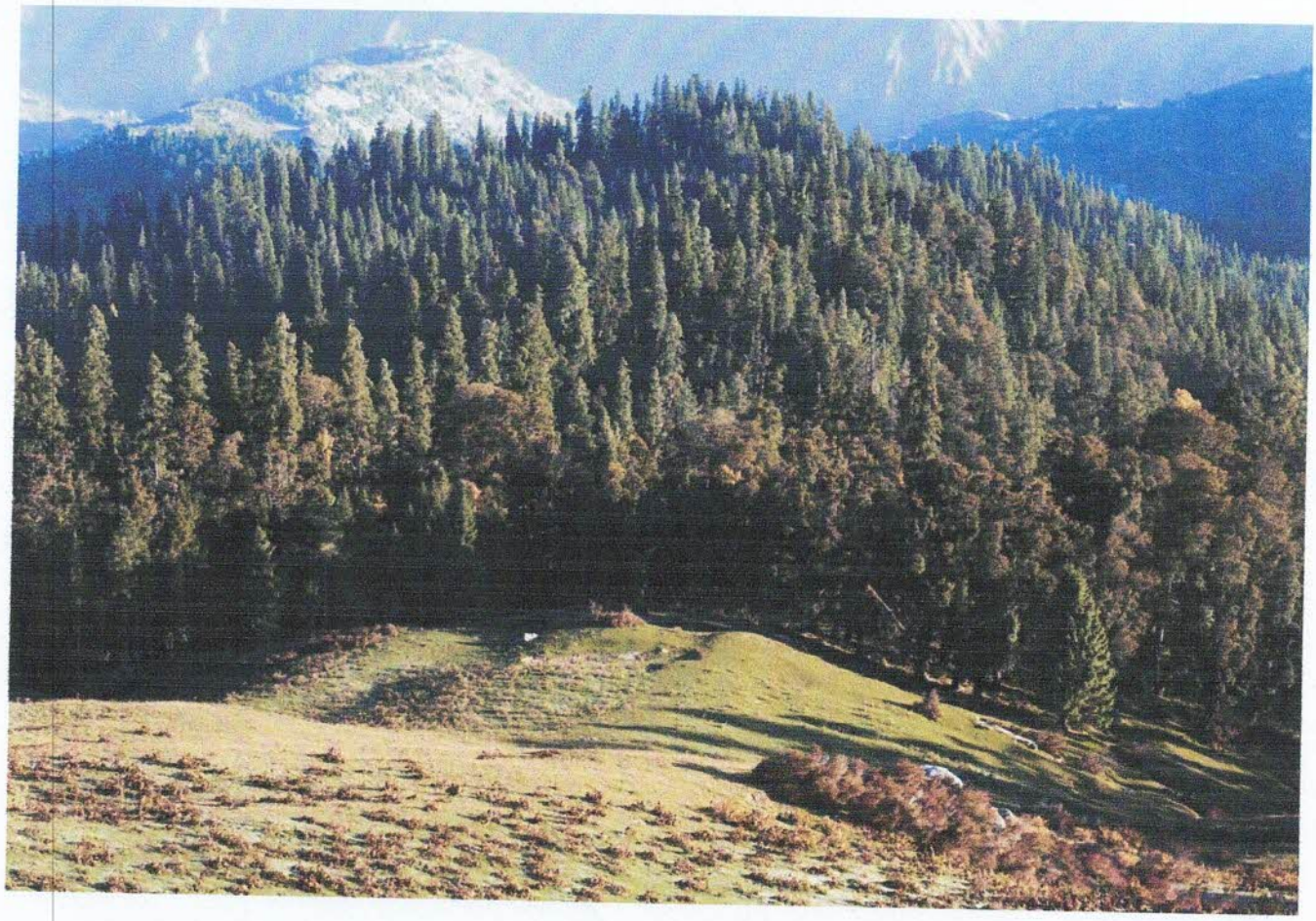
Management Plan

Of

Talra Wildlife Sanctuary

(2020-21 to 2029-30)



Wildlife Wing of Himachal Pradesh Forest Department

Authenticated

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

Management Plan

of

Talra Wildlife Sanctuary

Himachal Pradesh

(2020-21 to 2029-30)

Prepared By: Wildlife Division Shimla

Commissioned By: Wildlife Wing, Himachal Pradesh Forest Department

Authors: Anita Bhardwaj HPFS (ACF Wildlife)

&

Rajesh Sharma HPFS (DFO Wildlife)

Under the supervision of: Dr Sushil Kapta IFS (CCF WIldlife Shimla)

&

Sh Anil Thakur IFS (CCF Wildlife Headquarters)

Under the overall Guidance of: Dr Savita IFS (PCCF Wildlife cum Chief Wildlife Warden, Himachal Pradesh)

Acknowledgements

Talra Wildlife Sanctuary is located in district Shimla of Himachal Pradesh at the boundary of Himachal Pradesh with Uttrakhand. Sanctuary is spread over 46 km^2 area. It provides home to a variety of endemic flora and fauna. The Government of Himachal Pradesh declared it as a Wildlife Sanctuary and final Notification under wild life (Protection) Act, 1972 was issued in 2013 to this effect, taking into consideration it's ecological, faunal, floral, geomorphologic, natural and zoological significance.

This management plan is the revision of the previous plan which expired in 2004- 05 and has been prepared for a period of 10 years w.e.f. 2020-21 to 2029-30. The emphasis has been on the protection and improvement of the habitat with a view to conserve the rich biodiversity existing in the Sanctuary. The prescription of the management plan has been made keeping in view the requirements of the native fauna. Different measures have also been proposed to eliminate the decimating and the limiting factors specially the biotic pressure. Emphasis has also been laid for educating the people and making them aware about the significance of conserving the wildlife. Research and training has also been given due priority for the better management of the Sanctuary and also providing learning opportunities to the field staff.

This management plan would have been incomplete without the valuable suggestions, guidance and words of advice from Dr. Savita, IFS PCCF(Wildlife) cum Chief Wildlife Warden Himachal Pradesh, Sh. Anil Thakur, IFS CCF (Wildlife Headquarters) and Dr. Sushil Kapta, IFS (CCF South).

I would like to place on record the efforts put in by Smt. Anita Bhardwaj, ACF wildlife for writing this document. Efforts done by entire staff of Tharoch Range for providing valuable inputs are also appreciated.

This management plan will definitely contribute towards achieving the long terms goal of maintaining viable wild populations in the Talra Wildlife Sanctuary.

Rajesh Sharma, HPFS
Divisional Forest Officer
Wildlife Division, Shimla

CONTENTS

Chapter 1

Introduction to the Area

1.1 Name, Location and the Extent of Area

Talra is a wildlife sanctuary in the state of Himachal Pradesh. This management plan covers the Kangar demarcated Protected Forest of Tharoch area and part of Chhajpur, Shashan and Kashta Demarcated protected forests of Jubbal area which was declared as Talra Wildlife Sanctuary under Wildlife Protection Act 1972 as notified vide H.P. Govt notification no 5-11/70-\SF dated Shimla-1 the 27/3/1974 and thereafter finaly notified in the year 1999, vide notification FFE-B(F) 6-21/99 Dated 1-11-1999 (Annexure-1), for its, ecological, faunal, floral, geo-morphological, natural or zoological significance. The area was transferred to Wildlife Wing of Himachal Pradesh Forest Department during the year 1987-88 and a separate Wildlife Range with its headquarters at Tharoch was created. In 2011, new area comprising of 6.48 sq. km was merged with this sanctuary from Rohru Forest division which was finally notified vide GoHP. notification no.FFE-B-F(6)-11/2005-II/Talra dated 07.06.13(Annexure -2).

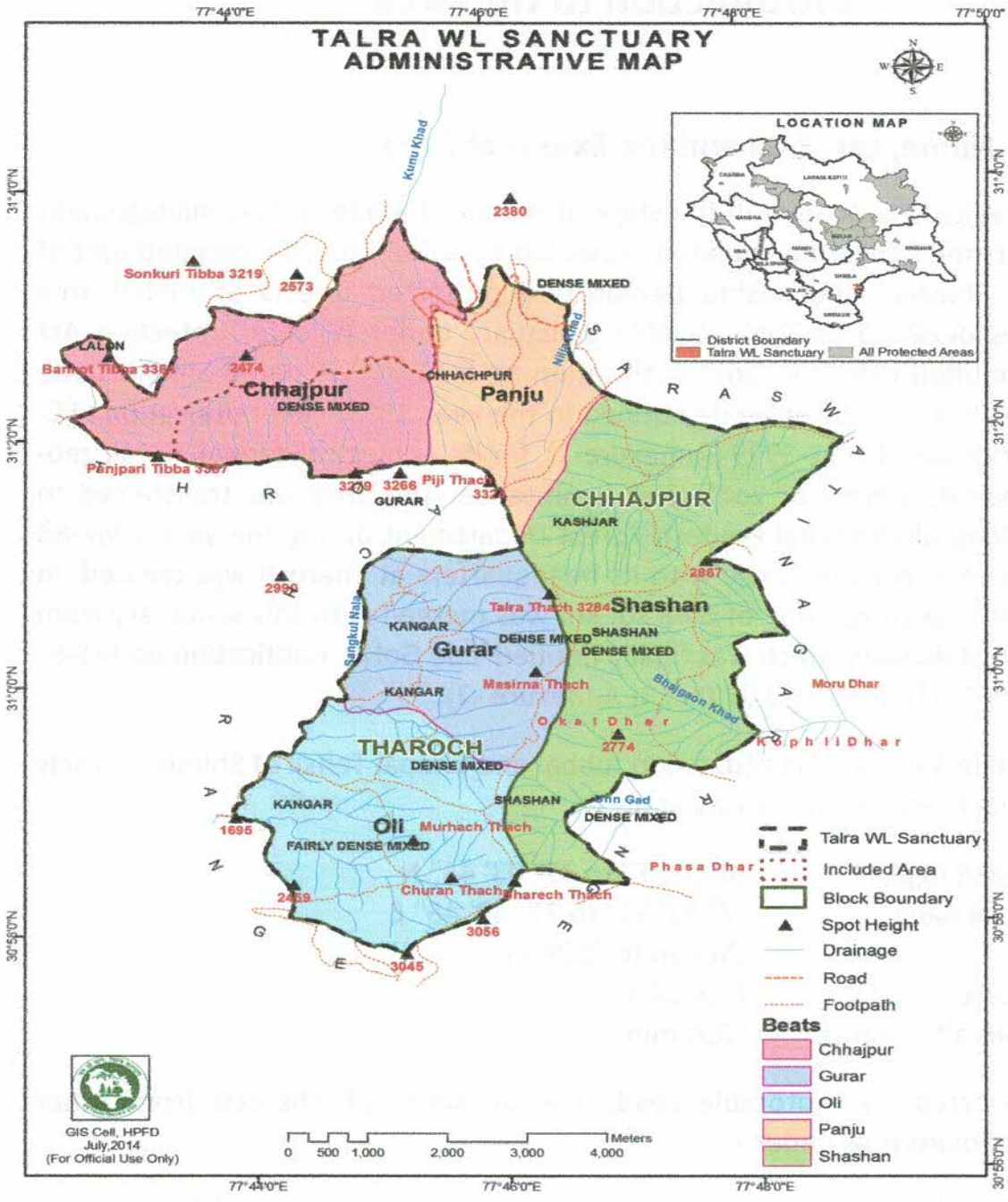
Talra Wildlife Sanctuary is situated in Jubbal and Chopal Tehsil of Shimla Districts in Himachal Pradesh and located at an

