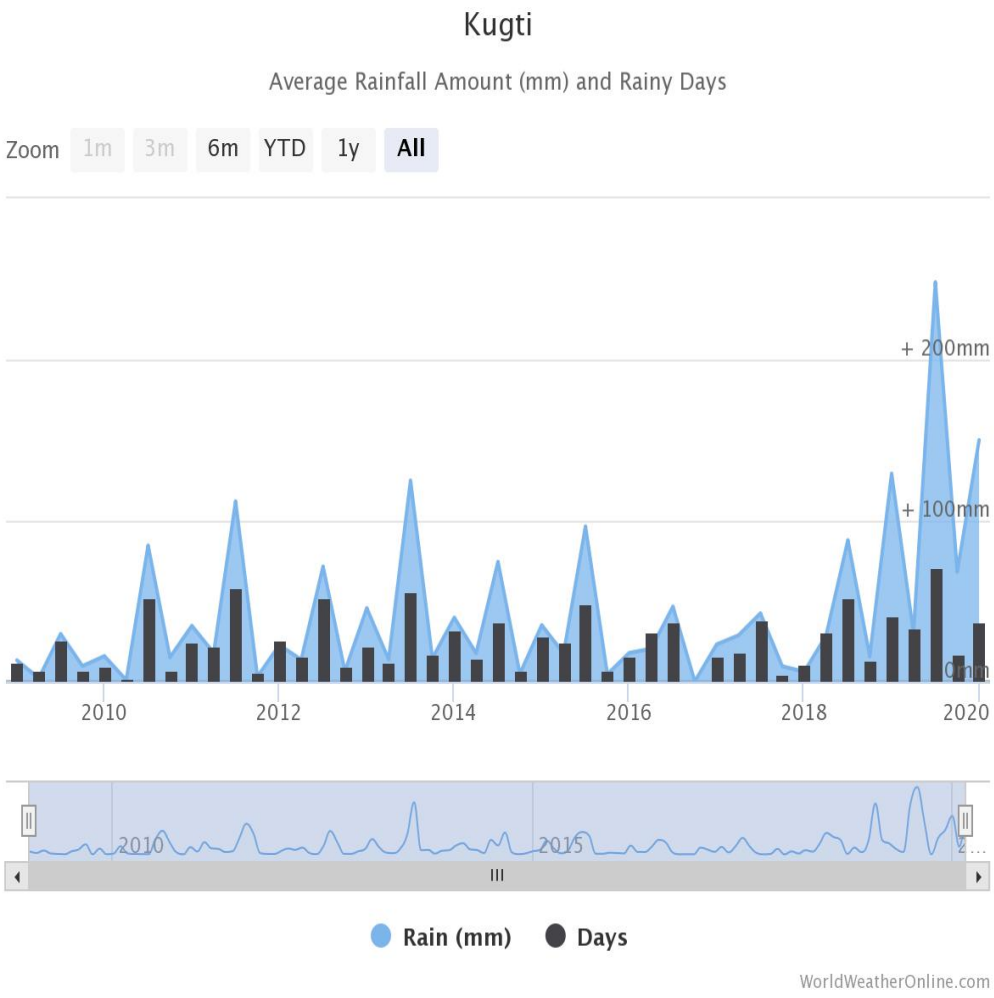
2.4.1 RAINFALL PATTERN AND DISTRIBUTION

The area acquires greater proportion of precipitation in the form of rain/snow during the winter season. The monsoon rains also occur during July to August.

2.4.2 RAINFALL

The sanctuary experiences greater proportion of precipitation in the form of rain/snow during the winter season. The monsoon rains do occur but the quantum of rain is very less. The rainfall and snowfall data collected from the nearest metrological station from theKugti sanctuary is as under: -

Name of Station: - Kugti. **Altitude:-2181 mtr.**

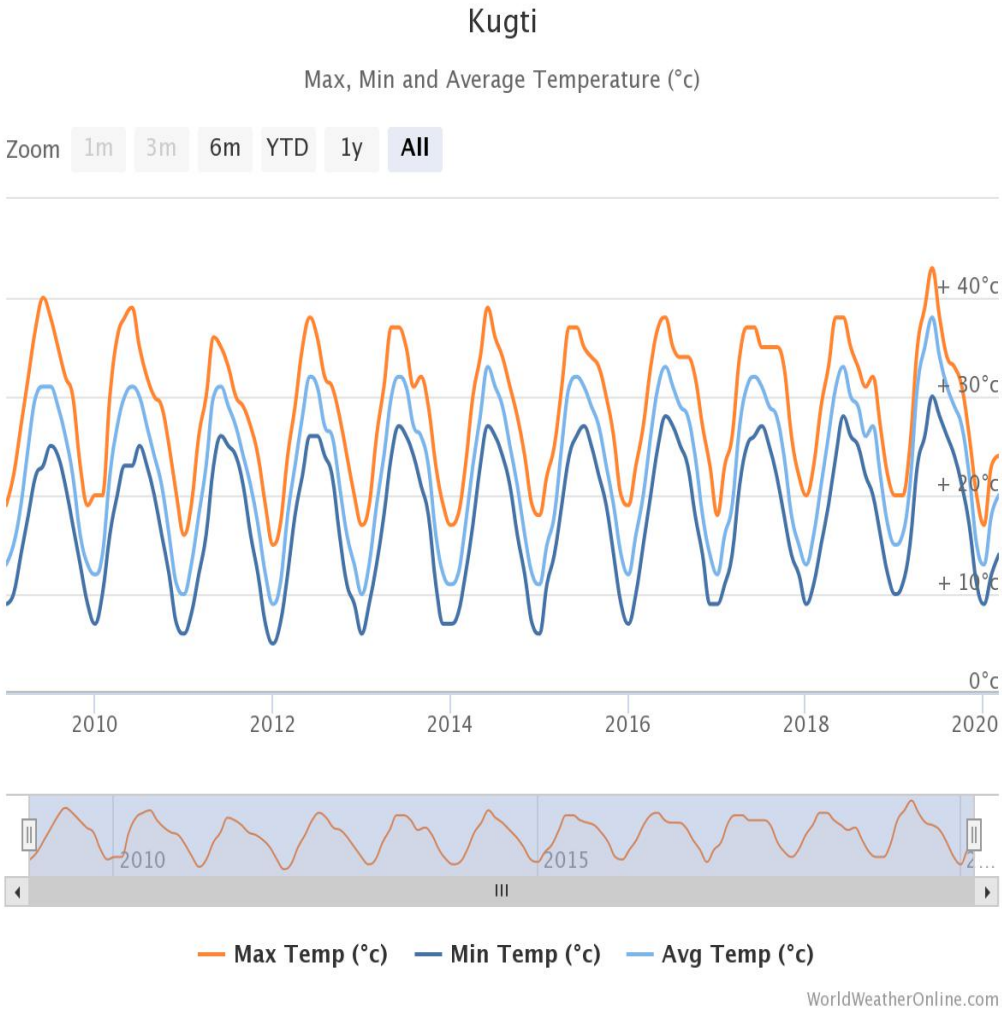


2.4.3 SNOW FALL

Thus the average annual rainfall and snowfall for last 7 years works out to be 320.02 mm and 168.95 cm respectively. The bulk of precipitation falls in the form of snow and sheet in the months of November to February and rainfall occurs in the months of July to August.

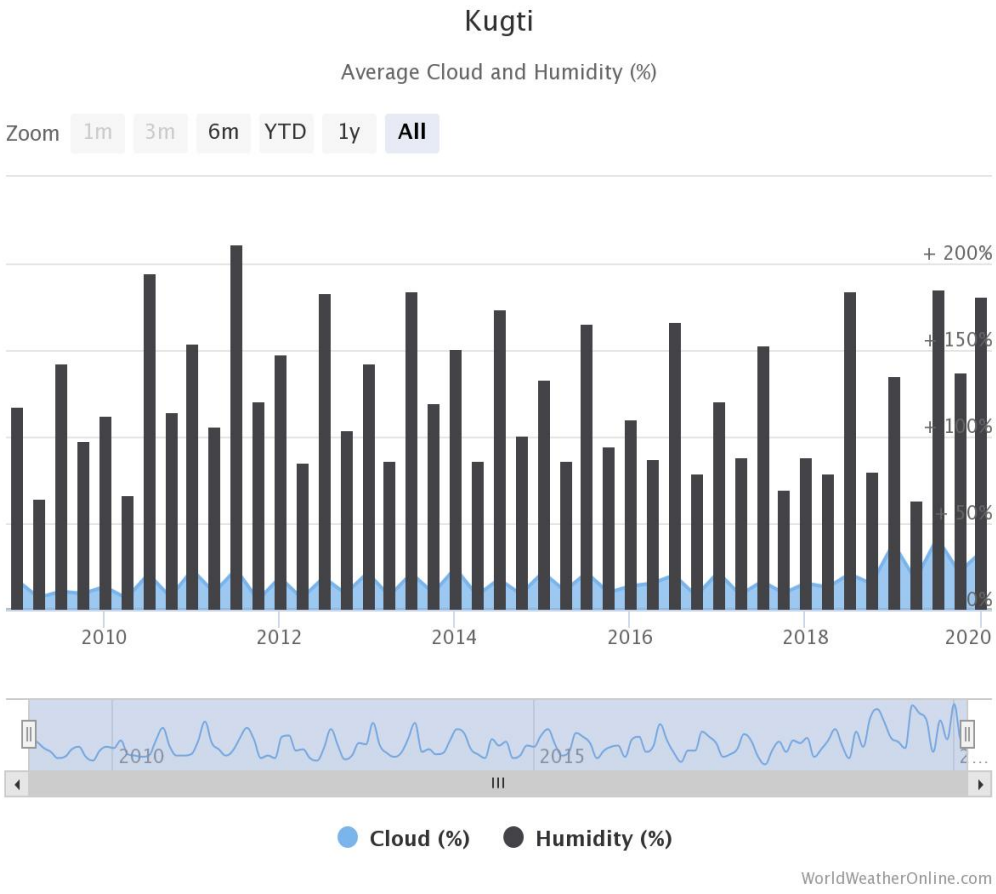
2.4.4 TEMPERATURE

It is primarily the temperate conditions which prevail in this region. Temperature goes down considerably during winters. Sub zero conditions touching – 10^0 are not rare during the winter season. During summer months, however, the weather normally remains clear with quite equable temperatures which may go up to 30^0. The detail of average temperature during last ten years is as under:



2.4.5 HUMIDITY

Atmospheric humidity increases during the winter season. Otherwise the humid conditions rarely prevail with very little turbidity in the atmosphere. Average cloud and humidity data for last ten years is as under:

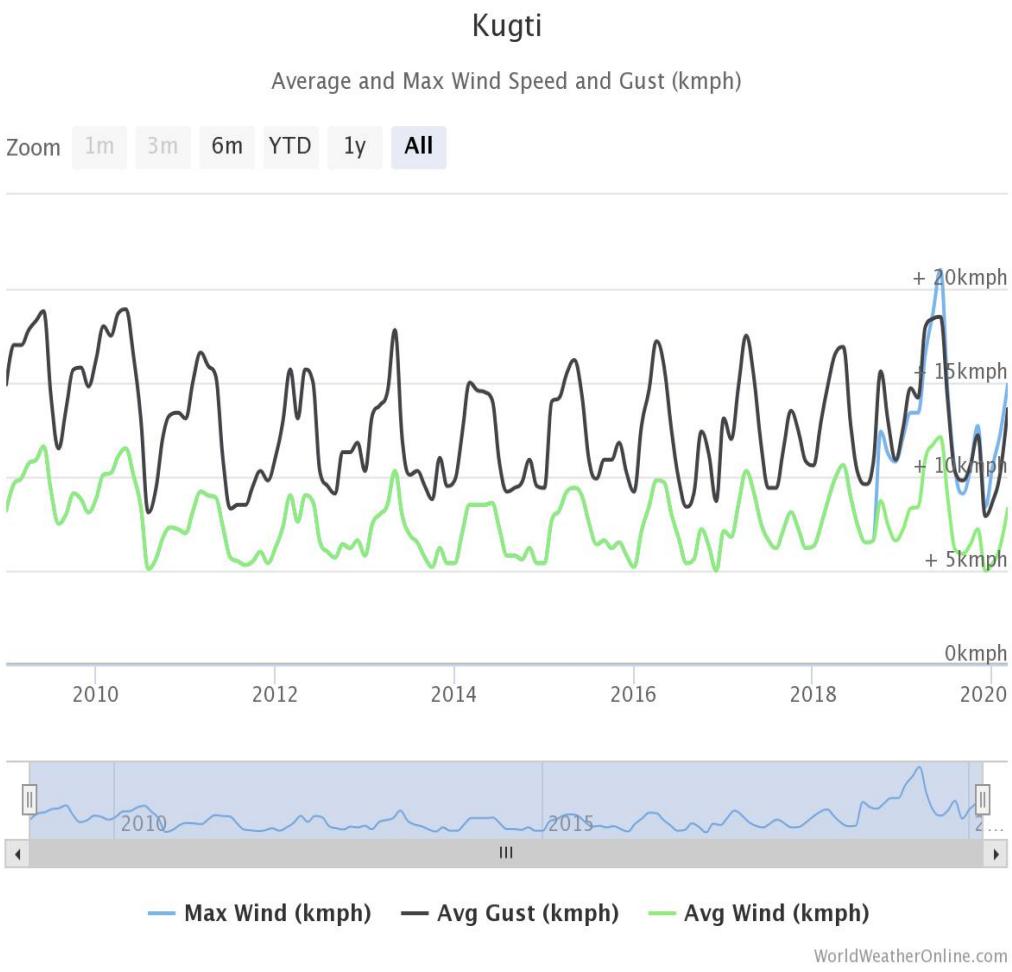


2.4.6 DROUGHT

Droughts occur during April – May and early June and again during October – November. Normally such droughts come as routine weather conditions and do not have any noticeable influence on the vegetation or water supply. It is only during occasional prolonged droughts when the young regeneration gets adversely affected. The perennial steams and water bodies are not much affected. However, the cultivated crops suffer damage on this account.

2.4.7 WIND

Light wind of 6-11 Km / hr velocity can be generally felt in the area. At some occasions particularly during winter season, there may be some gentle to moderate winds ranging from 12-29 Km / hr. These chilly winds are generally experienced along the Nallah when glaciers come down with a disastrous affect. Last ten years data for average and maximum wind speed is as under:



2.5 WATER SOURCES

The area is endowed with perennial streams / nallas and small water bodies. These are mainly snow fed and receive large quantities of water from the melting of high level snow during the hot weather. The main Nallas / streams in the sanctuary flowing down to Budhil river are as follow:

1. DhanchhoNalla.
2. Hali Nalla.
3. Thanari Nalla
3. Kagsain Nalla.
4. Gahi Nalla.
5. Baggi Nalla
6. Raling Nalla.
7. Ghionla Nalla.
8. Dharol Nalla.
9. Hulani nalla
10. Lahal Nalla
11. Shiv nallah
12. Chalathu Nalla
13. Duggi Nalla
14. Kugti Nalla

Besides these, there are few prominent water bodies in the wild life sanctuary, which are annexed as Annexure-III. Some species of fishes are definitely available in these Khadds (small streams) but the same have not been identified. The source of runoff water is snow as such there are sufficient reasons for the raring of trout fish.

Dharol Nalla

2.6 BIOGEORAPHIC CLASSIFICATION

Biogeographically, the area falls into Trans Himalayan Zone.

2.7 HABITAT ATTRIBUTES, RANGE OF WILDLIE DISTRIBUTION AND STATUS

The floral and faunal diversity with respect to altitudinal zone of the Sanctuary is as under-

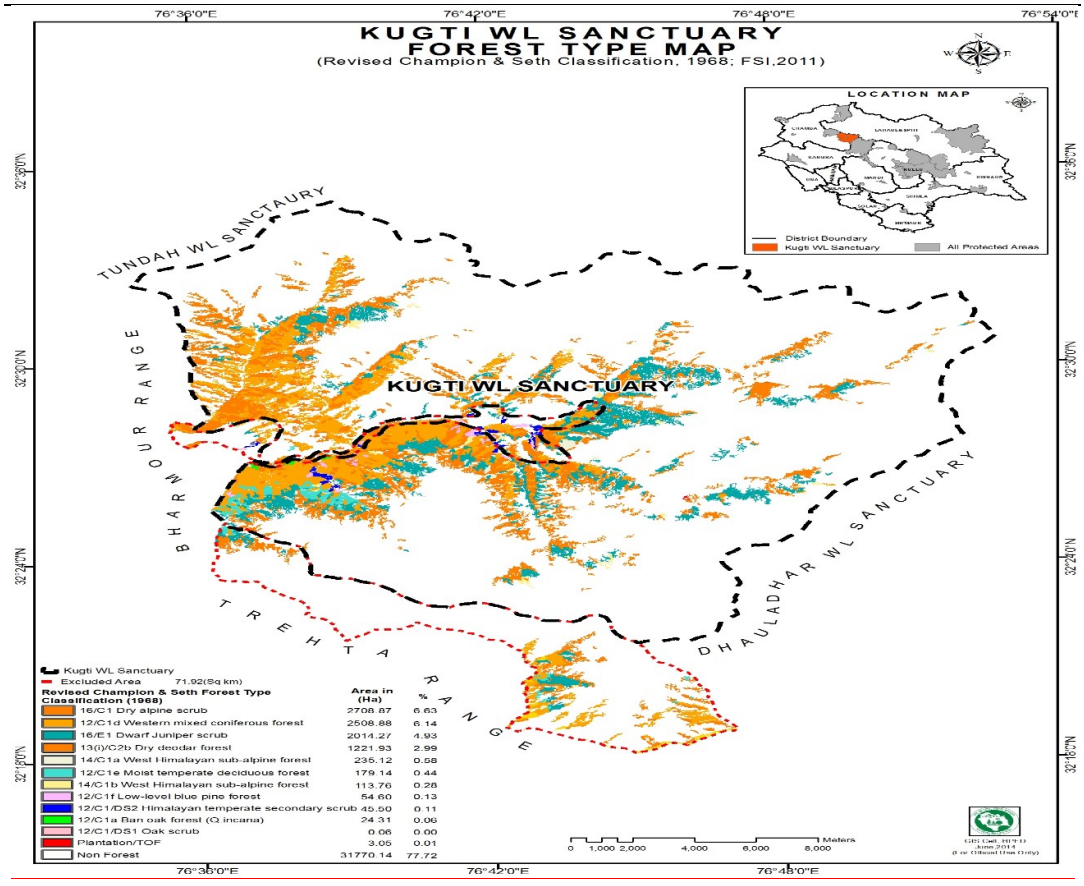
Altitudinal Range (in meters)	Flora	Fauna
2000–2800 Temperate Zone	*Abies pindrow,* *Cedrus deodara,* *Piceasmithiana,* *Taxus wallichiana,* *Pinus wallichiana, ,* *Aesculus indica,* *Corylus colurna,* *Acer pictum, ,* *Juglans regia,* *Prunus persica,* *Prunus cornuta,* *Rhamnus virgatus* *Berberis lyceum,* *Desmodiumgangeticum,* *Indigofera,* *Morchella esculent* *Vivurnumerubescens,* *Fagopyrum esculentum,* *Fragaria vesca,* *Polygonum capitata,* *Rumex nepalensis*	ASIATIC BLACK BEAR *Ursus thibetanus* COMMON LEOPARD *panthera pardus* GORAL *Nemorhaedus goral* YELLOW THROATED MARTEN *Martes flavigula* COMMON LANGUOR *Presbytus entellus* HIMALAYAN GREY LANGUR *Semnopithecus ajax* PORCUPINE *Hystrix indica* MONAL *Lophophorousimpejanus* KOKLAS *Pucrasiamacrolopha* CHEER *Catreuswallichii*
2800–3300 Upper Temperate	Abies pindrow, Cedrus deodara, Piceasmithiana, Pinus wallichiana, Prunus persica, Prunus cornuta, Rhamnus virgatus Quercus semecarpifolia, Betula utilis, Rhododendron companulatum Rubus, Morchella esculent	GORAL Nemorhaedus goral HIMALAYAN BROWN BEAR Ursus arctos HIMALAYAN GREY LANGUR Semnopithecus ajax SIBERIAN WEASEL Mustela sibirica ROYLE'S PIKA Ochotona roylei KOKLAS Pucrasiamacrolopha

	Cotoneaster bacillaris, Indigofera heterantha, Viburnum, erubescens, Sarbococca, Rosa, Juniperus recurva Berberis, Lycium, Artemisium, Viola, Valeriana, Fragaria, Rumaxnepalensis, etc.	 CHEER Catreuswallichii MONAL Lophophorousimpejanus
3300– 3600 Subalpine Zone	*Rhododendron companulatum,* *Betula utilis,* *Juniperus communis,* *Iris kemaonensis and* *Trifolium repens etc.*	HIMALAYAN BROWN BEAR *Ursus arctos* MUSKDEER *Moschus moschieferus* HIMALAYAN IBEX *Capra ibex,* HIMALAYAN THAR *Hemitragusjemlahicus* HIMALAYAN BLUE SHEEP Pseudoisnayaur SNOW LEOPARD *panthera uncia.* MONAL *Lophophorousimpejanus* CHUKAR *Alectoris chukar* SNOW COCK *Tetraogallushimalayensis* SNOW PARTRIDGE *Lerwalerwa*
>3600 Alpine Zone	*Jurineamacrocephala (Dhoop),* *Aconitum heteropllyllum (Patis),* *PicrorhizaKurrooa (Kaur),* *Sassurealappa (Kuth),* *Viola odorata (Banafsha),* *Valeriana – wallichi* *(Muskwala).*	HIMALAYAN BROWN BEAR *Ursus arctos* MUSKDEER *Moschus moschieferus* HIMALAYAN IBEX *Capra ibex,* HIMALAYAN THAR *Hemitragusjemlahicus* HIMALAYAN BLUE SHEEP Pseudoisnayaur SNOW LEOPARD *panthera uncial* CHUKAR *Alectoris chukar* SNOW COCK *Tetraogallushimalayensis* SNOW PARTRIDGE *Lerwa lerwa*

2.8 FOREST TYPES

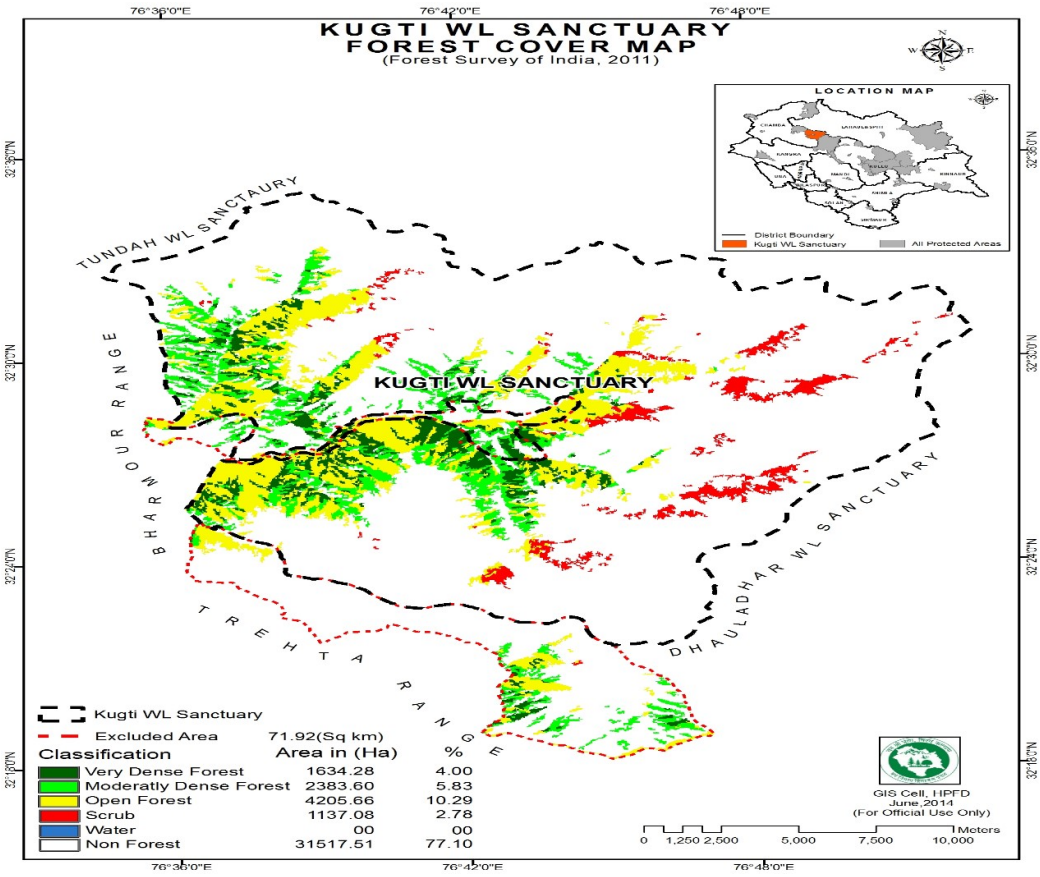
According to the classification of Revised Champion & Seth, the forests of the Sanctuary are categorized into the following forest types: -

Sr. No.	Forest type	Area (in Ha)	%
1	13(i)/C 2b Dry deodar forest	1221.93	2.99
2	12/C1d Western mixed coniferous forest	2508.88	6.14
3	12/C1e Moist temperate deciduous forest	179.14	0.44
4	16/E1 Dwarf juniper scrub	2014.27	4.93
5	16/C1 Dry alpine scrub	2708.87	6.63
6	12/C1f Low level blue pine forest	54.60	0.13
7	12/C1/DS2 Himalayan temperate secondary scrub	45.50	0.11
8	12/C1/DS2 Oak scrub	0.06	0.00
9	14/C1a West Himalayan sub-alpine forest	235.12	0.58
10	14/C1b West Himalayan sub-alpine forest	113.76	0.28
11	12/C1a Ban oak forest (*Q.incana*)	24.31	0.06
12	Plantation/ TOF	3.05	0.01
13	Non Forest	31770.14	77.72



2.9. COVER

The sanctuary has fairly close forest canopy of mixed coniferous species in the lower elevation where as the higher altitudes as described under forests type are mainly alpine pastures. There is a good interface of the blanks and the forested area. This provides ideal shelter to different animals and bird species.



Sr. No.	Classification	Area (In Ha)	%
1	Very Dense Forest	1634.28	4.00
2	Moderately Dense forest	2383.60	5.83
3	Open Forest	4205.66	10.29
4	Scrub	1137.08	2.78
5	Non Forest	31517.51	77.10

2.10 FOOD FOR ANIMALS

The vegetation of varied nature offers plenty of food for the wild animal. Some fruit bearing tree species like *Juglans regia, Aesculus indica, Prunus persica, Prunus padus, PyrusPasia, Quercus spp., Berberis aristata*, Wild Cherry, Cotoneaster etc. are the staple diet of the Wild animals. Some animals like Himalayan Brown Bear and Asiatic Black Bear prefer the fruits of *Prunus persica, Prunus cornuta, Rhamnus virgatus, Berberis aristata andViburnum cotinifolium* as their food. Other plants or their parts consumed by them are *Rumex nepalensis, Fagopyrum esculentum*, *Morchella esculent and, Fragaria nubicola, which are found in good number in this sanctuary.* Herbivorous consume many varieties of grasses, herbs and fodder plants and mainly venture into the vast expense of pasture. The prey and predator relationship exists in the different species of wild animals.

CHAPTER-III

HISTORY OF MANAGEMENT AND PRESENT PRACTICES

3.1 GENERAL

The general history of the forests prior to the annexation of Punjab by the British Government in the year 1849 of which present day Kugti Wild Life Sanctuary of Chamba District was a part, is practically unknown. It is presumed that no large scale fellings for export purpose had been carried out and only petty felling by the adjoining villagers might have taken place to meet the bonafide requirements. Subsequently, in the year 1851, an agreement between Raja of Chamba and Britishers was entered upon for delivering 10,000 logs annually to British Agent at Shahpur for the construction of barracks and other public utility works. This arrangement failed in the year 1854 due to obstruction in the Ravi River. Further, the Raja of Chamba made an arrangement in 1861 to sell standing trees direct to the British Govt. but it also lasted up to 1864. In May, 1864 the forests were again leased to the British Govt. for a period of 99 years subject to renewal of the rules every after 20 years.

This lease was re-drafted in 1872 when a code of forest rules was added to it as a schedule. Under these rules, some of the forests were to be demarcated and declared as reserved forests.The demarcation of the forests was done at the option of Raja of Chamba and the British Govt assumed the exclusive control of Reserve Forests whereas the other forests were managed by the Chamba State for the benefit of the Ruler and for the supply of privileges to local people, as they were entitled to subject to the condition that no trees were exported for sale from these forests. The demarcation and settlement work of the present day Reserve Forests of Bakloh, Dalhousie, Upper Chamba, Bharmour and Trehta Ranges was completed in 1879-82. The lease of the Reserve Forests was revised in 1886 and 1905.On 1st April, 1908, the British Government restored the management of these forests to His Highness, the Raja of Chamba on experiment basis for a period of five years in the first instance on certain conditions. All the Reserve Forests were finally handed over back to Raja of Chamba in the year 1913 and the lease was cancelled. The Reserve Forests were placed under the control of Conservator of Forests and the State's Revenue Forests remained under the control of Superintendent of Forests. The two units functioned independently except that the Conservator of Forests acted as an advisor to the Superintendent of Revenue Forests.

After independence in1947, Chamba State was merged in Civil District of Chamba as a part of Himachal Pradesh under Govt of India. The forests of Chamba District were divided into two forest divisions i.e.Churah and Chamba.

The first working plan for the Reserve Forests of Upper Ravi valley was prepared by D' Arcy in 1885 which came into operation w.e.f. 1886-87. This plan was revised by Mc. Intire. Trevor's Plan remained operative during the period

1911 to 1924. This Plan was followed by Khosla's Plan which became operational in 1928 and expired in 1952. Mr. Gaur compiled working plan for the period 1954-55 to 1968-69.This was followed by R.C. Sharma's working plan for the period 1969-70 to 1983-84. Sharma's working plan covered present Dalhousie Forest Division, Bharmour Forest Division, Chhatrari Range of Chamba Forest Division and area transferred to Wildlife Division Chamba including Kugti Wildlife Sanctuary.

Bharmour Forest Division was created in 1984 and there was no working plan for the forests of this division for the period 1984-85 to 2003-04. However, the forests were being managed under the expired working plan of Shri R.C.Sharma. Shri Avtar Singh, IFS, prepared the working plan of Bharmour Forest Division for the period 2004-05 to 2019-20 which was approved during the year 2003-04. This plan excludes the forests falling in two sanctuaries of Bharmour Forest Division i.e.Kugti and Tundah. In working plans mentioned above there was no specific activity adopted for the management of wildlife except general protection provided to the wildlife under Wildlife (Protection) Act, 1972.

However, plantations have been raised under various center and state schemes and soil conservation measures carried out in different years did help in the improvement of habitat for wild animals in the sanctuary.

Wildlife Division Chamba was created in 1984and the Kugti Block which constitutes Kugti wildlife sanctuary was transferred to the wildlife division Chamba. The first ever management plan for the Kugti wildlife sanctuary for the period 1994-95 to 2003-04 was prepared by Shri T.D. Sharma, IFS. Subsequently, the control of the Kugti wildlife sanctuary was again transferred to the Bharmour Forest Division (T) and the charge of the sanctuary was taken over by Range Forest Bharmour (T) during February, 1997.

T.D. SHARMA'S MANAGEMENT PLAN

This was the first ever effort to manage the wildlife in Kugti sanctuary scientifically for the period 1994-95 to 2003-04. Special emphasis was laid on habitat management, protection; pasture improvement, eco- development, eco- tourism and research and monitoring. As mentioned above, the control of the sanctuary remained with D.F.O. Wildlife Chamba up to February, 1997 and thereafter the sanctuary was again put under the control of Bharmour Forest Division (T) up to 31-03-2008. During this phase sanctuary was not managed scientifically or as per the prescriptions of management plan. From 1.4.2008 the administrative control of Kugti wildlife sanctuary was transferred to DFO wildlife Chamba and since then it is functioning under the control of DFO Wildlife Chamba.

3.2 TIMBER OPERATIONS

3.2.1 EXPLOITATION OF FORESTS

The exploitation of forests for export purpose started during 1850 onwards. A considerable number of trees mostly deodarwere removed up to 1860.14443 nos. of trees are estimated to be felled between 1861 to 1864. Thereafter felling of moderate intensity took place up to 1885. The forests were further exploited under the provisions of various working plans which remained under operations from time to time. Further, a complete ban on commercial green felling was imposed in the state of H.P. Since 1983. However, dry, dead, diseased trees were being removed in salvage marking in the various forests of sanctuary. The trees were also granted to the right holders for house construction in TD rights upto the 2003-04. The timber exploitation activity over the years has affected the wildlife due to loss of habitat and occasional poaching by laborers. With the pronouncement of judgment in a court case in IA No. 548 dated 12.02.2000, all activities of timber exploitation has been stopped.

3.2.2 FIREWOOD HARVEST AND COLLECTION

There has been no exploitation for firewood in the past. However, the local right holders, migratory and nomadic graziers had been collecting fuel wood from dry fallen trees and bushes existing in the forests for their domestic use for more than hundred years. Fuel wood was also collected for marriage and funeral purposes. At present there are 213 families living aroundKugti wildlife sanctuary. On an average, there is a consumption of 75 qtls fuel wood per annum per family for cooking and heating purposes and this works out to be 15975 qtls per annum removal of firewood for 213 families. Further, it is estimated that the nomadic graziers also collect about 1025 qtls of fuel wood for cooking purpose. Therefore, the whole removal of firewood works out to be 17000 qtls annually from the sanctuary. Upto the year 2005-06, 213 families consisting of 1326 souls were residing inside the sanctuary area. The proposal for the rationalization of area of the sanctuary was moved during the year 2005-06 making a provision of exclusion of 881 ha forest and private area for the use of villagers and includes an equivalent non habilitated area into the sanctuary. During the year 2013, final notification after rationalization of the boundaries of sanctuary was issued and 881 ha forest and private area for the use of villagers was excluded from the sanctuary and an equivalent non habilitated area was included into the sanctuary.