Lattitudinal Range	:	30^0 58' 7" to 31^0 03' 44" N
Longitudinal Range	:	77^0 42' 36" to 77^0 48' 46" E
Altitude	:	1500 m to 3324 m.
Temperature	:	7^0 to 28^0C
Annual rainfall (mean):		1090 mm

It is connected by motorable road. The distances of Tharoch from other important towns is as under:-

Chopal - 52Km.
Shimla - 150 Km.

Fig 1.1: **Administrative map of Talra Wildlife Sanctuary**



Following Demarcated Protected Forests Constitute the area of the Sanctuary

Kangar DPF	-	1481.18 ha
Chhajpur DPF	-	1077.27 ha
Shashan DPF	-	832.43 ha
Kashta DPF	-	603.39 ha

Total - 3994.27 ha
New Area - 648 ha
G. Total area - 46.48 Sq. Km. (Annexure-4)

Prior to transfer of areas to Wildlife wing these were being managed as per provisions of Working Plan for Rohru and Jubbal Forest Division. The break up of sanctuary area according to compartment is given in the Annexure 5.

1.2 Approach and Access

The Sanctuary can be approached from its northern side where it is linked with a motorable road running along its boundary for about 7kms from Chhajpur forest Compartment No 8 to Compartment No 16 at Panju. There is regular bus services upto Chhajpur from Rohru and Shimla. From its eastern side Sanctuary can be approached via Tharoch which is linked to Gurar by a Bridle path of 12 kms up to Tharoch. There are regular bus services from Shimla to Tharoch.

Table 1.1.: Distance of Talra wildlife Sanctuary from main cities

Town city	Distance from Talra Wildlife Sanctuary (km)
Shimla	150
Chandigarh	257
Delhi	518

The nearest airstrip is at Jubbar Hatti which is 35 kms from Shimla town. Flights are available to Shimla from Delhi.

The nearest railways station is at Shimla. Shimla is connected by Kalka- Shimla small gauge railway line. The nearest railway station on a broad-gauge railway is at Kalka which is on the Delhi- Chandigarh railway line.

1.3 Statement of Significance

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

Ecological

- The tract drains into Pabber and Tons rivers through smaller streams which are snow fed for most part of the year. For the rest of the tract there are

plenty of seasonal springs which are fairly common due to countinuous vast stretches of forests. However, the watewr supply in the PA is scarce in summers.

- It protects the soil in the geologically fragile and erosion prone Himalayas.

Biological

- Talra Wildlife Sanctuary forms good convervation unit.
- Talra Wildlife Sanctuary has the finest forest of spruce, blue pine, Silver fir, deodar and Tosh that supports the associated fauna/.
- Talra Wildlife Sanctuary supports good population of highly endangered species of deer i.e. goral.
- Black bears are found in highest density among the PAs of the State.

Conceptual

- The area supports very high number of species of floral and faunal importance.

Recreational

- Scenic landscape of the sanctuary area is awesome and it is a true experience of wilderness.
- The sanctuary is an ideal place for Nature enthusiasts, long distance Trakkers and lovers of Wildlife.

Research and Education

- The sanctuary has potential for research on a variety of subjects of biological importance and ecological monitoring e.g. ethno botany ethno- zoology, forestry, wildlife related or ecosystem related studies etc.
- It has potential for conservation education for students and tourists.

Chapter 2

Background Information and Attributes

2.1 Boundaries

The Talra Wildlife Sanctuary shares its boundary with Tons Forest Division of Uttrakhand. These areas hold a substantial population of wildlife. This stretch of forest is vital for long term conservation of wildlife species in this area. The final notification under section 35 of Wild Life Protection Act, 1972 had been done on 7th June 2013 Vide Notification No. FFE-B-F(6)-11/2005=II/Talra.
As per notification the boundaries of the Wildlife Sanctuary are as follows

North- Northern boundary of the sanctuary starts from DPF Rawigarh C 5 to Bankot Tiba – Thanali Thach C 5 along Ashri Dhar C 6 – Retru Thach / Sabla Thach upto C 9 along Chhachpur Nallah upto C 12 and C 13 of Chhachpur (Rohru Division) and touches C11 touching C14 (b) upto boundary of C 15 Reserve Forests of Rohru Forest Division. The entire boundary touches Rohru Forest Division.

East- Boundary starts from C 15 RF alongwith Rohru Forest Division (C 17) upto Kashta (C 1) Forest boundary. The boundary falls between Rohru Forest Division and Uttrakhand State boundary.

South- Uttrakhand State territory and Khora Forests (Chopal Forest Division).

West – Separating Auli Dehat, Gurar Dehat, Sarach forests, Thanal forests, Rinja forest upto Lallon forest- Ravigarh forest C 6 and C 5 (top).

2.2 Geology, Rock and Soil

The area falls with in the lesser Himalayan Ranges of Himachal Pradesh. Steep escarpment, numerous ridges and deep V-shaped valleys are important feature of landscape.

The rocks of the area belong to the Jutog formation of Archean age. Practically the entire area is occupied by quartz- muscovite schist. The rock is usually of dark colour with yellow and green shades. At places the rock is talcore and contains minerals

like Quartz, Chlorite, magnetite etc. It supports deep clayey loam soil, which are fertile and support rich Oak, Fir and Spruce forests.

The soil is clay loam to loam. Depth varies usually with slope. The soil profiles found within the area are generally well developed with clear demarcation of horizons. The soil is brown and podsol. It has fine texture akin to clays and clayey loams. Large quantities of decomposing vegetable material enrich the forest soil with a good deal of humus. The soil on ridge, spurs, precipitant slopes and sounthern aspects tends to be shallow and dry, else where on easier slopes and sheltered places is deep, fertile and moist enough to support good tree growth. In spruce and fir forests heavy accumulation of raw humus is a characteristic feature and constitutes the main inhibiting factor to their natural regeneration.

2.3 Terrain

Talra thach which forms the focal point of Sanctuary is situated at 2800 m above sea level and located in the middle of the Sanctuary. Previously it used to be the dividing line between erstwhile Jubbal and Tharoch states. This used to be a very important place in the past from hunting point of view. Large parties of Shikaries from Jubbal, Tharoch and Uttar Pradesh (now Uttrakhand) areas used to come for hunting to this place specially in winter after snowfall for weeks together because of its rich wildlife.

The terrain is moderate towards the Northern aspect to very steep towards the southern aspect with Peaks and cliffs. Since old days, bridle path passing through Talra used to be the only communication link to the residents of Jubbal and Tharoach states, and used to be a busy route.

2.4 Climate

The area receives most of its annual precipitation from South- East monsoon which begins by end of June and lasts till end of September. The precipitation during mid-December to March is usually in the shape of snow on higher elevations whereas; the lower reaches receive only rains. The average annual precipitation in the shape of rain and snow is 1090 mm. (see Annexure 6 for monthly distribution of rainfall). Summer months from May to mid June and autumn extending from September to November are generally dry.

The tract lies between Temperate to Alpine Zone. Summers are pleasant and Winters severe with temperature going down to below freezing point for

considerable length of time. Snow lasts up to April and at higher and shady place for about a fortnight more. Areas above 3000 m above mean sea level though confined to ridges and peaks have alpine climate. Frost is experienced from November onwards till March and it's severity varies with altitude.

2.5 Water Sources

Several perennial and non-perennial streams, and many springs run through the area. The list of water resources is given in the Annexure 10.

2.6 Range of Wildlife, Status Distribution and Habitat

2.6.1 Vegetation

The Sanctuary lies in 2 B Himalaya: West Himalaya Bio-geographic Zone.
According to revised survey of Forest Types of India by Champion and Seth (1968) the forests of this sanctuary can be classified into following groups:

i. Group 12: Himalayan Moist Temperate Forests.
ii. Group 15: Moist Alpine Scrubs