3.3 MINOR FOREST PRODUCE COLLECTION

The collection and removal of minor forest produce was regulated under the Chamba Minor Forest Produce Exploitation and Export Act, 2003 and under section 41 and 42 of Indian Forest Act, 1927 and rules made there under from time to time. The extraction, purchase and export permits of the minor forest produce were issued after realizing prescribed fee/ royalty under the above rules by the competent forest officers. The minor forest produce was exported from the sanctuary during 1994-95 to 2003-04. Extraction and export of minor forest produce has now been stopped since 2004-05 with orders of Hon'ble Supreme Court of India.

3.4 LEASES

As there is no green felling or Salvage removal from the sanctuary area hence, no leases at present exist in the sanctuary.

3.5 OTHER PROGRAMMES AND ACTIVITIES

3.5.1 HABITAT MANAGEMENT

The afforestation and pasture improvement activities by artificial sowing and planting of species beneficial to wildlife and suitable to the temperate climate have been carrying out. The detail of plantations raised upto 2019-20 with number of plants and species planted in the plantation areas is given as Annexure- IV

3.5.2 PROVISION OF SALT LICKS

The provision of salt licks was also made on the suitable sites. The details of which is annexed as Annexure –V

3.5.3 TREKKING ROUTES

There are already some trekking paths in the area, however, for a better study of flora, fauna and for better protection network, some more routes are required to be constructed. Detail of already existing trekking routes is enclosed as Annexure-VI

3.5.4 CONSTRUCTION OF BUNKERS AND WATCH TOWERS

Bunkers help the staff in the adverse climate and for lodging during the night to keep watch against the poachers when they cannot come back to their headquarters. The wild animals also take shelter in the bunkers in the severe winter.

Such shelters will provide commanding position in controlling the poaching of wild animals during adverse climatic condition / snow fall and will save the valuable wild life present in the area. Watch towers are essential components in detecting fires and control of poaching and Sighting of wild animals and latest status of their health, as well as keeping watch on the moments of suspicious elements.

3.6 FOREST PROTECTION:

3.6.1 LEGAL STATUS

As the complete area 405.49 Sq. Km. has been declared as Wildlife Sanctuary. The complete area is also legally protected area as per Wildlife (Protection) Act, 1972**.** The legal status of forests is as under:

RESERVE FORESTS

The Reserve Forests were constituted after demarcation during 1879-1882 and forest settlement was carried out simultaneously. Further Chamba State forests were declared as reserve forests. These forests were again revalidated as Reserve forests under The Indian Forest Act, 1927. The Reserve Forests constitute 1277.63 hac. of area in the sanctuary. The forest wise detail is enclosed as Annexure – II.

DEMARCATED PROTECTED FORESTS

The old DPFs were demarcated and settled in 1912-15. Subsequently, these were declared as DPFs under section 29 of Indian Forest Act, 1927. Consequent upon the merger of states and formation of H.P. all the proprietary rights over forest area have been inherited by H.P. Subsequently, H.P. Govt. ordered that these forests stands demarcated, surveyed and rights determined and now these forests stand declared as Demarcated Protected Forests. The Demarcated Protected Forests and Dhars constitute an area of 39272.27 hac. The forest wise detail is given in Annexure – II.

3.6.2 HUNTING

A complete ban on hunting of wild animals has been imposed under the Wildlife (Protection) Act, 1972 and further amendments of the above Act and rules framed there under from time to time except as provided under special circumstances provided in the Act/rules.

3.6.3 POACHING AND OTHER ILLEGAL ACTIVITIES

3.6.3.1 POACHING

Although no case of poaching in the sanctuary has been reported since last so many years, but this threat to the wild animals cannot be ruled out. As the sanctuary is located in remote area and during winter season when most of the families of Kugti village migrate towards Kangra and other areas and also the mobility of field staff is hampered due to excessive snowfall, possibility of occurring poaching cases is always there. The wild animals can become easy targets of poachers. It has been noticed that the villagers never inform the forest officers nor come forward to witness the poaching or other forest offences and become ignorant even if they know the commission of any offence. Besides providing effective patrolling mechanism during this period, the local people be educated regarding the importance of wildlife conservation.

3.6.3.2 ILLEGAL FELLING OF TREES

No case of illicit felling on the record/reported since 2004-05 onwards.

3.6.3.3 ILLICIT REMOVAL OF MINOR FOREST PRODUCE

There had been a systematic exploitation of minor forest produce under the Chamba Minor Produce Exploitation and Export Act 2003, and transit rules under section 41 & 42 of IFA, 1927. As local habitants are tribals and have liberal rights for exploitation of minor forest produce that time. Thereafter, the extraction of Minor Forest Produce has been banned now with the orders of Hon'ble Supreme Court of India. Whenever any case of illegal extraction of minor forest produce comes in the notice of field staff, action as per law is taken.

3.6.3.3 ENCROACHMENT

No case of encroachment in the sanctuary has been reported since last seven years.

3.6.3.4 OTHER ILLEGAL ACTIVITIES

Other illegal activities which are taken place are illegal grazing by the domestic and nomadic goats, sheep and cattle in the plantations and closed areas. A few instances of illegal lopping, removal of fuel wood in the forests have also been detected but by and large these offences are petty and action has been taken by the staff as per rules.

3.6.4 LIVESTOCK GRAZING

The right to graze in all types of forests, except Reserve Forests is more or less unlimited and was being exercised for more than 125 years. In reserve forests, the number of cattle allowed to be grazed had been fixed but this regulation has seldom been enforced in the field. In the days of Rajas, people who used to herd cattle in excess of prescribed number had to pay fees in the shape of Ghareri to the State. This was an effective check on the tendency of rearing cattle over and above the maximum domestic requirement of a family. Since the abolition of this tax by H.P. Govt, the pressure on forests has increased considerably resulting in soil erosion particularly adjoining to the villages and also in the pasture areas. The hereditary, migratory and nomadic graziers had enjoyed grazing rights in the forests of sanctuary as per settlement rights and concession granted to them by the rulers of Chamba State. The number of sheep and goats allowed to graze in particular Dhars and forests was freezed to the enumeration carried out during the year, 1971-72. The number was further revised and freezed to the actual enumeration carried out during 1987-88. Thereafter, the Grazing Advisory Committee has allowed the number of sheep and goats and other cattle to graze as per actual enumeration. The dhars are more or less free from rights. The gaddies and gujjars were allowed to graze their cattle on payment of prescribed fee. With the pronouncement of judgment in a court case in IA No. 548 dated 12.02.2000, all activities including grazing have been prohibited in the sanctuary area without the prior approval of Apex Court. Despite of this ban nomadic graziers with their flock have been using their traditional route through sanctuary area to reach Lahaul and other areas. This is a serious issue as about one lakh sheep and goats cross sanctuary area twice in a year i.e. just after winter season and before onset of winter season. There is no alternate route available for them to reach Lahaul as Kugti wildlife sanctuary along with Tundah, Dhauladhar, Nargu and Khokhan wildlife sanctuaries form a contiguous patch of forests. Therefore, this issue needs to be addressed on higher priority and the matter be taken up with the government of Himachal Pradesh or any other appropriate forum.

3.6.5 WILD FIRES

The chances of occurring forest fires are more in the winters before snowfall. During this period people from adjacent villages burn their grazing lands (Ghasnis) to have more grass in the coming season. Fire incidences also take place when nomadic graziers cross sanctuary area, although such incidences are rare. Regular patrolling along with deployment of fire watchers are carried out during both the summer and winter seasons. Construction of water bodies, cleaning of bridle paths, inspection paths are also done during the season. Besides this regular fire awareness campaigns/ workshops are also conducted to make people aware about the loss during forest fires. These activities help in combating with fire incidence. The list of fire prone areas is given as Annexure-IX

3.6.6 INSECT ATTACK AND PATHOLOCIICAL PROBLEM

No study in this regard has been carried out in the past. However from the field experience of the staff, it has been reported that no insect attack has taken place on the vegetation in the past. This is perhaps due to the existence of the sanctuary in the high mountains. However, the interaction between domestic cattle and wild animals cannot be ruled out, which may result into some contagious diseases. But this aspect has not been ascertained yet. Remains of salt given to the domestic live stock in the pastures may act as a carrier of some pathogenic disease to the wild animals if they lick that salt.

3.7 TOURISM

Due to lack of publicity about the area, this area is practically untouched from tourism point of view. Although a number of pilgrims visit Manimahesh every year and they use the trek which is inside the sanctuary area. Efforts are being made to develop eco tourism in this area for which an interpretation centre has already been established at Pranghala. Eco-tourism society/ committee are also being formed to involve local people in eco tourism activities.

3.8 RESEARCH MONITORING AND TRAINING

3.8.1 RESEARCH AND MONITORING

Although some research works have been published by research scholars/ institutes, but that is not suffice in itself for the management of the sanctuary. Neither research on the issues required for better management of sanctuary nor regular training have been done so far in this sanctuary area. However, in house trainings for field staff have been undertaken. The works executed in the sanctuary are regularily being monitored by different level of forest officers as per protocol. Until and unless there is sufficient research data and information regarding the schemes to be implemented is available, the success cannot be achieved. The very basics of the subject matter viz a viz topography, climatic condition, flagship wildlife species, associates, migratory origin wildlife, predators, prays, all types of invertebrates and vertebrates including reptiles, birds, amphibians, insects, various types of flora of the area and the choice of species for different wild animals species, carrying capacity of the area, eco system services provided by the area, adaptability of the habitat to the wild animals, infrastructure available for the managerial staff in the sanctuary area and their effectiveness as well as professional skills / excellence etc. are some of the basics for research monitoring and subsequent training.

3.8.2 TRAINING

ON JOB TRAINING

To manage ecosystem with the basic purpose of wildlife management is a highly technical subject. Wildlife is a dynamic component of the ecosystem, which requires a well-trained forester to comprehend, appreciate and manage. It is highly imperative that short trainings, in house trainings, refresher courses, exposure visits etc. for the field staff are made a regular feature, so that they keep abreast with the latest developments regarding different management techniques.

FORMAL TRAINING COURSES

Regular training courses being conducted at Wildlife Institute of India impart a useful technical knowhow. The officers/officials dealing with the wildlife management will be trained. Besides this, to acquaint with the latest management techniques adopted in different states/ countries, short training will be arranged for the officers and field staff.

3.9 WILDLIFE CONSERVATION STRATEGIES AND THEIR EVALUATION

3.9.1 AWARENESS PROGRAMME

The approach with respect to conservation of wildlife is mainly by way of ensuring effective protection against poaching. A special campaign for educating the people through nature awareness programmes, guided tours and telling them the significance of wildlife conservation is required to be taken up every year. The field staff of the sanctuary has been carrying out awareness campaign among mass but more emphasis is needed to make people understand about the basic values of eco system services, wildlife conservation and other benefits, which they are getting from the area.

3.9.2 PASTURE IMPROVEMENT

The sanctuary has a vast area under alpine pastures, which is visited by the migratory as well as hereditary graziers during the summer every year. Although the Hon'ble Supreme Court of India prohibited many activities including grazing in the sanctuary, yet the problem of grazing is yet to be settled, as the rights of migratory graziers have not been settled. It will take some time to sort out the problem. The pasture improvement activities had been taken up in the past in a limited way and it need to be extended further with removal of unpalatable grasses and bushes selectively for the protection and dissemination of indigenous grasses scientifically and execution of soil conservation measures in the slips and nallahs.

3.9.3 CATTLE TREATMENT& VACCINATION

Inoculation against possible cattle diseases is required for the domestic cattle, sheep and goats passing through the sanctuary during the migratory period. The inoculation is carried out by the Animal Husbandry department as per norms. However, it needs to the ensured that the inoculation has been carried out from time to time at the main entrance points in the sanctuary and provision is required to be made and kept at the disposal of the Animal Husbandry Department so that the infection does spread to the wild animals.

Kugti sanctuary has a number of alpine pastures which are the grazing grounds of migratory graziers during the summer season. These grounds are grazing grounds for numerous domestic animals like cow, sheep and goat. While during their stay, these animals become easy prey for carnivorous animals and their excreta gets mingled with grass, water etc. which is ultimately consumed by wild animals. In this way diseased animals can spread diseases in the wild population.

All migratory animals are inoculated against common diseases to ensure that they are disease free. Adequate funds needs to be provided to the animal Husbandry Department well in time for inoculating such animals before they enter the sanctuary.

3.9.4 CONSTRUCTION OF BRIDLE PATHS AND BUNKERS

The larger portion of the sanctuary is inaccessible and located in high mountainous altitudes. Moreover, it is very far from field staff headquarters and they cannot come back to their residences in the evening. For proper monitoring and vigilance of wildlife, it is necessary to have paths and shelters at appropriate places during patrolling in the sanctuary. The natural sites like caves and overhangs can be improvised in the shape of bunkers where the staff can halt for the night. The paths and bunkers need to be maintained every year as these are damaged and blocked with debris due to the heavy snowfall during the winter season.

3.9.5 ENGAGEMENT OF WILDLIFE WATCHERS/ INFORMERS

The field staff has been carrying out the protection and management duty of the sanctuary. However, during the summer season, the graziers pass through the sanctuary to their grazing runs. More vigil is required for the protection of wildlife. Moreover, the Forest Guard of the beat cannot go to the forest in the high alpine pastures alone during emergency. He has to have atleast two /three persons with him to go on raid or otherwise for patrolling and other duty in the remote and inaccessible areas. The persons from the adjoining villages with a vent of wildlife conservation attitude can be engaged as watchers in the sanctuary. Their services can also be utilized for launching awareness campaign regarding wildlife conservation and its importance. This will also generate employment potential to the villagers.

3.9.6 PROHIBITION OF WEAPONS

There is a complete ban on carrying of weapons inside the sanctuary area. The necessary sign boards of prohibited activities are already in place. However further awareness shall be taken up regularly.

3.9.7 CENSUS

The census of the rare and endangered species especially and other important wild animals and birds in general is a must to monitor their population in the wild. Census techniques are not available for all the species. However, the Wildlife Institute of India, Dehradun can be requested to evolve the census methodology and provide training to the field staff so that the process can be completed at least once in year after the melting of snow. The regular survey and census will help in maintaining or amending the management practices. It must be ensured that a time schedule for census and its methodology be prepared and the census be conducted as per census schedule each year. The detail of census/ survey carried out during 2018-19 is enclosed as Annexure-XIX

3.10 ADMINISTRATIVE SET UP

The sanctuary is being managed by Divisional Forest Officer, Wildlife Division Chamba. There is one Range Forest Office (Wildlife) posted at Bharmour, who supervises two Wildlife Sanctuaries viz Kugti&Tundahboth in the tribal area. The Kugti Wildlife Sanctuary has been divided into one block and three beats. The Deputy Ranger at Kugti is the incharge of forest block (whole sanctuary area) and three Forest guards (incharge of each beat) posted at Lower Kugti and Dharol beat. The administrative set up of the sanctuary is given as under:-

Designation of the Forest Officer	**No.**	**Headquarter**
D.F.O.	1	Chamba.
A.C.F.	1	Chamba
Range Forest Officer	1	Bharmour.
Block Officer	1	Kugti
Forest Guards	3	Kugti- 2 & Dharol-1
Forest Guard	1	Special duty in Range office
Forest Guard	1	Temporary check post cum interpretation centre at Pranghala
Multipurpose workers	2	Temporary check post cum interpretation centre at Pranghala
Peon/ Chowkidar	1	Range Office, Bharmour

3.11 COMMUNICATION

For better management and strengthening the Wildlife protection measures, it is imperative to have an efficient communication system.Kugti wildlife sanctuary is connected to road upto Kugti village. For patrolling and to supervise other development works, one has to go on foot, as there is no road connectivity in the sanctuary. As far as the telephone and other mobile communication are concerned, there is no telephone connectivity except manual delivering of message. Mobile signal is functional upto village Pranghala which is about 20 kms from Kugti. The whole sanctuary gets disconnected with rest of the world due to heavy snowfall during the winters. This is the period when wild animals migrate from higher reaches to lower elevation for search of food and water. Poachers become active during this time. Although a temporary check post has already been established at Pranghala and the efforts are being made to make it functional from village Dharol from where an effective monitoring on poachers can be done. Besides this, a good communication network among field staff by means of providing them satellite phones/ walkie talkie/ GPSor any other latest means of communication will give effective protection and of course will be of tremendous help in better management and protection of wildlife in the coming time.

3.12 SUMMARY OF THREATS TO WILDLIFE

3.12.1 GRAZING

Grazing by migratory and hereditary graziers not only poses serious threat to the habitat but also there are chances that the infection of contagious diseases may spread among the wild animals from the domestic livestock. No disease or mortality was noticed in the past but the fact needs to be studied / established and prevention on this score must be taken by way of inoculation of domestic livestock and better animal husbandry practices. As mentioned earlier, the grazing has been prohibited by the orders of Hon'ble Supreme Court of India but the rights of migratory graziers have not been settled yet and the scenario in the field is entirely different. As discussed above, this is a serious threat to the wildlife and needs to be addressed on high priority

3.12.2 PASTURE STATUS

Due to excessive grazing beyond the carrying capacity, the pastures have got degraded in many areas causing soil erosion and invasion of unpalatable grasses and bushes. This has resulted in the reduction of pasture area which is an issue to be addressed in the current plan. However, the area of reduction has not been quantified after due assessment of such areas. Since the framing of rules for grazing is a policy matter, however, keeping in view the orders of Hon'ble Supreme Court of India, the matter can be taken up with the government. Simultaneously the

efforts must be carried out by wildlife managers to tackle such pastures for immediate treatment by mobilizing resources for this purpose.

3.12.3 DISEASES TRANSMITTED THROUGH DOMESTIC CATTLE/ COMMUNICABLE DISEASES

Wildlife disease is a major protection issue. In Kugti wildlife sanctuary the chances of infection from the cattle of adjoining villages/ migratory graziers cannot be ruled out. The areas where the wild animals as well as domestic animals feed /graze frequently are more sensitive. Therefore, these area need to be sanitized, so that the disease from domestic animals does not get transmitted to the wild animals in the vicinity and vice versa. Further, the sites nearer to habitats or Goths (where the migratory graziers camp during nights) and entrance points to the sanctuary, it is necessary to vaccinate the herds of sheep and goat regularly to avoid the transmission of possible diseases.

3.12.4 HUMAN WILDLIFE CONFLICT

Crop depredation by wild animals, Grazing of cattle and collection of NTFP by Nomadic graziers and fringe villagers increase the chances of human wildlife conflict, as a result of which local people are not supportive to conservation of wildlife. Forest department (especially frontline staff) are not getting proper support from local communities, therefore management of human wildlife conflict should be the priority for management of any PA.

3.12.5 UNREGULATED TOURISM

Manimahesh Kailash Peak is one of the major pilgrimage sites as well as a popular trekking destination in Himachal Pradesh. The Manimahesh Lake also known as Dal Lake is at the base of the Kailash peak at 3,950 metres height and is also held in deep veneration by people of Himachal Pradesh, particularly the Gaddi tribes of the region. In the month of August/ September, a fair is celebrated in the precincts of the lake that attracts lacs of pilgrims. Although this lake is not inside the sanctuary area but one has to cross the sanctuary to reach this place. About 90% of the trek/ path leads to Manimahesh Dal Lake falls inside the sanctuary area and app. 7-8 lacs pilgrims visit this holy place every year that too in a very small duration of two months. This type of unregulated tourism causes damage to vegetation and change in the behavioral pattern of wild animals in general. Problems of garbage and noise pollution, damage to vegetation by locals and other tourism-generated pressures need to be addressed on high priority.

3.12.6 FOREST FIRES

During the process of rationalization, all villages were taken out from the boundary of sanctuary. As a result of this the chances of occurring fire reduced in itself. It has been noticed that no fire incident took place since last so many years. Even then the possibility of occurring forest fire cannot be ruled out. The forests adjoining to private ghasnis(pasture lands) are vulnerable to forest fire. People burn their ghasnis during winter season to have more grass in the coming season. In addition to this, the period of Mani Mahesh Yatra and movement of nomadic graziers is also sensitive from forest fire point of view.

3.12.7 POACHING

Poaching can be a threat to the existing wildlife. Of course, due to its remoteness this does not have any significant impact upon the Wildlife. Only in the event of heavy snow fall during winter, the Wild animals are compelled to climb down to lower areas and habitations in search of food when the local people do some damage to it. Besides this, people during collection of herbs and medicinal plants may indulge into poaching. This practice can be minimized through strong line of communication system and effective patrolling in the protected area through wildlife watchers and evolving effective information system amongst the local people of the area. The wildlife watchers are engaged in the sanctuary particularly in the winter season and this activity is of immense help in the protection of wildlife against poachers. However, there are no reported incidences of poaching from the sanctuary area.

CHAPTER- IV

4 PROTECTED AREA & THE EXISTING LAND USE SITUATION

4.1 EXISTING SITUATION IN THE ZONE OF INFLUENCE

The sanctuary has high mountainous peaks towards the northern, eastern and southern direction. As one goes in the western direction, the elevation goes on decreasing and the lowest point exists at the junction of Dhanchho nallah and Budhil nallah near Hadsar. One village in two hamlets i.e. Upper Kugti and Lower Kugti exists adjacent to the sanctuary. Privateland is also there at Dharol but the area is uninhabited. Only one shop exists at Dharol which caters the needs of tired migratory tribals and tourists on the way to their destination. No one lives there in the winters. Residents of Kugti village are also migratory in their habit. A few persons live there and the others migrate to Bharmour, Chamba / Kangra and Pathankot area of Gurdaspur district during the severe winters. However, with the pace of development and good connectivity by roads in the area, there is considerable amount of decrease in the age old migration to lesser harder areas down below in the planes under compelled circumstances of hardships and non availability of medical and other life saving facilities in the area. The professional poachers from outside the areas hardly ventures during the ordus winter season in the sanctuary area. Thus the villagers don't pose much of the problems in the wildlife sanctuary.

4.2 VILLAGE ADJACENT TO THE SANCTUARY

Prior to rationalization of the boundaries of sanctuary, the detail of villages existing within the sanctuary along with population is given as under:-

Sr. No.	Name of Village/Hamlet.	Population.	Remarks.
1.	Upper Kugti&Lower Kugti.	888	One village in two hamlets.
2.	Dharol.	-	Temporary inhabitation.

The whole of the population formally living inside the sanctuary was tribal. Now these villages have been excluded from the sanctuary area. The villagers have small land holdings. They grow maize, wheat, phullan, barley, potato and pulses (all purely organic) in their small land holdings. They rear sheep, goats and cattle for the agriculture needs. Apart from agriculture and marginal horticulture, a few of them run small shops of daily needs. Some of them are Govt. employees serving in the lower areas. In general, the villagers are very simple and tough. Their standard of living is increasing day by day and they have an education facility upto 12^{th} class at Kugti. Ayurvedic Health centre is also there at Kugti.

4.3 ETHNIC IDENTITIES

The villagers living adjacent to the sanctuary area are known as gaddies and they have a pastoral base of economy. Most of them migrate to Bharmour, Chamba and plains of Kangra district and Pathankot during the winters along with sheep, goats and cattle and few of them stay back at Kugti. Their migration pattern has undergone change with economy over the years. They have a rich cultural identity and their attire give them particular identity. However, with rise in the standard of living due of sale of pulses, potatoes and marginal horticulture and increased education, their general life style is changing day by day. They bear their traditional dress on specific occasions of marriages, deaths and worship of local gods and deities.

4.4 ECONOMY AND OCCUPATION OF VILLAGERS

Economically, the people are not well off but there have been an increase in their income with improved marginal agriculture and horticulture practices. They meet their annual requirement of food by practicing agriculture and horticulture on the small land holdings. The average production of food grains and fruit as per estimate of Revenue Department is given as under:-

Sr. No.	Crop.	Production in Kgs/Bigha.
1.	Maize.	73 **Kgs/Bigha.**

2.	Wheat.	24 **Kgs/Bigha.**
3.	Phullan.	9 **Kgs/Bigha.**
4.	Bharesh.	19 **Kgs/Bigha.**
5.	Barley.	29 **Kgs/Bigha.**
6.	Chenain.	16 **Kgs/Bigha.**
7.	Potato.	220 **Kgs/Bigha.**
8	Pulses.	25 **Kgs/Bigha.**
9.	Apple.	5 **Qtl./Bigha.**

The phototropic period of the crop is quite long due the severe temperate conditions prevailing in the area. Whatsoever crops are grown are harvested in the months of June- July and September-October. They had been living with nature in complete harmony along with their livestock. They migrate to Kangra district, Chamba, Bharmour and to the lower hills during the month of September and October with the onset of winter season and again start their back journey from the plains / lower hills in the summer season in the month of April and May. A few of them practice bee keeping for their domestic consumption and not on commercial scale. Collection of NTFP from sanctuary area has been prohibited by the order of Hon'ble Supreme Court of India dated 14.02.2000. However, they sell pulses, apples, wool and woolen blankets, sheep and goats in the nearest markets and make purchase of oil, grocery, cloths, utensils and other things from Bharmour and Chamba. The sale amount is just sufficient to provide them basic needs of livelihood and meet the requirement of education of their children. There are number of government schemes for their upliftment i.e. free medicines, free books and uniforms to students, housing subsidy, family and old age pension etc.

4.5 IMPLICATION OF LAND USE

The cattle's rearing is the major occupation of the majority of population and it is impossible to delink the dependency of the people on the forest resources. The quantity and quality of the livestock has to the determined on the carrying capacity of the forests and the available fodder on the private land holdings. Private land can be tilled in a better way so that the nutrient loss is less and sheet

erosion of top soil is arrested. The grazing land around the village have lot of biotic pressure wherein plantations of species fit for fuel and fodder can the raised to reduce the pressure on the main protected area. The pasture land along the corridor of migratory graziers leading to Lahaul and Spiti can be improved by rotational closure and planting of improved palatable grasses. But with the pronouncement of order dated 14.02.2000 of Hon'ble Supreme Court of India, the whole scenario has changed. This aspect may be taken up with the government so that alternate arrangement could be made for the well being of local people.

4.6 PORTECTED AREA MANAGEMENT AND ITS IMPLICATIONS

The forest department will rehabilitate the degraded forest land through assisted natural regeneration, artificial sowing and planting. The inspection/ census paths will be constructed and the old one will be repaired annually to have better monitoring of wildlife and different habitat management works in the sanctuary. By developing infrastructure in the form of paths, inspection huts, bunkers, the tourist will also be attracted towards the sanctuary. All the above activities will generate employment to the local people and research on wildlife can also be carried out for better management. At present no non-government agency is working in the area. The Forest Department is undertaking different livelihood activities aimed at increasing the income of the people living in the vicinity of sanctuary.

4.7 THE DEVELOPMENT PROGRAMMES AND CONSERVATION ISSUE

4.7.1 GOVT. AND NON GOVT. PROGRAMMES AND THEIR IMPLICATIONS FOR THE PROTECTED AREA AND ZONE OF INFLUENCE

At present, there is no Non-Govt. agency working in the area. The Forest Department is undertaking different activities aimed at improving the forests habitat conditions, making efforts to educate the masses regarding Wildlife Conservation and to promote Eco Tourism. For the involvement of non government

agencies, local bodies like Panchayats and other institutions like schools, YuvakMandals, MahilaMandals etc. are being persuaded to take part in wildlife conservation activities. To ensure more participation some eco developmental works are also being taken up in the surrounding villages.

4.7.2 ECONOMY

As already mentioned, economically the people are self sufficient. The production of cash crops in the area and other development schemes of the Govt. are helping the local people to improve their monetary status.

4.7.3 PROBLEMS FACED BY PEOPLE AND EFFECT ON THE MANAGEMENT OF PA AND ZONE OF INFLUENCE

So far as the management of Wildlife is concerned, it does not have any implication for the local public. People however, show resentment when there is man- animal conflict or some damage to the live stock or crops by the wild animals. Particularly leopard, Black Bear, Brown bear and Langur constitute man-animal conflicts for which people are quite apprehensive. Local people as well as migratory greziers also show resentment when they are restricted to graze their cattle in the sanctuary area especially during summer season. However, scientific management as well as awareness programmes can help in managing conflicts between the public and wildlife.

CHAPTER-V

VISION, OBJECTIVES AND PROBLEMS

5.1 THE VISION

"To be a well protected sanctuary in the Trans Himalayas free from any adverse biotic pressures, with an undisturbed; well protected ecosystem that is a home to a variety of flora and fauna and to develop as a centre for wildlife tourism providing a rich and hassle-free experience to eco tourists".

5.2 OBJECTIVES OF MANAGEMENT

The objectives of management of Kugti Wildlife Sanctuary are enumerated as under: -

1. To reduce dependency of local people on forest resources.
2. Improvement of Habitat for different wildlife species.
3. Protection against threats to wildlife.
4. Conservation of biodiversity.
5. Pasture Improvement.
6. Ecological Development for livelihood.
7. Eco-tourism.
8. To develop capacity-building for front line staffand local community through training and nature education programmes.

5.3 PROBLEMS/ CONSTRAINTS IN ACHIEVING THE OBJECTIVES

Since the sanctuary is located in the remote area of Chamba District of Himachal Pradesh, it is very difficult to implement the management practices in very harsh temperate climate. The working season is very limited and ranges from April to November. The skilled workers have to be imported from Bharmour/Chamba, which is quite far and makes the implementation of different operations expensive. The remoteness, harsh weather conditions and non- existence of shelters inside the sanctuary area make regular monitoring of work difficult.

Sr. No.	Objective	Problems/Constraints
1	To reduce dependency of local people on forest resources	• Location of villages: These are surrounded by sanctuary area from almost all sides. • No alternate route available for the movement of migratory graziers outside sanctuary area. • Lack of knowledge about wildlife conservation values among local people • Lack of community participation in the management of sanctuary
2	Improvement of Habitat for different wild life species	• Insufficient scientific data • Limited working season
3	Protection against threats to wildlife	• No communication facility (phone network) inside the sanctuary area. • Sanctuary remains inaccessible during December to March due to heavy snow fall • Insufficient nos. of patrolling huts/watch towers/anti poaching huts inside sanctuary area. • Patrolling and monitoring system is not appropriate and needs improvement • Unregulated religious tourism • Insufficient human resources
4	Conservation of biodiversity	• Insufficient scientific data • Frontline staff posted in the sanctuary does not have required trainings for wildlife management
5	Pasture Improvement	• Traditional route for the movement of migratory graziers. • Dependence of local people on forest resources especially NTFP
6	Ecological Development for livelihood	• Lack of awareness and sense of belongingness among local community.

7	Eco-tourism.	• Lack of publicity about Kugti wildlife sanctuary and its significance. • Lack of knowledge about wildlife conservation values among local people • Unregulated religious tourism • Insufficient infrastructure
8	To develop a comprehensive capacity-building program for front line staff and local community through training and nature education programmes.	• Shortage of specialized resource persons for knowledge exchange and guidance • Lack of awareness and sense of belongingness among local community.

5.4 MAJOR CHALLENGES FOR THE MANAGEMENT

The sanctuary is facing many challenges and a summary of the same is as under:

- **To explore possibility of alternate route for migratory graziers:**Kugti wildlife sanctuary is located on the boundaries of District Chamba, Kangra and LahaulSpiti. Tundah wildlife sanctuary is located on its north western side, whereas Dhauladhar, Nargu and khokhan wildlife sanctuaries lie in its south eastern side. The boundary of District LahaulSpiti touches this sanctuary on northern side. Thus, a contiguous patch of forests is formed by Tundah, Kugti, Nargu and Khokhan wildlife sanctuaries. Nomadic graziers which are having their traditional rights both in lower areas of Himachal as well as in Lahaul. During winters they graze their cattle in the lower areas while during summers they are dependent on the pastures of Lahaul.During the month of April/ May they start their journey from Kangra/ Una districts and follow Kangra/ Una-chamba route to reach Lahaul. During their journey they cross either Dhauladhar/ Tundah or Kugti wildlife sanctuaries depending upon their rights to reach Lahaul. The same route is followed by them while they come back from Lahaul on the onset of winter season. This practice has been continuing since last hundred of years. The number of such cattle (sheep and goats) is app. 1.5 to 1.6 lacs. With the pronouncement of Hon'ble Supreme Court order passed in IA No. 548 in Civil Writ Petition No. 202/95 dated 14.02.2000 which prohibited all such activities in the sanctuary area, there is always a situation

of conflict between front line staff and the nomadic graziers. This issue needs to be addressed on higher priority and the matter be taken up with the state government or any other appropriate forum.This is the biggest challenge for the management of sanctuary,which the PA managers are facing.

- **Unregulated religious tourism:**Manimahesh Kailash Peak is one of the major pilgrimage sites as well as a popular trekking destination in Himachal Pradesh. The Manimahesh Lake also known as Dal Lake is at the base of the Kailash peak at 3,950 metres height and is also held in deep veneration by people of Himachal Pradesh, particularly the Gaddi tribes of the region. In the month of August/ September, a fair is celebrated in the precincts of the lake that attracts lacs of pilgrims. Although this lake is not inside the sanctuary area but one has to cross the sanctuary to reach this place. About 90% of the trek/ path leads to Manimahesh Dal Lake falls inside the sanctuary area and app. 7-8 lacs pilgrims visit this holy place every year that too in a very small duration of two months. This type of unregulated tourism causes damage to vegetation and change in the behavioral pattern of wild animals in general. Problems of garbage and noise pollution, damage to vegetation by locals and other tourism-generated pressures need to be addressed on high priority.

- **Tough terrain and harsh weather conditions**: Tough terrain and harsh weather conditions prevailing in the sanctuary make it difficult for wildlife managers to manage the sanctuary. Almost whole of the sanctuary area remains under snow from Nov-Dec to Feb-March. The working period in the area is very limited.

- **Inadequate capacities**: Frontline staff posted in the sanctuary does not have required trainings for wildlife management. Department does make some efforts for in house training programmes on specific issues. However, scientific management of the area requires staff to be equipped with different skills for protection, management as well as long-term monitoring.

- **Scientific database and monitoring**: The scientific study done so far in the sanctuary area is insufficient, although some information has been gathered by local

staff. However, this information generated is not consolidated into a database. Similarly, there is no system of long-term monitoring for the area.

- **Community participation**: Due to lack of awareness about wildlife conservation, public participation is almost nil in the management of PA. There is a lack of long-term vision in PA management and people participation is purely opportunistic depending upon availability of funds. There is need to formulate a mechanism so as to link the communities for better protection and management effectiveness of the sanctuary.

5.5 SWOT ANALYSIS

Strength-

1. Wildlife heaven
2. Religious places nearby
3. Natural & Cultural richness
4. Traditional hospitality
5. Pollution free environment

Weaknesses-

1. Dependency of local people on natural resources of the sanctuary
2. Harsh weather conditions 3. Tough terrain
4. Lack of proper awareness among the community

Opportunities-

1. To Provide better opportunities to the visitors to enjoy its natural beauty
2. To develop an ideal destination for nature lovers
3. To promote as an adventurous destination
4. To conduct awareness camps.
5. To provide opportunities of studies for research scholars/ educational institutes/ universities etc.

Threats-

1. Grazing
2. Pasture status
3. Poaching
4. Shrinking habitat
5. Absence of baseline information about wild life flagship species of the sanctuary.

CHAPTER- VI

THE STRATEGIES

6.1 STRATEGY FOR ACHIEVING THE BROAD OBJECTIVES

Kugti wildlife sanctuary is a unique assemblage of high altitude flora and fauna. Keeping this in mind, the proposed strategies are focused on securing the ecological integrity of this area with its connectivity in the large landscape. This will require building better understanding about the ecosystem and putting in place a mechanism which could provide intensive management, long-term monitoring of the area and generate support of the local communities for the management of wildlife sanctuary. Major strategies for future management of the area are as under:

6.2 ZONATION

Based upon the specicifific management interventions required on account of its objectives, it is proposed to create following zones in the area:

Wilderness Zone

In this zone the area is more or less secure. The area supports alpine pastures, dense forests of different conifers and some broad leaved species. This area is proposed to be managed to continue its pristine status by intensive protection and long-term monitoring.

Restoration / conservation Zone

(i) **Rehabilitation zone**: This zone consists of areas where the degradation level is comparatively higher due to anthropogenic pressure. Degradation of natural ecosystem is principal cause for losses of biodersity and ecosystem functions. This zone is facing tremendous pressure from migratory graziers. Local people are also putting extra pressure on these areas by cattle grazing and collection of non timber forest produce. The objective of this zone will be to restore these areas which would mitigate the negative effects of degradation.

(ii) **Species specific conservation zone**: This zone consists of the conservation plan of two flagship species (i.e. Himalayan Brown Bear & Musk Deer) of Kugti Wildlife Sanctuary. Based on their relative abundances and distribution, as these are habitat specialist species, two species (Himalayan Brown Bear & Musk Deer) have been identified as flagship species for Kugti wildlife sanctuary.

Eco-Tourism zone/ tracts

This area will be used for eco-tourism activities. The objective of this zone will be to regulate the inflow of eco-tourists to the sanctuary by involving local people, thereby generating direct and indirect livelihood options for them and generate support for long-term conservation of the area. In this zone/tracts various activities which involved nature trails, sight seeing, adventure trekking, biodiversity nature trails, glaciers tours, bird watching, religious trails, photography, conservation awareness programmes etc. will be taken up.

Human Wildlife interface management Zone

In this zone different management aspects to minimize/dealwith the human wildlife conflict situation will be discussed.

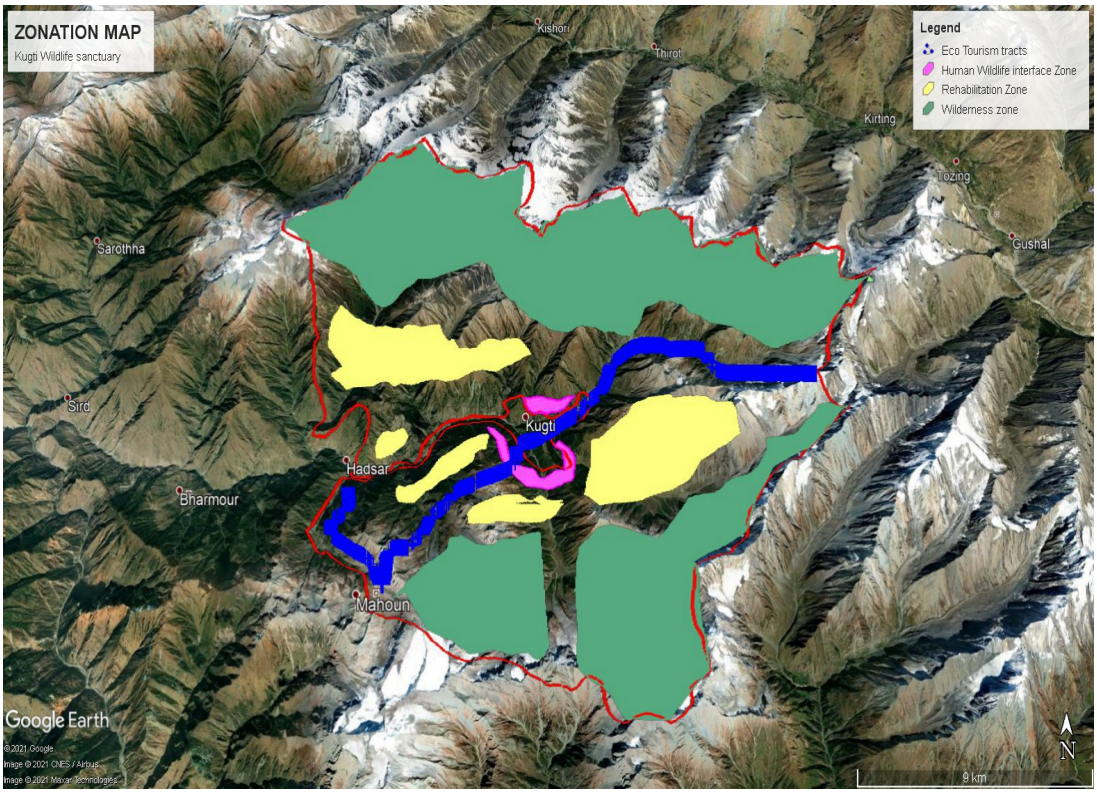
6.3 THEME PLANS

The theme plan which would be implemented in consonance with the plan objectives are as under:-

- **Protection Plan:** In this segment of theme plan, various challenges, possible threats and strategies to mitigate these constraints have been discussed.
- **Habitat enrichment Plan:** In this plan various interventions like plantation, soil& moisture conservation works keeping in view the breeding, foraging and hiding of two flagship species requirement in space and time etc. have been discussed.
- **Infrastructure development plan:** In this plan, the existing scenario of infrastructure has been identified and required infrastructure has been proposed.
- **Eco development plan:** It talks about different villages that are present around the sanctuary and various measures to involve these villages in the management of the wildlife sanctuary.
- **Research and monitoring:** In this plan various monitoring techniques have been elaborated.
- **Wildlife health management plan:** In this plan, various preventive measures against wildlife diseases have been discussed.

6.4 ZONE PLANS

Zones identify where various strategies for management and use will best accomplish management objectives to achieve the desired future of the Protected Area. Within each zone, the management prescriptions should be reasonably uniform but may differ in type or intensity from those in the other zones in order to accommodate multiple objectives.



6.4.1 WILDERNESS ZONE PLAN

This zone needs complete protection and just a minimum of restorative management intervention to secure its objectives. The forests/areas in this zone should be managed as to retain these in their pristine status and there will be no interference for development in this zone. The managerial interference here would only be protection oriented and the habitat should be regularly monitored.

6.4.1.1 OBJECTIVES

1. To maintain the naturalness and ecological integrity of area without any human interference.

2. To maintain and protect the biodiversity of the area.

6.4.1.2 PRESENT STATUS

The area supports alpine pastures, dense forests of different conifers and some broad leaved species. This zone possess intact undisturbed vegetation

6.4.1.3 RECOMMENDED STRATEGIES

Protection – A more intensive patrolling is suggested for this zone with more deployment of the frontline staff. Further details are given in Protection Plan (para 6.5.1).

Habitat restoration - This zone will primarily act as biodiversity conservation zone and needs complete protection with a minimum restorative management intervention to secure its objectives.

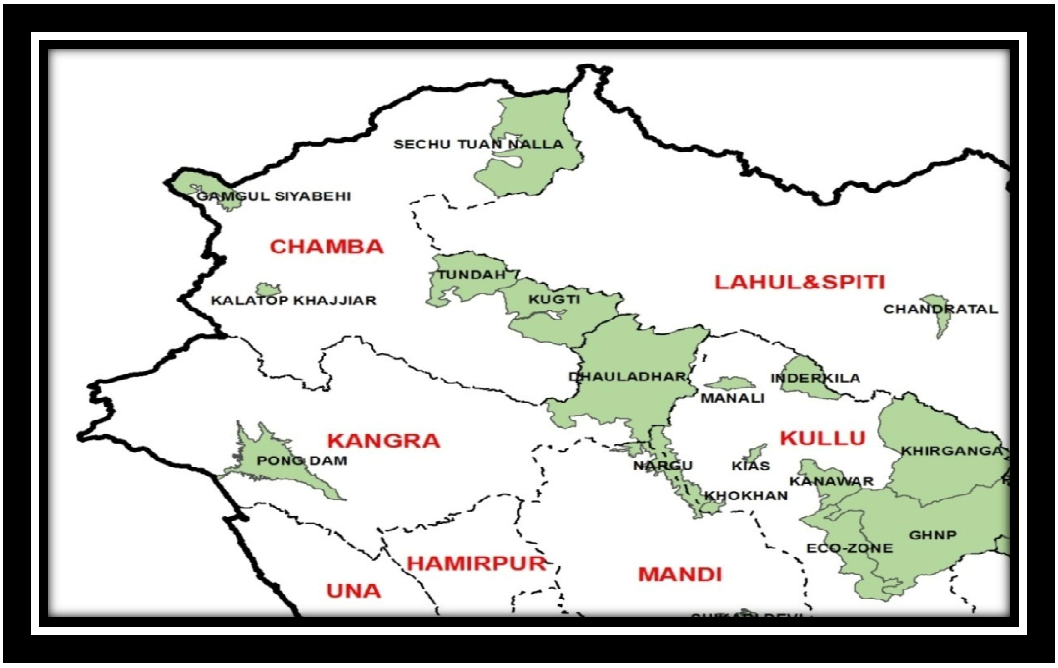
- A complete survey in this zone should be conducted in order to identify the gaps and possible augmentation activities.
- Similar survey should also be taken to identify potential soil conservation and water regime development areas.
- Further details related to these activities are given in habitat enrichment plan

Landscape approach to wildlife management

All animals move across the landscape to varying extents in order to acquire the resources necessary for survival: food, water, protective cover and mates. Man made barriers can affect each of these movement pattern and may pose a threat to the long term persistence of wildlife population. Disruption of habitat connectivity is a major impact of human activities on plant and animal populations and one of the leading causes of the biodiversity crisis.

The best solution to addressing the issues of habitat loss and fragmentation is to prevent it from occurring by preserving existing blocks of un- fragmented habitat. Creating corridors or linkage provides the means for animals to move between blocks of habitat while supporting natural levels of:

- Individual movement for needed resources (food and water etc.)
- Movements to breeding, birthing, summer and winter habitats
- Dispersal and colonization of vacant habitat
- Gene flow
- Seasonal migration
- Population movement in response to changing climate



In the past, some biodiversity conservation efforts have tended to focus on individual, local environmental challenges on smaller land areas, specific sites, or specific populations, often taking an opportunistic approach and without an eye to the broader landscape. Landscape management is an evolving concept in the conservation of biological diversity, in which conservation means much more than simply protecting a species or an ecosystem within a confined area.

Kugti wildlife sanctuary together with the areas to its north side LahulSpiti area, on north western side Tundah Wildlife Sanctuary and on south eastern side DhauladharNargu and Khokhan Wildlife Sanctuaries form a single landscape by a forest corridor which provides good shelter for many rare and endangered wildlife species. Therefore, conservation value of this landscape is immense for the conservation of the full range of species found in this region.

Efforts should be made to bring different wildlife managers and all stakeholders together to secure this landscape and develop effective conservation measures for the critical habitat across this landscape.

Kugti wildlife sanctuary houses a number of threatened species of flora and fauna. Concrete efforts should be made to declare this area as critical wildlife habitat.

Research & Monitoring – For Kugti Wildlife sanctuary available literature and ecological research data is not sufficient. Regular research and monitoring should be done on periodic basis. Details related to research and monitoring have been given in relevant chapter (Chapter IX -Research, monitoring and evaluation).

Infrastructure development- For effective patrolling and other management activities construction of watch towers/ anti poaching huts/ bunkers are proposed.Further details are given in Infrastructure development plan (para 6.5.3).

6.4.2 RESTORATION/CONSERVATION ZONE PLAN

(i) Rehabilitation zone plan

(ii) Species specific conservation zone plan

6.4.2.1 REHABILITATION ZONE PLAN

6.4.2.1.1 OBJECTIVES:

1. To identify degraded areas inside the Sanctuary
2. To restore these degraded areas through scientific/ managerial interventions.
3. To improve the habitat quality for different species.

6.4.2.1.2 PRESENT STATUS

Due to anthropogenic pressure, habitat in the area is degrading. The areasThanari Nalla (Heg Dhar), Goru-Da-Ban DPF, Dharol RF, Hal Dhar, Kangru DPF, Gharoie Dhar, Bhianu, Sarni Dhar, Dhamel Dhar, Baggi Dhar, SapparKinaour, Dughi Dhar and Nanoon Dhar are vulnerable from illegal grazing and collection of non timber forest produce. The management problem in these areas is overgrazing of grasses by domestic as well as migratory livestock. Overgrazing is the removal of plant leaves from an earlier grazing event at a rate faster than the plant recovers from. The forests in the sanctuary are potential habitat of many species; therefore proper management is vital for protecting the biodiversity of sanctuary and achieving the objectives of the management plan.

6.4.2.1.3 RECOMMENDED STRATEGIES

- Identify the drivers of degradation such as heavy grazing, exploitation of NTFP
- Stop the abuse by eliminating or strictly reducing these drivers.
- Protect the area from further degradation.

- If necessary re-introduce native species to help restoration of area.
- Efforts should be made to close these areas on periodic basis.
- Every year 5-10 hectare area will be taken up for plantation of native species of grasses in these areas.
- Use native species like Angleton grass (*Dichanthiumaristatum*), Spear grass (Heteropogon*contortus*), Fescue grass, (*Festuca spp.*), Creeping bent (*Andropogon pulmis*), Bari jhaan grass (*Pennisetum orientale*), Marvel grass (*Dichanthiumannulatum*), *Lotus corniculatus*, *Trifolium spp*, *Medicago denticulate* etc.
- Efforts should be made for site/ faunal species specific plantations.
- Removal of invasive weeds (if any) along the traditional routes of graziers.
- The areas where degradation level is high, stagerred contour trenches will be constructed and plant native spp. of grasses on the lower berm of the trenches to stop soil erosion.
- Vegetative structures will be constructed in the areas prone to soil erosion.
- Plant shrubs of nitrogen fixing species to improve soil fertility.
- Plantation of fodder trees in the village land/ agriculture land.
- Efforts should be made to provide alternate grazing sites outside sanctuary.
- Efforts should be made to provide alternate livelihood to the villagers.
- Public awareness programmes.

6.4.2.2 SPECIESSPECIFIC CONSERVATION ZONE PLAN

6.4.2.2.1 HIMALAYAN BROWN BEAR CONSERVATION SUB PLAN

The Himalayan brown bear is listed as "Vulnerable" in the Red Data Book (International Union for Conservation of Nature and Natural Resources, 1969), but not listed as "threatened" in the1996 Red list of Threatened Animals (IUCN, 2006). It is also listed on Appendix I of CITES (GOI, 1992) and on Schedule I of the Indian Wildlife (Protection) Act, (1997) as amended in 2003. Wildlife species that are listed in Schedule I of the Indian Wildlife (Protection) Act, are considered to be "endangered species and rare" and accorded highest protection. Among the four species of bear in India, the Himalayan brown bear(*Ursus arctos*) is least distributed and occurs in very low densities in the alpine region of the Greater and Trans Himalayan zones in India

HABITAT PREFERENCE

It is rare and usually encountered between 2800m to 4800m elevation. Population of brown bear is largely confined to the western and north western Himalayan regions in India. The Himalayan Brown Bears occur in rolling uplands, alpine meadows, scrub and sub-alpine forests in Kugti Wildlife Sanctuary. The potential habitat areas for brown bear during summer which includes Khabru, Duggi, Dabau, Dalotu, Baggi and Jodh Pass. The elevation ranges from 2900 – 3900m and the grassland areas are most suitable areas.

ACTIVITY PATTERN

The activity pattern i.e digging, feeding, moving and resting of Himalayan Brown Bears within Kugti wildlife sanctuary is as follow: They are active mainly during daylight hours in summer and monsoon and also less active during winter when *Prunus* sp., a principal winter food is scarce. The day time activity is maximum in the afternoon (1501-1800 hours), followed by morning and evening. They are seen maximum times within 0 to 500 m from water sources (RajkishoreMohanta and N.P.S. Chauhan).

FOOD HABITS

Understanding food habits is important to implement bear conservation and management and to assess bear distribution and habitat use (MacHutchon & Wellwood 2003). The survival of bears and their physiological activities are governed by the availability of food items and dietary components in their habitat. Both plant and animal are preferred by brown bear in their diet in all the seasons. Animal matter comprised insects, ants and unknown items including hairs, bones, jaws, teeth and claws in the bear diet. Plant matter comprised 10 plant species, but also included 58.3% unknown plant material. Known species included seeds of *Prunus persica, Prunus cornuta*, fruitsof *Rhamnus virgatus*, *Viburnum cotinifolium*, *Berberis aristata*, and Guchhi Mushroom (*Morchella esculenta)*. Scats also contained 7.2% cultivated species such as wheat (*Triticum aestivum)*, jau(*Hordeum vulgare)*, bharesh (*Fagopyrum esculentum)*, phullan (*Fagopyrum emarginatum)*, maize (*Zea mays)*, and fruits of jammu (*Prunus cornuta)*, kamulu (*Berberis aristata)* and *Rhamnus virgatus.* Other plants preferred by Himalayan Brown Bears are: *Rumex nepalensis*, *Chaerophyllumreflexum*, gucchhi *Morchella esculenta, Impatiens scabrida, Taraxacum officinale*, *Geranium pratens*, *Potentilla argyrophylla*, *Stellaria media*, *Stachys melissaefolia* and *Geum elatum*,*Chaerophyllum reflexum*, *Napeta laevigata*,

Origanu vulgare, *Typhonum seginatum and Gegea elegans* (Bipan C. Rathore & N.P.S. Chauhan)

RECOMMENDED ACTIONS

For conservation and management of Himalayan Brown Bear population, information on its ecology: population status, habitat use, behaviour, activity and movement patterns, food habits and breeding activity in the affected areas is necessary.

Protection- Entire potential habitat of Himalayan Brown Bear needs to be thoroughly combed at least twice in a year. Combing operations should be strictly prohibited during breeding season. For confirmed habitats combing operations should be done at least three times in a year.

Himalayan Brown Bear in Kugti WLS

Photo by- Sanjeev Singh, HPFS

Himalayan brown bear research- There is little knowledge about the population trends, habitat, threats and problems associated with the Himalayan Brown Bear, and there is inadequate research and monitoring of the food, population and habitat of this species. This issue should be addressed by further research and studies throughout the Himalayan Brown Bear's habitat in the area. Population monitoring will be done annually in selected areas by using Silent drive count method. Location for monitoring will be selected on the basis of direct/indirect evidences observed during patrolling of areas.

Habitat monitoring and the need for habitat restoration- It is believed that the Himalayan Brown Bear is vulnerable to anthropogenic threats, which limit the viability of the population and preclude its expansion. Furthermore, its habitat range is not fully known and the extent and quality of the brown bear population is unknown. Due to increasing populations of livestock, habitat is believed to be disturbed, fragmented and shrinking. Some pastures have been degraded by heavy livestock grazing. Apart from over-grazing, there is over-exploitation of natural vegetation for medicinal and aromatic plants. In general, there is a lack of a habitat evaluation programs and a lack of monitoring and management strategies. Additionally, there is very little information on the existing and potential biological corridors for brown bears in the area. Potential corridors are increasingly vulnerable to habitat degradation and there is an urgent need for the monitoring, protection and where necessary, restoration of these corridors.Therefore it is necessary that habitat should be monitored regularly for any changes in composition of vegetation. It is suggested that initially base line data may be collected by involving professionals from Wildlife Institute of India/other scientific institutions and proper training should be given to field staff for future monitoring on five yearly basis. It is also suggested that degraded areas should be surveyed properly during patrolling and gaps may be identified and shrub/ herb species should be planted to increase the food source for Himalayan Brown Bear.

Reduction in human-brown bear conflict- Human-brown bear conflict is identified as one of the major problems in ensuring the long-term conservation of the Himalayan Brown Bear. Although not frequent, livestock loss has been associated with brown bears, providing the potential for conflict. Conservation awareness activities are lacking in the remote parts of the Himalayan Brown Bear's distribution range. Further, the people are not aware of the methods and techniques that can be used for the reduction of loss/damage. The damage caused by the brown bear to human livelihoods has meant that in general the local people have a negative attitude towards wildlife conservation. Human-wildlife conflict in the area could be mitigated by awareness programmes among local people of the need for conserving wildlife such as the Himalayan Brown Bear, the introduction of incentive programmes and the involvement of local people in alternative income generation activities that do not present the potential for human-wildlife conflict.

Support for local people to improve their livelihoods- Without an improvement in the livelihoods of the local people, it is hard to conserve natural resources such as the brown bear and other wild animals. For this reason, species conservation needs livelihood improvement programmes. Sources of income for local people in the area are livestock (sheep/goat) farming, agriculture, collecting medicinal plants for sale, and tourism. Local people are directly dependent on resources such as fuel wood for their livelihood. Creating employment opportunities for local people will be helpful in promoting sustainable livelihoods. Non-Timber Forest Products (NTFPs)/medicinal plant cultivation on private land or community land is one of the most lucrative potential income-generation activities because the area has a unique ecological character and favours high value medicinal plants. There are considerable prospects for the production of pulses, green vegetables and fruits in the area. Efforts are required to realize these potential developments. Off-farm employment and income opportunities in this region are inadequate. Local resources and traditional

skills based on enterprise potentials have not been adequately identified and assessed. Potential exists in handicraft production, in livestock based production and in the area of traditional skills that need to be explored and promoted.

Awareness and involvement of local people –Any conservation initiative will not be successful without involving local people. Various eco development programmes that reduces the dependence of local people on the resources of Kugti wildlife sanctuary and strict protection measures are the two main strategies to conserve Himalayan Brown Bear. Regular awareness programmes for locals, students/youth are required to get their support.

6.4.2.2.2 MUSK DEER CONSERVATION SUB PLAN

Musk deer is a member of the family Moschidae. It is most threatened species and listed in schedule l of Wildlife (Protection) Act, 1972. Musk deer are small solitary, cryptic and primitive deer like ruminant. They inhabit forested mountain habitats between 2,000 m and tree line and also alpine scrub and meadows.

Musk Deer in Kugti WLS

Photo by-Sachin Sirmouri, Forest Guard

HABITAT PREFERENCE

Musk deer generally are found in areas above 2000 meter with a slight seasonal variation and mainly used areas with tree cover mixed with shrubs. Deodar forests having thick shrubs are the main habitat of musk deer. Therefore to maintain

the habitat of musk deer shrubs are extremely important as a refuge from predators and as a source of food Habitat preference.

RECOMMENDED ACTIONS

Protection- Entire potential musk deer habitat needs to be thoroughly combed at least twice in a year (Spring/Summer and autumn). For confirmed habitats combing operations should be done at least three times in a year. Care should be taken that no combing operation will be carried out during breeding season of the species.

Population Monitoring – Population monitoring will be done annually in selected areas by using Silent drive count method. Location for monitoring will be selected on the basis of direct/indirect evidences observed during patrolling of areas.

Habitat Monitoring – Musk deer is a selective feeder, therefore it is necessary that habitat should be monitored regularly for any changes in composition of vegetation and extent of ground cover. It is suggested that initially base line data may be collected by involving professionals from Wildlife Institute of India/other scientific institutions and proper training should be given to field staff for future monitoring on five yearly basis.

Habitat improvement - Musk deer uses ground cover as an anti-predator strategy; musk deer rely primarily on concealment to avoid detection. Female musk deer hide their newborn in dense ground cover vegetation to protect them from predators. Therefore, in those areas dense ground cover has to be maintained. It is suggested that these areas should be surveyed properly during patrolling and gaps maybe identified and shrub species should be planted to increase the ground cover and food source for musk deer.

Awareness and involvement of local people –Any conservation initiative will not be successful without involving local people. Various eco development programmes that reduce the dependence of local people on the resources of Kugti wildlife sanctuary and strict protection measures are the two main strategies to conserve musk deer. Regular awareness programmes for locals, students/youth are required to get their support.

6.4.2.2.3SNOW LEOPARD

The presence of snow leopard, an endangered species, listed in Schedule-I of the Wildlife (Protection) Act, 1972 in the KugtiWildlife Sanctuary was recorded with photographic evidence in the year 2010. Since then there was no

record available about the presence of snow leopard in the sanctuary. In the recent study conducted by NCF (2019), the presence of snow leopard was also recorded in the Bharmour area, though it was not in the sanctuary area. Till now there is no scientific data about the species is available. So it is recommended to conduct proper scientific study about the species and the outcome of the study be incorporated in the mid term evaluation or in the next management plan.

6.4.2.2.4 BIRDS, AMBHIBIANS AND REPTILES CONSERVATION PLAN

Kugti wildlife sanctuary is very rich in bio diversity and it is imperative that wildlife managers should focus on the conservation of each and every species found in the area. Till now, no specific scientific data about floral and faunal species is available. So, it is recommended that proper scientific study about birds, amphibians, reptiles and even indicative species of flora and fauna be got conducted and the recommendations/ suggestions may be incorporated in the management plan during the mid term evaluation of the same.

6.4.3 ECO TOURISM ZONE/ TRACTS PLAN

6.4.3.1 OBJECTIVES

i. To increase the inflow of eco-tourists to the WLS without affecting the main objective of conservation.
ii. To involve local people in tourism activities, thereby generating direct and indirect economic activities for them.
iii. To provide hassle-free, low volume and truly enriching experience of wilderness to the visitors
iv. To create awareness about wildlife conservation among masses.

6.4.3.2 PRESENT STATUS

There is a heavy potential of eco tourism in this area having very unique and aesthetic view of whole area. In this area two tracts have been identified viz; KailangBazir-Dugghi-Iliyas-grechu-Kugti pass and Budhil Nallah (below Kugti village)-Dalotu-Mani Mahesh- -Gauri kund- Sundrasi-Dhancho. The area is worth to see being a rich forest having a very high biodiversity, high mountnious, alpine pastures, small streams, a holy lake and natural water falls. At present there is one interpretation centre-cum- souvenir shop at Pranghala. This interpretation centre is a multi storeyed building having souvenir shop, interpretation hall, two bed rooms, one dormitory, a dining hall, a conference hall/ meeting room, kitchen,

accommodation for care taker and parking facility. A forest rest house having two bed rooms is also there at Kugti. These facilities can be availed for eco tourism activities. As the infrastructure mentioned above is outside the boundary of sanctuary, so, a scope is there to develop this area by providing some temporary eco friendly infrastructure like camping sites, eco huts, bunkers, rain shelters, trek routes etc. It must be ensured that eco tourism activities should be done with the participation of local people for which a local committee or society will be formed and all eco tourism activities should be executed by that committee/ society only.

6.4.3.3 RECOMMENDED STRATEGIES

- Before starting eco tourism in the sanctuary, carring capacity of the area must be evaluated.
- Formation of local eco tourism society/ committee.
- By eco tourism, impact of human activities on PA will be high. Therefore, regular patrolling should be done.
- Sanctuary literature (brochures/pamphlets) should be printed.
- The popular treks should be maintained and monitored on a regular basis.
- Proper waste management system should be established.
- Regulatory measures to ensure social, cultural and environmental sustainability as well as safety and security of tourists.
- Proper signage and detailed instruction at some prominent places.
- Further details regarding ecotourism management, capacity building of staff and community, infrastructure development etc. are given in chapter VII- Eco Tourism, Interpretation and Conservation Education.

It must be ensured that all eco-tourism activities to be executed in the PA are as per the provisions of Wildlife (Protection) Act, 1972 as amended from time to time and rules made thereunder and different guidelines regarding eco-tourism in PA issued from time to time.

6.4.4 HUMAN WILDLIFE INTERFACE MANAGEMENT PLAN

There are mainly two villages viz; Upper Kugti and Lower Kugti in the vicinity of sanctuary. Crop depredation by wild animals, grazing of cattle and collection of NTFP by Nomadic graziers and fringe villagers increase the chances of human wildlife conflict, as a result of which local people are not supportive to conservation of wildlife. Forest department (especially frontline staff) are not getting

proper support from local communities, therefore management of human wildlife conflict should be the priority for management of any PA.

6.4.4.1 OBJECTIVES

1. To assess the human wildlife conflict situation in surrounding areas of PA
2. To suggest various actions to mitigate human wildlife conflict
3. To strengthen the infrastructure required for managing human wildlife conflict
4. To involve the local people in management of human wildlife conflict on the principals of participatory approach.

6.4.4.2 HUMAN WILDLIFE CONFLICT - SENSITIVE AREAS

As discussed earlier, common sites where the wild animals as well as domestic animals feed / graze frequently and the sites nearer to habitats or Goths (where the migratory graziers camp during nights), are vulnerable sites for human wildlife conflict. However, during winter period, the chances of human-wildlife conflict increase near villages, when wild animals migrate from higher reaches to lower elevations in search of food and water.

6.4.4.3 RECOMMENDED STRATEGIES

The Human wildlife conflict is a resultant of various aspects of the natural resource degradation as well as societal stratification. Very often damage caused by the wild animals directly affects the poor, marginalized rural communities living next to the wildlife sanctuary.

Crop Depredation – There is a complete ban on the hunting of wild animals. Because of this ban, the number of wild animals has been increasing in the area. The resource-deficient villagers need to resort to labour intensive measures of crop protection and such actions mostly result in disproportionate cost of raising crops by the poor and marginal villagers. The villagers often use retaliatory measures of harming/killing the wild animals of which there is hardly any record or report. The depredation enhances dramatically when there is an increase in the number of livestock as well as the area under cultivation close to the PA; when there is a decline in the availability of the natural food; when there is an increase in the number of large wild herbivores due to “conservation measures”. In all these circumstances, the crop depredation or killings of livestock are escalated exponentially. The top crop damaged is mainly maize, wheat and top crop raider was Langour followed by Asiatic black bear and Himalayan Brown Bear.

Livestock Depredation - Due to harsh weather conditions especially during winters wild animals migrate towards lower elevation resulting in human wildlife conflict. The Rhesus macaque and Chamba sacred langurs are able to adapt themselves to the human presence. The wild animals intrude into agriculture fields as the crops raised are more palatable, and they are located in easy locations. The domestic livestock is very easy prey for the wild animals.The areas mentioned in foregoing paras are more prone to human-wildlife conflict and Asiatic Black Bear is responsible for most the of the conflicts. Crop raiding incidents problem is more severe than livestock killing.

Compensation - There is a provision of providing compensation to the person whose sheep, goats or cattle have been killed by the wild animals. Similarly, State Government through other departments is also providing compensation for the damage to agriculture and horticulture crops. In future, the situation can be quite alarming as the damage done to their crops by the wild animals is enormous. This may also adversely affect the acceptance of the conservation ideas among the locals.

6.4.4.4 RECOMMENDED ACTIONS

Proactive Actions – To prevent the damage by the wild animals.

- The villagers are already using deterrents such as making sounds, beating drums or putting up a scare crow in their fields. The WLS staff and the local villagers need to put up a combined defence against the human-wildlife conflict.
- There is a need to undertake action research on human-animal conflict so that preventive guidelines are made in consultation with the villagers.
- Regular census of ungulates and carnivores in the wild will give an insight into the prey-predator relationship. This will also help understand the carrying capacity of their habitats.
- To increase the availability of food, plantation of wild fruit trees should be done in the forests areas.
- A Joint Rapid Action Team (a mix of Territorial and wildlife staff) is suggested to be constituted to manage the incidents.
- Fencing of the cultivated land at strategic points.
- Proper waste management is very important to avoid attracting wild animals to human settlements and to prevent wild populations being augmented and artificially sustained by human induced food availability. Each stage of waste handling should be addressed, from collection to transportation to disposal. It is suggested that through various awareness programmes, local people and civil

authorities should be encouraged taking this issue seriously. Proper waste disposal is the key strategy to reduce the conflict.

- Awareness activities at different levels, for instance in schools or in village level meetings should be held regularly. These programmes are essential for building local capacity in conflict resolution and increasing public understanding of human wildlife conflict. Educating rural villagers in practical skills would help them to deal with wild animal species and to acquire and develop new tools for defending their crops and livestock

Reactive Actions - When the damage by the wild animals has already been done.

- Compensation for damage to livestock must be given timely as per rule.
- The future of human wildlife conflict resolution lies as much in the involvement of the local communities in the wildlife habitat management.
- Vide Notification No. FFE-B-A (10)-1/2009 dated 18/09/2018; guidelines for dispensing compensation for life/property losses during human wildlife conflict have already been issued by state government (Annexed as **Annexure XVI)** which should be strictly followed.

People's participation –

Resolving human wildlife issues becomes difficult without active support from the local communities. It is recommended that to increase the involvement of local stakeholders a Village level response team involving local youth from the vulnerable areas should be formed. Initially these youth should be trained to handle various issues of human wildlife conflict. Following responsibilities may be given to local youth after initial training:

- Managing the agitated locals to maintain safe distance from the conflict animal
- Communicating with the forest tranquilization team on time in respective ranges
- Wherever possible, first aid to small injured animals and birds
- Medical help to injured villagers in the conflict situation.

Infrastructure requirement-

For effective dealing of human wildlife conflict incidences and preventive measures various equipment's and other infrastructure like transportation vehicle, communication etc. are necessary requirement.

6.5 THEME PLANS

6.5.1 PROTECTION PLAN

6.5.1.1 OBJECTIVES OF PROTECTION PLAN

1. To maintain environmental/ecosystem stability of Kugti Wildlife Sanctuary
2. To protect the vast variety of flora and fauna of Kugti Wildlife Sanctuary which represent the remarkable biological diversity and genetic resources
3. To strengthen the infrastructure
4. To involve the local people in protection of Kugti Wildlife Sanctuary on the principals of participatory approach.

6.5.1.2 POSSIBLE THREATS

Following are possible threats –

- Grazing/ NTFP collection
- Diseases transmitted through domestic cattle / Communicable diseases
- Unregulated religious tourism
- Forest Fire
- Poaching

6.5.1. 3 CONSTRAINTS

1. Inadequate infrastructure and logistics support
2. Lack of proper communication system and technologies
3. Harsh weather conditions
4. Dependency of local people on natural resources.