The forests can be classified into following main Forest Types: -

12 C.1.e - Moist Temperate deciduous Forest

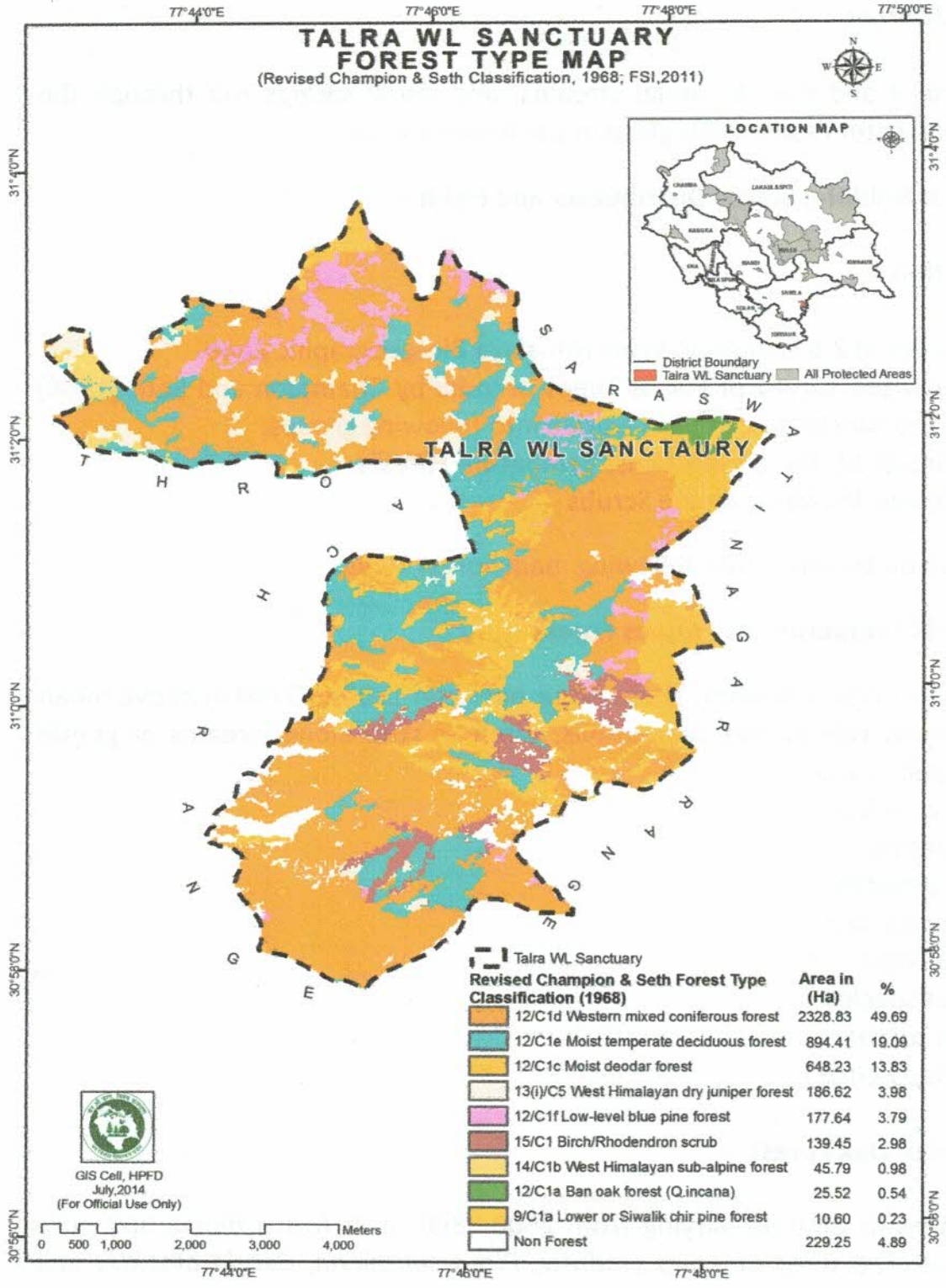
The extent of this type is limited. These occur between 1800 to 2780 m above mean sea level in moist valleys and depressions, often as strip along streams or gentle slope. Main species are

Aesculus indica
Acer species
Betula alnodies
Cornus capitata
Juglans regia
Quercus species
Corylus colurna
Alnus nepalensis

12 C.2.a - Kharsu Oak Forest

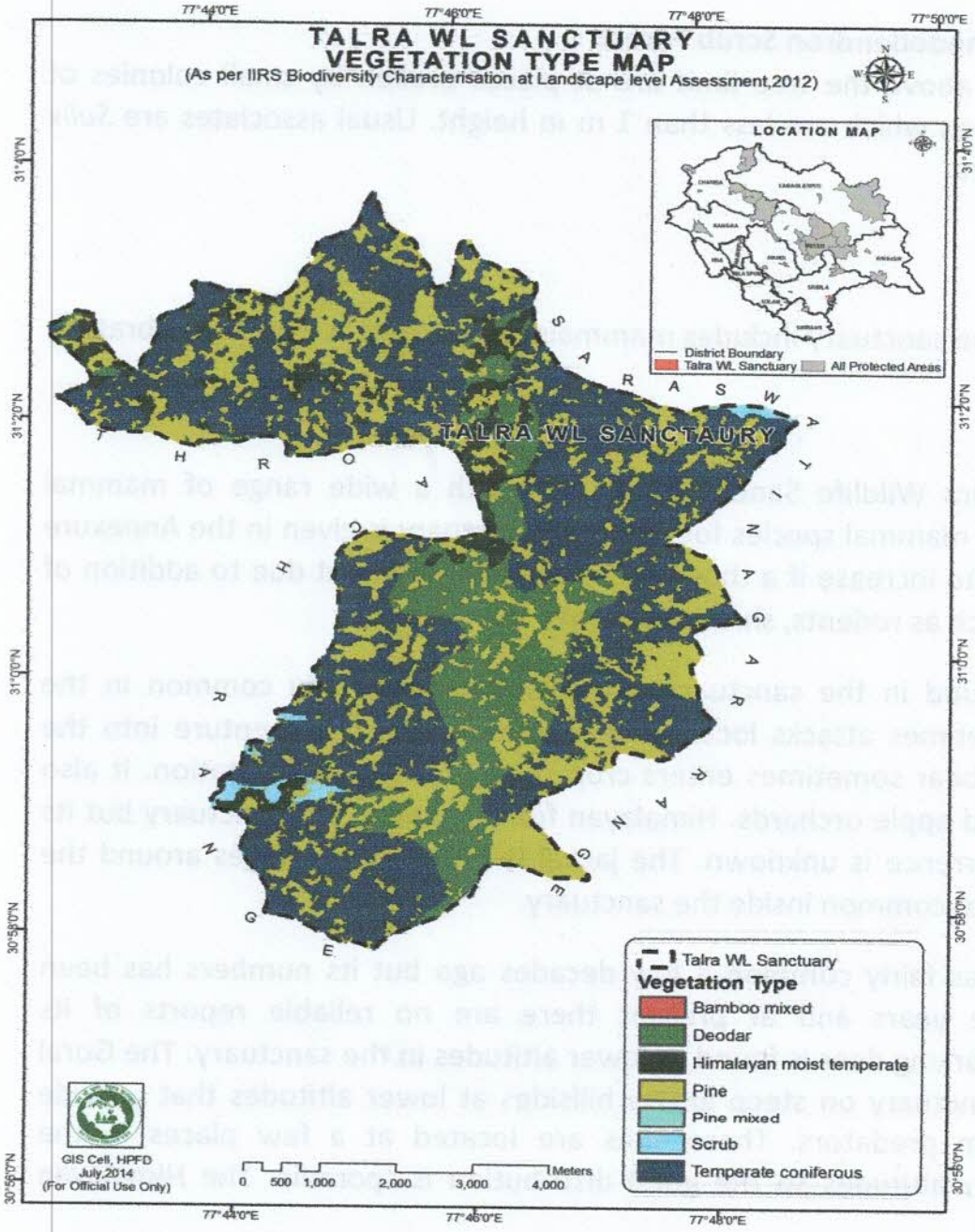
This type ranges at altitude varying from 2500-3300 m. It forms dense and pure crop. Few scattered trees of *Abies pindrow*, *Picea smithiana*, *Betula alnoides* and

Taxus baccata are found in mixture with Kharsu. Trees are 20- 30 m in height and are generally lopped heavily. The under growth is moderate comprising of *Vibernum, Cotoneaster, Sarcococa saligna, Salix, Geranium, Viola, Fragaria, Anenone, Skimmia laureola,* ferns and grasses.



12 C.2.b - West Himalyan Upper Oak Fir Forest

This type occurs in a narrow belt and distribution is between 2600 and 3400 m elevation. Deep moist humus layer is present. Grassy meadows are extensive and join with alpine ones towards upper limit. It contains *Abies pindrow* with *Quercus semicarpifolia* and little *Betuta alnoides* in the under story. The undergrowth is moderate comprising of *Rhododendron companulatum*, *Salix*, *Skimmia laureola*, *Rumex nepalensis*, ferns and Grasses. Canopy is irregular. Regeneration of Fir is entirely absent.



12/C.Id - Western Mixed Coniferous Forest

The Western mixed coniferous forests comprise not only representation of mixed coniferous but also includes pure spruce and pure Silver Fir. The habitat of the type lies above the Deodar Zone between elevation of 2000 - 3050 m. This type is common in Chhajpur Forests of the Sanctuary. The common broad-leaved associates are *Aesculus indica*, *Juglans regia*, *Celtis australis*, *Prunus cornuta*, *Ulmus wallichiana*, *Machilus* spp, *Litsea* spp. which come up as a group of individual tree mixtures.

15 C.2/e - Dwarf Rhododendron Scrub Forest

The pasture lands above the tree limit are at places broken by small colonies of dwarf Rhododendron which are less than 1 m in height. Usual associates are *Salix* and *Lonicera* species.

2.6.2 Animals

Wildlife found in the sanctuary includes mammals, birds, reptiles and invertebrates.

Mammals

The forests of Talra Wildlife Sancturay are rich with a wide range of mammal species. The list of mammal species found in the sanctuary is given in the Annexure 7. The list is likely to increase if a thorough survey is carried out due to addition of small mammals such as rodents, shrews and bats.

The leopard is found in the sanctuary. The Black bear is fairly common in the sanctuary. It sometimes attacks local people, either when they venture into the forest or when a bear sometimes enters crop- fields or human habitation. It also damages crops and apple orchards. Himalayan fox is found in the sanctuary but its frequency of occurrence is unknown. The jackal is found near villages around the sanctuary and is not common inside the sanctuary.

The musk deer was fairly common a few decades ago but its numbers has been reduced over the years and at present there are no reliable reports of its occurrence. The barking deer is found at lower altitudes in the sanctuary. The Goral is found in the sanctuary on steep grassy hillsides at lower altitudes that provide them escape from predators. These sites are located at a few places in the sanctuary at lower altitudes so the goral distribution is sporadic. The Himalayan

palm civet, the yellow- throated marten and the flying squirrel are arboreal mammals found in the sanctuary.

There is a possibility of the occurrence of the serow at higher altitudes in the sanctuary but its presence has not been confirmed. Efforts need to be made to determine if it exists in the sanctuary. Many rodent species other than the flying squirrel and pica are likely to be found in the sanctuary. A survey needs to be carried out to determine the mammal species found in the sanctuary.

Birds

The high altitudinal range of the sanctuary gives it a rich bird life. It has forest dependent bird species that are commonly found in temperate forests of the Himalayas as well as species of the sub- alpine zone and a few species of the alpine zone. The beautiful Monal pheasant is found in the sanctuary. Other pheasants such as Kalij pheasant, Koklass pheasant and Cheer pheasant are reported from the sanctuary.