INADEQUATE INFRASTRUCTURE AND LOGISTICS

Theoffice & residential buildings available at range headquarters and block headquarters aresufficient but some of the buildings being old require immediate maintenance. Infrastructures inside the sanctuary is almost zero. Insufficient watch towers, patrolling huts/anti-poaching huts, patrolling vehicles makes it more difficult to manage the sanctuary.

LACK OF PROPER COMMUNICATION SYSTEM AND TECHNOLOGIES

Presently the staffs are mainly located at Bharmour, Pranghala and Kugti. Mobile / Phone connectivity is upto Bharmour and Pranghala. Even Kugti is

not connected with mobile facility. There is no mobile connectivity inside the sanctuary area.The wireless communication may prove very useful in such areas for better management. Hence, the option of the wireless communication has a very high relevance. Possibility of installing wireless network may be explored.

HARSH WEATHER CONDITIONS

The cold temperature conditions are more prevalent in the area. During the winter season sub zero conditions are also witnessed.

DEPENDENCY OF LOCAL PEOPLE ON NATURAL RESOURCES

The people of Upper Kugti, Lower Kugti, Harsarand nomadic graziers are dependent on the sanctuary for various NTFPs including medicinal plants, fuel wood, fodder and cattle grazing. Therefore, reducing the dependency of the people from the sanctuary by providing them with alternate options should be one of the prime objectives of the management.

6.5.1.4 THREAT ASSESSMENT:

Threats	**Over all Status**	**Remarks**
A.Grazing / NTFP collection	High	Fringe villages's people, nomadic graziers are dependent on the resources of Wildlife sanctuary.
B.Communicable diseases	low	A number of cattle population in villages situated along the boundary of Wildlife sanctuary & nomadic graziers
C.Unregulated religious tourism	Medium	Movement of pilgrims during Mani Mahesh Yatra
D. Forest Fire	Low	Location of fringe village's Ghasnis (private pastures) Dependance of Fringe villages's people, nomadic graziers on the resources of Wildlife sanctuary.
E.Poaching/Hunting	Low	As a result of human wildlife conflict.

F. Climate Change	Not assesed	

6.5.1.5 PLAN OF OPERATION

Before discussing strategies to be adopted for better protection of PA, it is pertinent to mention here that all maps of the sanctuary must be geo referenced upto compartment level with ground truthing of the same in the field. Boundary pillars must be erected along the boundaries and full detail of each boundary pillar i.e. no. of boundary pillar, location, geo coordinates, reference point (if any) must be depicted in boundary pillar register as well as in compartment history files and beat manual.

6.5.1.5 (A) -GRAZING/ NTFP COLLECTION

Fringe villages's people, nomadic Gaddies and Gujjars are dependent on the resources of Wildlife sanctuary. Nomadic graziers use this area as a traditional route for the movement of flocks. The areas viz; Thanari Nalla (Heg Dhar), Goru-Da-Ban DPF, Dharol RF, Hal Dhar, Kangru DPF, Gharoie Dhar, Bhianu, Sarni Dhar, Oji Gan Dhar, Sia Dhar, SapparKinaour, Dughi Dhar, Nanoon Dhar are vulnerable from illegal grazing. The dependence of local people on medicinal plants of the sanctuary area can not be ruled out.

Strategies to be adopted -

1. Group patrolling
2. Strengthening of Infrastructure/communication system
3. Awareness programmes
4. Regular checking at strategic point
5. Eco development activities (details are given in **Chapter VIII**) .

Wildlife Protection Maps

There is a great need of preparing the Wildlife Protection Maps, which should indicate the hot spots of the Kugti wildlife sanctuary, topography, water/salt points, the vegetation type of these wildlife hotspots, concerned trekking routes, availability of patrolling huts and other related information.

6.5.1.5(B)- COMMUNICABLE DISEASES

Wildlife disease is a major protection issue. In Kugti wildlife sanctuary the chances of infection from the cattle of adjoining villages and migratory graziers cannot be ruled out. The following areas have been listed sensitive as well as key

sites on account of common sites where the wild animals as well as domestic animals feed /graze frequently.

Sr. No.Location.

1. Thanari Nalla (Heg Dhar).
2. Goru-Da-Ban DPF.
3. Dharol RF.
4. Hal Dhar-DPF.
5. Kangru DPF.
6. Gharoie Dhar DPF.
7. Bhianu,Sarni Dhar.
8. Oji Gan Dhar.
9. Sia Dhar.
10. SapparKinaour.
11. Dughi Dhar.
12. Dughi Dhar.
13. Nanoon Dhar.

Therefore, these areas need to be sanitized, so that the disease from domestic animals does not get transmitted to the wild animals in the vicinity. Further, the sites nearer to habitats or Goths (where the migratory graziers camp during nights), it is necessary to vaccinate the herds of sheep and goats regularly to avoid the transmission of possible diseases. Further details are given in **Wildlife health management plan (Para 6.5.6)**

6.5.1.5(C)- UNREGULATED TOURISM

Manimahesh Kailash Peak is one of the major pilgrimage sites as well as a popular trekking destination in Himachal Pradesh. The Manimahesh Lake also known as Dal Lake is at the base of the Kailash peak at 3,950 metres height and is also held in deep veneration by people of Himachal Pradesh, particularly the Gaddi tribes of the region. In the month of August/ September, a fair is celebrated in the precincts of the lake that attracts lacs of pilgrims. Although this lake is not inside the sanctuary area but one has to cross the sanctuary to reach this place. About 90% of the trek/ path leads to Manimahesh Dal Lake falls inside the sanctuary area and app. 7-8 lacs pilgrims visit this holy place every year that too in a very small duration of two months. This type of unregulated tourism causes damage to vegetation and change in the behavioral pattern of wild animals in general.

Problems of garbage and noise pollution, damage to vegetation by locals and other tourism-generated pressures need to be addressed on high priority.

Possible negative impacts:

The negative impacts of such kind of tourism can gradually destroy environmental resources on which it depends. Negative impacts from tourism occur when the level of visitor use is greater than the environment's ability to cope with this use within acceptable limits of change. Uncontrolled tourism poses potential threats to many natural areas. It can put enormous pressure on an area and lead to impacts such as soil erosion, increased pollution, natural habitat loss, increased pressure on wildlife species and heightened vulnerability to forest fires.

Noise pollution

It causes distress to wild animals in the area

Solid Waste and Littering

Waste disposal is a serious problem and improper disposal can be a major despoiler of the natural environment, lake, rivers/ Nallas, scenic areas etc.

Sewage

Unregulated tourism often leads to increased sewage pollution. Waste water pollutes Nallah and other water sources damaging the flora and fauna and also very dangerous to mankind.

Extraction of fuel wood

This area is having many high altitude threatened floral species including Betula, Rhododendrone, junipers and Taxus etc. Use of these species as fuel wood poses a threat on the existence of these species.

Collection of NTFP

This sanctuary is a home to very rare andthreatened plant species including *Bergenia stracheyi, Jurineadolomiaea, Juniperus communis, Podophyllum hexandrum, Polygonatumverticillatum, Aconitum heterophyllum, Picrohizakurroo and Selinumtenuifolium etc.* Illegal extraction and trade of these plants during this period can not be ruled out. Hence, this is a serious threat to the bio diversity of this area.

Physical impacts

Attractive landscape sites, such as high altitude pastures, lakes, mountaintops and slopes,are often transitional zones, characterized by species-rich ecosystems. Typical physical impacts include the degradation of such

ecosystems. The ecosystems most threatened with degradation are ecologically fragile type of areas, which are present in this sanctuary.

Strategies to be adopted -

1. Mani Mahesh Yatra is a fair which is controlled/ managed by district administration and Mani Mahesh temple trust. Since the tract (from Dhancho to Dal lake) leads to Mani Mahesh is in sanctuary area, so the issue of uncontrolled tourism and its negative impacts should be taken up with the administration.
2. The requisition of forest personnel and infrastructure by district administration during Yatra should be discouraged strongly.
3. Deployment of extra front line staff from other sanctuaries during this period
4. Information regarding wildlife sanctuary must be displayed in the entry gate at Harsar, Dhancho and other vintage points.
5. Group patrolling
6. Strengthening of Infrastructure/communication system
7. Installation of dust bins along the tract and disposal of garbage in eco friendly manner should be ensured.
8. Regular cleanliness drives should be organised with local civic bodies, NGOs etc.
9. It should be ensured that proper sewage disposal will be done by the authorities responsible for it.
10. Do's and don'ts of sanctuary area must be displayed at strategic points.
11. Regular checking at strategic point
12. Awareness programmes

"Tourism has the potential to increase public appreciation of the environment and to spread awareness of environmental problems when it brings people into closer contact with nature and the environment".

6.5.1.5(D)-FOREST FIRE

Fire sensitive areas –The following areas in the wild life sanctuary area sensitive from fire hazards which needs to be taken care of so that there is minimum loss to the habitat as well as to the wild life itself.

Sr. No.	Name of area.	Area in ha.
1.	Dharoal RF.	114.93 Ha.
2.	Kugti RF C-I	333.06 Ha.

3.	Kugti RF C-II	445.17 Ha.
4.	Dharoal DPF	19.54 Ha.
5.	Deosah DPF	262.49 Ha.
6.	Bihanu DPF-II.	290.56 Ha.
7.	Deosahdhar.	716.03 Ha.

Strategies to be adopted –

1. During fire season fire sensitive areas must be patrolled by the front line staff intensively.
2. Introduction of modern firefighting tools and training of staff and labor in their use.
3. Construction of new fire lines.
4. Construction of water harvesting structers/ Kaccha water ponds in the sanctuary area.
5. Regular cleaning of roads, bridle paths and inspection paths.
6. People's Participation – As almost all the fires result from human activity, the involvement of people is essential for improved prevention and control.
7. Regular meetings/ awareness programmes among local community are essential.
8. Fire fighting operations - During the fire season the following shall be done:

- Once fire is detected all hands must proceed to fight the fire, irrespective of range/jurisdictional boundaries
- Range headquarter will have enough spare sets of equipment like fire rakers, small axes, sickles, water bottles etc.
- Proper reporting of fire incidents will be ensured. The general tendency to under report has to be strongly discouraged.
- Fires watch huts/Gang huts/ Watch towers will be established at vantage points. Each watch point will be managed by three-four fire watchers. Fire watchers will be provided with mobiles/Walkie Talkie and fire-resistant kits during fire season.
- There is a need to develop a rapid response system in case of outbreak of fire. Since people do not get much in terms of fuel, fodder and rights from the

sanctuary, in such scenario, people are reluctant to put off fire. It therefore, appears that in the short term an effective network of inspection paths, which are regularly cleaned during and before the dry season is maintained and sufficient provision be made in the annual budget for this. Record of fires needs to be maintained regularly.

9. Development of extension programme to educate villagers and visitors about fire. Sign boards with suitable messages will be displayed at all prominent places in the Wildlife Sanctuary.

Fire awareness campaign at Kugti

6.5.1.5(E) - POACHING/ HUNTING

Ban on hunting has been of great help to the wildlife. Poaching in the sanctuary area is almost nil and no case of poaching has been reported during last so many years. However following actions are recommended –

- Group Patrolling and Reporting: This aspect of the wildlife protection needs very effective strengthening through patrolling by the wildlife sanctuary staff. Group Patrolling reporting proforma is attached as **Annexure XX**
- Unlike traditional patrolling by one Forest Guard, it is recommended that at least two Forest Guards along with one or two casual workers / local people need to form one patrolling party and conduct three or four long patrols in a month.

- Each patrol to cover interior areas of the sanctuary. The patrolling party has to have maps with their route shown on it.
- Full reporting on every patrol including collection of biological information is to be ensured.
- The biological and other information collected during patrolling must be organized and compiled.
- In addition to preventing wildlife crime, these patrolling reports may be very useful for the evaluation of management effectiveness and for monitoring habitats and population of target species.
- A well-accomplished Nature Awareness programme involving school children and locals can arouse public opinion in favour of wildlife conservation.

Anti-Poaching Operations-

- Winter season (November-March) is more sensitive period, therefore more intensive operations are required in these months.
- Wherever possible local people/youths should be involved in anti-poaching operations.

Reward to persons-

A reward is recommended to be given to a person or villager who renders assistance in the detection of an offence or the apprehension of the offenders. A reward is also recommended to front line staff for doing outstanding job in protection of wildlife.

Capacity building of Front line staff-

Some of the suggested courses for Forest Guards, Dy. Rangers, and Forest Rangers are:

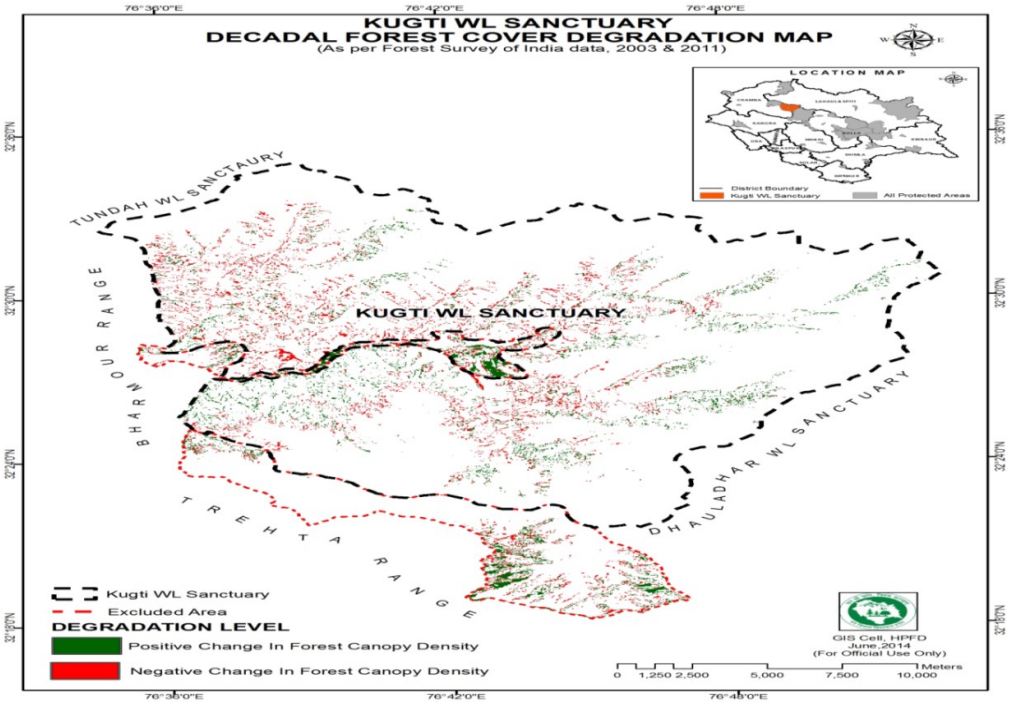
- One week module on Identification and prevention of illegal trade in wildlife, its derivatives and parts.
- One week module on intelligence gathering, investigation and prosecution of wildlife offence cases.
- One-week module on Wildlife (Protection) Act, 1972 and its application: This course will help develop standard Performa for booking forest and wildlife offences under IFA and WPA, such as Search Warrant, Seizure Memo, Bail Bond, Case Dairy/DR etc. for the entire state. This will help in making prosecution of cases simple and will reduce the chances of technical errors in filing offence cases in the court of law.
- One week module on human wildlife conflict, Nature Conservation Education, and provisions of wildlife compensation.

6.5.1.5(F)- IMPACTS OF CLIMATE CHANGE

At present, no specific data is available to assess the impact of climate change on Kugti Wildlife sanctuary. However, it is expected that in future many different types of impacts on biodiversity (individual organisms, species and ecosystems) will be felt.

6.5.2 HABITAT ENRICHMENT PLAN

Habitat management within the PA is a key to effective conservation of wildlife. Active managerial intervention, including habitat restoration will be carried out in the sanctuary for development of the forest area as ideal wildlife habitat. This would include carrying out plantations, management of high altitude pastures, soil, moisture conservation works & improvement of water availability etc.



6.5.2.1 OBJECTIVES

1. To identify degraded areas inside the Sanctuary.
2. To restore these degraded areas through scientific/ managerial interventions.
3. To improve the habitat quality for different flagship species.

6.5.2.2 PRESENT STATUS

Due to anthropogenic pressure, habitat in the area is degrading.

Degradation level of various areas within PA is shown in the above map. The forests in the sanctuary are potential habitat of many species; therefore proper management is vital for protecting the biodiversity of sanctuary and achieving the objectives of the management plan.

6.5.2.3 RECOMMENDED STRATEGIES

6.5.2.3.1 HABITAT MANAGEMENT ACTIVITIES

6.5.2.3.1 (A) PLANTATIONS

Area being moderately dense to dense forest, there is no need for tree plantation in the sanctuary. However, the assisted natural regeneration can be taken up at certain places. The rocky habitats will be maintained as such. However, some native fruit tree species will be planted in the sanctuary area, as it will provide food for the rich Avian-fauna of the area.Following areas need to be restocked through plantation or assisted natural regeneration technique-

KugtiRF ,Kangru DPF, Deosah DPF, Sapper Kinour DPF, Bhiyanu DPF, Dharoul RF &Goru Da Ban DPF

Actions to be taken –

- Every year 10-20 hectare area will be taken up for plantation/assisted natural regeneration of native species.
- Only native species of trees/ shrubs/ herbs/ grass will be planted and more emphasis will be given to assisted natural regeneration.
- Efforts should be made for site/ faunal species specific plantations
- Plantation of trees/ Shrubs/Herbs/ Grasses should be site specific.
- Three storey plantation model (Trees, Shrubs and herbs/grasses combined) depending upon the objective can also be developed.
- An integrated approach with plantation and soil and moisture conservation will be followed.
- Involvement of local people, school children, Mahilamandal, Yuvakmandal etc. will give better results of plantation.
- Following species are proposed for plantation:

1. *Aesculus indica (* Horse Chestnut*)*
2. *Juglans regia (*Walnut)
3. *Quercus semicarofolia (Ban)*
4. *Quercus baloot (Ban)*

5. *Cedrus deodara (*Deodar)
6. *Pinus wallichiana (*Kail)
7. *Pinus smithiana (*Spruce)
8. *Abies pindrow(* Fir)
9. *Acer pictum* Maple
10. *Pyrus pashia* (Kainth)
11. *Prunus padus* (Bird cherry)
12. *Pyrus pyrifolia (Sainth)*
13. *Salix wallichiana*
14. *Rhododendron (*Burans)
15. *Berberis (*Kasmal)
16. *Fragaria vesca(* Strawberry)
17. *Geranium wallichianum (*Ratanjot)
18. *Dioscoreadeltoidea (*Shinglimingli*)*
19. *Fragaria indica(* Wild Strawberry *)*
20. *Rumax* (Arrowleaf Dock)
21. *Solanum* (Mullein nightshade)
22. *Rubus* (Raspberry)
23. *Lonicera hispida* (pink honey suckle)
24. *Native species of grasses.*


6.5.2.3.1 (B) SOIL AND MOISTURE CONSERVATION WORKS - (BIOLOGICAL AND ENGINEERING)

Since, the sanctuary is being managed for conservation of wildlife, soil and moisture conservation works are of utmost importance. Engineering measures will be supplemented with vegetative measures as per site specific conditions.

The overall objectives of Soil and moisture Conservation works are:

- Increase filtration into soil
- Controlling excessive run off

- Manage and utilize run off for useful purpose.
- Improving existing water resources by plantation of water holding species

Soil erosion in Sapper Kinnor DPF

Actions to be taken/ Recommendations-

Following actions are proposed to achieve above objectives

- Biological measures will be preferred over engineering measures (wherever possible)
- A plan for soil and moisture conservation works will be prepared and work will be done systematically.
- Small kacchha water ponds
- Contour staggered trenches alongwith plantation of local grass species on their lower berm are proposed
- Soil & Moisture conservation works are proposed in Kugti RF, Kangru DPF, Deosah DPF, Joal Dhar, Saredh Dhar, Deosah Dhar, Nanoon Dhar, Karog Dhar, Sapper Kinour DPF, Bhiyanu DPF, Heg Dhar & Hal dhar.

6.5.2.3.1 (C) IMPROVEMENT OF WATER AVAILABILITY

Although, the sanctuary area has many perennial streams and many seasonal springs but some more water resources are needed to be created especially for the lean period. The type of water retention structure will depend on the site condition. As there is water deficiency the trenches and percolation ponds on higher reaches

shall be made so that the water resources and nallahs remain rejuvenated throughout year. The first and foremost step to improve water availability inside the sanctuary is to have the information of all the existing water sources and be aware of their status. This could be done by identifying the perennial and seasonal water sources through intensive survey and water mapping that area using 2x2 km grid. Any Grid square without perennial sources represents a gap. The best way to fight water scarcity is by regenerating natural sources of water and then construction of artificial water holes. Another important criterion to manage water resources inside a PA is by proper site selection. Following points should be considered for any water development works –

- A gap in water supply is not in itself sufficient reason to establish an additional water source. Clear objectives must be established.
- A large number of small and widely scattered sources are better than a few large sources.
- Water development should be avoided in areas where Endemic and rare plant species are present.
- Water development may trigger erosion on steep lands and fragile soils.
- Site which has shade trees and tall shrub or grass would be favourable – (escape cover nearby)
- Sites that are likely to be disturbed frequently by livestock, local people or traffic should be avoided.

6.5.2.3.1 (D) PROVIDING SALT LICKS

Provision of artificial salt lick affect the behavior and movement of wild animal and sometimes it also help poachers to locate the presence of the animals. Therefore, it is necessary to provide due care and protection where artificial salt licks have been provided. It is suggested that all the existing natural salt lick locations should be mapped and based on the information decision to provide new salt licks should be taken carefully. Detail of salt licks is provided as Annexure-V

6.5.3 INFRASTRUCTURE DEVELOPMENT PLAN

For the effective protection and regular monitoring, proper communication system, patrolling huts in remote areas, continuous maintenance of path and small bridges are necessary requirements. In addition, other logistic support like tents and other trekking equipment's are also required.

6.5.3.1 LIST OF TOTAL INFRASTRUCTURES AVAILABLE AND REQUIRED

1. Forest road/path-

Existing Situation	Proposed/Recommended action
Bridle paths/ Inspection paths/ Census paths Kailing to Grachu pass. 16 Km. Kugti to Chobu pass. 25 Km. Kugti to Ghiola. 16 Km. Kugti to Hali. 18 Km. Gorikund to Behanu. 16 Km. Thanari to Topi Goth 10 Km. Topi Goth to Upper Thanari10 Km.Dharolto Dharol RF. 6 Km. Bhurandudu to Dharol RF. 8 Km. Dharol RF to Hali. 5 Km. Deosah to Oji Gan. 8 Km. Kailing to Siya Dhar. 7 Km. Anderli Dhamel to Bahrli Dhamel 8 Km. Dalotu to Sarni Dhar 10 Km. Sarni to Tal. 8 Km. Tal to Gehi. 5 Km. Gharoie to Heg Dhar, 8 Km. Gehi to Gharoie 4 Km. Kailing to Duggi. 8 Km. Thantho to Tapni Gan. 8 Km.	Maintenance suggested of these path on periodic basis.

2. Check posts and Forest guard quarters-

Existing Situation	Proposed/Recommended action
• No Check post exist in the area • 3 Forest guard quarters	• It is proposed to establish one check post alongwith sufficient accommodation for staff atDharol/ Hadsar. This check post should be equipped with telephone/ wireless system facility, CCTV cameras and fire arms. Check post should be provided with regular staff of 3-4 persons. • Two additional forst guard quarters

3. Patrolling Huts/ Anti poaching huts/ Watch towers-

Existing Situation	Proposed/Recommended action
No patrolling hut/ watch tower/ anti poaching hut exists in	Construction of watch towers and anti poaching hut/ patrolling hut/ Bunkers with basic facility at following places is proposed: Halli Dhar

the sanctuary.	Goru Da Bann Upper Thanari Dhar Kugti RF C-II GouriKund Dhancho Sundrasi Nanoon Dhar Sarni Dhar Kailang Dhar Dhamel Dhar Baggi Dhar Railang Buhar Dhar Karog Dhar

4. Office and residential complex for forest officers-

Existing Situation	Proposed/Recommended action
1 No.Range office cum residence 1 No. Block officer residence	Special Maintenance of these buildings suggested on regular basis

5. Construction of other infrastructures-

Existing Situation	Proposed/Recommended action
• No proper demarcation of beats • Insufficient signages at each entry point and along the trails	• Proper boundary with boundary pillars should be demarcated and redefined. • Effective signage like Do's and Dont's, species rich areas, trekking routes etc. should be demonstrated properly on the display at each entry point and inside the sanctuary. • Periodic maintenance of the buildings and infrastructures present in the sanctuary

6. List of total instruments and logistics available and required-

Existing Scenario	Proposed/Recommended action
1. Vehicles for forest staff	
• One Bolero –DFO • One motor cycle	• One Patrolling vehicle needs to be purchased • Bike for each forest guard These vehicles will be used for effective movement of fronline staff from Bharmour to Kugti. Although the road from Harsar to Kugti has been excluded from sanctuary area, but the area on both sides of this road is inside the sanctuary.
2. Instruments and gadgets	
• Only one desktop + 1 printer +1 scanner in Range office • 9 GPS • 8 binoculars • 10 compass • 10 Range finders	• Wireless handsets/ walkie talkie sets for all forest guards • Snow Gear instruments • Sufficient Tents, sleeping bags • Trap cameras • Digital Cameras • Drone cameras • Fire resistant kits • Snake handling kits • Fire arms for self protection

6.5.4 ECO DEVELOPMENT PLAN

There is a lot of scope to promote the Eco Development activities in and around the sanctuary so that the following objectives could be achieved:

a. To provide healthy, hygienic environment to the general public residing around the sanctuary and to improve their living conditions.

b. To help the local people in ameliorating their economic status.
c. To manage the human wildlife conflict in buffer area.
d. To encourage ancillary occupation in the area.
e. To improve the agricultural productions by adopting better techniques like terracing, soil conservation measures etc.
f. To provide basic medical facilities both to human being as well as cattle.

Detail regarding specific issues, broad strategies Etc. is in **Chapter VIII**

6.5.5 WILDLIFE HEALTH MANAGEMENT PLAN

The increase in human-wildlife-domestic interface increases the threat of transmission of diseases from wildlife to human-livestock and vice versa. Therefore, disease transmission has important implications not only for wildlife management, but also for public health, livestock development, and rural livelihoods. Proper surveillance programs all year round are crucial in maintaining management health plans. This will help develop databases which will help in forecasting disease outbreaks and establish early warning systems.

6.5.5.1 IMMUNIZATION

All domestic animals and livestock around the Kugti wildlife sanctuary as well as nomadic cattle should be vaccinated against the transmissible diseases. This will prevent the transmission and introduction of diseases from wild animals to domestic and vice versa.

6.5.5.2 PUBLIC AWARENESS

To prevent wild animals from frequenting into human habituated areas, the communities living around the Wildlife Sanctuary should be made aware of the repercussion of irresponsible disposal of garbage and livestock carcasses.

6.5.5.3 EDUCATION AND TRAINING

All the stakeholders require education and training for at least basic public health concerns and bio-security to achieve the desired outcome. Protocols for handling carcasses, attending disease outbreaks, etc should be made. The field personnel should be made aware of this and given at least basic training for this purpose.

CHEPTER- VII

ECO-TOURISM, INTEERPRETATION AND CONSERVATION EDUCATION

The eco tourism in a very broad sense means venturing into and enjoying nature in such a way as to assure that negative impacts on the cultural and natural environment are minimized and mitigated. It is therefore responsive tourism which besides being ecologically and culturally sensitive helps the local community in realizing social and economic benefits.

7.1 GENERAL

As such there is great potential of eco cum religious tourism in this far flung area having a very unique and aesthetic view of whole of the wildlife sanctuary. The acquaintance with some of the most endangered flora and fauna, entourage to wildlife sanctuary becomes an eye opener and rarest moments of their pilgrimage. Such visitors will be the real ambassadors of wildlife conservation and eco diversity in the Himalayan region. It will also be a great boon for the development of religious cum eco tourism to the state.

7.2 OBJECTIVES

- To regulate the inflow of eco-tourists to the WLS without affecting the main objective of conservation.
- To involve local people in tourism activities, thereby generating direct and indirect economic activities for them.
- To provide hassle-free, low volume and truly enriching experience of wilderness to the visitors
- To promote local cultural significant sites.
- To promote traditional knowledge, cultural values and heritage.
- To create awareness about wildlife conservation among masses.

7.3 ISSUES AND PROBLEMS

The non existence of basic amenities, tough terrain, harsh weather and non availability of trekking guides entourage the trekkers as well as wildlife lovers are some of the main bottlenecks and limitations for the promotion of tourism throughout the year which needs to be addressed at very first stage.

7.4 THE STRATEGIES

7.4.1 IDENTIFICATION OF THE ZONE

Based upon the zonation of the sanctuary area, the following tracts have been identified for the eco-tourism/ religious tourism activities:

(i) Trek from kugti to grechu/ Kugti pass via KeylongBazir temple,Dugghi

(ii) Kugti – Dalotu-Manimahesh via Parikrama marg

(iii) Dhancho-Sundrasi-Gauri Kund-Dal lake route

The area is worth to see being a rich forests, high mountainous alpine pasture, natural water falls, small streams, glaciers, passes and religious places. Presence of rare and threatened floral species energize the trekkers/ hiker/ pilgrims during their journey. Presence of religious places in the area gives actual peace of mind. Although a number of wild animals are present in the sanctuary and their sighting is a matter of chance, but the chances are more here as compared to other wildlife sanctuaries in the state.

7.4.2 FORMATION OF SOCIETY/ COMMITTEE

A Society/ Committee will be constituted with the primary objective to promote and manage eco-tourism activities in the area of operation to get optimum economic returns to the local people in an environmentally and culturally sustainable way. The Society/ committee shall, for this purpose, retain the revenue receipts generated out of those government assets in its area of operation, the use of which will be allowed to the society/ committee, and utilize the same to fulfill the objectives of the society.

Role of society/ committee will be as under:

- To create awareness amongst the local people about the potential of eco- tourism in the area and its intimate linkages with conservation of natural resources.
- To build capacity of the local people and concerned government officials in managing eco- tourism in their area.
- To identify eco-trails/ tracts in the area of operation and develop infrastructural facilities along these trails/ tracts for such tourism.
- To manage the infrastructure developed by the society/ committee and /or taken over by the society from other organizations under MoU if any.

- To develop and enforce protocols to minimize the negative impacts of traditional tourism on ecology and social fabric of the area.
- To develop ways and means to attract responsible nature and adventure tourists to the identified and developed eco-trails/ tracts.
- To promote cooperatives amongst local artisans for production and sale of handicrafts/ cottage level produce or any local produce to get better returns to them.
- To set up branches of the society for the said purposes at such places as may be decided by the Governing Body of the society from time to time.
- To assist or take assistance from and collaborate with other institutions with similar activities in India or elsewhere.
- To keep close liaison with State Level Eco-tourism Advisory Committee set up in the State Forest Department and work under its broad policy guidelines on the subject.
- To engage persons for the purpose of the society.
- To carry out all activities keeping in view various provisions of related Acts, Rules , regulations and guidelines issued by the government from time to time.
- To do all other lawful things as may be incidental or conducive to achieve the above objectives.

7.4.3 INFRASTRUCTURE DEVELOPMENT

Main tourism activities in the area could be trekking, hiking and sighting of various faunal species. Glaciers, waterfalls, dense forests and high altitude pastures are also main attractions of the area. For this purpose the basic requirement would be as under:-

7.4.3.1 TREKKING ROUTES

There are a number of bridle / inspection paths inside the sanctuary area. Regular repair/ improvement of such paths will be required on periodic basis.List of bridle / inspection paths is as under:

- Kailing to Grachu pass 11 Km.
- Kugti to Chobu pass 25 Km.
- Kugti to Ghiola 16 Km.
- Kugti to Hali 18 Km.
- Gorikund to Behanu 16 Km.
- Dhancho to Gauri Kund 8 Km

- Kugti to Manimahesh via Dalotu 13 Km

7.4.3.2 TREKKING HUTS/ CAMPING SITES

Besides maintenance of already existing buildings, the following trekking huts/ camping sites are proposed to be constructed at following places:-

Sr. No.	Name of place	Nos.	Beat
1.	**2.**	**3.**	**4.**
1.	Dugghi	1 No.	Upper Kugti
2.	Dalotu	1 No.	Upper Kugti
3.	Dhancho	1 No.	Dharol
4.	Sunderasi	1 No.	Dharol
5.	Gauri Kund	1 No.	Dharol
6.	Iliyas/ Grechu	1 No.	Upper Kugti
7.	Bihanu	1 No.	Upper Kugti
8	Nanoon Dhar	1 No.	Upper Kugti
9	Dabau	1 No.	Upper Kugti
10	Hanuman Garhi	1 No.	Lower Kugti

7.4.3.3 RAIN SHELTERS/ RESTING PLACES AND BENCHES

Eco friendly rain shelters/ resting places will be developed along the trek routes to have a rest for a while in the lap of nature.

7.4.3.4 OTHER ACCESSORIES

The trekking huts have to be equipped with basic necessities like utensils, LPG connection, necessary bedding, Solar lights etc. Sleeping bags, Mattresses, Tents (Two men to six men where trekking huts are not available), Rucksacks, Snow shoes, Ice axe, Snow glasses, solar light arrangements, water bottles (2Ltr. Capacity) & walking sticks etc are to be provided.

7.4.3.5 TREK GUIDES/ HELPERS

During the trekking seasons which would be May-June to September-October, some guides/helpers will have to be engaged amongst the local residents to enable them seasonal alternative livelihood who will not only look after the maintenance of the trekking huts but also would act as guides to the tourists and assists them as and when required.

7.4.3.6 INSTALLATION OF DUST BINS

Sufficient number of dust bins will be installed along the eco tourism tracts/ trekking huts and camping sites. A proper mechanism will be developed for the disposal of solid waste. Regular cleanliness drives will be organized to keep the area clean and green.

7.4.3.7 SANCTUARY LITERATURE

Brochures/pamphlets about the sanctuary will be printed for distribution to tourists. The brochure will give the trekking map of the sanctuary including trails, list of wild animals, birds and plants. It will inform the tourists about the rules to be followed in the sanctuary.

7.4.3.8 SIGNAGES

Signage needs to be developed in the sanctuary and be placed at vantage points. Some points for inclusion in the signboards are as follows:

- Name and area of the sanctuary.
- Wildlife (Flora & Fauna) found in the sanctuary.
- Significance of the sanctuary.
- Historical background of the area.
- Rules and regulations.
- Fire safety.
- Distance from famous places.
- Do's and don'ts.

It would be ideal to develop a proper signage plan by a professional agency including the location of each signboard and content and design of each signboard. The actual signage put up will be as per the signage plan.

7.4.3.9DEVELOPMENT OF INTERPRETATION CENTRE

Nature interpretation and conservation education are integral part of eco-tourism. Interpretation centres are instrumental in changing the perception of visitors as well as those of the local community in support of conservation. Therefore, to fulfill these twin objectives, an interpretation centre-cum-souvenir

shop has already been established at Pranghala. The interpretation centre- cum-souvenir shop will perform the following functions:

- Create awareness about the sanctuary values.
- Inform people about the biodiversity of the sanctuary.
- Educate people to follow sanctuary rules.
- To promote cooperatives amongst local artisans for production and sale of handicrafts/ cottage level produce or any local produce to get better returns to them.
- To promote local culture

7.4.3.10 CAPACITY BUILDING

Local Eco-guides will be trained to acquaint the tourists about the sanctuary. The main skills for which they need to be trained are as follows:

- Knowledge of animals, birds and plants in the sanctuary.
- Wildlife interpretation skills.
- Basic principles of safety while escorting the tourists.
- Cleanliness and prevention of littering.

The field staff shall also be trained in these skills so that they can act as resource persons for future trainings. The staff posted in forest rest houses, inspection huts etc. shall be trained in basic hospitality skills by professionals, either private hoteliers or trainers from the Tourism Department.

7.4.4 REGULATIONS, MONITORING AND EVALUATION

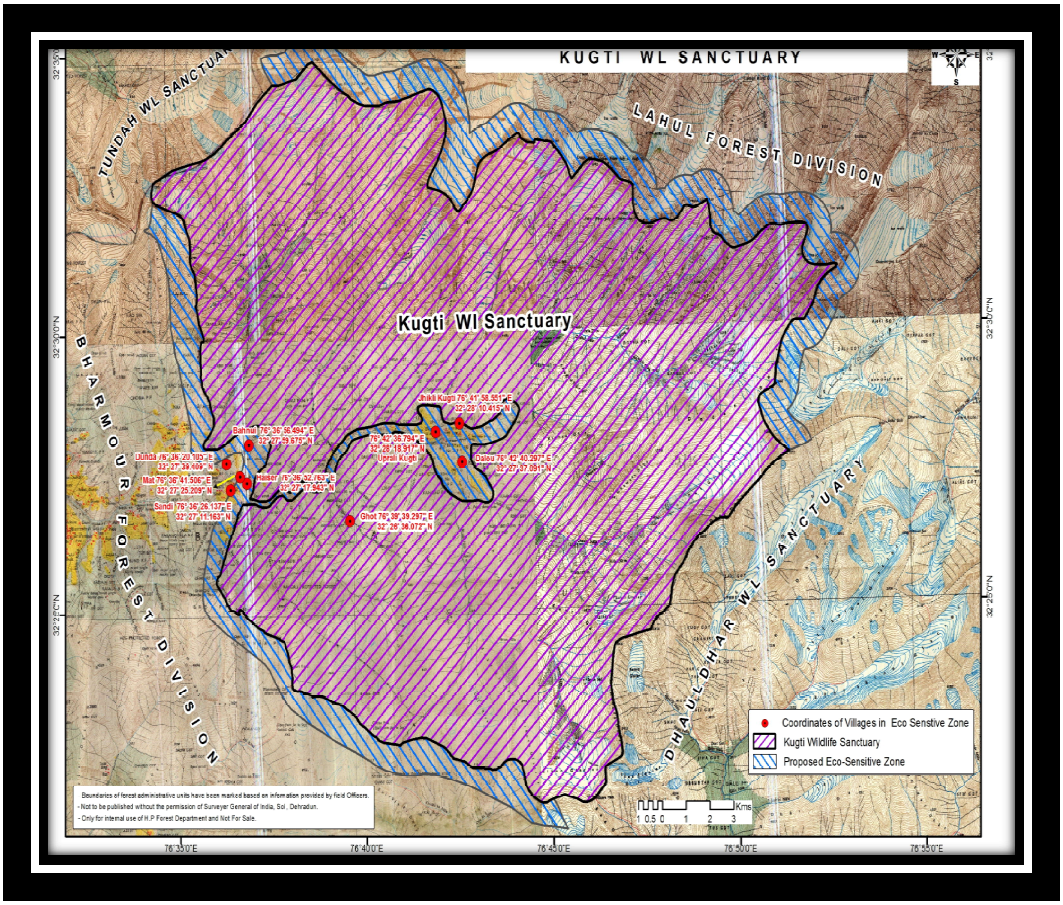
The basic information about the sanctuary be displayed from the information centre/ interpretation centre. The troop size of the visitors and timing to visit the sanctuary will be decided as per the availability of infrastructure facilities, weather conditions and subject to the conditions that there is least disturbance to wildlife. To get a feedback, proper record would be kept in the prominent places wherein the tourists can make remarks regarding the sanctuary and other observations for its development. This would also help in making more concrete efforts towards eco tourism promotion. Proper record of the number of visitors will

also be maintained.Tourists however, would be desired to create least disturbance in the sanctuary area. No weapon shall be allowed in the sanctuary area. Tourists will also be advised *not to use any kind of polyethene/ plastic*and *keep the sanctuary area clean and green*.

CHAPTER VIII

ECO-DEVELOPMENT

Eco-Development is the process by which the economic well being and quality of life of local community are improved by promoting efficient use of natural resources and alternative livelihood. There are mainly two villages viz. Upper kugti and Lower Kugti, which were earlier inside the boundary of sanctuary. After rationalization (2013), these villages were excluded from the sanctuary area. There has been a strong bonding between the villagers and forests since times immemorial. Although the gap in relationship has been increasing over the past few years due to migration of people towards towns/ cities but still the villagers are dependent on the natural resources of the sanctuary. Dependency of fringe population on the natural resources exert biotic pressure in the sanctuary and at the same time they also face the problem of human wildlife conflict. So management interventions involving local people will be in the interest of long time conservation of the sanctuary and also well being of local people.



Location of villages around Kugti WL Sanctuary

8.1 OBJECTIVES

Main objectives of various Eco-development activities would be as under:

1. To provide healthy, hygienic environment to the general public residing around the sanctuary and to improve their living conditions.

2. To help the local people in ameliorating their economic status.

3. To encourage ancillary occupation in the area.

4. To improve the agricultural/ horticultural productions by adopting better techniques like organic farming, terracing, soil conservation measures etc.

5. To provide basic medical facilities both to human being as well as cattle.

8.2 SPECIFIC ISSUES

Eco-development works will be carried out in the fringe villages by sanctuary managers. This will help in the development of the villages and at the same time it will also help to gain their cooperation for achieving sanctuary objectives. Some activities that may be carried out are as follows:

- To reduce the people dependency on the forests, it will be necessary to meet the basic requirements like fuel wood, fodder etc. by raising plantations in the vicinity of villages.Distribution of LPG gas connection and fuel saving devices at subsidized rates will be of great help.
- People are engaged primarily in agriculture and sheep rearing. To improve their economic status it becomes imperatives to initiate better agricultural techniques, better land use, introduction of better cattle breed etc.
- Construction of Water conservation structures such as check dams, van sarovars, water percolation ponds, Irrigation tanksand trenches.
- People do not pay much attention to the hygienic aspect. This requires to be improved so that the living conditions of the people are healthy one even by helping them to construct toilets.
- To aim at harmony between the ecologically dictates and the various developments, it is necessary to generate awareness among the people towards nature in general and wildlife conservation in particular.
- Other activities depending on needs of each village.

8.3BROAD STRATEGIES

There is a need to involve local people in all management practices of the sanctuary. Presence of human population near the sanctuary is an unavoidable reality. The presence of local people affects the sanctuary's biotic components in a number of ways. It is important to manage the interaction of the community with the sanctuary so that the most beneficial results are obtained for the people as well for the sanctuary.Interactions with local community are often ad hoc and without a fixed policy and direction. Therefore, true progress is not achieved without co-operative efforts. Conflicts arise because proper communication does not take place. Taking this into consideration some objectives of interaction with the local community are described in this section. Dealing with local people with well defined objectives and directions will help to achieve progress in the relationship with local people.

The objectives of the interactions with local community shall be as follows:

- Create awareness about sanctuary values among local people.
- Obtain cooperation from local community for sanctuary management.
- Give benefits to local people from the sanctuary, especially to the poor.
- Resolution of various issues and conflicts that the sanctuary authority may have with local people and vice versa.

8.4 VILLAGE LEVEL SITE SPECIFIC STRATEGIES

The strategies evolved to tackle the village level problems will be as under:

- Construction of village paths.
- Soil conservation works including terracing, check dams etc.
- Construction of public toilets.
- Provision of stall feeding for cattle.
- Construction of water ponds.
- Improvement of water channels.
- Distribution of solar cookers, Solar lights, Hammam, Gober Gas, etc.
- Afforestation in the vicinity of villages
- Distribution of implements / kits for agriculture / horticulture purposes as an incentive to the local residents to make them self sufficient in their livelihood by switching over to cash crops like vegetables, fruits etc.
- Construction of fish ponds for rearing snow trout by local residents as a supplement to their resources.
- Distribution of high yielding honey bees.
- Provision of animal husbandry facilities by distributing chicks of High yielding meat quantity, providing yaks/ bulls in semi nation facilities etc.

Kugti Village

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8.5 MONITORING AND EVALUATION

Regular meetings with all local people will be conducted, in which the progress of all eco-development activities carried out will be monitored. The representatives of local community will also be involved for the decision making, execution and monitoring of eco development activities. Local people, especially school and college children, will be involved in treks, outings and various field programmes for spreading awareness and conservation message among local people. On the basis of the response of villagers and their feedback, further strategies can be worked out and accordingly the modification can be made in the eco development plans for the well being of the habitants around the sanctuary area as well as the wild life of the area.

CHAPTER IX

RESEARCH, MONITORING AND TRAINING

9.1 RESEARCH AND MONITORING

9.1.1 MONITORING OBJECTIVES

Monitoring of wildlife population is very important aspect of wildlife management as it reveals the results of the management. Without a clear objective, monitoring may absorb considerable time without achieving anything useful. Important conservation questions that monitoring could answer include: how are the populations of species of conservation interests changing on a site? How are the populations of predator species changing? Where are the most important areas for a species? What are the habitat requirements of a species? How do populations respond to changes in the management?Changes whatsoever, in the habitat are manifested in the changing trends of wildlife. Since it is a slow process, the studies in this regard have to be on a long term basis. This comprehension is imperative to arrive at effective management techniques.

The main objectives of monitoring would be as under:

1. To carry out survey and census exercise of main species and monitor their relationship with habitat dynamics.
2. To collect baseline data which is the basic tool around which the management of the sanctuary will revolve
3. To evolve simple method for recording evaluation and observation by the field staff.

9.1.2 BASELINE SURVEY

Until and unless the basic data or the species and its number in the sanctuary area is not known, management of the sanctuary can not take off in right direction. For this purpose, the collection of baseline data is the basic tool around which the management of the sanctuary will revolve. Without knowing the specific number of each wild life species, the prescription of the management will be aiming an arrow in the wilderness. As such the baseline survey will act as booster rocket for the management plan for better results from the sanctuary in near future. To start with the baseline survey first of all tap the available ingredientsi.e. the local resources viz a viz recording of spotting of each mammal and bird from each

member of the family residing in the sanctuary area. The approximate time, date, year and place of the spotting is to be recorded from all such sources available in side and around the sanctuary area. Secondly similar information to be gathered from the local as well as migratory graziers of the area. The record on working plans or damages caused by wildlife stands reported to forest officials / other agencies with the specific location and detail of incidence. The sectarian as well as actarian generation aged people to be consulted or recorded separately for the presence of what kind of wildlife was seen 70-90 years back and when and where they saw or encountered with what kind of wildlife in the area. Further what their fore fathers use to tell about the availability of what kind of wild life species in the said sanctuary area.

The compilation of above information will prove an eye opener and will give a clear idea of what kind of wildlife species is presently available and what has not been spotted for how many years in the said area. If on an average hundred such resource persons have been interrogated the dominance of flagship as well as other associated wildlife of an area will a merge as a proof for the future management of the wildlife of the area. This will further make the management to go ahead with the specific techniques for the baseline survey of the area which can be adopted on the basis of the resources available. The topography and the terrain of the sanctuary area, the accessibility and inaccessibility to be prioritized on the basis on the information collected, making smaller units or grids for survey, line survey etc. will be ensured before taking off the ground level survey. Once the survey report is analyzed, it will be easy to proceed further in the right direction in preparing management plan in future.

9.2 MONITORING

The main target of the monitoring program is large terrestrial mammals and pheasants. Some of the methods that can be used for monitoring are described in the following sections. The techniques described can be divided into index-based monitoring techniques and absolute population estimation techniques. Monitoring by index-based techniques yields trends in populations. Monitoring must be carried out for a few years before clear population trends emerge.

The techniques described assume an even distribution of animals. Species with clumped populations or high habitat specificity, such as goral and cheer may require different monitoring techniques.

9.2.1 MONITORING TECHNIQUES FOR MAMMALS

Some mammal species are obvious and can be readily counted. However, most species are difficult to see. Some of the species of greatest conservation interest are both secretive and occur at low densities. Some of the methods of mammal census are as follows.

HIMALAYAN BLACK BEAR IN KUGTI WLS

Photo by- Sanjeev Singh, HPFS

9.2.1.1ANIMAL ENCOUNTER RATE In this method a network of routes are marked inside the sanctuary that are well dispersed inside the sanctuary. The routes should not follow the main trails only but should pass through the undisturbed parts of the forest where probability of encounters is higher. Each route should be about 4 to 5 km long. The total length of routes inside the sanctuary should be sufficient to give reliable results. These routes should be regularly walked at fixed hours in the morning and evening, when animal visibility is higher, and animals encountered along the route should be recorded. This exercise should be carried out regularly throughout the year, say once in a

month. The encounter rate of a species is defined as follows:

Encounter rate (i) = Number of animals sighted of i^{th} species

(Total length of routes walked X no. of times walked)

The encounter rate is an index of population density. If this exercise is carried out every year we can get population trends reliably. However, this exercise cannot give estimates of absolute population.

9.2.1.2SIGN ENCOUNTER RATE The sign encounter rate relies on sighting/ collection of animal signs. It is useful for monitoring populations, since their scats are highly visible. Sign encounter routes are laid as above. Since there is no compulsion on walking during morning hours or evening, the length of route can be increased to 10 km. The routes should be broad and clear with no vegetation growth so that scats can be spotted easily. Heavy human traffic should not be there on the routes so that scats are not trampled. These routes are also walked a number of times in a year and scats of leopard and other carnivores with highly visible scats, are collected.

Scat encounter rate (i) = Number of scats sighted of i^{th} species

(Total length of routes walked X no. of times walked)

The scat encounter rate is an index of population density. It is possible to obtain population trends if this exercise is carried out every year. This exercise also cannot give estimates of absolute population. It is less reliable than animal encounter rates which relies on direct sightings. However, it is useful for monitoring population trends in species wherein sightings are very low, such as leopards.

Leopard scats collected during the exercise can be analysed by microscopic examination of hair of prey in the scat samples to determine the dietary pattern of leopards.

9.2.1.3 PELLET DENSITIES

This method is used for monitoring population of ungulates by estimating density of their dung pellets. Pellet densities are estimated by laying plots in the forest all over the sanctuary and counting the pellet groups in each plot. The pellet groups refer to the small pellets deposited during a single defecation at one place. In this method, the basic assumption is that rate of defecation is constant for the species. The plots should be laid in the same season and month every year. The

number of pellet groups divided by the defecation rate gives the number of the total deer population as indicated below:

Total Deer Population= Number of pellet groups divided by Number of days for the count

This method is fairly simple but it cannot give absolute population estimates.

9.2.1.4LINE TRANSECTS SAMPLING Line transects sampling is used for estimating absolute densities of wild animal populations. A large number of straight lines, known as transects, are laid in the forest in a scientifically designed pattern. Each transect has a fixed length, generally 3 to 4 km, and a fixed orientation. Transects are clearly marked by marking the trees along transect in red or yellow paint. Bush cutting is necessary only if undergrowth is very thick.

HIMALAYAN IBEX IN KUGTI WLS

Photo by- Sanjeev Singh, HPFS

These transects are walked by observers according to a specific sampling design and observations of each animal sighting are recorded. The distance of the group is estimated by a rangefinder and a compass bearing is taken for each encounter. This data is used to estimate the perpendicular distance of the animal from transect. In this manner all transects are walked and animal sightings recorded. All transects

must be walked a number of times so that sufficient observations are obtained to make reliable population estimates. If number of observations is low, reliable estimates cannot be made. Typically 5 to 10 repetitions may be necessary. It may be possible to carry out the sampling by making monthly rounds of observations without much loss of accuracy.

Line transect sampling requires a high level of training of the observers for proper recording of observations such as compass bearings and distance estimation by rangefinders. It is also a fairly laborious technique. The advantage is that it can give reliable estimates of animal populations.

Design and layout of line transects need considerable effort. These transects need to be remarked annually if they are to be used on a repetitive basis. Considerable effort is also needed in carrying out observations. Nature enthusiast volunteers from nearby towns and even youth from local villages may be invited to participate in the monitoring exercise. If necessary, labourers may be engaged for making the observations.

9.2.1.5POPULATION ESTIMATION BY WATERHOLE COUNT

Waterhole count is a traditional method used in India for estimating wildlife populations. The waterhole count is not useful if there are extended water bodies such as perennial streams or lakes since it is difficult to count animal all along such extended water bodies. It is carried out at the peak of summer, either in May or June, depending on the date of arrival of monsoon. Well-camouflaged machans are built on trees near all perennial water sources including natural and artificial waterholes. Hides are made if it is not possible to have machans. A team of three persons keeps watch at each waterhole for 24 hours and records the mammals and large birds such pheasants coming to drink water at the waterhole. The total count of animals of each species for all waterholes is the population of that species. The method suffers from some uncertainties but is nevertheless a useful method for population estimation.

9.2.1.6TERRITORY MAPPING

Mapping is best for those species that are clearly territorial such as many primates and carnivores. In mapping, the location of sightings and territorial calls are mapped. In many mammals the territory may be held by a group and thus mean group size has also to be determined.

Territory mapping can be better done with the help of radio telemetry. The territory mapping for each animal can be fixed with regular field verification and use of telemetry.

9.2.1.7 PUGMARK METHOD FOR MONITORING LEOPARD POPULATION The pugmark method has been traditionally used for estimating tiger populations in protected areas in India. It has not been regularly used for estimating leopard population but the technique can easily be used for estimating leopard populations also. Since leopard pugmarks are smaller there is greater possibility of making mistakes in identification since small mistakes in tracing can alter the shape of the pugmark. Hence greater care needs to be exercised in tracing pugmarks.

To achieve proper impressions of the pugmarks should be on a hard surface with a thin layer of fine dust. These conditions are achieved on forest roads and trails in summer. Hence pugmark census is generally carried out in the month of May.

The original pugmark method relied on tracings on glass plates, which created possibility of error while tracing. Digital cameras can be used for taking photographs that can later be converted to pugmark outlines after transferring to the computer. This can increase the reliability of the method. Alternatively there are special optical instruments that can increase the accuracy of the tracing and minimize errors.

The pugmark census is carried out over a period of a few days, generally a week. All forest roads and trails are searched intensively for pugmarks during this period.

9.2.1.8POPULATION ESTIMATION OF LEOPARDS BY DNA ANALYSIS OF SCATS DNA analysis of leopard scats can be used for population estimation. DNA analysis can be done by taking mucous layer covering the scat and then analysing it in the laboratory. The technique is still at an experimental stage in the country. The technique may soon become generally available, but it is definitely expensive. The technique requires collection of fresh scat (within 24 hours) and its preservation by an appropriate method. DNA analysis is carried out in specially-equipped laboratories.

9.2.2 MONITORING TECHNIQUES FOR BIRDS

Birds have the advantages that they are often reasonably conspicuous; have diagnostic calls or songs and many people have the expertise necessary to identify them in the field. As a result of the ease of counting them, birds are good for monitoring environmental change. Monitoring techniques for birds are as follows:

9.2.2.1FOOT TRANSECTS

Counts along transect lines, are useful for estimating relative abundances, as well as for estimating densities.

Line transect is a simple, easy to execute method that can help in obtaining density estimate for pheasants in India. In this method, one walks along a straight line and counts animals on both sides of the line. Line transect could be permanently marked and vegetation trimmed for the observer to walk easily and carefully look for animals. In case of temporary transects, the observer walks in a straight line using a compass on a predetermined bearing. At least 2 or 3 transects of length ranging between 1 and 3 km to be laid in each habitat/area and walked at least 2 or 3 times in a month during the early morning hours. For every sighting, species, number, age and sex (if possible), sighting angle and sighting distance are measured. This information will be useful in calculating the encounter rates and density of pheasants in an area. This technique is best suited for pheasants. Software such as distance could be used to analyse line transect data for obtaining encounter rate and density estimates.

The actual number of birds encountered on transect can act as a simple index of abundance for comparative purposes. Care must; however, be taken to ensure that the visibility in the habitat is similar during all the counts being compared. A decrease in visibility may lead to fewer birds being encountered, even though the actual number may be the same. Since visibility often changes seasonally as a function of the amount of foliage, counting in the same season is an effective way of controlling for visibility. The conspicuousness of a bird also depends on its behaviour; birds, especially males, are highly visible during the breeding season when they are singing and advertising their territories. The best season for counts is thus the breeding season, when birds are most conspicuous.

9.2.2.2POINT COUNT

A variation of the transect count is the point count. Here the observer stands at

a fixed point for a specific period and count all birds, either within a specified circle (of say 25m or 50 m radius), or as far as birds can be seen (open radius). This is actually like a transect count of length zero. Each individual should be counted just once. It is often sensible to wait 5 minutes before counting so that the birds are less disturbed. The count is for a fixed period of 3-10 minutes depending upon how conspicuous the birds are. The counts should be completed as quickly as possible to reduce the risk of double counting and allow more points to be visited. Points should be at least 200 m apart to prevent double counting.

Point counts are particularly useful in areas of difficult terrain such as hills or swamps, where one cannot easily lay a straight, continuous transect.

9.2.2.3CALL COUNTS SURVEY

This method can be used for most of the pheasants which call during morning hours in their breeding season. The counts can be made from strategic point in the habitat of the particular pheasant. The number obtained can be doubled for obtaining the estimate of breeding population.

The counts of calling males assume that all the existing males in the area will call every morning. In case of Koklass the best time to carry out this count is January to June and September to December (Gaston 1980; Young et al. 1987; Ridley 1986). Most of the observations are made during the short time period of about half an hour. For observation strategic points which allow the observer to hear the birds over as wide an area as possible, should be selected. A point on the ridge allows the observer to listen to the pheasant calls on both the sides. Observation points should be marked at an interval of about 500m to 600m. All the observers must visit their observation points on the previous evening of the survey day. They should be in position well before dawn so that all the calling pheasants are counted.

9.2.2.4TERRITORY MAPPING

This is a standard method of counting birds in most ornithological studies, and regarded as the most reliable. The technique is based on locating singing males in an area on a map. This is done repeatedly (3-4 times) within a limited period (maybe a week, or the breeding season). A composite map is then prepared by overlaying the locations of each separate count. One can then find clusters of locations indicating territories of individual males. The number of each cluster is thus number of territorial males in the area, and assuming all of these are

monogamous, one can then estimate the breeding population.

An obvious limitation of this technique is its being restricted only to the breeding season and non-breeding members are left out. The technique also requires skill in identifying territories correctly from clusters (correct mapping) otherwise it can lead to interpretational errors. This would require a degree of familiarity with the general ecology of the species, which would require extra efforts. Hence this is of more limited use for a manager, than the generalised transect or point counts.

9.2.2.5ENCOUNTER RATES

Encounter rate is the simple index for abundance estimation and is expressed as number seen per unit effort. The unit effort could be time spent in intensively searching for animals in an area or it could be the distance travelled in an area intensively searching for animals. Number seen could be based on direct evidences (sightings) or indirect evidences such as calls, droppings and other signs such as digging signs for feeding.

Survey could be done along existing roads, paths, trails, ridges, and nullas or along a predetermined bearing using a compass or GPS. If the distance travelled is measured, then one could use that as effort(ER=number seen/km walked). In cases when distance travelled is not known, one could use the time spent in searching that area as effort (ER=number seen/ time spent). Indirect evidences such as calls and droppings could also be used, but one should be very careful in identification of calls of different species and calls of different individuals of the same species. Similarly, care should be taken to identify droppings or other signs of a species

Encounter rates are good for monitoring the abundance of pheasants in an area, if done regularly (monthly/ seasonally/ annually). Comparison of ER of a species in two similar habitats located in different areas could be made. Adequate number of walks per month or season is necessary for calculating mean ER and standard errors. The technique is applicable for most of the pheasants.

9.2.3MONITORING TECHNIQUES FOR PLANTS

Vegetation is a major component of wildlife habitat. It is made up of a

number of plant communities, which can be distinct entities or more diffuse merging slowly into each other. The value of the habitat for wildlife species is directly linked to the type and variety of plant communities and their conditions. Changes will have a positive or negative effect on the overall quality of a habitat for a particular habitat species. Assessing and monitoring vegetation as a basis for manipulating it in tune with management objective is one of the important aspect of protected area management. It involves qualitative processes such as floristic inventory and community description as well as quantification of factors such as vegetation cover. Some of the monitoring techniques for plants are as follows:

9.2.3.1TOTAL COUNTS OF PLANTS

Total counts seem easier than they usually are. Unless carried out methodically it is easy to miss individuals or count them twice. One approach is to grid out the entire area and systematically search each grid square, marking each individual with a flag once found. This can be very accurate and provide excellent information on distribution but is time consuming.

9.2.3.2QUADRATS

Quadrats are the most widely techniques used for the plant census. Quadrats could be rectangular strips, square (10mX10m) or circular (10m radius).

The number of individuals of the species of interest can be counted. It is usual to only count those rooting in the quadrate. Percentage cover may be used for mat-forming species or when it takes too long to count all individuals, but it is less accurate. Percentage cover is often used when the observer can stand above the vegetation or for estimating canopy cover above the observer, but it is difficult to estimate scrub or tall herbaceous vegetation at the observer's height.

9.2.4MONITORING ENVIRONMENTAL VARIABLES

It is often impossible to interpret the changes over a period of time unless there is a programme of monitoring environmental variables. Some of the environmental variables which can be measured are as follows:

9.2.4.1TEMPERATURE

Maximum-minimum thermometers can be used to give the daily temperature range. They are best located 1.25 m above ground as this is the standard

height for meteorology (and thus best for comparison with other sites).

For conservation studies, thermometers are often located in relation to the ecology of the species being studied. Recording of temperature at set intervals is very good for ecological measures of microclimate. For ectotherms in temperate areas, temperature is often critical; sward height, aspect, slope and colour may all have marked effects on the local temperature and detailed measurements can help interpret the ecology and behaviour.

9.2.4.2RAINFALL

Rain can be collected in open containers, but they are likely to be inaccurate due to evaporation. For accuracy rain-gauge can be used.

$$\text{Rainfall} = \frac{\text{ml or cm}^3 \text{ of rain}}{(\text{Diameter of rim of gauge in cm})^2}.$$

A rain gauge should be positioned such that water does not get splashed in and all the standing objects like trees etc. are four times their height away. Rain gauges are usually emptied daily at a fixed time. If visited irregularly then a little oil may be added to reduce evaporation.

9.2.5 MONITORING HUMAN IMPACT

It is often useful to be able to document human impacts such as the number of offences, number of visitors and mining in the area etc. The approach is same as in monitoring populations or environmental variables. It is necessary to find a sensible sampling regime and a repeatable way of monitoring. Without precise definition it is difficult to distinguish variation in classification from actual changes.

9.2.6 PHOTOGRAPHIC MONITORING

Photographs are a good way of documenting changes to sites. Photographs are not usually useful for documenting small scale changes for which data from Quadrats is usually preferred. Aerial photographs are invaluable for monitoring and documenting gross changes to sites, such as changes in the extent of woodland. A series of photographs may show changes imperceptible to site managers, especially when managers change. Photographs may also be valuable for legal uses although the documentation must then be rigorous. Photographs can be a very dramatic way of illustrating change and problems and are likely to be of more

widespread public interest than, presenting data on changes in species composition within a quadrate.

9.2.7 RECOMMENDED POPULATION ESTIMATION AND MONITORING METHODS

The **animal encounter rate** and **sign encounter rate** technique will be used. Trails 4 to5 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.

HIMALAYAN BROWN GORAL IN KUGTI WLS

Photo by- Sanjeev Singh, HPFS

The **pugmark method** will be used for estimating leopard population. Training in the proper technique is very important to prevent the staff from making mistakes. The **line transect** method will 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 will 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. Hired manpower may be necessary for line transect surveys since every transect needs to be walked by two people. Educated and intelligent young men should be identified and hired from the surrounding villages. Volunteers from Chamba and nearby town may also be called for the line transects exercise. Care

should be taken that they are well trained.

The **point count** method of population estimation of bird will be used. 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.

The **territory mapping** method of counting pheasants will be followed. Due care should be taken in identifying the call, recording observation and overlaying the locations on the map. **Line transect** method will be used for density estimation of pheasants. **Encounter rate** method should be used for relative abundance of the pheasants.

In addition to above methods, modern day tools and techniques like **Trap cameras**should also be used for effective monitoring of faunal species especially nocturnal ones. The modern camera trap is simply a digital camera connected to an infrared sensor which can see warm objects that are moving, like animals. When an animal moves past the sensor it causes the camera to fire, recording an image or video to the memory card for later retrieval. Camera traps can be left in the field to continuously watch an area of habitat for weeks or even months, recording the rarest events which occur in nature.Camera traps are also wildlife friendly asthey cause little or no disturbance to wildlife.

For monitoring of plants **circular Quadrats** will be laid. Centre point of the quadrat should be fixed and observation should be taken annually on a fixed date of a particular month. Circular plots of 10m radius for trees and sapling, 5m radius for shrubs and seedlings and 1m radius for ground cover should be laid.

Monitoring of indicative species of flora and fauna (orchids, lichens, insects amphibians etc.) will be done regularily.

9.2.8 MONITORING DURING REGULAR PATROLLING WALKS

Animal encounters and animal signs observed during regular patrolling walks should be recorded in specified formats. The animal signs recorded shall be mainly of Black Bear and leopard pug marks and well preserved scats.

HIMALAYAN BROWN BEAR IN KUGTI WLS

Photo by- Sanjeev Singh, HPFS

9.2.9 RESEARCH NEEDS IN THE SANCTUARY

Sanctuary managers often function in an information vacuum. Research in a sanctuary can contribute considerably to effective management of the sanctuary by providing useful information on the biological features of the sanctuary.

Research studies may be carried out according to the preferences of the researcher. Some important areas for research in the sanctuary are:

Surveys of flora, pheasants, mammals, reptiles and amphibians, carrying capacity of the area, evaluation of eco system services, behavior and habits of mammals etc.

- Water conservation studies
- Studies on prey-predator ecology
- To conduct studies regarding food habits of important animals and impact of migratory graziers on the wildlife
- Evaluation of pastures

- Man-animal conflict
- Corridor studies and other landscape level planning studies

Research/ studies already done are attached as Annexure- XVIII

9.3 TRAINING

Training is a very important tool for capacity building and improving the professionalism of sanctuary staff. The sanctuary staffs, while carrying on their normal protection duties, also need to develop an understanding of various issues related to sanctuary management at a professional level. Capacity building in this regard can best be achieved through trainings designed for this purpose.

Improving the knowledge and capacity of the staff has several benefits. It helps them to carry out their duty with an increased understanding and awareness and hence with increased dedication. It gives them more confidence in their work. This helps them to deal with various stakeholder groups, such as local people and tourists, with more confidence. Improved skills and knowledge will improve their productivity and quality of output.

9.3.1 ON JOB TRAINING

To manage ecosystem with the basic purpose of wildlife management is a highly technical subject. Wildlife is dynamic component of the ecosystem which requires a well trained forester to comprehend, appreciate and manage. It is highly imperative that short trainings, in house trainings, refresher courses, exposure visits etc. for the field staff are made a regular feature, so that they keep abreast with the latest developments regarding different management techniques.

9.3.2 FORMAL TRAINING COURSES

Regular training courses being conducted at wildlife Institute Dehradun impart a useful technical know how. The officers/officials dealing with the wildlife management will be trained. Besides this to acquaint with the latest management techniques adopted in different states on India, short training will be arranged for the officers and field staff.Some areas where training will benefit the staff are as follows:

- Knowledge and identification of mammal species found in the sanctuary, habits of species, biology and ecology of important species.

- Identification of bird species found in the sanctuary
- Knowledge of reptile and amphibian species found in the sanctuary
- Knowledge and identification of plants, including medicinal plants found in the sanctuary
- Soil and water conservation techniques
- Sanctuary ecology, inter dependence of plant and animal species
- Monitoring methods, population estimation methods
- Anti-poaching skills and documentation of offence cases
- Wildlife interpretation skills
- Wildlife tracking and field signs
- Conflict resolution skills for dealing with local people
- Weapon training
- Controlled burning techniques
- Nursery techniques
- Darting and trapping wild animals
- Use of instruments such as compass, binoculars, digital camera etc.
- GPS skills
- Computer literacy

Field staff will be given small projects on which they should collect information from the field such as information on mammal, bird or plant species. They should make write-ups and give presentations on their project.