A survey titled "Birds of Talra Wildlife Sanctuary in Lower Western Himalaya, H.P., With Notes on their Status and Altitudinal Movements" was conducted by Sh. Anil Mahabal, Zoological Survey of India. The report is annexed as Appendix-8.

Amphibians and Reptiles

There is no information on amphibians and reptiles found in the sanctuary. There is need for a thorough survey to fulfuill this need.

Invertebrates

Various species of butterflies are found in the sanctuary. But there is information about the exact number of species and there is a need for a details survey to fulfill this need.

Large Mammal Ecology of the Sanctuary

Leopard and black bear are found at the higher level of biological pyramid Considering the ecology of large mammals every sanctuary depends on one more herbivore species that are found in large number to form the lower most stratum of the biological pyramid. Gorals and Barking Deer are found in good numbers all over the sanctuary and form the main prey base for the large carnivore.

Pictures of some of the common birds found in the Talra sanctuary are as follows:

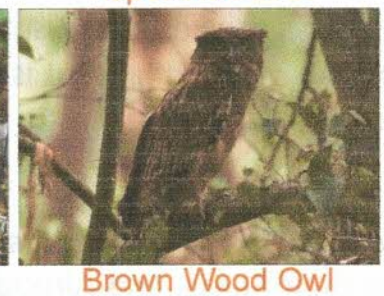

Brown Hawk Owl


Black Drongo


Spotted Dove


Crested Bunting


Cattle Egret


Brown Wood Owl


Rufous Fronted Redstart


Gray Bushchat


Green Bee Eater


Gray Breasted Prinia


Medium Egret


Red Wattled Lapwing


Shikra


Oriental Magpie Robin


Blue Fronted Blue Flycatcher

Gray Wagtail

Indian Peafowl

Pied Bushchat

Yellow Footed Green Pigeon

Jungle Myna

Fulvous Breasted Woodpecker

White Rumped Shama

Purple Sunbird

Red Rumped Swallow

Long Tailed Shrike

White Eyed Buzzard

Siberian Stonechat

Plumbous Redstart

Red Jungle Fowl

Pied Hornbill

2.7 Buffer Zone and Connectivities

The Talra Wildlife Sanctuary is well buffered on all sides. It is bordered by dense forests of Chopal and Rohroo Forest Divisions all around.

The area of the Sanctuary is comprised of the forest caps of Chhajpur, Kangar, Kashta and Shashan forests, which are far from the habitation and remaining part of these forests is also far from habitation and most of the area is under the snow from December to April hence there is no considerable biotic pressure on the PA as it is surrounded by dense forest from all the side. The zone of influence is restricted to these surrounding forests. There is no village inside the PA. The habitation is about seven to fifteen Kms away from the boundaries of the PA.

Few paths pass through the PA which are occasionally used by the local people to traverse from Chhajpur area to Tharoch area. Apart from it, migratory graziers illegally graze their cattle in some of the forest of the PA causing a lot of disturbance and make soil losses subjecting it to erosion. There is no village even on the periphery of the PA. No rights are admitted in the PA.

General economical condition of the area is not very good. For their livehood people are engaged in marginal agriculture and horticulture and are depending upon the forest for fodder and fuel wood etc. of the nearby forest away from the PA. Most of the people depend upon of the development activities in the area which help them in augmenting their income.

Chapter 3

History of Management and Present Practices

3.1 Past Administrative History

Talra sanctuary covers the Kangar Demarcated Protected Forest of Tharoch area and part of Chhajpur, Shashan and Kashta Demarcated Protected Forests of Jubbal area and was declared as Talra Wildlife Sanctuary under Wildlife Protection Act, 1972 as notified wide. H.P. Govt notification no 5- 11/70-\SF dated Shimla-1 the 27th March 1974 and thereafter, finaly notified in the year 1999, vide notification FFE- B(F) 6-21/99 Dated1.11.1999, and subsequently wide. H.P. Govt notification no FFE-B-F(6)-11/2005-II/Talra dated Shimla-2 the 7th June, 2013 for it's, ecological, faunal, floral, geomorphological, natural and zoological significance. The area was transferred to Wildlife Wing of Forest Department during the year 1987- 88 and a separate Wildlife Range with its headquarters at Tharoch was created.

3.2 Timber Operations

No timber operations including bamboo and firewood harvests were carried out in this PA.

3.3 Silvicultural Treatment including System of Management

Nil

3.4 Rights and Leases

There is no village inside the sanctuary. No rights or leases exist in the sanctuary area. However, Gujjars (Nomads) used to bring their cattle to graze in some forests of the sactuary causing a lot of biotic interference in the sanctuary from May to October each year. But now as per orders of Hon'ble Supreme Court of India exercise of rights have been abolisheded.

3.5 Internal Administrative Boundaries

The Talra Wildlife Sanctuary is divided into two blocks Chhajpur and Tharoch, each headed by a Block Officer. Chhajpur block is divided into Chhajpur, Panju and Shashan beats, while Tharoch block is divided into Gurar and Auli beats. Each beat is

headed by a forest guard. The headquarters of these administrative units is given as under:

Table 3.1: Internal Administrative Units

Block	Beat	Headquarter
Chhajpur	Chhajpur	Chhajpur
	Panju	Panju
	Shashan	Shashan
Tharoch	Auli	Auli
	Gurar	Gurar

3.6 Sanctioned Posts

The existing staff position of the Tharoch Range is given as under:

There are 11 sanctioned posts in the Range including 1 Range officer, 2Dy. Rangers, 5 Forest Guards, one Animal Attendant and one Forest Worker. Two daily wage mazdoors are also working in this range (Annexure 9).

3.7 Protection Practices

The forests of the Sanctuary are not burdened with rights except for migratory Gujjars who used to graze their cattle in forests of the PA, but now as per orders of Hon'ble Supreme Court of India exercise of rights has been stayed.

Patrolling is being carried out on foot by the sanctuary staff on the bridle paths which criss cross the entire sanctuary. Sanctuary staff generally carries patrolling in groups, which is effective. Sometimes Sanctuary Staff carries out patrolling individually. Night patrolling is also done occasionally.

For protection purpose no weapon has been provided to the field staff.

3.8 Infrastructure inside the Sanctuary

The infrastructure inside the sanctuary consists of forest guard hut at Panju, Gurar, Shashan, Chhajpur; BO Quarter at Chajjpur and Tharoch and one inspection hut at Shashan and one office cum residence for RO at Tharoch.

3.9 Impact of Human presence around the Sanctuary

There is no village inside the sanctuary. The habitation is about seven to fifteen Kms away from the boundaries of the sanctuary. Few paths pass through the sanctuary, which are occasionally used by the local people to traverse from Chhajpur area to Tharoch area. Apart from it, migratory graziers have right to graze their cattle in some of the forest of the sanctuary causing a lot of disturbance and make soil losses in some of the forest of the sanctuary causing a lot of disturbance and make soil losses subjecting it to erosion. There is no village even on the periphery of the sanctuary, the people of which can cause disturbances. No rights are admitted in the sanctuary. Moreover, exercise of the rights has been stayed by Hon'ble Supreme Court of India.

3.10 Occurrence and control of diseases

No information is available on any wide spread disease of flora and fauna in the past.

3.11 Weed Infestation

Various species of weed are present in parts of the sanctuary. Weed presence reduces the habitat quality of the sanctuary as it reduces fodder availability for herbivores. This has an adverse impact on herbivore populations and thus on the food chain of carnivores. Weed infestation therefore, has an impact on all levels of the biological pyramid.

3.12 Tourism in the sanctuary

There is scope of Tourism in the sanctuary but basic infrastructure is lacking. Remoteness of area is also an impediment in the field of Eco- Tourism. Area is lacking in this aspect due to the reason that there is no habitation up to a distance of about 15 Km from the core area. The sanctuary is lacking in basic facilities like water availability, medical aid and transportation etc. Even the inspection paths require sufficient maintenance. The area is also very remote having very steep terrain with peaks and cliffs.

3.13 Soil Erosion

There is degradation of the soil strata leading to soil erosion. Mostly the soil is fragile liable to erosion and formation of gullies and Nallas, ultimately deteriorating

the ecology of the area. It is with the aim of saving the ecology of the area the conserving the soil and water regime and exploring the possibility of providing an alternate grazing area to the migratory Gujjars will be explored. To control soil erosion bio engineering works such as constructing of check dams, check walls etc. are required to be carried out.

3.14 Fire Protection

Lower portion of the sanctuary is dominated by Chir pine and hence is prone to fire hazards is summers. These fires occasionally spread to the sanctuary and damage vegetation and wildlife. Fires have adverse impact on small mammals, birds, reptiles, amphibians and other micro fauna. Protection against fires is given top priority. Although no such incidents have occurred in this sanctuary, but measures are to be undertaken as huge deberis of fallen dead trees and foliage etc, are lying in the sanctuary. If it catches fire it will lead to a fire hazard resulting in a lot of damage to the wild flora, fauna and ecology.

3.15 Assessment of works carried out inside the sanctuary

Plantation work

Plantations have been carried out inside the sanctuary in the past on a regular basis in blank areas. The main species planted have been Ban Oak, Moru Oak, Deodar, Robinia, Chuli etc. But no plantations has been raised since past 5 years.

Weed Control

Due to non - availability of funds weed removal was not done in the past but is a useful activity to rid the sanctuary of unpalatable species and should be taken up in future.

Creation of Water Resources

Several water ponds and water bores have been created for tapping the water, which are being used. Some of these ponds are pernnial and few dry up during summers.

Water ponds and water bores including earthen structures constructed around perennial spring may prove to be effective in retaining water and will be useful for the wildlife.

Soil Conservation works

Soil conservation works done in the sanctuary consists of construction of check dams and dry-stone check dams. Check dams have proved to be effective in controlling erosion of streams. Dry stone check dams have been successful in conserving the soil moisture.

Fire line maintenance

Fire line maintenance is being carried out regularly. This activity is necessary for controlling fires inside the sanctuary and is very effective in controlling fires. New fire lines need to be created at some places. This is also essential for protection of the sanctuary.

Boundary Demarcation

78 boundary pillars are in the sanctuary. Boundary demarcation is an important activity since it helps to prevent encroachments and boundary disputes.