Training will also be imparted to local people, particularly guide and tour operators with the intention of upgrading their skills for tourism. Some training subjects are:

- Sanctuary rules
- Skills of dealing with tourists
- Interpretation skills

Basic information on identification of species, tracks and signs, habits of species. Professional organizations will be involved in developing and conducting training programmes. Officers of the department should also be involved in training programmes

9.3.3 EXISTING CENSUS / TREKKING ROUTES AND TRANSECTS

The existingcensus / trekking routes and transects meant for the census purpose are as under:-

Sr. No.	Name of Path	Particular	Length (in KM)
1	Thanari to Topi Goth	Census Path	10
2	Topi Goth to Upper Thanari	Census Path	10
3	Dharolto Dharol RF	Census Path	6
4	Bhurandudu to Dharol RF.	Census Path	8
5	Dharol RF to Hali.	Census Path	5
6	Deosah to Oji Gan	Census Path	8
7	Kailing to Siya Dhar	Census Path	7
8	AnderliDhamelto BahrliDhamel	Census Path	8
9	Dalotu to Sarni Dhar	Census Path	10
10	Sarni to Tal.	Census Path	8
11	Tal to Gehi.	Census Path	5

12	Gharoie to Heg Dhar	Census Path	8
13	Gehi to Gharoie	Census Path	4
14	Kailing to Duggi	Census Path	8
15	Thantho to Tapni Gan	Census Path	8

These paths alongwith their Geo Coordinates are required to be depicted on the map.

9.4EVALUATION OF ECOSYSTEM SERVICES

The advantage of including the concept of ecosystem services in management is that it encourages a wider consideration of the benefits and stakeholders involved in an area. Ecosystem services are usually categorized intoProvisioning, Regulating, Cultural and Supporting services which include all type of physical goods and non extractive benefits from the environment. Consideration of this range of services and of who benefits from them locally and in other areas helps to build sustainability and wider societal support for management decisions. So, evaluation of various ecosysyem services is must and will be got done by some professional agency.

9.5 MANAGEMENT EFFECTIVENESS EVALUATION (MEE)

Management Effectiveness Evaluation (MEE) is an useful tool to assess the effectiveness of management initiatives and to understand better what is working and what is not, and to plan any necessary changes as efficiently as possible. Normally management effective evaluation is done by regional expert committee. In addition to this it should also be done (in house) on regular basis to assess the effective implementation of the management plan.

9.6 REVIEW OF MANAGEMENT PLAN

"Mid term review of the management plan will be carried out by some expert agency.The purpose of mid term review is to assess the extent to which management of PA to which the plan applies has been undertaken in accordance with the plan, including the extent to which key performance indicator targets are being achieved".

This review will be strategic review and all the component of Management plan including Vision, Goals and Objectives will be reviewd to make it updated as per current policies, rules and requirements.

It is suggested that every year all the monitoring and evaluation data will be compiled and analyzed. Based on this analysis APO for the next year will be modified.

CHAPTER -X

ORGANISATION AND ADMINISTRATION

10.1 STRUCTURE AND RESPONSIBILITIES

In the present set up Kugti Wildlife sanctuary is controlled by a Range Forest Officer (Wildlife) stationed at Bharmour. There is one block officer stationed atkugti. The administrative/management unit is the Beat. The Beats are managed by forest guards. The detail of beats is as under:-

Block	Block HQs	Beat	Beat HQs	Area of beat (In Hac.)
Kugti	Kugti	Upper Kugti	Kugti	28153.21
		Lower Kugti	Kugti	5827.17
		Dharol	Darati/Dharol	6569.52
			Total Area	40549.90

Over all supervision of works is done by Range Officer, Wildlife Range Bharmour. He draws out the plan of operation and accordingly the works are executed after its due approval. The Block officer gets the various development

works executed through the Forest Guards. The Forest Guards, besides undertaking plantation and other infrastructure works are also the main guardians of wildlife within their respective jurisdictions. They have to ensure the protection of wildlife by way of effective patrolling within the sanctuary and making continuous awareness campaign among the local public regarding the significance of wildlife and nature conservation.

Censes/Survey operation and other related activities become a joint venture of the staff and experts with association of local residents which makes them more and more aware and sensitized about the importance and co existence of wildlife with that of man.

Keeping in view the envisaged multifarious developmental activities throughout the year, larger area of the sanctuary, tough terrain and harsh weather conditions it is proposed to create two more beats for effective management of sanctuary. The staff strength is also required to be increased accordingly. Following staff is proposed for strengthening the human resource in the wild life sanctuary:-

10.1.1 SITUATION OF THE PRESENT STAFF AND FUTURE REQUIREMENTS

Sl. No.	Post	Existing staff	Posts to be created	Remarks
1	Divisional Forest Officer, Wildlife division Chamba	1	0	-
2	Assistant Conservator of Forests, Wildlife division	1	0	-
3	Range Officer, Wildlife Range Bharmour	1	0	-
4	Block Officer	1	0	
6	Forest Guards	3	4	2 for additional beats and 2 for check post
7	Class IV workers	2	4	For office, FRH, Patrolling huts

10.1.2 RECOMMENDATION

At present, there is only one block officer and three forest guards. For effective management of the sanctuary it is suggested that two more forest guard posts may be created to strengthen the management of Kugti Wildlife sanctuary. At present, there is no check post. So one check post is recommended to be constructed at Dharol/ Hadsar. For this check posts additional two forest guards would be required as mentioned above. The check post should be equipped with telephone/ wireless system facility/ walkie talkie, CCTV cameras and fire arms.

10.2 STAFF AMENITIES

10.2.1 RESIDENTIAL ACCOMMODATION

The Staff posted in the sanctuary is provided with Govt.accommodation. The existing Buildings/ housing for the staff and additional requirement are as under:-

Sl. no.	Post	Currently available	Total needed
1	Range Office at Bharmour	1	1
2	Range officer Residence, Bharmour	1	1
3	Block Officer Residence	1	1
4	Forest Guard quarters	3	5
5	Check post at Dharol/ Hadsar with additional staying accommodation	0	1

10.2.2 UNIFORM AND FIELD EQUIPMENTS

Proper uniforms and field equipments(including field gear and equipment for high-altitude climbing and trekking) should be provided to the frontline staff regularly.

10.2.3 INCENTIVES AND AWARD

For management of PA, motivated frontline staff is necessary requirement. Therefore, it is recommended that suitable appreciation, recognition, award or some incentives should be given to staff who perform outstanding duties.

10.3EDUCATION FACILITY

For education purposes, the schools exist at following places:-

Name of School	Standard	Location
Govt.SSSKugti	Senior Secondary	Kugti
Govt. SSS Harsar	Senior Secondary	Harsarl
Govt. SSS Bharmour	Senior Secondary	Bharmour
Govt. primary School Upper Kugti	Primary	Upper Kugti
Govt. primary School Lower Kugti	-do-	Lower Kugti

10.4. MEDICAL FACILITY

1. Govt. Ayurveda . Dispensary at Lower Kugti

However, since the staff has to negotiate tough terrain & inclement weather condition & mobility is also mainly on foot, thus to meet exigency on account of ill health in such areas, it is necessary to impart basic training to the staff regarding First Aid and should be provided with the necessary Kits, so that not only staff but local residents can also be rendered help in hard situations. Vaccination and life insurance of the staff is also an integral part of medical facility.

10.5 CAPACITY BUILDING OF THE FIELD STAFF

The following are basic topics, which should be known by everyone in the field staff (Forest Guard, block officer and Forest Ranger) in varying degree of details and understanding:

- The importance of nature conservation and Protected Area
- Use of GPS, Camera traps, Drone Cameras and other modern equipments.
- A few terms relevant to biodiversity conservation
- Introduction and identification of local flora, vegetation/forest types
- Introduction and identification of local fauna (mammals, birds, reptiles, etc)

- Elementary field methods for vegetation and animal population sampling
- Laws regarding forest and WL protection
- Effective dealing with human wildlife conflicts
- Protection measure , intelligence gathering and crime control
- Patrolling and Reporting
- Conducting Anti-poaching operations
- Law enforcement procedures
- Collection of evidence effectively for forensic examination
- Maintenance of equipment and other facilities
- Fires and control of Forest fires
- Map-reading
- First Aid and medical care
- Monitoring of the impact of villages and community on the PA
- Importance of local people in nature conservation
- Importance of linking conservation efforts to the livelihoods of the villagers
- Importance of local knowledge in biodiversity conservation

10.6 TRAINING FOR THE LOCAL PEOPLE/OTHER STAKEHOLDERS

- Capacity building workshops for local villagers (alternative livelihoods)
- Orientation and vocational training of tourist guides.
- Awareness /sensitization workshop for hotel/home stay owners , shop owners
- Special educative programs for school teacher and students
- Waste management training

CHAPTER XI

BUDGET

11.1 BUDGET SUMMARY

The Forest department will be the main executing agency for the implementation of the present Management Plan for the Kugti wildlife sanctuary. The management of habitat, protection activities, eco-tourism, eco-development, human-wildlife conflict, monitoring, capacity building of the staff and community are the main focal points for this Management Plan.

11.2 FUNDING AGENCIES

The main funding agencies for the Management Plan of Kugti wildlife sanctuary will be as under:

- H.P. Forest Department
- Government of India - Centrally Sponsored Schemes (CSS)
- CAMPA funds
- Tribal Sub Plan Schemes

The APO for next ten years is attached as Annexure XV

CHAPTER-XII

THE SCHEDULE OF OPERATIONS AND MISCELLENEOUS REGULATONS

12.1 THE SCHEDULE

The area being high attitude one, works are necessarily to be executed before the winter season. With this time constraint the works have to be meticulously planned. In this context the instructions issued from time to time have to be followed in letter and spirit.

12.2 RECORD OF DEVIATION AND IMPLEMENTED TARGETS

The final execution of works would depend upon the finance availability. But still the deviation from the plan prescriptions should be brought on record so that the plan objectives are not defeated.

12.3 THE RECORD OF EMPLOYMENT POTENTIAL

All works in the sanctuary though will improve and manage the habitat for Wildlife, yet at the same time there has to be a healthy and cordial relation with the common people of the area around the wildlife sanctuary. For their benefit, we have to give them gainful employment through various developmental works. In this way not only their income will be supplemented but also they will feel involved in this activity.

12.4 MAINTENANCE OF COMPARTMENT HISTORIES AND BEAT MANNUALS

The Compartment histories and beat manuals would be maintained in such a way that all forestry operations carried out in the area as well as general condition of the forests with relation to the wildlife trends, digital maps of the forests upto compartment level, Geo- coordinates of boundary pillars, census results will also be recorded.

Annexure- I

NOTIFICATION OF SANCTUARY (FACSIMILE)

GOVERNMENT OF HIMACHAL PRADESH

FOREST DEPARTMENT

No.5-511/70-SF Dated Shimla-2 the 27th March 1974

NOTIFICATION

Whereas the Government of Himachal Pradesh state after due consideration is of the view that the areas mentioned in the Schedule below are of adequate ecological, faunal, floral, Geomorphologic, natural or Zoological significance.

Now therefore, in exercise of the powers conferred on under Section 18 of the Wildlife (Protection) Act, 1972, the Governor of Himachal Pradesh is pleased to declare the aforesaid areas as sanctuaries for, the purpose of protecting propagating or developing Wildlife or its environments.

SCHEDULE

Sr . No.	**Name of Sanctuary**	**Name of (a) Distt. (b) Division. (c) Range**	**Situation of the sanctuary.**
1.	2.	3.	4.
	Kugti Game Sanctuary.	(a) Chamba. (b) Dalhousie. (c) Bharmour.	North: Hari Dhar East: Kinour Dhar South: Heg Dhar. West: Dhanchho.

By Order
P.N. Mattoo,

Secty. (Forests to the Govt.of H.P.).

Annexure- IA

(Authoritative English Text of this Department Notification No. FFE-B-F (6)11/2005, Dated 28th July, 2010 as required under Article 348 (3) of the Constitution of India).

GOVERNMENT OF HIMACHAL PRADESH

DEPARTMENT OF FORESTS

No. FFE-B-F(6) 11/2005 Dated Shimla-2, the 28th July, 2010.

NOTIFICATION.

Whereas, the Governor, Himachal Pradesh, after careful consideration is of the view that the area mentioned in the Schedule below are of adequate ecological, faunal, floral, geomorphologic, natural or Zoological significance.

Now therefore, the Governor, Himachal Pradesh in exercise of the powers vested in her under Section 18 (1) of the Wildlife (Protection) Act, 1972 is pleased to declare her intention to add the aforesaid areas as specified in the said schedule as extension to the Kugti Wildlife Sanctuary, notified vide Notification No. FFE-B-F-(8)-6/99 dated 23-10-1999 by including an area of 90 Sq. Km to the existing Kugti Wildlife Sanctuary having area on ground 324.30 sq. km. (notified area 379 sq. km.) for the purpose of protecting, propagating, or developing wildlife, or its environment.

SCHEDULE

Sr. No.	Name of WL Sanctuary to be extended.	Constituents i) District ii) Division	Proposed boundaries of the area to constitute as inclusion to the existing Kugti Wildlife Sanctuary
1.	Kugti WL Sanctuary	i) Chamba ii) Bharmour	**NORTH:-** Starting from the common boundary line of District Lahaul&Spiti and Wildlife Sanctuary Tundah at conjunction point Vara Kanda at 5857 Mtr. Height, follows Chobia Pass at 4466

			Mtr. Height and Wildlife Sanctuary Kugti towards Eastern direction. **EAST:-** Starting from Chobia Pass on boundary line of District Lahoul&Spiti follows boundary of Kugti Wildlife Sanctuary via conjunction point at 4460 Mtr. Height along Chobia Nallah up to Kao at 2940 Mtr. Height towards Southern direction. **SOUTH: -** Starting from conjunction point of Kugti Wildlife Sanctuary at 2940 Mtr. Height follows drun at 4225 Mtr. Height up to Tundah Wildlife Sanctuary towards Western direction. **WEST: -** Starting from the conjunction point along Tundah Wildlife Sanctuary at boundary line follows Bara Kanda at 5857 Mtr. Height up to boundary of Lahaul and Spiti district.

Area: - This area of 90 sq. km shall constitute extension of the existing 324.30 sq. km area of KugtiWildlife Sanctuary.

By Order

Addi. Chief Secretary(Fis)to the

Govt. of Himachal Pradesh.

Endst.No.FFE-B-F (6)11/2005 Dated Shimla-2 the 28th July, 2010

Copy forwarded to:-

1. All the Administrative Secretaries to the Govt. of H.P. Shimla-2.
2. All the Divisional Commissioners, Shimla, Mandi and Dharamshala, H.P.

3. All the Heads of Department 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. The Conservator of Forests (Wildlife) (North) Dharamshala.
7. The Conservator of Forests(South)Shimla H.P.
8. The Conservator of Forest GHNP Shamshi. Kullu.
9. All the Deputy Commissioners in H.P.
10. ALL the CCFs / CFs/DFOs in H.P.
11. All Commissioner ,Municipal Corporation, Shimla.
12. The Controller ,H.P. Printing and Stationary Department Shimla-5 for publication in the Raj-Patra(Extra-ordinary)Five Copies of the Raj-Patra be sent to this Department.
13. Guard File

Deputy Secretary (Forests) to the
Government of Himachal Pradesh

Annexure-IB

(Authoritative English Text of this Department Notification No. FFE-B-F(6)11/2005-II-Kugti, Dated 18th Sept. 2013 as required under Articles 348 (3) of the Constitution of India).

GOVERNMENT OF HIMACHAL PRADESH
DEPARTMENT OF FORESTS

No. FFE-B-F(6)-11/2005-II/ Kugti Dated : Shimla-2, the 18th Sept. 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)-6/99, dated 23.10.1999 to declare **Kugti as Wildlife Sanctuary** comprising an area of 379.00 sq. km;

And whereas, the matter with regard to the rationalization of Wildlife Sanctuaries and National Parks in Himachal Pradesh was under consideration of the Hon'ble Supreme Court in IA No. 139/2010 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 7th May 2010, the State Government issued intention Notifications under Section 18 of the Wildlife (Protection) Act, 1972 in respect of Wildlife Sanctuaries and National Parks for which rationalization had been proposed;

And whereas, Intention Notification under section 18(1) of the Wildlife (Protection) Act, 1972 was issued vide Notification No. FFE-B-F(6)-11/2005, dated 28th July, 2010 to include an areas of 90.00 sq. km to the existing on ground area of 324.30 sq. km of Kugti Wildlife Sanctuary.

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;

And whereas, as a consequence of rationalization of boundaries of Kugti Wildlife Sanctuary, an additional area of 90.00 sq. kms is included and 8.81 sq. km. areas is excluded (comprising 2 villages namely Upper Kugti and Lower Kugti) from the existing area on ground i.e.

324.30 sq. km of Kugti Wildlife Sanctuary. The total area of 405.49 km (324.30 sq. km + 90.00 sq. km—8.81 sq. km) shall now constitute the Kugti Wildlife Sanctuary after rationalization.

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 the aforesaid area of 405.49 sq. km as **'Kugti Wildlife Sanctuary'** with immediate effect for the purpose of protecting, propagating and developing wildlife and its environment.

The limits of **Kugti Wildlife Sanctuary** shall be as under:

Sr. No.	Name of Wildlife Sanctuary	Constituents i) District ii)Forest Division	Boundaries of Kugti Wildlife Sanctuary.
1.	**Kugti Wildlife Sanctuary**	i) Chamba ii) Chamba (Wildlife) Division	**NORTH:** Starting from point 5740 mtr along the ridge line to point 5723 mtr to point 5681 to point 5842 mtr to Dugg ka jot at point 5342 mtr along Pangi Dhar to point 5861 mtr to Grechu Jot to Kugti Galu at point 5040 mtr. To point 5573 mtr to point 5700 mts to Laihas jot at point 4991 mtr to point 6070 mts all along Pangi Dhar. **EAST:** From point 6070 mtr to point 5444 mtr to point 5304 mtr to point 5702 mtr along Dhog Dhar to point 5535 mtr along ridge to point 5416 mtr to point 5422 mtr along Nikora Dhar to Nikora pass at point 4749 mtr. **SOUTH:** From Nikora pass at point 4749 mtr to point 4759 mtr to point 5184 mtr to point 4871 mtr to Khidala gallu to Chobu pass along Goari Khad and Dhanchhow nalla up to Dhanchhu Got. **WEST:** From Dhanchhu Got along Ghoi nalla up to Budhil nalla then along right bank of Budhil Nalla up to point 2500 mtr to Khesar Got to point 3128 mtr to Chalatu nalla to Chhih Got

			to point 3081 mtr to point 2941 mtr to Lahal Got along outer boundary of Lal RF to Dharaul Got to point 1974 along the left bank of Budhil nalla to Cheri Behi to Goru Ban to point 2565 mtr to Khapar to point 4018 mtr to point 4790 mtr to point 5295 mtr all along the ridge of Jul Dhar to point 5336 mtr up to point 5740 mtr all along the ridge line.

This area is situated within the Geo-coordinates, **North** latitude 32° 35' 00" N and longitude 76° 38' 59" E, **East** latitude 32° 31' 12" N and longitude 76° 53' 02" E, **South** latitude 32° 21' 32" N and longitude 76° 46' 15" E, **West** latitude 32° 32' 37" N and longitude 76° 34' 23" E. This area falls on Survey of India topo sheet No. 52 D/10, 52D/11, 52D/14 & 52D/15 on scale 1: 50,000.

Area of Kugti Wildlife Sanctuary= 405.49 sq. km

By Order

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

Endst. No As above Dated Shimla-2 the 18th Sept., 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 / DFOs (Wildlife) in H.P.
7. All the Deputy Commissioners in H.P.
8. All the CCFs/CFs /DFOs in H.P.
9. ALR-cum- Under Secretary Law to the Government of Himachal Pradesh.
10. 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.
11. Guard File.

(Prakasha Nand)
Under Secretary (Forests) to the
Government of Himachal Pradesh.
Ph. No. 2880-818, Mob. 94184-55573
E.mail usforests.hp@gmail.com.

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Annexure- II

LIST OF FORESTS/COMPARTMENTS

Sr. No.	Name of Forest Compartment.	Area in Hac.
1.	Dharol RF.	114.93
2.	Kugti RF-I.	333.06
3.	Kugti RF-II.	445.17
4.	Kugti RF-III a.	181.31
5.	Kugti RF-III b.	203.16
	Total RF	**1277.63**
6.	Dharol DPF.	19.54
7.	Goru –da-Ban DPF.	170.37
8.	Kangru DPF.	526.18
9.	Deosah DPF-II	262.49
10.	Bhiyanu DPF-II.	290.56
11.	SapparKinour DPF-I.	142.30
12.	SapparKinour DPF-II.	160.00
	Total DPF	**1571.44**
13.	Gharoie Dhar.	1343.46
14.	Bhiyar Dhar.	2946.11
15.	Nanoon Dhar.	1921.04
16.	Dhamel Dhar.	6690.65

17.	Karog Dhar.	1869.65
18.	Bhunkar Dhar.	7727.44
19.	Deosah Dhar.	716.03
20.	Hal Dhar.	1770.90
21.	Heg Dhar.	3715.55
22.	Joal Dhar.	1486.81
23	Saredh Dhar	2451.19
24	Kinnour Dhar	990.00
25	Ghewala Dhar	1950.00
26	Dhog Dhar	1458.00
27	Dodan Dhar	664.00
	Total NDPF	**37700.83**
	G. Total	**40549.90 Hac**
	OR	**405.49 Sqkm**

Annexure-III

LIST OF NATURAL WATER SOURCES

Sr. No.	Name of watersource	Perennial	Seasonal.
1.	**2.**	**3.**	**4.**
1.	Dhanchho Nallah.	**-do-**	-
2.	Thanari Nallah.	-	-do-
3.	Hali Nalla.	-	-do-
4.	Lahal Nalla.	-do-	-
5.	Kugti/Buhari Nalla.	-do-	-
6.	Bhiyar Nalla.	-	-do-
7.	Nanoon Nalla.		
8.	Chalatho Nalla.	-	-do-
9.	Duggi Nalla.	-	-do-
10.	Dhamel Nalla.	-	-do-
11.	Kagsain Nalla.	-	-do-
12.	Bhagsain in Nalla.	-	-do-
13.	Kailing Nalla.	-do-	-
14.	Rainling Nalla.	-	-do-
15.	Budhal Nalla.	-do-	-

Annexure- IV

LIST OF PLANTATIONS& NURSERIES

Sr. No.	**Name of plantation.**	**Spp. planted.**		**Area (Hac.).**	**Year of Establishment.**
1.	Koohli CA	Deodar = 3000	B/Leave= 1000	4 Hac.	**2005-06**
2.	Hag Dhar.	Grass stuffs = 5540	-	2.5 Hac.	-do-
3.	Buhari CA.	Deo = 2500	B/Leave = 3000	5 Hac.	-do-
4.	Ghari CA.	Deo. = 1500	B/Leave = 5100	6 Hac.	-do-

Sr. No.	**Name of plantation.**	**Spp. planted.**		**Area (hac.).**	**Year of Establishment.**
1.	Sapper Kinnour.	-	B/Leave = 1200 Grass = 770	3 Hac.	**2006-07**
2.	Behanu CA.	Deo. = 4400		4 Hac.	-do-
3.	Tpri CA.	Deo. = 8200	B/Leave = 2800	10 Hac.	-do-
4.	Kugti RFC-I.	Deo. = 5500	-	5 Hac.	-do-
5.	Choli CA.	Deo. = 6600	B/Leave = 4400	10 Hac.	-do-

Sr. No.	Name of plantation.	Spp. planted.		Area (Hac.).	Year of Establishment.
1.	Dhara CA.	Deo. = 3500	-	5 Hac.	**2007-08**
2.	Deosah CA.	Deo. = 1600	-	3 Hac.	-do-
3.	Bhiyanu CA.	Deo. = 3850	-	7 Hac.	-do-

Sr.No	Name of Plantation	Spp.planted.	Area in hac.	Year of Establishment
1	Deosa CA	Kail =500,Deodar =4500,Adu=200,H.C.Nut=300 G.Total= 5500	5 hac.	2010-11
2	Dharol CA	Kail =3510,Deodar=508,Rob.=260,H.c.Nut=1122 G.Total = 5500	5 Hac.	
3	Buhar CA	Kail =2600,Deodar= 2200,H.C.Nut=700 G.total =5500	5 Hac	

Sr.No	Name of Plantation	Spp.planted.	Area in hac.	Year of Establishment
1	Dhar CA	Deodar =355,Chuli=1535,Adu=2110 G.Total=4000	5 hac.	2011-12

Sr.No	Name of Plantation	Spp.planted.	Area in hac.	Year of Establishment
1	Dhar	Deodar =1500,Chuli=650,Adu=600 G.Total=2750	2.5 hac.	2012-13
2	Buhar-II	Chuli=900,Adu=1850 Total = 2750	2.5 hac	
3	Thentho	Chuli=800,Walnut=280,Robina=470,Adu=1200 Total = 2750	2.5 hac	

Sr.No	Name of Plantation	Spp.planted.	Area in hac.	Year of Establishment
1	Thentho	Chuli=6600, G.Total=6600	6 hac.	2013-14
2	Deosa CA	Deodar=5500, Total = 5500	5 hac	
3	Buhar CA	Deodar=5500, Total = 5500	5 hac	
4	Kailing CA	Horse Chest nut =3600,Robinia =100,Adu=300, Total =4000	5 hac	

5	Dolotu CA	Horse Chest nut =3600,Robinia =100,Adu=300, Total =4000	5 hac	
6	Dharol CA	Deodar =2000,Kail =1825 ,Horse Chest nut=675,Chulli =1000 Total = 5500	5 hac	
7	Hulani CA	Deodar=1000, Horse Chest nut =2000,Chuli =2500, total =5500	5 hac	
8	Goo da Goth CA	Deodar =2050, Horse Chest nut =1456,Chulli =2000 total= 5506	5 hac	
9	Cholli Mata CA	Deodar=2000, Horse Chest nut= 800,Chulli =1200 total =4000	5 hac	

Sr.No	**Name of Plantation**	**Spp.planted.**	**Area in hac.**	**Year of Establishment**
1	Duggi CA	Horse Chest nut=1500 Chuli=2000,Adu=2000 G.Total=5500	5 hac.	2014-15
2	Buhar CA	Deodar =40000	5 hac.	
3	Chaloth CA	Horse Chest nut= 3300,Discoria =4300, Karu=11000,Banksha=8800,nihan=12200 Total =39600	3 Hac.	
4	Chaloth CA	Horse Chest nut= 3500,Chulli=500,Adu=1500 total=5500	5 hac.	

Sr.No	**Name of Plantation**	**Spp.planted.**	**Area in hac.**	**Year of Establishment**
1	Tapanighar CA	Kail=498,Horse Chest nut= 2000,Adu=3002 G.Total=5500	5 hac.	2015-16
2	Dosa CA	Kail=900,Horse Chest nut= 1600,Adu=3000 G.Total=5500	5 hac.	
3	Buhar CA	Kail= 800,Horse Chest nut= 1700,Adu=3000 G.Total=5500	5 hac.	
4	Kangru CA	Kail= 500, Horse Chest nut= 1500,Adu=2000 Total =4000	5 hac.	
5	Kelong CA	Kail= 2650, Horse Chest nut= 4800,Adu=9050 Total =16500	15 hac	

Sr.No	**Name of Plantation**	**Spp.planted.**	**Area in hac.**	**Year of Establishment**
1	Thanari CA	Kail=500,Horse Chest nut= 3000 Adu= 2000 G.Total=5000	5 hac.	**2016-17**
2	Deosa CA	Kail=1000,Horse Chest nut= 3000,Adu=1500 G.Total=5500	5 hac.	
3	Thunali CA	Kail= 500,Horse Chest nut=2000,Adu=1500 G.Total=5500	5 hac.	
4	Kelong -I	Horse Chest nut= 2000,Adu=3500 Total =4000	5 hac.	

5	Kelong -II	Horse Chest nut= 2000,Adu=3500 total =5500	5 hac	
6	Buhar-I	Kail=3500, Horse Chest nut= 2000, total 5500	5 hac	
7	Buhar-II	Kail=3500, Horse Chest nut= 2000, total 5500	5 hac	
8	Buhar-III	Kail=3500, Horse Chest nut= 2000, total 5500	5 hac	
9	Sapper kinnour-I	Kail=3500, Horse Chest nut= 2000, total 5500	5 hac	
10	Sapper kinnour-II	Horse Chest nut= 2000,Adu=3500 total 5500	5 hac	
11	Sapper kinnour-III	Kail=1745,Horse Chest nut= 255Adu=3500 total 5500	5 hac	

Sr.No	**Name of Plantation**	**Spp.planted.**	**Area in hac.**	**Year of Establishment**
1	PasrureTandei	Deodar =2550, Kail =200, Adu =2750 G.Total=5500	5 hac.	2017-18
2	Chalathu	Deodar =1100, Kail =1100,Chulli =500,Horse Chest nut=1100, Adu =1700 G.Total=5500	5 hac.	

LIST OF EXISTING NURSERIES

Sr. No.	**Name of nursery.**	**Location.**	**Area.**	**Year of establishment.**
1.	Drati.	Drati DPF.	0.20 Hac.	1983-84
2.	Kugti.	Lahal RF.	0.20 Hac.	1994-95

Annexure- V

LIST OF NATURAL SALT LICKS AND
PROPOSED LOCATION FOR ARTIFICIAL SALT LICKS

A. NATURAL SALT LICKS

Sr. No.	Place	Location
1	Oddi	Tapni Gan Dhar
2	Vinna	Oji Gan Dhar.
3	Dhuda Sapper	Bhunkar Dhar
4	Kuddi.	Duggi Dhar
5	Tal	Duggi Dhar
6	Dehra	Bhyiar Dhar
7	Karthudu	Heg Dhar.

B. PROPOSED ARTIFICIAL SALT LICKS

Sr. No.	Place	Location
1	Thanari ridge.	Kugti RF-II
2	Hali Nalla	Hal Dhar
3	Dharol ridge.	Dharol RF.
4	Bhunkar Goth	Bhunkar Dhar
5	Goru Da Ban ridge	Goru Da Ban DPF

Annexure-VI

LIST OF BUILDINGS, ROADS & PATHS

Sr. No.	Name of Building	Location	Year of Construction
1	Range Office cum Residence	Dadma	-
2	Block Officer' Residence	Kugti	-
3	Forest Guard Hut	Lower Kugti	-
4	Forest Guard Hut	Dharol/Hadsar	-
5	Type-I Residence	Dadma	2010-11
6	Forest Rest House	Lower Kugti	-
7	Seed Store	Lower Kugti	2010-11
8	Interpretation Centre	Pranghala	2017-18

Sr. No.	Name of Path	Particular	Length(in KM)
1	Kugti to ManimaheshParikarma	Bridle Path	13
2	Kelang to Alias	Bridle Path	5
3	Dalotu to Sarni Dhar	Bridle Path	5
4	Cholli Dar to Hegh Dhar	Bridle Path	5
5	Thanari to Topi Goth	Census Path	10
6	Topi Goth to Upper Thanari	Census Path	10
7	Dharolto Dharol RF	Census Path	6
8	Bhurandudu to Dharol RF.	Census Path	8
9	Dharol RF to Hali.	Census Path	5
10	Deosah to Oji Gan	Census Path	8
11	Kailing to Siya Dhar	Census Path	7
12	AnderliDhamelto BahrliDhamel	Census Path	8
13	Dalotu to Sarni Dhar	Census Path	10
14	Sarni to Tal.	Census Path	8

15	Tal to Gehi.	Census Path	5
16	Gharoie to Heg Dhar	Census Path	8
17	Gehi to Gharoie	Census Path	4
18	Kailing to Duggi	Census Path	8
19	Thantho to Tapni Gan	Census Path	8
20	Kailing to Grachu pass	Trekking path	16
21	Kugti to Chobu pass	Trekking path	25
22	Kugti to Ghiola	Trekking path	16
23	Kugti to Hali.	Trekking path	18
24	Gorikund to Behanu	Trekking path	16

Annexure-VII

LIST OF SENSTIVE SITES/KEY AREAS

The following areas have been listed sensitive as well as key sites on account of common sites where the wild animals as well as domestic animals feed / graze frequently. Therefore, these areas needs to be sanitized so that the disease from domestic animals does not get transmitted to the wild animals in the vicinity.

Sr. No.	**Location.**
14.	Thanari Nalla (Heg Dhar).
15.	Goru-Da-Ban DPF.
16.	Dharol RF.
17.	Hal Dhar-DPF.
18.	Kangru DPF.
19.	Gharoie Dhar DPF.
20.	Bhianu,Sarni Dhar.
21.	Oji Gan Dhar.
22.	Sia Dhar.
23.	SapparKinaour.
24.	Dughi Dhar.
25.	Dughi Dhar.
26.	Nanoon Dhar.

ANNEXURE-VIII

Year Wise expenditure done under different heads (2008-09 to 2020-21)

Sr. No.	Item of Work	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1	Infrastructure Development	2.72	29.16	18.79	15.5	11.88	18.52	24.73	94.9	56.26	24.606	3.75	14.50	22.85
2	Habitat improvement	4.64	5.51	9.11	20.69	20.00	27.73	42.21	100.95	63.10	79.9726	26.80	26.51	30.80
3	Capacity Building/Training/ Research & Monitoring	0.49	1.04	0.51	0.83	0.67	0.41	1.41	1.20	34.95	20.65	6.40	17.82	3.00
4	Wildlife Protection and Conservation Activities	2.56	0.69	3.93	0.45	0.48	7.98	8.510	25.50	14.60	8.000	2.49	7.55	8.37
5	Education and Awareness Generation	0.18	0.76	1.19	1.45	0.32	0.70	0.50	2.55	2.96	2.00	3.85	8.19	2.44
6	Wildlife Tourism Management	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50	3.25	37.35	3.94	0.00	0.00
7	Field equipment	0.00	0.00	0.00	0.00	0.00	0.00		3.26	13.56	8.30	0.85	0.00	1.00
8	Office expenses	0.30	0.75	0.50	0.40	0.60	0.72	0.00	1.35	5.70	0.25	0.30	1.15	1.03
9	Community Development through Participation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59	17.41	4.80	2.05	10.90	3.00
10	Human-wild animal Conflict	0.00	0.00	0.00	0.00	0.05	0.07	0.00	1.54	5.30	3.60	3.50	0.50	0.50
12	Operational Support	0.25	0.18	0.15	0.20	0.25	0.15	0.25	2.56	2.81	0.09	2.91	1.75	1.804

Annexure- IX

LIST OF FIRE PRONE AREAS

Sr. No.	**Name of area.**	**Area in ha.**
1.	**2.**	**3.**
1.	Dharoal RF.	114.93 Ha.
2.	Kugti RFC-I.	333.06 Ha.
3.	Kugti RFC-II	445.17 Ha.
4.	Dharoal DPF.	19.54 Ha.
5.	Deosah DPF.	287.49 Ha.
6.	Bihanu DPF-II.	290.56 Ha.
7.	Deosahdhar.	716.03 Ha.
	Total:-	**2206.78 Ha.**

Annexure- X

LIST OF MAMMALS

Sr. No.	Scientific Name	Local Name	English Name	Schedule WL Act, 1972	IUCN Status
1	*Macaca mulatta*	Bander	Rhesus macaque	Sch II Part-I	Least Concern
2	*Presbytis entellus*	Langoor	Common Langoor	Sch II Part-I	Least Concern
3	*Semnopithecus ajax*	Gaula	Chamba Sacred Langoor	Sch II Part-I	Critically Endangered
4	*Vulpes vulpes*	Lomri	Fox	Sch II Part-II	Least Concern
5	*Selenarctos thibetanus*	Kala Bhaloo	Black Bear	Sch II Part-II	Vulnerable
6	*Ursus arctos*	Bhrigu,LalBhaloo	Brown Bear	Sch II Part-II	Least Concern
7	*Martes flavigula*	Dhiklu	Yellow-Throated Marten	Sch II Part-II	Least Concern
8	*Pagumalarvata*	Sakralu	Palm civet	Sch II Part-II	Least Concern
9	*Felis chaus*	Bilao	Jungle cat	Sch II Part-II	Least Concern
10	*Panthera pardus*	Mirg,Bagh	Leopard	Sch I Part-I	Vulnerable
11	*Mustela sibirica*		Himalayan weasel	Sch II Part II	Least Concern
12	*Hystrix indica*	Sail	Indian creasted porcupine	Sch IV	Least Concern

13	*Petauristapetaurista*		Common giant flying squirrel	Sch II Part II	Least Concern
14	*Moschus moschiferus*	Rons,Rastura	Musk Deer	Sch.I Part-I	Vulnerable
15	*Nemorhadeus goral*	Pij	Goral	Sch III	Near threatened
16	*Hemitragusjemlahicus*	Karath	Himalayan Tahr	Sch I Part-I	Near threatened

Annexure-XI

LIST OF BIRDS

	Scientific Name	Common Name	Schedule WL Act, 1972	IUCN Status
1.	*Accipiter badius*	Shikra	Sch.I Part-III	Least Concern
2.	*Aquila Chrysaetos*	Golden Eagle	I Part-III	Least Concern
3.	*Sarcogyps calvus*	King vulture	IV	Least Concern
4.	*Gyps fulvus*	Griffon vulture	IV	Least Concern
5.	*Gyps himalayensis*	Himalayan griffon vulture	IV	Near Threatened
6.	*Neophron pescnopterus*	Egyptian vulture	IV	Endangered
7.	*Falicoperegrinius*	Shaheen falcon	I Part-III	Least Concern
8.	Folcotinnuculus	Kestrel	IV	Least Concern
9.	*Lerwalerwa*	Snow partridge	IV	Least Concern
10.	*Tetraogallushimalayensis*	Himalayan Snow cock	IV	Least Concern
11.	*Alectoris chukar*	Chukor	IV	Least Concern
12.	*Lophophorusimpejanus*	Monal	I Part-III	Least Concern
13.	*Pucrasiamacrolopha*	Koklass	IV	Least Concern
14.	*Catreuswallichi*	Cheer	I Part-III	Vulnerable
15.	*Streptopelia chinensis*	Spotted Dove	IV	Least Concern
16.	*Streptopeliadecaoto*	Indian Ring Dove	IV	Least Concern
17.	*Columba palumbus*	Common Wood Pigeon	IV	Least Concern
18.	*Cuculus saturates*	Himalayan Cuckoo	IV	Least Concern
19.	*Eudynamysscolopaceus*	Koel	IV	Least Concern
20.	*Glaucidium cuculoides*	Barred Owlet	IV	Least Concern
21.	*Strixaluco*	Himalayan wood owl	IV	Least Concern
22.	*Collocalia brevirostris*	Himalayan swiftlet	-	Least Concern
23.	*Apus melba*	Alpine swift	-	Least Concern
24.	*Apus affinis*	House swift	-	Least Concern
25.	*Meropsorientalis*	Small green bee eater	-	Least Concern
26.	*Upupa epops*	Hoopoe	IV	Least Concern
27.	*Mergalaima virens*	Himalayan green barbet	IV	Least Concern

28.	*Picussquamatus*	Scaly woodpecker	IV	Least Concern
29.	*Dendrocoposhimalayensis*	Himalyan Pied woodpecker	IV	Least Concern
30.	*Laniusschach*	Rufous backed shrike	-	Least Concern
31.	*Dicrurusmacrocerus*	Black drongo	IV	Least Concern
32.	*Acridotheres tristis*	Common myna	IV	Least Concern
33.	*Urocissaflavirostris*	Yellow billed blue magpie	IV	Least Concern
34.	*U. erythrorhyncha*	Red billed blue magpie	IV	Least Concern
35.	*Dendrocitaformosae*	Himalayan tree pie	IV	Least Concern
36.	*Nucifragacaryocatactes*	Himalayan nutcracker	IV	Least Concern
37.	*Corvus macrorhynchos*	Jungle crow	IV	Least Concern
38.	*Pyconotuscafer*	Red vented bulbul	IV	Least Concern
39.	*Garrulaxalbogularis*	White throat laughing thrush	IV	Least Concern
40.	*Eumyiasthalassina*	Verditer Flycatcher	IV	Least Concern
41.	*Rhipidurahypoxantha*	Fantail flycatcher	IV	Least Concern
42.	*Luscinia svecica*	Blue throat	IV	Least Concern
43.	*Tarsigercynarus*	Orange flanked bush Robin	IV	Least Concern
44.	*Phoenicurusochruros*	Black redstart	IV	Least Concern
45.	*Phoenicurus frontalis*	Blue fronted redstart	IV	Least Concern
46.	*Enicarusscoulrea*	Forktail	IV	Least Concern
47.	*Saxicola caprata*	Pied Bushchat	IV	Least Concern
48.	*Chaimarrornis leucocephalus*	White-capped red start	IV	Least Concern
49.	*Monticola solitarius*	Blue Rock- Thrush	IV	Least Concern
50.	*Monticolacinclohyinchus*	Blue- headed Rock-Thrush	IV	Least Concern
51.	*Turdus merula*	Blackbird	IV	Least Concern
52.	*Zootherawardii*	Pied Ground-Thrush	IV	Least Concern
53.	*Cincluscinclus*	White-Throated Dipper	-	Least Concern
54.	*Pyrus major*	Great Tit	IV	Least Concern
55.	*Sitta leucopsis*	White-cheeked Nuthatch	-	Least Concern
56.	*Certhiahimalayana*	Himalayan tree creeper	-	Least Concern
57.	*Anthushodgsoni*	Indian tree pipit	IV	Least Concern
58.	*Motacillacitreola*	Yellow-headed Wagtail	IV	Least Concern
59.	*Motacilla cinerea*	Grey Wagtail	IV	Least Concern

60.	*Motacilla alba* White Wagtail	IV	Least Concern
61.	*Passer domesticus* House Sparrow	IV	Least Concern
62.	*Carduelis carduelis*Gold Finch	IV	Least Concern
63.	*Carduelis spinoides*Himalayan Greenfinch	IV	Least Concern
64.	*Carpodacus erythrinus* Common Rosefinch.	IV	Least Concern
65	*Columba leuconota* Snow pigeon .	IV	Least Concern
66	*Leucosticte nemoricola*Plain Mountain finches .	IV	Least Concern
67	*Cincluspallasii*Brown dipper	IV	Least Concern
68	*Prunella collaris*Alpine accentor	IV	Least Concern
69	*Prunella rubeculoides*Robin accentor	IV	Least Concern
70	*Troglodytes hiemalis*Winter wren .	IV	Least Concern
71	*Pyrrhocoraxpyrrhocorax*Red billed chough	IV	Least Concern
72	*Pyrrhocoraxgraculus*Yellow billed chough	IV	Least Concern
73	*Accpiter nisus*Eurasian sparrowhawk	I Part-III	Least Concern

Annexure-XII

GLOSSARY OF TREES, SHRUBS AND CLIMBERS

A. TREES

S. No.	Scientific Name	Local Name	English Name	IUCN status
1	*Abies pindrow*	Rai	Silver Fir	Least Concern
2	*Acer caesium*	Mandhar	Indian Maple	Least Concern
3	*Acer caudatum*	Mandhar	Maple	Least Concern
4	*Acer pictum*	Mandhar	The Painted Maple	Least Concern
5	*Acer villosum*	Mandhar	Maple	Least Concern
6	*Aesculus indica*	Goon	Indian Horse chestnut	Vulnerable
7	*Alnus nepalensis*	Piak	Alder	Least Concern
8	*Alnus nitida*	Piak	Alder	Least Concern
9	*Betula alnoides*	Bhuj	Himalayan Birch	Least Concern
10	*Betula utilis*	Bhuj	Himalayan White Birch	Least Concern
11	*Buxus sampervirens*	Samshad	Wild wood	Least Concern
12	*Carpinus caoinea*	Bhakri	NA.	–NA-
13	*Cedrela serrata*	Dhori	NA	Least Concern
14	*Celtis australis*	Khirak	Nettle Tree	Least Concern
15	*Cedrus deodara*	Diyar	Himalayan cedar	Least Concern
16	*Cornus macrophylla*	Halen	Large Leaf Dog Wood	Least Concern
17	*Ficus glomerata*	Phagoora	Indian fig tree	Least Concern
18	*Ficus aurea*	Phagoora	Stranger fig	Vulnerable
19	*Fraxinus floribunda*	Sunnu	Himalayan Ash	Least Concern
20	*Juglans regia*	Khor	Walnut	Near Threatened
21	*Litseaumbrosa*	Chirindi	NA.	-NA-
22	*Lonicera quiqueloculareis*	Bak	Translucent honey suckle	-NA-
23	*Morus serrata*	Karun	Himalayan Mulberry	-NA-
24	*Morus alba*	Karun	White Mulberry	Least Concern
25	*Parrotiopsiscacquemontiana*	Killar	Parrotia	-NA-
26	*Piceamorinda*	Tosh	Spruce	Least Concern
27	*Plerisovalifolia*	Ailan	NA.	–NA-
28	*Populus alba*	Chaloon	Poplar	-NA-
29	*Populus ciliata*	Pahari Chulanooj	Himalayan Poplar	Least Concern
30	*Prunus armenika*	Chir	Apricot	Least Concern
31	*Prunus communis*	Aloocha	Plum	Least Concern

32	*Prunus cornuta*	Jammu	Himalayan Bird Cherry	-NA-
33	*Prunus padus*	Jammu	Bird cherry	Least Concern
34	*Prunus persica*	Aru	Peach	-NA-
35	*Pyrus baccata*	Lewar	Siberian Crab Apple	Least Concern
36	*Pyrus communis*	Nakh	Pear	Least Concern
37	*Pyrus lanata*	Amlor	NA.	-NA-
38	*Pyrus malus*	Seo	Wild apple	-NA-
39	*Pyrus pashia*	Kainth	Indian Wild pear	Least Concern
40	*Quercus dilatata*	Moru	MoruOak(Mid Zone)	Least Concern
41	*Quercus incana*	Ban	Baan Oak(Low Zone)	Least Concern
42	*Quercus semecarpifolia*	Khareu	KharsuOak(High Zone)	Least Concern
43	*Rhododendron arboreum*	Cheers	Red Burans	Least Concern
44	*Rhododendron campanulatum*	Cheo	Rhododendron	Least Concern
45	*Salix wallichiana*	Bedah	Wallich Willow	-NA-
46	*Taxus wallichiana*	Rakhaal	Himalayan Yew	-NA-
47	*Ulmuswallichiana*	Maral	Himalayan elm.	Vulnerable

B. SHRUBS

Sr. No	Scientific Name	Local Name	English Name	IUCN Status
1.	*Berberis aristata*	Kemel	Indian Barberry	Least Concern
2.	*Berberis jaeschkeana*	Lal Kemel	Jaeschke's Barberry	Least Concern
3.	*Colebrookeaoppositifolia*	-	Indian Squirrel tail	-NA-
4.	*Coria nepalensis*	Ancha	Masuri Berry	-NA-
5.	*Cotoneaster bacillaris*	-	Rons	-NA-
6.	*Cotoneaster microphyllus*	-	Rockspray Cotoneaster	-NA-
7.	*Daphne mucronata*	-	Kashmir Daphne	-NA-

8.	*Deutzia staminea*	Bathi	Brown Deutzia	-NA-
9.	*Elsholtziafructicosa*	-	Shrubby Mint	–NA-
10.	*Giradiandiversifolia*	Jungli/Pahari Ahem	Himalayan Nettle	-NA-
11.	*Juniperus communis*	Bitthal	Common Juniper	Least Concern
12.	*Juniperus indica*	Bitthal	Black Juniper	Least Concern
13.	*Juniperus recurva*	Bitthal	Drooping Juniper	Least Concern
14.	*Neilliarubriflora*	-	East Himalayan Neillia	–NA-
15.	*Prunus Cerasoides*	Krangora	Wild Himalayan Cherry	Least Concern
16.	*Rhododendron anthopogon*	-	Dwary Rhododendron	Least Concern
17.	*Rhododendron companulatum*	Sarngal	Pink Buran	-NA-
18.	*Rhododendron lapidosum*	TalshiPata	Pink Scary Rhododendron	Threatened
19.	*Rosa macrophylla*	-	Big Hip Rose	–NA-
20.	*Rosa moschata*	Ban Gulab	The Musk Rose	–NA-
21.	*Rubus biflorus*	-	Two Flowered Raspberry	–NA-
22.	*Rubus Ellipticus*	Aakhee	Golden Himalayan Raspberry	Least Concern
23.	*Rubus moluccanus*	Kali Aankhee	Blackberry	Least Concern
24.	*Salix denticulata*	ChotaBedah	Elegant Willow	Least Concern
25.	*Sarcococcasaligna*	-	The Sweet Box	-NA-
26.	*Saussureaalbescens*	-	Pink Saw Wort	–NA-
27.	*Sorbaria tomentosa*	-	Kashmir False Spirea	Near Threatened
28.	*Spiraea canescens*	-	Grey Stem Spiraea	Least Concern
29.	*Urtica dioica*	Alun	Stinging Nettle	Least Concern
30.	Viburnum grandiflorum	Trandolu	Grand Viburnum	–NA-
31.	Wikstroemiacanescens	Chambat	Himalayan Tie Bush	–NA-
32.	Zanthoxylum armatum	Timber	Winged Prickly Ash	Least Concern

C. CLIMBERS

Sr. No	Scientific Name	Local Name	English Name	IUCN Status
1.	*Ficus pumila*	-	Creeping fig	-NA-
2.	*Hedera nepalensis*	-	Himalayan Ivy	-NA-
3.	*Parthenocissus semicordata*	-	Himalayan Woodbine	-NA-
4.	*Smilax glaucophylla*	-	Elegant Smilax	-NA-

D. MEDICINAL PLANTS

Sr. No	Scientific Name	Local Name	English Name	IUCN Status
1.	*Acomastyliselata*	-	High Avens	-NA-
2.	*AconitiumChasmanthum*	Keri Patis	Gaping Monkshood	Critically Endangered
3.	*Aconitiumheterophyllum*	Mithi Patis	Patis	Endangered
4.	*Aconitum violaceum*	Dudhia/Mitha Telia	Violet monkshood	Vulnerable
5.	*Actea spicata L. varacuminata*	-	Himalayan baneberry	-NA-
6.	*Ainsliaea aptera*	-	Wingless Ainsliaea	-NA-
7.	*Anaphalismargaritacea*	Bhull	Western Pearly Everlasting	Least Concern
8.	*Anaphalistriplinervis*	-	Wooly Pearly Everlasting	Least Concern
9.	*Melanoserismacrorhiza*	Chyate	Violet Dandelion	-NA-
10.	*Androsaceprimuloides*	-	Rock Jaismine	-NA-
11.	*Androsace rotundifolia*	-	Round Leaf Rock Jasmine	-NA-
12.	*Androsacesarmentosa*	-	Rock Jaismine	-NA-

13.	*Anemonastumobtusilobum*	Ratan Jot	Himalayan Thimble Weed	-NA-
14.	*Anemone rupicola*	-	Rock Anemone	-NA-
15.	*Angelica glauca*	Chaura	Smooth Angelica	Endangered
16.	*Aquilegia pubiflora*	-	Himalayan Colimbine	-NA-
17.	*Arisaema flavum*	-	Yellow Cobra Lilly	-NA-
18.	*Arisaema griffthi*	Kidabuti	Grifth's Cobra Lilly	-NA-
19.	*Arisaema propinquum*	Kidabuti	Wallach's Cobra Lilly	-NA-
20.	*Asragalusrhizanthus subsp. candolleanus*	-	Candolle's Milk Vetch	-NA-
21.	*Aster albescen's*	-	Fading Himalayan Aster	-NA-
22.	*Aster himalaicus*	-	Himalayan Aster	-NA-
23.	*Aster thomsonii*	-	Thomson's aster	-NA-
24.	*Astragalus grahamianus*	-	Grahm's Milk Vetch	-NA-
25.	*Bergenia ciliata*	-	Frilly bergenia	-NA-
26.	*Caltha palustris*	-	Marsh Marigold	Least Concern
27.	*Cassiopefastigiata*	-	Himalayan Heather	-NA-
28.	*Chaerophyllumreflexum*	-	Kashmir Chervil	-NA-
29.	*Cirsium falconeri*	Pahari sentha	Falconers Thistle	-NA-
30.	*Fragerianubicola*	-	Himalayan Strawberry	-NA-
31.	*Corydalis govaniana*	-	Govan's Corydalis	-NA-
32.	*Corydalis rutifolia*	-	-	-NA-
33.	*Crematho diumarnicoides*	-	Himalayan Daisy	-NA-
34.	*Cremanthotiumellisii*	-	Himalayan Mini Sun Flower	-NA-

35.	*Dactylorhizahatagirea*	Salam Panja	Himalayan Marsh Orchid	-NA-
36.	*Delphinium cashmerianum*	-	Kashmir Larkspur	-NA-
37.	*Delphinium roylei*	-	Royale's Larlaspur	-NA-
38.	*Dioscoreadeltoidea*	Khildiri	Nepal Yam	Critically Endangered
39.	*Dolomiaeamacrocephala*	Pahari Dhoop	Himalayan Dolomiaea	-NA-
40.	*Dracocephalum nutans*	-	Nodding Dragon Head	-NA-
41.	*Elsholtziafruticosa*	-	Shrubby Mint	-NA-
42.	*Epilobium laxum*	-	Lax Willow Herb	-NA-
43.	*Epilobium wallichiana*	-	Willow Herb	-NA-
44.	*Erigeron multiradiatus*	-	Himalayan Fleabane	-NA-
45.	*Erysimum melicentae*	-	Himalyan Wall Flower	-NA-
46.	*Euphorbia cognate*	-	-	-NA-
47.	*Fragerianubicola*	-	Himalayan Strawberry	-NA-
48.	*Fritilariaroylei*	JungliKufera	Yellow Himalayan fritillary	Critically Endangered
49.	*Gentiana carinata*	Kadu	Dark Blue Gentia	-NA-
50.	*Gentiana kurroo*	-	Himalayan Gentian	Critically Endangered
51.	*Geranium himalayense*	Lal Jari	Himalayan Geranium	-NA-
52.	*Geranium wallichianum*	Lal Jari/Ratan Jot	Wallich Geranium	-NA-
53.	*Gerbera gossypina*	JhuluKuferu	Hairy Gerbera Daisy	-NA-
54.	*Gypsophiliacerastioides*	-	Himalayan Baby Breath	-NA-
55.	*Hackeliauncinata*	-	Hooked stickseed	-NA-
56.	*Hyoscyamus niger*	Kaljaher	Blackhenbane	-NA-

57.	*Impatiens glandulifera*	-	Himalayan Balsan	-NA-
58.	*Impatiens scabrida*	-	Three horned balsan	-NA-
59.	*Indigofera heterantha*	Pree	Himalayan Indigo	-NA-
60.	*Inula grandiflora*	-	Showy Inula	Endangered
61.	*Inula royleana*	Pauskara	Himalyan Elecampane	-NA-
62.	*Iris kemaonensis*	-	Kumaon Iris	-NA-
63.	*Leontopodium himalayanum*	-	Himalayan Edelweiss	-NA-
64.	*Lingulariaamplexicaulis*	-	Stem Claspineyligularia	-NA-
65.	*Logistic kunawurensis*	-	Kinnaur Lagotis	-NA-
66.	*Lomatogoniumcarinthiacum*	-	Blue Felt Wort	-NA-
67.	*Meconopsis aculeata*	Kanta	Blue Poppy	-NA-
68.	*Megacarpaeapolyandra*	Ban Palak	Barmola Rook	-NA-
69.	*Melanoserismacrorhiza*	Chyate	Violet Dandelion	-NA-
70.	*MorinaCoulteriana*	-	Yellow Whorl Flower	-NA-
71.	*Morina longifolia*	-	Himalayan Whorl Flower	-NA-
72.	*Morinapolyphylla*	-	Many Leaved Whorl Flower	-NA-
73.	*Myosotis Sylvatica*	-	Wood Forget-me-not	-NA-
74.	*Oxytropislapponica*	-	Northen Milk Vetch	-NA-
75.	*Pedicularisbicornuta*	-	Horned Lousewort	-NA-
76.	*Pedicularis pyramidata*	-	Pyramid Lousewort	Least Concern
77.	*Persicarianepalensis*	-	SpoltedLadysthumb	-NA-
78.	*Picrorhizakurroa*	Karoo	Kutki	Endangered\

79.	*Pleurospermumcandollei*	Gughi	Paper Cup Flower	-NA-
80.	*Podophyllum bezecuidrum*	Ban Kakri	Himalayan Mapple	Threatened
81.	*Polygontumcirrhifolium*	-	Coiling Leaf Soloman Seal	-NA-
82.	*Polygonum molle*	Trod	Sikkim Knotweed	-NA-
83.	*Potentilla argyrophylla*	-	Himalayan cinquefoil	-NA-
84.	*Potentilla atrosanguinea*	-	Himalayan cinquefoil	-NA-
85.	*Potentilla cuneata*	-	Five finger cinquefoil	-NA-
86.	*Potentilla nepalensis*	-	Nepal cinquefoil	-NA-
87.	*Primula denticulate*	Salkute	Drum Stick Primula	-NA-
88.	*Primulainvolucrata*	-	Tall Pose Primrose	-NA-
89.	*Primula macrophylla*		MoorcraftPrimos	-NA-
90.	*Primula reptans*	-	Creeping Primrose	-NA-
91.	*Pseudomertensiamaltkioide*	-	-	-NA-
92.	*Ranunculus diffusus*	-	Spreading Butter Cup	-NA-
93.	*Rheum austral*	Chukhri	Red-veinet Pie Plant	-NA-
94.	*Rhodiolahimalensis*	-	Himalayas Rhodiola	-NA-
95.	*Rhodiola imbricate*	Rose Root	Rhodiola	-NA-
96.	*Ribes griffthi*	-	-	-NA-
97.	*Roscoea purpurea*	-	Purple Roscoe Lily	-NA-
98	*Saussureaalbescens*	Pirya	Pink Saw Wort	-NA-
99.	*Saussureagraminifolia*	Baan	Grass leaved Saw Wort	-NA-
100.	*Saussureanepalensis*	-	Nepal Saw Wort	-NA-

101.	*Saxifraga sibirica*	-	Siberian saxifrage	-NA-
102.	*Seliumvaginatum*	-	Bhut Keshi	-NA-
103.	*Semenoviacandicans*	-	White leaf Hogweed	-NA-
104.	*Senecio chrysanthemoides*	-	CherfulSenico	-NA-
105.	*SenerioJacquementianus*	-	-	-NA-
106.	*Silene edgeworthii*	-	Edgeworth's Campion	-NA-
107.	*Swertia cordata*	-	Heart Leaf Swertia	-NA-
108.	*Tanacetum dolichophyllum*	Ghuggulu	Himalayan Tansies	-NA-
109.	*Thermopsisbarbata*	-	Black Pea	-NA-
110.	*Thymus linearis*	JungliAjwain	Wild Thyme	-NA-
111	*Trillium govanianum*	NaagChattri	Himalayan Trillium	-NA-
112.	*Trollius acaulis*	-	Dwarf Globe Flower	-NA-
113.	*Valerianajatamansi*	Smak	JatamansiMushkbala	-NA-
114.	*Viola biflora*	-	Alpine yellow violet	-NA-
115.	*Waldheimiaglobra*	-	Smooth Ground Daisy	-NA-
116.	*Waldheimiatomentoses*	-	White Leaf Ground Daisy	-NA-

Annexure-XIII

FACTSHEET RELATED TO ESZ IN RESPECT OF NATIONAL PARK/ SANCTUARY

Name of the State: Himachal Pradesh

***

	Name of the protected Area- KugtiWildlife Sanctuary	
I.	Hard copy of the proposal	Annexure-I
II.	Soft copy of the proposal (CD/E-mail)	Enclosed
III.	A legible black and white/ colour map (A-4 size) showing notified boundary of the protected area and clearly demarcating eco-sensitive zone (with hatching) with GPS coordinates of prominent points (East, West, North & South) along with dist from boundary of PA.	Annexure-II&III
IV.	Preamble providing specific details on the protected area.	Annexure-IV
V.	Description of ESZ boundary	**NORTH:** North boundary of the proposed Eco-sensitive Zone starts from the last point of Tundah Wildlife Sanctuary on its north eastern side at $76^0$37'22.549''E $32^0$34'56.149''N and ends at $76^0$49'39.304''E $32^0$32'42.441''N on north east in Lahaul forest Division **EAST:**It starts at $76^0$49'39.304''E $32^0$32'42.441''N in Lahaul forest Division and ends at 76^0 52'01.500''E 32^0 27'54.624''N towards Dhauladhar wildlife sanctuary. **SOUTH:** Startsat $76^0$40'16.414''E 32^0 22'11.341''N upto $76^0$43'05.106''E $32^0$21'40.806''N. towards Dhauladhar wildlife sanctuary **WEST:**Starts from Kelang Bazir temple at $76^0$44'2.054''E $32^0$28'42.337''N up to 76^0 36'45.868''E $32^0$27' 47.660''N.
VI.	Details of Biodiversity value (if available) along with list of rare/endangered/ endemic flora and fauna (along with their scientific names) found in PA.	Deodara (*Cedrus deodara*), Kail (*Pinus wallichiana*), Spruce (*Piceasmithiana*), Silver fir (*Abies pindrow*), Ban (*Quercus semicarpofolia*) Pink Burans (*Rhododendron campanulatum*) Himalayan Ibex *(Capra ibex)*, Snow Leopard (*Panthera uncia)* ,HimalayanTahr*(Hemitragusjemlahicus),*Muskdeer *(Moschus moschieferus)*, Ghoral*(Nemorthaedus goral),*Leopard*(Panthera pardus),*Brown Bear *(Ursus arctos)*, Black Bear *(Selenarctos thibetanus),*Monal*(Lophophorousimpejanus),*Western Tragopan *(Tragopan*

		*melanocephalus),*Chakor*(Alectoris chukar),*Koklas*(Pucrasiamacrolopha)* etc.
VII.	List of villages falling within ESZ	Annexure-V&VI
VIII.	Activities to be prohibited/ regulated/promoted in the eco sensitive zone.	Annexure-VII
IX.	Proposed composition of monitoring committee.	Para XI of Draft Proposal
X.	ESZ area (sq km) and extent (dist) from PA in km.	82.00sq km 1 km
XI.	PA area (sq km)	405.49 sq km
XII.	If the PA has 0km ESZ on any side, justification to be provided by the State Govt While forwarding the proposal	Annexure-VIII
XIII.	Boundary description in physical terms (roads, hills, river bodies, railway line etc) by starting from a point on the boundary and then moving clockwise along the boundary and reaching back the starting point	Annexure-IX
XIV.	If a proposal has more than one PA (sometimes upto 4-5), a justification may be provided as to why it contains more than one PA.	NA
XV.	Justification for not having a corridor connecting one PA to the other	Annexure-X

Proposed Draft Notification

Name of the Wild life Sanctuary- Kugti

WHEREAS, the Kugti Wildlife Sanctuary is situated between 32^0- 21'-32" N to 32^0-35'-00" N Latitudes and 76^0-34'-23" E to 76^0-53'-02" E Longitudes which falls on Survey of India toposheet No.52D/10,52D/11,52D/14 and 52D/15 on scale1:50,000. The Kugti Wildlife Sanctuary is located in Bharmour Sub division of Chamba district and falls under the administrative control of Wildlife Division Chamba.

The limits of the Kugti Wildlife Sanctuary as per Govt.of Himachal Pradesh Notification No.FFE-B-F(6)-11/2005-II dated 18th September,2013 under Section 26(A) of the Wildlife(Protection) Act,1972 is as under-

North: - Starting from point 5740 mtr.along the ridge line to point 5723 mtr.to point 5681 to point 5842 mtr.to Dugg ka jot at point 5342 mtr.alongPangi Dhar to point 5861 mtr.to Grechu jot to Kugtigalu at point 5040 mtr.To point 5573 mtr.to point 5700 mtr. to Laihas jot at point 4991 mtr.to point 6070 mtr. all along the Pangidhar.

East: - From point 6070 mtr. to point 5444 mtr. to point 5304 mtr.to point 5702 mtr. along Dhog Dhar to point 5535 mtr.along ridge to point 5416 mtr. to point 5422 mtr.alongNikora Dhar to Nikora Pass to point 4749 mtr.

South: - From Nikora Pass at point 4749 mtr. to point 4759 mtr. to point 5184 mtr. to point 4871 mtr. to Khidala gallu to Chobu Pass along Goarikhad and Dhanchhow nalla up to Dhanchhu got.

West : - From Dhanchhu got along Ghoi nalla up to Budhil nalla then along right bank of Budhil nalla up to point 2500 mtr.to Khesar got to point 3128 mtr.to Chalatu nalla to Chhih got to point 3081 mtr. to point 2941 mtr. to Lahal got along outer boundary of Lal RF to Dharaul got to point 1974 along the left bank of Budhil nalla to Cheri Behi to Goru Ban to point 2565 mtr. to khapar to point 4018 mtr. to point 4790 mtr. to point 5295 mtr. all along the ridge of Jul Dhar to point 5336 mtr. up to point 5740 mtr.all along the ridge line.

Total area: - 405.49 sq.kms.

AND WHEREAS, it is necessary to conserve and protect the area of suitable width from the boundary of the proposed rationalized protected area of Kugti Wildlife Sanctuary as Eco-sensitive Zone from ecological and environmental point of view.

AND WHEREAS, the Central Government proposes to notify the area of suitable width from the boundary of the proposed rationalized area of Kugti Wildlife Sanctuary enclosed within the boundary described below in the State of Himachal Pradesh as 'Eco Sensitive Zone' (here in after called as the Eco Sensitive Zone) in exercise of the powers conferred by subsection (1) read with clause (v) and clause (xiv) of sub – section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) and for that purpose hereby publish this notification as required under sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, for the information of the public likely to be affected thereby; and notice is hereby given that the said draft notification shall be taken into consideration on or after the expiry of a period of sixty days from the date on which copies of the Gazette of India containing this notification are made available to the Public. Any person interested in making any objections or suggestions on the proposals contained in the draft notification may do so in writing for consideration of the Central Government within the period so specified through post to the Secretary, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, Lodi Road, New Delhi-110003, or electronically at e-mail address: envisect@nic.in.

DRAFT PROPOSAL

1. Boundaries of Eco-sensitive Zone –

(i) The said Eco-sensitive Zone shall comprise of the area of 1000 mtr. width from the boundary of the rationalized area of Kugti Wildlife Sanctuary situated in the Chamba District of Himachal Pradesh. It has been proposed on the Southern and Western side along the boundary of the Sanctuary with an average width of 1 km.Thus, the total area of proposed Eco-Sensitive Zone will be 38.67 sq.km.

(ii) The map of the Eco-sensitive Zone is at Annexure-III and the list of the forests within area of suitable width of the boundary of Kugti Wildlife Sanctuary in the Eco sensitive Zone are as follows:

(a) List of Forests proposed for Eco- sensitive Zone:-

S. No.	Name of Division	Name of Range	Name of Beat	Name of Forest	Comptt.	Area
1.	Wild Life Chamba/ Bharmour	Wild Life Range Bharmour/ Bharmour	Upper Kugti	DPF Sapper Kinor I DPF Sapper Kinor II	-	
			---do---	RF Bhianu II (Part)	-	
			Lower Kugti	DPF Thaintu (Part)	-	
			---do---	DPF Deosa	-	
			---do---	DPF Kangru	-	
			---do---	RF Kugti III	-	
			---do---	RF Dharol(Part)	-	
			Dharol	RF Dharol (Part)	-	
			---do---	DPF Dharol I	-	
			---do---	DPF Darati	-	
			---do---	RF Kugti I and II	-	
			---do---	DPF Goru da ban	-	
2.	LahaulForest Division	Udaipur	Trilok Nath	DPF Triloknath	-	
			Bardang	DPF Bardang	-	
			---do---	DPF Lober	-	
			Jholing	DPF Jholing CI, CII & CIII	-	
			---do---	DPF Gilding	-	
			---do---	DPF Bihadi	-	
				Total (including non forest area)	**-**	**82.00 sq km**

All the Forests listed above will be part of eco sensitive Zone of Kugti Wildlife Sanctuary.

(b) List of Gram Panchayats covered in the Eco-Sensitive zone:-

S. No.	Division	Gram Panchayat	Villages
1.	Chamba (Sub Division Bharmour)	Kugti/Harsar	Dalotu, Upper Kugti, Lower Kugti, Harsar, Mat, Bahnut, Ghot, Sandi, Dunda

These villages are falling within the proposed eco sensitive zone.

(iii) All activities in the Kugti Wild Life Sanctuary are being governed by the provisions of the Wildlife (Protection) Act, 1972 (53 of 1972).