Training, Exposure Visits and Study Tours

Exposure visits have been organized for teachers and school children in the past. The participants were informed about various aspects of wildlife and Forestry including identification of flora. Few students of Wildlife Trust of India, Delhi visited the sanctuary.

Infrastructure Development

Shashan Inspection Hut was renovated at a cost of Rs. Two lacs during the year 2006-07. Renovated Inspection Hut is very useful for accommodating officers on tour during their day time visits.

The Residence cum- Block Officer at Tharoch Range office requires immediate repairs as the condition of the same is very bad. Some other residences including Forest Guard Hut shashan also require improvement.

Equipment and Vehicle Purchase

There is only one computer in Tharoach WL Range Officer, hence one more computer is urgently required in Tharoch Wildlife Range. One motorcycle may also be purchased for this range.

Wildlife Monitoring and Population Estimation and Research

A survey has been carried out in the year 2006, 2007 and 2009-10 although some monitoring and research was also carried out way back in 2008 by wildlife Trust of India, Delhi but their reports were not received.

3.16 Eco- Sensitive Zone

An area of 22.56 Km^2 area (all Forest land) with extent varying from zero to 0.77 km has been declared as Eco-Sensitive Zone by Government of India. The area of ESZ is as shown in the mapas follows.

Commercial mining, stone quarrying, setting up new saw mills, setting up of industries, new major hydroelectric projects, fishing, muck disposal, establishment of large-scale commercial livestock and poultry farms by firms, setting up of kilns etc have been prohibited in the notified Eco-sensitive Zone. Activities like establishment of hotels and resorts, widening of roads, construction and repair of civic amenities, cottage industries, homestays, felling of trees, erection of electrical lines, communication towers, collection of fodder, change of agriculture system, extraction of ground water, vehicular traffic at night, introduction of exotics, collection of NTFP, solid waste management, eco-tourism etc have been regulated. However, emphasis will be on promoting certain activities like agriculture and horticulture practices, dairy farming, aquaculture, fishries, organic farming, rain water harvesting, use of renewable energy and fuels, agro-forestry, use of eco-friendly transport, skill development, restoration of degraded habitats, environmental awareness.


ECO-ZONE AREA
TALRA WL SANCTUARY
77°42'0"E
77°46'30"E
31°3'0"N
30°58'30"N
ECO-ZONE
TALRA WL SANCTUARY
77°45'38.437"E
31°4'28.843"N
77°44'13.24"E
31°3'59.01"N
77°46'51.703"E
31°3'12.206"N
77°42'57.159"E
31°3'35.748"N
77°45'19.196"E
31°3'42.826"N
77°42'20.171"E
31°3'17.67"N
77°46'57.491"E
31°3'45.436"N
77°43'48.825"E
31°3'1.346"N
77°45'47.336"E
31°2'59.008"N
77°47'37.155"E
31°2'55.801"N
77°42'37.74"E
31°2'42.867"N
77°46'38.209"E
31°3'0.049"N
77°49'29.396"E
31°2'35.506"N
77°41'34.182"E
31°2'50.454"N
77°44'29.538"E
31°2'52.948"N
77°42'41.182"E
31°2'9.951"N
77°43'22.059"E
31°2'0.85"N
77°47'51.182"E
31°1'57.764"N
77°49'48.859"E
31°1'42.734"N
77°41'36.151"E
31°1'51.836"N
77°44'33.654"E
31°1'39.825"N
77°48'45.74"E
31°1'54.359"N
77°42'22.821"E
31°1'39.451"N
77°42'36.04"E
31°1'2.959"N
77°43'36.665"E
31°1'4.042"N
77°46'12.826"E
31°1'4.363"N
77°47'41.056"E
31°0'58.213"N
77°48'32.414"E
31°1'34.088"N
77°49'26.23"E
31°0'33.995"N
77°48'17.675"E
31°0'19.34"N
77°44'4.671"E
31°0'14.351"N
77°44'37.984"E
30°59'51.953"N
77°47'50.883"E
30°59'59.002"N
77°48'57.605"E
31°0'16.405"N
77°43'30.523"E
30°59'31.063"N
77°48'2.847"E
30°59'33.078"N
77°48'57.848"E
30°59'25.795"N
77°46'58.552"E
30°59'13.801"N
77°43'52.658"E
30°58'55.781"N
77°48'37.126"E
30°59'5.721"N
77°49'25.844"E
30°59'14.136"N
77°46'29.758"E
30°58'50.69"N
77°43'10.582"E
30°58'27.895"N
77°46'58.291"E
30°58'19.679"N
77°44'18.533"E
30°58'6.942"N
77°47'42.122"E
30°58'6.787"N
77°45'15.845"E
30°57'47.811"N
77°43'57.088"E
30°57'38.37"N
77°44'53.521"E
30°57'4.898"N
Eco-Zone Boundary
Talra Wl Sanctaury

Chapter 4

The Protected Area and the Interface Land Use

4.1 Villages in the zone of influence

There is no village in the vicinity of the sanctuary. The habitation is about three to fifteen Kilometers away from the boundaries of the sanctuary. However, the list of villages out side the PA with their status with reference to human population cattle population and agriculture is given in the Annexure 11.

4.2 Wildlife Human conflict

Wildlife human conflict is negligible. No domestic animal killing of surrounding villages (which are far away for the sanctuary) by wildlife has been reported in last 5 years. Animals killed outside the sanctuary are in the purview of the territorial forest divisions and not the responsibility of sanctuary authority.

4.3 NTFP Collection

Local people do not have any rights over forest produce in the sanctuary. No NTFP is collected from the sanctuary by villagers of the surrounding villages. Culturally also villagers of surrounding villages are not accustomed to the collection of NTFP from forests.

4.4 Peoples Requirements

Since the habitation is about three to fifteen kilometers away from the boundaries of the sanctuary, hence there is no interference/ requirements of local people. Few paths pass through the sanctuary, which are occasionally used by the local people to traverse from Chhajpur area to Thraoch area. Apart from it in past migrated grazier used to graze their cattle in some of the forests of the sanctuary causing a lot of disturbance and making soil losses subjecting it to erosion. But now as per orders of Hon'ble Supreme Court of India, exercise of rights of migratory graziers have been stayed.

There is no village even on the periphery of the sanctuary people of which can cause disturbances. No rights are admitted in the sanctuary. General economic condition of the people of the area is not very good. For their livelihood people are engaged in

marginal agriculture and horticulture moreover, most of the people depend upon of the development activities in the area which provide them daily labour wages.

Chapter 5

Vision, Objective, Issues and Problems

5.1 Vision Statement

To be a well protected high-altitude sanctuary in the Outer Himalayas free from human pressures, with an undisturbed, well protected ecosystem that is home to a variety of species, involving an "ecosystem approach".

5.2 Objectives of Management

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

i. To relieve the sanctuary from anthropogenic pressures such as grazing
ii. To provide high level of protection to the sanctuary and minimize poaching.
iii. To have a thriving well managed wildlife population.
iv. To have professional management in the sanctuary based on scientific methods and research inputs.
v. To have well managed wildlife tourism that provides a rich experience for tourists.
vi. To provide opportunities for staff to have professional development in the field.
vii. To conserve bio-diversity of the sanctuary.

5.3 Issues and Problems

There is no major problem in achieving these objectives for remoteness of sanctuary and lack of road and transportation facilities. The issues, problems and constraints for each of the above objectives are discussed in this section as follows:

Relieve anthropogenic pressures on sanctuary

In the present case the significant Gujjar presence inside the sanctuary is problem that is very complex. Voluntary resettlement seems to be a way out, but this needs to be backed by grant of a good resettlement package. Yet it is important to handle this issue in order to achieve the vision of sanctuary.

Protection in the sanctuary

The field staff needs to be highly motivated in carrying out patrolling in order to protect the sanctuary from poaching. Patrolling the forests in difficult terrain of the Himalayas is difficult. Group patrolling, if done properly could become an effective protection and monitoring strategy, especially against poaching. A small core group from among the sanctuary staff and some suitable local youth could be trained for effective management interventions.

To have professional management

Well trained manpower is necessary to have professional management in the sanctuary. Frequent transfer of trained wildlife staff causes problems and continuity in management strategies suffers. The wildlife trained staff seems to be a step in the right direction. Involvement of professionals and scientists from various fields is also necessary for having professional management via specialized training, research inputs, insights into various issues and quality up-gradation. The field staff does not have much exposure to scientific management concepts.

To have well managed tourism

There is a scope of tourism but basic infrastructure is lacking. Remoteness of area is also an impediment in the field of Eco-Tourism. Area is lacking in this aspect due to the reason that there is no habitation up to a distance of about 15 Kms from the core area. Also, the sanctuary is lacking in basic facilities like water availability, medical aid and transportation etc. Even the inspection paths require sufficient maintenance.

Chapter 6

Management Strategies

6.1 Management Philosophy

At the outset it would be appropriate to discuss the philosophy or the approach towards management of the Sanctuary. Some of ideas are discussed in this section. The management strategy prescribed in this management plan is based on the philosophy outlined in this section.

Degree of Intervention

In general, a policy of low intervention in natural biological processes has been followed in this management plan. The floral and faunal assemblage of the park has arisen through years of evolution and adaptation to a natural set of condition. All life forms are dependent on each other in a complex web of life. The chain of interdependence is too complex to be understood in totally. Tampering with this natural ecosystem out of insufficient understanding may create a chain of event that we do not understand and may have long-term undesirable effects. Management therefore, is mostly directed towards reducing human influence that may create undesirable impact on the flora and fauna.

At the same time a totally hands-off approach can not be justified. In situations where the cause and effect relationship are well understood it may be justifiable to carry out interventions that help to mitigate an altered natural feature of the ecosystem or for achieving specific management objectives. This implies a good understanding of the ecology of the Sanctuary at the habitat level, species level, forestry, hydrology and other discipline.

Today's protected areas are often like islands in human altered landscape. In the distant past, when the species and ecosystems evolved, the natural checks and balance functioned effectively and the ecosystem was at a stable equilibrium. Today such checks do not exist. This is especially true for animal populations. Hence the sanctuary fauna inevitably spill out into the human landscape creating conflict. In such situations interventions such as population management may be necessary to manage the problem.

Issues of small protected areas

Small protected areas have some unique issues. Firstly, small populations in such PA's are subject to population fluctuations that my lead to loss of species. Secondly it may be difficult to maintain the complete assemblage of herbivore species in such PA's to support a sufficient population of the apex predators. Thirdly small PA's may provide limited tourism opportunities. These problems are sought to be addressed in this management plan. Specific interventions may be needed to address these issues that may not be necessary or advisable in larger protected areas.

Functions of the Sanctuary Authority

Protection is the first and foremost importance role of the sanctuary authority Protection alone can relieve the sanctuary area from a number of constraints.

The most important role is that of monitoring the sanctuary. Monitoring is a very important tool for understanding what is going on in the sanctuary. It helps gain an understanding regarding the status of various floral and faunal elements.

The most important component is often the population of large mammals and important bird species. These generally occur in relatively small numbers and are the most threatened component of the ecosystem and it is essential to keep track of their population.

The other components may be monitored based on need. Once the essential components are taken care of other important functions are implementation of various habitat amelioration works, creation and maintenance of infrastructure, staff management, management of tourism and revenue collection.

The management strategies adopted in this management plan are described under the above categories.

6.2 Thrust Areas for Management

Thrust areas for management are identified in this section for the period of this management plan. This will help in directing efforts in important areas of the park management. The thrust areas are given below:

i. Strengthening patrolling and protection in the sanctuary.
ii. Minimising the biotic pressure of migratory graziers on the sanctuary.
iii. Strengthening the monitoring mechanism.

iv. Strengthening the interface with local people.
v. Adding to the knowledge of biodiversity of the sanctuary.
vi. Development of tourism in this sanctuary.
vii. Professional development of sanctuary staff.

6.3 Strengthening the Protection Mechanism

Patrolling Practices

Regular patrolling is the best means of maintaining protection inside the sanctuary. The present system should be continued and be strengthened. Group patrolling should be carried out. This practice will give moral support to the field staff and give them confidence in dealing with wrongdoers.

Night patrolling is of utmost importance and should be carried out regularly since most poaching activities take place at night. Different modes of patrolling should be adopted and should be implemented effectively. Both day and night patrolling schedule should be prepared and strictly followed.

Firearms

Firearms are useful deterrent measure for controlling poaching in a sanctuary. It is suggested that the field officers should carry a gun with them while patrolling the field.

The gun needs to be used only rarely, if at all required. However, possession of a gun will give confidence to the field staff in dealing with poachers and other people indulging in illicit activities in the sanctuary. All the field staff should be trained in handling of firearms. An annual refresher course should be conducted for this purpose and experts from the Police/ Army should be requested to train the field staff in handling and maintenance of guns. Conducting trainings annually will ensure that there are regular refresher courses and fresh entrants also receive training within a few months of joining. Trainings can be held in the firing ranges of the police Department. A schedule should be decided for annual or biannual maintenance of the guns in the possession of the range.

Development of Patrolling Trails

There are insufficient trails in the sanctuary and condition of existing trails is very bad. The field staff feels difficulty during patrolling. Improvement of these trails

should be carried out and be surveyed and prioritized for development. The same trails will also serve as trekking routes for tourists.

Development of Bridges

The field staff in Talra Wildlife Sanctuary face difficulty in patrolling during monsoon because some of their paths are blocked due to flooding of Sari Khad at Auli, Sui and Shashan Khad in Tharoch block and Chhajpur C.No. 10 and 11 near Panju Kainchi and C.No. 15 and 16 at Panju Nalla in Chhajpur block. Foot-bridges are required at these points.

Creating Patrolling Hut

There is no patrolling hut anywhere in the sanctuary. The field staff will find easier to carry out patrolling if they have place for halting inside the sanctuary. It will also provide them additional safety at night. There are a number of locations where patrolling huts can be created. The best centralized location for creating a patrolling hut is the Talra, since it can be used by field staff of both blocks. In Tharoach block, two patrolling huts are also required at Sui Thach and Kangar C.No. 11. Hence these patrolling huts should be created at the earliest. The disadvantage of constructing a patrolling hut is that it may be damaged by vandals when not occupied. Therefore, the patrolling hut should be regularly visited by the field staff. The construction of the patrolling hut should be sufficiently strong to prevent it from damage such as construction of steel doors and windows as well as frames. The roof should also be strong enough to withstand damage by causal efforts. The benefits of this intervention can be evaluated for the period of this plan. If found useful and necessary, additional patrolling huts may be proposed in the next management plan.

6.4 Managing Human Pressures on the Sanctuary

In past, presence of migratory Gujjars was a source of servere biotic pressure on the sanctuary resources. As noted earlier, this had severe adverse impact on the vegetation and fauna. But now as per orders of Hon'ble Supreme Court of India exercise of rights of these migratory Gujjars have been stayed.

6.5 Infrastructure Development

The repair of following building is proposed in the sanctuary:

1) Block officer's quarter at Tharoach and Chhajpur

2) Forest guard quarter at Gurar and Chhajpur
3) Inspection Hut at Shashan
4) Range office at Tharoch

6.6 Creation of Water Resources

Although, Sanctuary area has ten perennial streams and many seasonal springs but some more water resources need to be created especially for the lean period. The type of water retention structure will depend on the site condition. A list of water resources is given in Annexure 10.

6.7 Soil Conservation

Soil conservation has been carried out mainly by construction of check dams. However, this will not be effective in face of intensive livestock grazing. The following technique should be adopted.

1) Identification of areas prone to severe erosion.
2) Closure of the area for grazing by brushwood fencing for a period of two to three years.
3) Eroded surfaces should be stabilized by planting tussocks of local grass species and shrubs, and cuttings of shrubs that will root from cuttings.
4) Gulleys should also be stabilized in the above manner. In addition, stone pitching may be carried out at gulley heads if necessary to prevent gulleys from progressing further.
5) In case of forested areas tree plantation should be carried out by planting native species in keeping with the character of the surrounding forest. Plantation should be avoided in the alpine meadow zone and native species should be allowed to colonise by themselves. Plantation should also be avoided in natural grassy blanks that are habitat of the Goral. Soil conservation should not be carried out if an area cannot be completely closed to livestock grazing.

6.8 Equipment and Vehicle Purchase

The staff should have good quality field equipment for working in the forest area. Hence following equipment is proposed for procurement.

Table 5.1- Equipment to be procured

Equipment	Quality	Purpose
Lap Top/ computer	1	Ranger office
Binoculars	8	For Range officer, Block officer & Forest Guards
Digital Camera	3	Range Officer and Block Officers
GPS/PDA	8	Range officer, Block Officer and Forest Guards
Motorcycle	2	Block officer Tharoch and Chhajpur
Rain gauge	2	For Block office at Tharoch and Chhajpur

6.9 Development of Communication System

There is no telephone at Tharoch Range Office at present. There should be good communication facility.

Most of the field staff own their own mobile sets, and they are given connectivity allowance during fire season which should be given throughout the year.

6.10 Weed Control

Weed pose a serious problem of fodder availability for herbivores. Therefore, removal of weeds should be given priority. Weeds should be removed physically. No weedicide should be used since they adversely affect food chains.

6.11 Tree Plantation

Tree plantation should be carried out only in understocked areas where there are clear signs of soil and vegetation degradation due to severe biotic pressure. Plantation should not be carried out in the alpine zone or on natural blanks on steep slopes with thin soil cover. The species planted should be native species in keeping with the character of the standing vegetation in and around the plantation site. Exotic species should not be planted. The natural vegetation composition should under no circumstances be altered.

The plantation area should be closed for grazing for a period of five years by brushwood fencing. As far as possible plantation should be combined with soil conservation using the techniques described in the previous subsection.

There are some blanks in the sanctuary but planting of these blanks may prove to be counterproductive. Therefore, these rocky habitats should be maintained as such. However, some fruit trees should be planted in the sanctuary area to provide food for the rich avi- fauna of the area.

6.12 Fire Protection

There is only one fire line that too on the boundary of the sanctuary. Hovever, the sanctuary is not fire prone, but more should be created in future, if required. Fire watcher huts should be established at vantage points. Each watch point should be manned with suitable number of fire watchers. Fire watchers should be provided with mobiles during fire season.

Fire protection measure should be under taken as huge deberis of fallen dead trees and foliage etc. are lying in the sanctuary and if it catches fire, it may lead to a fire hazard resulting in a lot of damage to the wild flora, fauna and ecology.

6.13 Creation of meadows

Purpose of meadow creation

Herbivore population including highly endangered Goral and Barking deer is fairly good in number. Gorals usually associate in small parties of four to eight, feeding on rugged grassy hill-sides, or rocky ground in forest whereas, barking deers prefer thickly wooded hills and come out to graze in the outskirts of forest. Encouragement of Goral in the sanctuary would increase the herbivore biomass in the sanctuary and benefit the apex carnivores. Goral is a very vigilant species and the predator has to develop stealth, surprise and sheer persistence to counter the senses of this species.

These areas are rich in grasses and support good herbivore population.

Procedure for meadow creation and maintenance

No plantations are to be raised in grasslands. For maintenance of these meadows, manual uprooting of woody vegetation should be done regularly. Control burning of these grassy blanks in cool, springs and winter can also be resorted to, for control of weeds the strategies should be mainly to employ mechanical method, combined with protection from biotic factors. Impact of control burning on the quality and quantity of grasses should be studied over the period of this management plan.

Monitoring of Meadows

The meadows should be monitored for presence of herbivores using a proper monitoring protocol. Monitoring will determine the success of the intervention. Each meadow should be given a name or number. Each meadow should be visited once a month on a particular day in the early morning and the number of herbivores seen in the meadow should be counted. Since the meadows are small it would be possible to count the approximate number of animals by visual estimation. Regular monitoring will be able to establish the degree of success of the intervention.

Chapter 7

Tourism Development

7.1 Tourism Goals and Strategy

Talra Sanctuary has great scenic beauty and is an ideal site for tourism. Putting Talra on the tourism map is part of the vision for Talra Sanctuary. Tourism in a sanctuary achieves several valuable functions. It increases the visitation levels to an area and contributes to the economy. In a state such as Himachal Pradesh, which depends on tourism, this is very important. Tourism raises the profile of the sanctuary and ensures that it will receive funds. Tourism increases awareness about wildlife, among tourists as well as local people. However, excessive and poorly managed tourism can be detrimental to the sanctuary ecosystem.