2. Zonal Master Plan for the Eco-sensitive Zone:-

a) A Zonal Master Plan for the Eco-sensitive Zone shall be prepared by the State Government within a period of one year from the date of publication of this notification in the Official Gazette and shall be submitted forapproval to the Central Government in the Ministry of Environment and Forests, Government of India.

b) The Zonal Master Plan shall be prepared with due involvement of all concerned State Departments, such as Environment, Forest, Urban Development, Tourism, Municipal and Revenue Department and the Himachal Pradesh State Pollution Control Board for integrating environmental and ecological considerations into it and shall provide for restoration of denuded areas, conservation of existing water bodies, management of

catchments 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.

c) The Zonal Master Plan shall demarcate all the existing village settlements, types and kinds of forests, agricultural areas, fertile lands, green areas, horticultural areas, orchards, lakes and other water bodies and change of land use from green uses such as orchards, horticulture areas, agriculture parks and others like places to non green uses shall be permitted in the Zonal Master Plan, except that strictly limited conversion of agricultural lands may be permitted to meet the residential needs of the existing local residents together with natural growth of the existing local populations, without the prior approval of the State Government.

d) The Zonal Master Plan shall be a reference document for the State Level Monitoring Committee for any decision to be taken by them including consideration for relaxation.

e) The Zonal Master Plan shall indicate measures and lay down stipulations for regulation of traffic.

f) Pending the preparation of the Zonal Master Plan for Eco-sensitive Zone and approval thereof by the Central Government in the Ministry of Environment and Forests, all new constructions shall be allowed only after the proposals are scrutinized and approved by the Monitoring Committee as referred to in paragraph 4 and there shall be no consequential reduction in Forest, Green and Agricultural area.

g) The State Government shall prescribe additional measures, if necessary, in furtherance of the objectives and for giving effect to the provisions of this notification.

3. Regulated or restricted activities in the Eco-sensitive Zone

I. Industrial Units:-

a) New wood based industry in private area shall be allowed only after obtaining permission from the State Government and shall be operated as per rules and regulation framed by the state Government from time to time .

b) No new polluting industry shall be regulated as per relevant Act and rules within the eco sensitive zone of KugtiWild Life Sanctuary.

c) No new highly polluting industry shall be set up within **eco sensitive zone area** of the Kugti Wild Life Sanctuary.

II. Construction Activities –

a) In Forest area no Commercial construction including Hotels / Resorts construction shall be allowed. Only listed activities will be allowed.

b) Domestic construction included housing small shop, Dhabas and small outlets shall be permitted only in private land.

c) Commercial construction including Hotels / Resorts shall not be in eco sensitive zone.

III. Quarrying and Mining –

a) No commercial Mining activities in the Forest area will be allowed except for domestic use as per record of rights as given in the Forest Settlement Report by H.M Glover, 1921

b) Mining activities in private area for domestic use shall be allowed subject to rules and regulations framed by the government from time to time.

c) Stone / mineral crushers for domestic use shall be allowed to be established within the eco-sensitive zone after taking permission from competent authority.

IV. Trees: -Felling of trees in the Forest area shall be allowed as per working plan. And felling of trees in private area shall be allowed under the provision of Land Preservation Act, 1978.

V. Water: -

a) Extraction of ground water in forest area for domestic use shall be permitted only with the permission of State Government.

b) Extraction of ground water in forest area for commercial use shall be prohibited.

c) Extraction of ground water in private area for bonafide domestic and agriculture use shall be permitted.

d) Extraction of ground water in private area for commercial use shall be permitted with permission of competent authority.

VI. Noise pollution: - The Environment Department or the State Forest Department,Himachal Pradesh Shall be the authority to draw up guidelines and regulations for the control of noise in the Eco-

Sensitive Zone.

VII. Discharge of effluents: - No untreated or industrial effluent shall be permitted to be discharged into any water body within the Eco-sensitive Zone and treated effluent shall meet the provisions of the Water (Prevention and Control of Pollution) Act, 1974.

VIII. Solid Wastes:-

a) The solid waste disposal shall be carried out with prior permission of State Government .
b) The biodegradable material may be recycled preferably through composting or vermin-culture and the inorganic material may be disposed of in an environmentally acceptable manner at a site identified outside the Eco-sensitive Zone managed on scientific principles.
c) Solid wastes and other waste material shall not be allowed to be dump within the ESZ.

IX. Other: -

a) **Rights: -** All rights of right holders shall remain continue as per settlement record.
b) **Migratory Graziers:** - All migratory Gaddis & Gujjars shall be allowed as per the provision of settlement Report of H.M. Glover, 1921.
c) **Sign Board and Hording**: - All Sign Boards and Hoardings shall be allowed after obtaining permission from competent authority**.**
d) Hydro and Thermal Electric Projects: -ExistingHydro- electric Project shall be permitted in a regulated way subject and regulation lay down by the state Government from time to time. No Thermal / Nuclear power projects and future Hydro- electric project shall be allowed within the Eco-sensitive Zone.
e) Road: - Construction and widening of road shall be allowed after obtaining permission under FCA Act, 1980 and muck management plan shall be strictly adhered to and un scientific muck dumping shall not be permitted within the Eco-sensitive zone.
f) **Other Eco- friendly activities:-**Other friendly activities like organic and improved agricultural techniques rain water harvesting, soil and water conservation measures, plantation of native spps. Solar/ wind energy development and adoption of green technology shall be encouraged within Eco-sensitive Zone.
g) **Eco-tourism**: - Eco-tourism will be allowed in the Eco-sensitive Zone only with the prior permission of the State Government.
h) **Extraction of Medicinal Plant**: - Extraction of minor forest produce including medicinal plants will be allowed as per the provision of settlement Report of 1921.
X. **Governance of the ESZ: -**The ESZ shall be controlled by the Concerned DFO (T) i.e.,DFO,Bharmour.

XI. Monitoring Committee: -

a) Under the provisions of sub-section (3) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby constitutes a committee to be called the Monitoring Committee to monitor the compliance with the provisions of this notification.
b) The Monitoring Committee shall consist of not more than ten members and the Chairman of the Monitoring Committee shall be an eminent person with proven having knowledge of ecology, managerial or administrative experience and understanding of local issues and the other members shall be: -

- Chief Conservator of Forests (T) Chamba will be the Chairman monitoring Committee
- Divisional Forest Officer (Wild Life) will be as a Member Secretary and Divisional Forest Officer (Territorial) will be a Member.
- A representative of the Ministry of Environment and Forests, Government of India.
- One representative of Non-Governmental Organizations working in the field of environment (including heritage conservation) to be nominated by the Government of India.
- XEN, HP Pollution Control Board, having jurisdiction of the area.
- SDM, Bharmour or his representative.

c) The powers and functions of the Monitoring Committee shall be restricted to the compliance of the provisions of this notification only.

d) In case of activities requiring prior permission or environmental clearance, such activities shall be referred to the State Level Environment Impact Assessment Authority (SEIAA), which shall be the Competent Authority for grant of such clearances as per the provisions.

e) The Monitoring Committee may also invite representatives or experts from concerned Departments or Associations to assist in its deliberations depending on the requirements on issue to issue basis.

f) The Chairman or Member Secretary of Monitoring Committee shall be competent to file complaints under section 19 of the Environment (Protection) Act, 1986 for non-compliance of the provisions of this notification.

g) The Monitoring Committee shall submit its annual action taken reports by the 31st March of every year to the Ministry of Environment and Forests and the Central Government in the Ministry of Environment and Forests shall give its directions to the Monitoring Committee from time to time for effective discharge of the functions of the Committee.

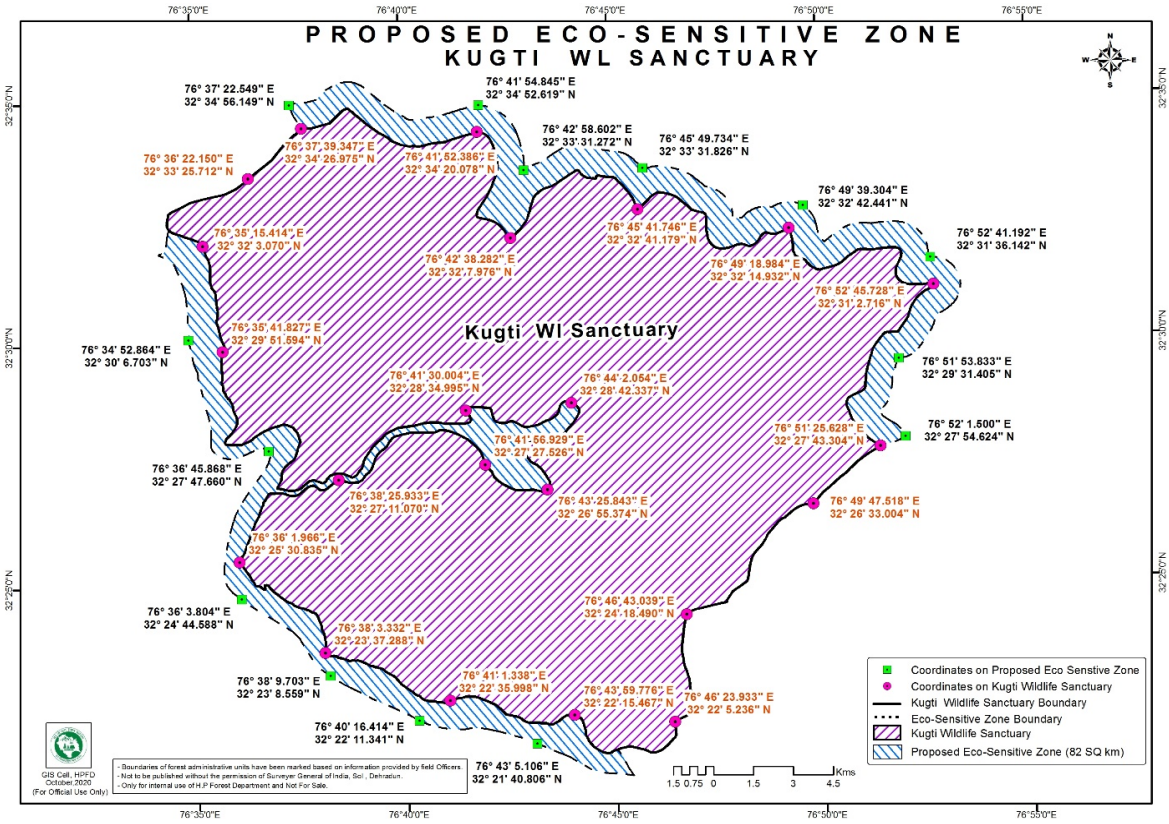
Sd/-	Sd/-	Sd/-
Divisional Forest Officer	Divisional Forest Officer	CF (T)-cum- Chairman
Wildlife Division, Chamba	Forest Division, Bharmour	Chamba Forest Circle,
(Member Secretary)	(Member)	Chamba, HP

Annexure –II of Annexure XIII

Geo Co-ordinates of boundary of KugtiWildlife Sanctuary and its Eco-sensitive zone

KugtiWildlife Sanctuary	Eco-sensitive Zone
$76^0$35’15.414’’E $32^0$32’3.07’’N	76^0 34’52.864’’E 32^0 30’6.703’’N
$76^0$42’38.282’’E $32^0$32’7.976’N	76^0 36’45.868’’E 32^0 27’47.660’’N
$76^0$49’18.984’’E $32^0$32’14.932’’N	76^0 36’3.804’’E 32^0 24’44.588’’N
$76^0$52’45.728’E $32^0$31’2.716’’N	76^0 43’05.106’’E 32^0 21’40.806’’N
$76^0$43’59.776’’E $32^0$22’15.467’’N	76^0 52’01.500’’E 32^0 27’54.624’’N
$76^0$38’3.332’’E $32^0$23’37.288’’N	76^0 52’41.192’’E 32^0 31’36.142’’N
$76^0$36’1.966’’E $32^0$25’30.835’’N	76^0 49’39.304’’E 32^0 32’42.441’’N
$76^0$41’56.929’’E $32^0$27’27.526’’N	76^0 45’49.734’’E 32^0 33’31.826’’N
$76^0$44’2.054’’E$32^0$28’42.337’’N	76^0 41’54.845’’E 32^0 34’52.619’’N
$76^0$38’25.933’’E$32^0$27’11.070’’N	76^0 37’22.549’’E 32^0 34’56.149’’N

Annexure –III of Annexure XIII



Preamble:

Kugti sanctuary is named after the Kugti village which falls in Bharmour Sub Division of tribal area. This sanctuary was originally notified vide Notification No. Ft. 43-51/50-VI dated 19-09-62, further revised vides No. 5-11/70-SF dated 27-03-1974. The sanctuary is located in the east of Bharmour in the catchment of Budhil nallah away from habitation and in the remote area. Thus the significance can be attributed to the ideal habitat of the sanctuary, which harbors majestic Ibex, Tahr, Musk Deer, Goral, Brown Bear, Black Bear, Snow Leopard, Common leopard, Monal, Koklas, and Snowcock. There is good interface of wooded areas and vast expenses of pastures that forms an ideal habitat for animals as well as birds.

Besides this, one temple named as "Kailing" is an important representation of the rich religious and cultural heritage. This temple is located at a distance of 5 Kms. from Kugti towards Grechu pass and is visited by many pilgrims of H.P. and other states. Apart from wildlife, the panoramic valley provides an adventurous trekking route for nature enthusiasts. On the southern fringe of the sanctuary, there is the famous Kailash Mountain and Mani Mahesh Lake where fair is celebrated during August- September every year and is most important from pilgrimage and tourism point of view.

Keeping in view the rich biodiversity of the area, an area of up to 1 km. width in north, , North east, south and south west direction of the sanctuary is proposed as Eco- Sensitive Zone. The other sides of the sanctuary are surrounded by another Wildlife Sanctuariesi.eTundah and Dhauladhar Wildlife Sanctuaries.

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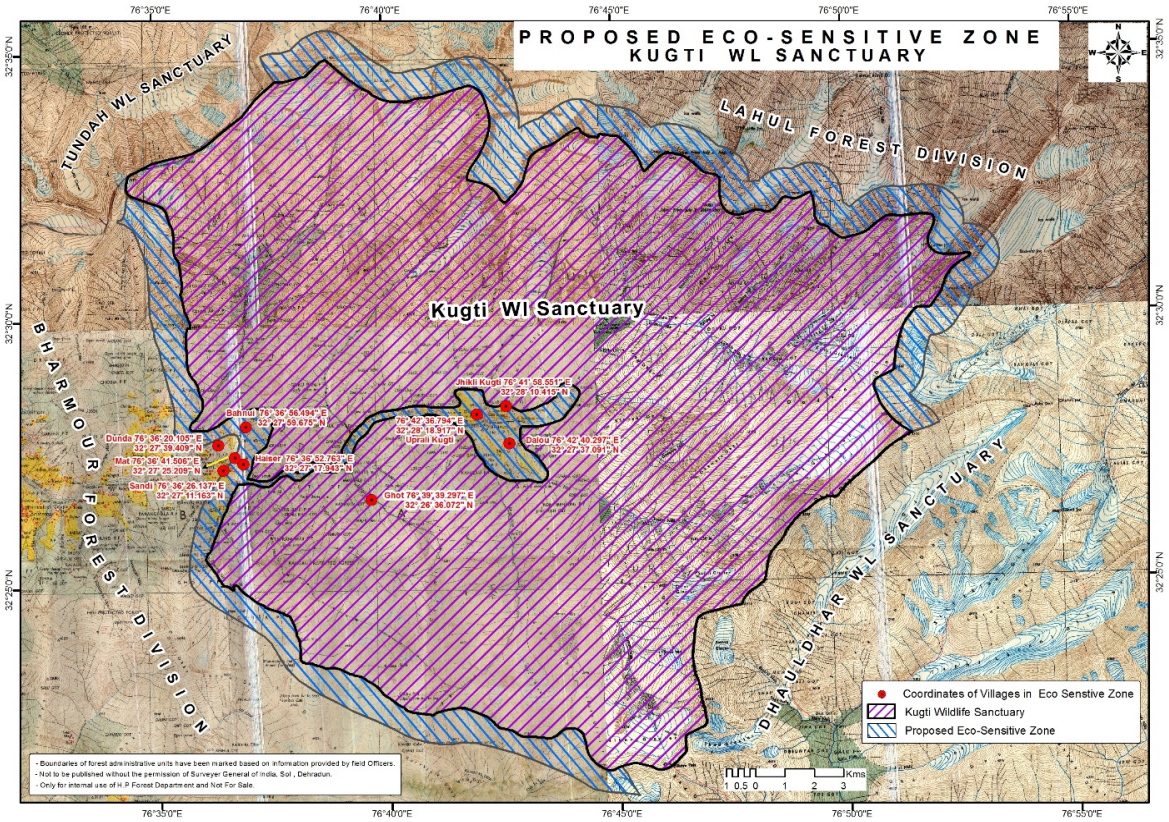
Annexure –V of Annexure XIII

List of villages falling within Eco Sensitive Zone of KugtiWildlife Sanctuary

Co-ordinates of village falling in Eco –sensitive Zone of Kugti Wildlife Sanctuary		
Sr. No.	Name of Village	Co-ordinates
1.	Dalotu	$76^0$42’40.297”E $32^0$27’37.091”N
2.	Upper Kugti	$76^0$42’36.794”E $32^0$28’18.917”N
3	Lower Kugti	$76^0$41’58.551”E $32^0$28’10.415”N
4	Hadser	$76^0$36’52.7627”E $32^0$27’17.943”N
5	Mat	$76^0$36’41.506”E $32^0$27’25.209”N
6	Bahuni	$76^0$36’56.494”E $32^0$27’59.675”N
7	Ghot	$76^0$36’219.297”E $32^0$26’36.072”N
8	Sandi	$76^0$36’26.137”E $32^0$27’11.163”N
9	Dunda	$76^0$36’20.105”E $32^0$27’39.409”N

Annexure –VI of Annexure XIII



Annexure-VIII of Annexure XIII

Justification for not proposing Eco-Sensitive Zone towards North-Western and South-East side of Kugti Wildlife Sanctuary:-

The Sanctuary is surrounded by Dhauladhar Wildlife Sanctuary on South East Side and Tundah Wildlife Sanctuary on North West direction. Hence, No Eco-Sensitive Zone has been proposed in these directions.

Annexure-IX of Annexure XIII

ESZ BOUNDARY DESCRIPTION IN PHYSICAL TERMS OF KUGTI WILDLIFE SANTUARY IN H.P.

Boundary description in physical terms of Kugti Wild life Sanctuary is as under:-

NORTH: North boundary of the proposed Eco- sensitive Zone starts from the last point of Tundah Wildlife Sanctuary on its north eastern side at $76^0$37’22.549’’E $32^0$34’56.149’’N and ends at $76^0$49’39.304’’E $32^0$32’42.441’’N on north east in Lahaul forest Division

EAST: It starts at $76^0$49’39.304’’E $32^0$32’42.441’’N inLahaul forest Division and ends at 76^0 52’01.500’’E 32^0 27’54.624’’N towards Dhauladhar wildlife sanctuary.

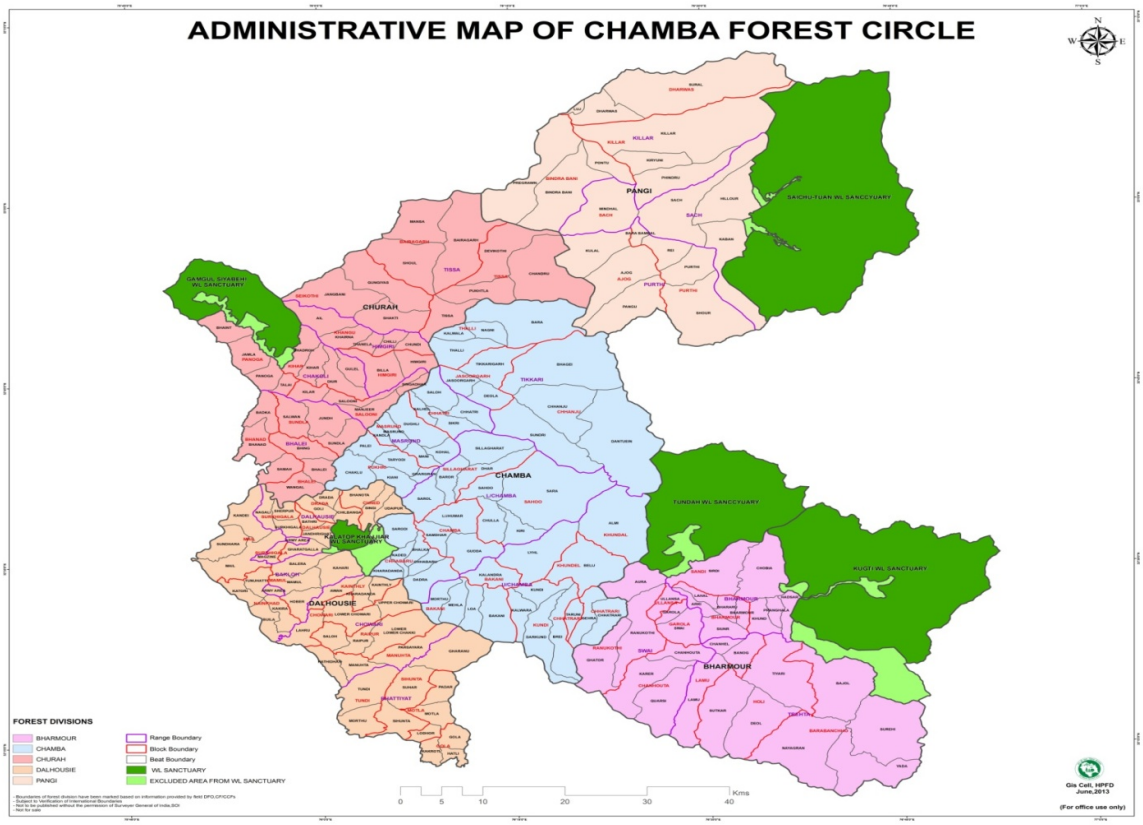
SOUTH: Startsat $76^0$40’16.414’’E 32^0 22’11.341’’N upto $76^0$43’05.106’’E $32^0$21’40.806’’N. towards Dhauladhar wildlife sanctuary

WEST: Starts from Kelang Bazir temple at $76^0$44’2.054’’E $32^0$28’42.337’’N up to 76^0 36’45.868’’E $32^0$27 47.660’’N

Justification for not having a corridor connecting one PA to the other

All the 5 Wildlife Sanctuaries under Wildlife Division Chamba except Tundah Wildlife Sanctuary and Kugti Wildlife Sanctuary are located in different corners of Distt.Chamba and spread over 5 Territorial forest divisions (Administrative Map of Chamba forest Circle showing territorial divisions and Wildlife Sanctuaries is being attached).Moreover, the natural barriers and the aerial distance between the WLSs are high to act as corridor connecting one PA to the other. The Approximate Aerial distances between the WLSs are as under:-

1. KugtiWLS to Kalatop Khajjiar WLS = 48 Km
   GumgulSiyabehi WLS = 63 Km
   SaichuTwan WLS = 30 Km



Annexure- XIV

LIST OF PERSONS HAVING LICENSED ARMS AROUND SANCTUARY AREA

Sr. No.	Name & address of fire arms holders.	Licence No.	Gun No	Remarks
1.	S/Sh. Hadi S/o Sh. Diwana Village Upper Kugti Tehsil Bharmour Distt. Chamba.	1483/Cba	2092	SBML
2.	Ranjha S/o Sh. Bhotu, Vilage Upper Kugti.	209/Bhr.	209	SBML
3.	Dainjhu S/o Sh. Shayama Village Lower Kugti.	38/Cba	2814	SBML
4.	Badri S//o Sh. Ustaj Village Lower Kugti.	212/58/Cba	212	SBML
5.	Rijha S/o Mohan Village Upper Kugti.	-	1447	SBML
6.	Moti S/o Sh. Franti Village Lower Kugti.	39	2823	SBML
7.	Lozan S/o Sh. Indru Village Lower Kugti.	-	2824	SBML
8.	Karmu S/o Sh. Mehtu Village Lower Kugti.	206/53/Cba	206	SBML
9.	Bishnu S/o sh. KouruVill. Lower Kugti.	211/53	211	SBML
10.	Raghu S/o Sh. DhumaVill. Lower Kugti.	2206	2206	SBML
11.	Dhanni Ram S/o sh. KhonkDassVill. Lower Kugti.	-	1454	SBML
12.	Mansa S/o sh. DumnuVill. Lower Kugti.	51/Bhr.	2822	SBML
13.	Jeet S/o sh. MusafirVill. Kugti.	8/Bhr.	2299/82	SBML
14.	Chamaru S./o sh. Bhagat Vill. Kugti.	45/Bhr.	2302/Bhr/76	SBML
15.	Amar Singh S/o Sh. Mehta Vill. Lower Kugti.	47/Bhr.	208/76	SBML
16.	Baldev Parshad S/o sh. Rumi Vill. Kugti.	19/Bhr./82	20	SBML

TENTATIVE APO OF KUGTI WILDLIFE SANCTUARY (2020-21 TO 2030-31)												
Sr. No.	Item of Work	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	TOTAL
		Rs. In Lac.	Rs. In Lac.	Rs. In Lac.	Rs. In Lac.	Rs. In Lac.	Rs. In Lac.	Rs. In Lac.	Rs. In Lac.	Rs. In Lac.	Rs. In Lac.	
A.I	Infrastructure Development	11.00	13.00	15.00	18.00	18.00	20.00	20.00	16.00	18.00	25.00	174.00
A.II	Habitat improvement	33.00	15.64	15.00	16.86	16.00	16.00	15.00	15.00	15.00	15.00	172.50
A.III	Capacity Building/Training/ Research & Monitoring	3.00	7.50	8.00	9.00	10.00	10.00	10.00	10.00	10.00	10.00	87.50
A.IV	Wildlife Protection and Conservation Activities	13.60	7.50	7.50	8.00	8.00	8.50	8.50	9.00	9.00	9.00	88.60
A. V	Education and Awareness Generation	6.20	4.75	5.00	5.50	6.00	7.00	8.00	9.00	8.00	8.00	67.45
A.VI	Wildlife Tourism Management	6.50	8.00	10.00	12.00	12.00	12.00	14.00	16.00	18.00	18.00	126.50
A.VII	Field equipment	2.50	8.00	8.50	9.25	8.00	8.00	8.00	8.00	8.00	6.00	74.25
A. VIII	Office expenses	1.00	1.75	2.00	2.00	2.00	2.00	2.50	2.50	2.50	3.00	21.25
A.IX	Community Development through Participation	3.50	3.00	3.25	3.50	3.50	3.50	4.00	4.00	4.00	5.00	37.25
A. X	Human-wild animal Conflict	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	9.50
A.XII	Operational Support	1.50	3.25	3.50	3.50	3.50	3.50	4.00	4.00	4.00	4.50	35.25
	G.Total:-	82.30	73.39	78.75	88.61	88.00	91.50	95.00	94.50	97.50	104.50	894.05

ANNEXURE-XVI

Government of Himachal Pradesh
Forest Department

No. FFE-B-A (10)-1/2009 18 Dated Shimla-2, the

Notification

In supersession of all previous Notification Nos. Fts (F)6-7/82-Loose, Fts-B(B)-6-7/82-II, FFE-B-A(10)-2005 and FFE.B-A(10)-1/2009 dated 09.04.1996, 27.08.2001, 20.07.2006 and 04.03.2014 regarding relief due to losses caused to human beings and domestic livestock by the Wild animals as defined in Wildlife (Protection) Act, 1972, the Governor, Himachal Pradesh is pleased to notify the following enhanced relief rates as under:-

S.No	Particulars	Enhanced Rates (in Rupees)
1.	In case of death of human being.	4,00,000/-
2.	In case of permanent disability to human being.	2,00,000/-
3.	In case of grievous injuries/partial disability to human being.	75,000/-
4.	In case of simple injury to human being as per actual cost of medical treatment subject to maximum.	15,000/-
5.	In case of loss of Horse, Mule, Buffalo, Ox, Yak and Camel	30,000/-
6.	In case of loss of Cow Jersey and cross breed.	15,000/-
7.	In case of loss of Cow (local breed), Donkey, Churu, Churi & Pashmina Goat.	6,000/-
8.	In case of loss of Sheep, Goat and Pig.	3,000/-
9.	In case of loss of young ones of Buffalo, Cow Jersey and all other breeds, Mule, Yak, Horse, Camel, Churu, Churi, Donkey, Pashmina Goat, Sheep and Goat.	15,00/-

The following guidelines will be followed for grant of relief:-

i) Production of postmortem report in case of loss of human life, certificate in case of grievous injury, partial & permanent disability and prescription slip as well as verification of actual cost of Medical treatment in case of simple injury (including Monkey bites) from the Medical officer of a Government Institution/Govt. recognized Medical Institution, as the case may be.

ii) The verification of loss of cattle that was actually caused by wild animal can be done by the Pradhan/Up Pradhan of Panchayat/Patwari/President Notified Area Committee/ Chairman, Municipal Committee, Commissioner/ Mayor/Deputy Mayor, Municipal Corporation of the area/Elected Member of the Cantonment Board area/Councilor of the area, Range Officer/Deputy Ranger/Forest Guard or any other forest officer higher in rank than a Range Officer, Veterinary Officer or Veterinary Pharmacist or officer authorized by Veterinary officer of the area.

iii) All DFOs in HP shall be the final authority to sanction all cases of relief claims on account of losses caused by the wild animals to humans and domestic livestock.

iv) The DFOs shall release 25% of the amount of relief prescribed for human loss/permanent & partial disability/grievous injury on receipt of report as interim relief immediately to the family of the deceased/affected person after due

verification in anticipation of formal sanction without delay. The balance amount will be released after receipt of the complete relief claim.

v) For immediate disbursement of relief claim, a corpus fund will be created at the level of Principal Chief Conservator of Forests (Wildlife)-cum Chief Wildlife Warden. All the budget allocations from the state as well as from State CAMPA in respect of relief shall be deposited in the aforesaid corpus fund. The PCCF (WL) will ensure the disbursement of relief amount in respect of aforesaid categories of losses on the same day on receipt of a request from the concerned DFO. The DFO concerned will ensure to send such requests by E-mail/ Fax asking for funds of relief amount on the same day of incident or on the day of receipt of information of the incident from the claimant. DFO will make payment of aforesaid 25% of the relief amount immediately from the budget available with him under any scheme and same will be recouped on receipt of funds from the Chief Wildlife Warden.

vi) All claims in respect of simple injury to humans shall be restricted to actual cost of medical treatment verified by the Medical Officer of a Government Institution/Govt. recognized Medical Institution subject to maximum of Rupees 15,000/- as prescribed above in the categories of losses.

vii) All cases of losses caused by the wild animals should be reported by the applicant to the nearest Forest Office within seven days of the incident and claims for relief is filed within one month to the nearest Range Forest Office under control of Divisional Forest Officer (territorial or wildlife). The claim can be filed either at the place where the loss by wild animal has occurred/reported or where the applicant resides. All time barred cases shall be sent to Govt. of Himachal Pradesh for approval.

viii) The relief will be granted in case of loss of livestock to the owner of the livestock. These rates would be applicable for killing of domestic animals by wild animals as defined in Wildlife (Protection) Act, 1972 in cattlesheds/cowsheds, private land, private premises and forests.

ix) The relief in case of loss of the human being will be granted in the order of preference given below:-

(a) Wife or husband, as the case may be.
(b) Sons, unmarried or divorced daughters and children of predeceased son (equal share).
(c) Daughters. (equal share).
(d) Grand Children being children of his/her sons or daughters who died before him/her (equal share).
(e) Father or Mother.
(f) Brothers or sisters or children of the deceased brothers (equal share).
(g) Failing all above any other next of kin entitled to a share in the estate.

x) All the prescribed rates shall be made applicable with immediate effect.

By Order,

Tarun Kapoor
Additional Chief Secretary (Forests) to the
Government of Himachal Pradesh

Endst. No. As above Dated Shimla-2 the 18 August, 2018

Copy forwarded to the following for information and necessary action:-

1. All the Additional Chief Secretaries/ Principal Secretaries /Secretaries to the Government of Himachal Pradesh.
2. All the Heads of Departments in Himachal Pradesh.
3. All the Deputy Commissioners in Himachal Pradesh.
4. The Principal Chief Conservator of Forests, (HoFF) HP Shimla-1.
5. The Principal Chief Conservator of Forests, (Wildlife) HP Shimla-1.
6. APCCFs (IT), CCFs/DFOs (Territorial & Wildlife).
7. Controller, HP Printing Press, Shimla for publication in H.P., Rajpatra.
8. Guard file.

(Sat Pal Dhiman) 18-8-2018
Joint Secretary (Forests) to the
Government of Himachal Pradesh
Ph.No. 0177-2621874

Endst. No. WL/Compensation Rates/ WLM/ 3840-99 dated/ 25-09-2018

Copy is forwarded to all CCFs/CFs/DFOs (Territorial) and (Wildlife) in H.P. for information and necessary action please.

Chief Conservator of Forests (Wildlife)
O/o Principal Chief Conservator of Forest,(Wildlife)
-cum-Chief Wildlife Warden, HP Shimla-171001

24/9/18

Annexure-XVII

PERFORMA FOR GROUP PATROLLING EXERCISE

1. Track information

Name of the Block			
Name of the forest covered			
Name of the track/trail			
Team Members			
Track Details			
Date	Starting point (Name & GPS coordinates)	Mid stations (Name & GPS coordinates)	End point (Name & GPS coordinates)
Total distance covered (km)			

2. WILD ANIMAL ENCOUNTER DATA (Direct Sighting)

S. N.	Name of Species	Place of Encounter	Location		Time	Distance from the Observer	Direction from observer (Left or Right side of the transect)	No. of individual seen				Activity (Feeding, resting,
			Latitude	Longitude				Male	Female	Offspring	Total	
1												
2												
3												

4												

3. WILD ANIMAL ENCOUNTER DATA (Indirect Sighting)

S. No.	Name of Species	Place of Evidence	Location		Time	Type of Evidence				No. of pellet groups/scats/ carcass
			Latitude	Longitude		Pellet/ Scat	Carcass	Signs	Others (specify)	
1										
2										
3										
4										
5										

4. WATER RESOURCES DATA

SN	Name of waterhole/source	Location		Condition	Remarks
		Latitude	Longitude		
1					
2					
3					
4					
5					
6					
7					
8					

5. AREA SELECTION FOR SOIL CONSERVATION WORKS DATA

SN.	Name of the forest	Location		Area	Name of place with GPS coordinates	Type of problem (Gully widening, Landslips, silt in nala etc.)	Intervention required (Create wire, check dam, Bioengineering works)
		Latitude	Longitude				
1							
2							
3							
4							
5							

6. COMBING OPERATION DATA

SN.	Name of forest	Location		Type of illegal material recovered (Traps/Snares/wire etc)	No. of materials
1		Latitude	Longitude		
2					
3					
4					
5					

7. WEED PRONE AREAS (INVASIVE ALIEN SPECIES)

SN	Name of the forest	Location		Name of the species	Area covered by weeds (approx.)
		Latitude	Longitude		
1					
2					
3					
4					