Being located in the Himalayas, Talra Sanctuary is a natural candidate for trekking. An effort should be made to retain the tourist for at least 3-4 days by planning a package that gives tourists some activity while staying in the sanctuary. Success of wildlife tourism inside the sanctuary depends on good experience of tourists. Good management of the sanctuary, especially reduction in human pressures and high level of protection, are important for improving wildlife sightings. The inspection/ trekking paths in this sanctuary require maintenance.

There is one inspection of the sanctuary, especially reduction of anthropogenic pressures, minimizing weeds, enhancement of availability of forage and high level of protection, are essential for improving wildlife sightings.

List of Watch-towers: -

Sr. No.	Location
1.	Talra
2.	Orapad
3.	Hadala
4.	Morudhar

Tourism at sanctuary should be aimed at catering to the needs of tourists from Shimla town and those coming from other parts of the country.

7.2 Philosophy of Tourism

Different sites need different philosophies for tourism development. Some issues in this respect are discussed in the section.

Firstly, some thinking is necessary about the extent to which tourism infrastructure should be developed. Talra is a small sanctuary and presently the tourism level in the sanctuary is nil. Development of infrastructure such as lodging facilities requires considerable expenditure with no guarantee if it will be used to a sufficient extent.

Moreover, there is a fear of vandalism and damage to constructions at remote locations. Development of permanent lodging facilities may also put pressure on the surrounding area due to presence of caretakers.

Secondly, a decision is necessary about the main agency that will be responsible for executing tourism. Typical agencies executing tourism in protected areas are the Forest Department, Tourism Department, external tour operators, hotel owners and local people, and the tourism business is divided between them in some combination or proportion. Ecotourism in its true sense implies that the benefits of tourism will go to the local people. This will also motivate them to place higher value on the sanctuary and protect it more actively. It is therefore proposed that the main stakeholders implementing tourism shall be the local people around the sanctuary with the Forest Department playing facilitatory regular duties.

7.3 Nature of Tourism to be promoted

Tourism in Talra sanctuary should focus on natual landscape, serene beauty of the area, bird watching and ecosystem services provided by the forest.

Tourism should concentrate on guided walks and treks in the sanctuary on designated trails but should be restricted to small groups. This will also increase the chances of sighting mammalian species specially the Goral and Barking Deer. Carrying capacity of the sanctuary should be determined and tourism should be regulated accordingly.

No infrastructure should be developed in the sanctuary except staff quarters, and trails. While developing infrastructure care should be taken that it blends well with the natural surroundings.

7.4 Publicity

Talra Wildlife sanctuary should be publicized as a tourism destination.

Information on the sanctuary should be put on the website of the Forest Department including contact details such as address, telephone number and email addresses. Contact details of local tour organizers and lodges and hotels should also be given. Contacts should be built with tour organizers at Shimla.

All local tour operators should report to the Range office about the tours that they are conducting in the sanctuary. This should be made compulsory and tour operators should be informed of this.

7.5 Conducting Tourism in the Sanctuary

Trails should be indentified for wildlife viewing inside the sanctuary. They should be given clear names for identification. A brief description should be written about the main features of each trail, including the wildlife likely to be seen on the trail.

Table 6.1: Suggested List of Trails for Tourism

Sr. No.	Trekking Route	Distance (Km)
1	Chhajpur- Panju	06
2	Panju- Talra	06
3	Talra- Gurar	07
4	Talra- Auli	10
5	Shashan- Talra	11

Activities for Tourists

The main activities for tourists should be as follows:

1) Walks along the nature trail and bird and flora watching
2) Morning and evening walks along the main road for bird watches

7.6 Sanctuary literature

Brochures/pamphlets about the sanctuary should be printed for distribution to tourists. The brochure should give the trekking map of the sanctuary including trails, list of wild animals, birds and plants. It should inform tourists about the rules to be followed in the sanctuary with regard to such as prevention of fire, avidance of littering, noise pollution and disturbance to wildlife etc.

7.7 Signage

Vandalism is a major problem for signage. The signage design should consider this and create signage that is durable and resistant to vandalism. The signage should also be appropriate for the setting. Signage needs to be developed in the sanctuary and be placed at vantage points.

Some points for inclusion in the signboards are as follows:

1) Name and area of the sanctuary
2) Wildlife (mammals and prominent birds) found in the sanctuary
3) Significance of the sanctuary
4) Historical background of the area
5) Sanctuary geography and geology
6) Rules and regulations
7) Fire safety

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.

7.8 Development of Interpretation Centre

Nature interpretation and conservation education are integral to 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 fulfil these twin objectives an interpretation centre- cum- souvenir shop should be created at Chhajpur.

The interpretation centre should perform the following functions:

1) Create publicity about the sanctuary
2) Create awareness of the sanctuary values
3) Inform people about the rules and biodiversity of the sanctuary
4) Educate people to follow certain do's and dont's in Sanctuary
5) Design and development of the interpretation centre should be entrusted to a professional organization.

7.9 Capacity Building

Capacity of local community for carrying out trekking tours and nature interpretation should be developed. Training campus should be conducted for them for taking tourists on treks. An association of local tour operators should be formed to manage tourism.

Treks inside the sanctuary should not be limited to adventure tourism. Nature interpretation should be an important component of treks in the sanctuary. Interpretation skills of local tour operators and guides should be developed in this respect. Knowledge of plants, bird watching individuals and wild animals are some of the important skills that should be developed. They should be trained to follow sanctuary rules such as avoidance of littering, prevention of disturbance to wildlife and maintaining silence inside the sanctuary. Consumption of alcohol inside the sanctuary should be discouraged. Trekkers should camp at established camping spots and follow designated trekking rails. Tour operators should report all animal sightings to the Range office. They should be trained in conducting tourism around the sanctuary.

The main skills for which they used to be trained are as follows:

1) Knowledge of animals, birds and plants in the sanctuary.
2) Wildlife interpretation skills.
3) Basic principles of safety while escorting the tourists
4) Cleanliness and prevention of littering.

Forest guards and Deputy Rangers should also be trained in these skills so that they can as resource persons for future trainings and escort school children and other nature lovers when occasions demand. However, it must be borne in mind that escorting tourists should not be a regular duty of the forest staff or daily wagers of the Forest Department as this will result in neglect of their regular duties.

The staff at inspection hut Chhajpur should be trained in basic hospitality skill by professionals, either private hoteliers or trainers from the Tourism Department.

Chapter 8

Monitoring, Research and Training

8.1 Considerations in Design of Monitoring Programme

Mammals are generally the most visible charismatic species of a sanctuary. They are also generally among the most threatened because of their small population. Therefore, the main target of the monitoring program shall be large mammals. These include goral, barking deer, musk deer, black bear, langur and rhesus macaque.

Because of the steep terrain population estimation is very difficult in the Himalayas. An appropriate scientific methodology needs to be adopted so that it is feasible to execute the monitoring protocol and obtain reliable results.

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 estimate techniques. Monitoring by index-based techniques yields trends in populations. Monitoring must be carried out for a few years before clear population trends emerge. Absolute population estimation techniques can give estimates of absolute population within error margins.

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

8.2 Synopsis of Monitoring Techniques

Animal encounter rate

In this method a network of routes is 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 walks should be carried out at a fixed time at dawn or in the evening when the animal sightings are highest.

The encounter rate of a species is defined as:

$$\text{Encounter rate (i)} = \frac{\text{Number of animals sighted of ith species}}{\text{(Total length of routes walked x no. of times walked)}}$$

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.

Sign encounter rate

The sign encounter rate relies on sighting/collection of animal signs. It is useful for monitoring carnivore populations, since their scats are highly visible. Sign encounter routes are laid as above. Since there is no compulsion of walking during morning hours or evening the length of the 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, bear and other carnivores with highly visible scats, are collected.

$$\text{Scat encounter rate(i)} = \frac{\text{Number of scats sighted of ith species}}{\text{(Total length of routes walked x no. of times walked)}}$$

The scat encounter rate is an index of population density. If this exercise is carried out every year, we can get population trends. This exercise also cannot give estimates of absolute population. It is useful for monitoring population trends in species wherein sightings are very low, such as leopards.

Carnivore 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 the carnivore.

Pellet densities

This method is used for monitoring populations 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 piles in each plot. The plots should be in the shape of belt transects with dimension 50 m x 2 m or 100 m x 2 m. The plots should be laid in the same season and month every year. This method is fairly

simple but it cannot give absolute population estimates. Its reliability has not been well established.

Line transect sampling

Line transect sampling is used for making absolute estimates of wild animal population. A 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 fixed orientation. Transects are clearly marked by marking the trees along the transect in red or yellow paint. Extensive bush cutting is not necessary. An estimated 15 to 20 transects should be laid with a total length of 50 to 100 km.

These transects are walked by observers and records are made of each animal sighting. For each encounter the distance of the group is estimated by a rangefinder and a compass bearing is taken. This data is used to estimate the perpendicular distance of the animal from the 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 made to make reliable estimates. If number of observations is low reliable estimates cannot be made. Ideally all observations must be made in the same season. Typically, 10 to 20 repetitions may be necessary considering the low ungulate density in the sanctuary. However, 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 fairly laborious technique. It has the advantage that one can make reliable estimates of animal populations.

Considering the steep Himalayan terrain line transects cannot be laid in the standard manner because a straight line cannot follow the contours of the mountains. Transects laid along steep slopes will require too much effort on part of the observer and he will not be able to concentrate on making observations of animals.

Hilby and Krishna (2001) describe a modification of the line transect method for curved transects. This modification is well suited for line transect monitoring in the Himalayas. Curved transects should be laid along the contour lines all over the sanctuary in a well-distributed manner. Line transect sampling should be carried out in the sanctuary on these curved transects like straight line transects.

Design and layout out 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 Shimla and nearby towns and youth from local villages should be invited to participate in the monitoring exercise.

Population estimation of Leopards by DNA analysis of scats

DNA analysis of leopard scats can be used for population estimation. The technique is still at an experimental stage and researchers in the country are working on it to perfect it. The technique may soon become generally available, but it may be expensive. The technique requires collection of fresh scats and its preservation by appropriate technique. DNA analysis is carried out in specially-equipped laboratories.

8.3 Recommended Monitoring Techniques

Herbivores

All the above-mentioned techniques have their advantages and disadvantages. If population estimation of ungulates is the goal then line transects monitoring is the only suitable technique. Hence the line transect method is recommended for monitoring herbivore populations in the sanctuary.

Carnivores

Population estimation of carnivores is not possible by line transect method because number of encounters is generally too low. Hence some other monitoring technique is necessary. Scat collection and DNA analysis is possible only through involvement of a professional research institute. Otherwise scat encounter rate is the only technique for monitoring population of carnivores for conditions such as Churdhar Sanctuary.

Scat collection routes should be laid all over the sanctuary. Existing trails and trekking routes may be used for this purpose. Each route should be 6 to 10 km long. The start and end points of the routes should be clearly marked and the routes should be marked at one-kilometer intervals. Considering the size of the sanctuary about 10 to 15 routes should be laid.

Scat collection walks should be carried out regularly. The success of the method depends on collection of large number of samples. Hence more walks will give better results. Scat collection walks should be conducted 5 to 6 times a year. Scats

of leopards and black bear should be collected and labelled. The results for the entire year should be pooled and scat encounter rate should be determined for each species. The exercise should be conducted every year. The trends in scat encounter rate reflect the trends of population density.

Camera trap method should be used to supplement density estimation, abundance survey, proof of presence of a species in an area and trends in population change due to anthropogenic pressures of both herbivores and carnivores.

Integrity of Data

The reliability of the results of population monitoring depends on the quality of data collected. Hence accurate data collection is very important. The participants should carry out the exercise in a sincere manner. The participants should be thoroughly trained in the techniques so that the data collected is accurate.

Development and Implementation of Monitoring Programme

The monitoring exercises outlined in this section require qualified and trained persons for its implementation. A professional institute with experience in monitoring techniques should be engaged for developing and fine-tuning a monitoring programme for the Churdhar Sanctuary including implementation of the meothod and training the staff. The monitoring exercise should be carried out for one year by the institute with the help of the sanctuary staff. The sanctuary staff should continue the exercise themselves in subsequent years with periodic visits by the concerned agency for checking and correcting mistakes.

Recording Opportunistic Observations

The field staff should record opportunistic observations of important wildlife species seen during their patrolling rounds. A format for recording these observations is given in the Annexure 18. These should be regularly filled and submitted to the range officer on a monthly basis.

It is necessary to pinpoint the location of such observations. The field staff should have good quality topographic maps with contours gridded at approximately 1 cm intervals. Location of observations can be accurately recorded as horizontal and vertical coordinate of each square on the grid. Such maps should be prepared on priority and distributed to all field staff.

8.4 Research Needs of 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.

Study on vegetation of Talra Sanctuary is urgently required. The primary need is to carry out thorough inventory of various animal taxons in the sanctuary. Mammals and birds of the sanctuary are not fully listed. Though the large mammals found in the sanctuary are known there is no information on bats and rodents. There is hardly any information on reptiles, amphibians and fish found in the sanctuary.

A survey for the presence of musk deer will be useful for conservation of the species. Surveys should also be carried out for other rare and endangered species such as Western Tragopan.

8.5 Training of Sanctuary Staff

Training is a very important tool for capacity building and improving the professionalism of sanctuary staff. The sanctuary staff, 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 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.

Some areas where training will benefit the staff are as follows:

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

ii. Identification of bird species found in the sanctuary

iii. Knowledge of reptile and amphibian species found in the sanctuary

iv. Knowledge and identification of plants, including medicinal plants found in the sanctuary

v. Sanctuary ecology, interdependence of plant and animal species

vi. Monitoring methods, population estimation methods.

vii. Anti-poaching skills and documentation of offence cases

viii. Wildlife interpretation skills

ix. Wildlife tracking and field signs

x. Conflict resolution skills for dealing with local people

xi. Weapon training

xii. Darting and trapping wild animals

xiii Soil conservation methods

xiv. Nursery techniques

xv. Use of instruments such as compass, binoculars, digital camera, GPS

xvi. Computer literacy

Field staff should 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 should also be imparted to local people, particularly guides and tour operators with the intention of upgrading their skills for tourism.

Some training subjects are:

i. Sanctuary rules

ii. Skills of setting up camp

iii. Skills of dealing with tourists

iv. Interpretation skills

v. Basic information on identification of species, tracks and signs, habits of species.

Professional organizations should be involved in developing and conducting training programmes. Officers of the department should also be involved in training programmes.

Chapter 9

Management of Human Interface

9.1 Philosophy of Interaction with Local Communities

Presence of human population near the PA's is an unavoidable reality, however, it is meagre in Talra as human habitations are at more than 8 Km distance from the sanctuary boundary. The presence of local people impacts the sanctuary biotic components in a number of ways described earlier. 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 in 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 direction 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 the poor.
- Resolution of various issues and conflicts that the sanctuary authority may have with local people and vice versa.

9.2 Formation of Coordination Committee

In order to tackle various issues related to interactions with local people a coordination committee is proposed consisting of representatives of the local people and representatives of the sanctuary. Only those villages that are adjacent to the sanctuary and impact the sanctuary shall be included in the coordination committee. Each village shall contribute two members to the committee. The composition of the coordination committee shall be as follows:

- DFO (Wildlife), Shimla Division (President)
- Range Forest Officer Tharoch Range
- All Dy. Rangers (one of them shall be Member Secretary)
- All Forest Guards

- Two members each from each village
- One or more NGO representatives at the discretion of the President

Since the sanctuary is divided into two parts and for that two coordination committees can be considered, one for Tharoch (Tehsil Chopal) and the other for Chhajpur Block (Tehsil, Jubbal). The committee shall meet once in three months on a pre- decided day of the month. The President shall attend at least one meeting in a year. Proceedings of each meeting shall be recorded in detail by the member secretary.

The following shall be the main functions of the coordination committee:

- To resolve issues of the sanctuary.
- To seek opinion of people about implementation of developmental works.
- To arrange joint programmes and functions, especially awareness programmes.
- To discuss modalities for tourism and coordinate tourism and coordinate tourism in the sanctuary.
- To involve local people in monitoring activities of the sanctuary.
- To gain cooperation of local people for control of illegal activities.

The committee shall meet once in three months on a pre- decided date of the month. The president shall attend at least one meeting in a year. The proceedings of each meeting shall be recorded in detail by the member secretary.

The decisions taken during the committee meetings may be communicated to each village through meetings conducted by the forest guard and the village representatives.

9.3 Eco- development Programmes

Eco development works should be carried out in the local villages by sanctuary authority. This will help in development of the villages and it will also help to gain their cooperation for sanctuary objectives. Some activities that may be carried out are as follows:

- Water conservation structures such as check dams, spur etc.
- Irrigation tanks.
- Water ponds.
- Other activities depending on needs of each village.

9.4 Involvement of Local People in Conservation Activities

Desire for conservation comes from appreciation of wildlife and its importance. Appreciation for wildlife can best come from personal experience of wildlife in

natural situation. Therefore, local people, especially school and college children, should be involved in treks, outings and various field programmes. If local people can be made conservationist the job of the sanctuary authority will be lot easier. Wildlife NGOs like WWF should be involved in task of spreading awareness and conservation message among local people. If possible, nature clubs be started for local children and youths and well-established organizations like NCC and NSS shall be involved in future.

Local youths and college students should also be involved in wildlife monitoring programme on a voluntary basis. Local youth should be given employment as tourist guides. Collaborative programmes of various kinds should be started in schools, colleges and local bodies depending on their inclination.

Chapter 10

The Budget

10.1 Expenditure in Previous years

Expenditure in Talra has been under the major components: Habitat Improvement, Forest Protection, Soil Conservation Work, Ecodevelopment Work, Training and Workshops, Infrastructure, Equipment, Miscellaneous and Recurring Expenditure. The breakup of expenditure from 2020-21 to 2029-30 is given below.

10.2 Proposed Budget

The proposed budge for the sanctuary given in below. The suggested annual budget ranges from 10.9 lacs to 26 lacs. The items covered include the prescriptions made in this management plan. Routine expenditure such as staff salaries has not been included. The budget is indicative in nature, based on approximate costs. The sanctuary authority may propose an accurate budget based on actual costs and expenditure.

Year wise breakup of activities to be carried out during the year 2020-21 to 2029-30

ABSTARCT FOR 10 YEARS IN RESPECT OF TALRA WLS (Rs. In Lakhs)												
SN	Head	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	Total
I	Infrastructure Development	2.5	3.5	6.0	5.0	6.0	4.0	5.0	6.0	6.0	3.0	47.0
II	Habitat improvement	1.15	4.9	10.0	6.31	7.0	8.0	7.0	8.0	6.0	5.0	73.71
III	Capacity Building/Training/ Research & Monitoring	0	0	0	3.0	3.0	2.0	2.0	2.0	2.0	1.0	15.00
Iv	Wildlife Protection and Conservation Activities	0	2.0	8.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	9.80.
V	Education and Awareness Generation	0	0	0.5	1.5	1.0	1.0	1.0	2.0	1.0	2.0	10.0
VI	Wildlife Tourism Management	0	0	0.82	3.0	2.0	2.0	2.0	2.0	2.0	2.0	15.82
VII	Field equipment	0.5	0	0.95	0.5	3.0	1.0	1.0	1.0	0.5	0	8.45
VIII	Office expenses	0	0	1.7	0.56	1.74	1.77	0.79	1.75	0.8	0.84	9.95
IX	Community Development through Participation	0	0	0	0.5	1.0	1.0	0.50	1.0	0.5	1.0	5.5
X	Human-wild animal Conflict	0	0	0	1.0	0	1.0	0.50	0	0	0	2.5
XI	Contigency	0	0.50	0.23	0.23	0.26	0.23	0.21	0.25	0.2	0.16	2.27
Total		14.5	10.9	21.0	22.6	26.0	23.0	21.0	25.0	20.0	16.0	200.0

Annexures

Annexure 1

Notification under Wildlife (Protection) Act in 1999

(Authorative English Text of this Department Notification Number FFE- B- F (6) - 21/99- dated 01/11/1999 as required under clause (3) of Article 348 of the Constitution of India.)

GOVERNMENT OF HIMACHAL PRADESH DEPARTMENT OF FOREST
No. FFE- B- F (6) 21/99- Dated Shimla-2, the 01/11/1999

NOTIFICATION

AND Whereas Notification under section 18 of the Wildlife (Protection) Act, 1972 was issued vide Govt. Notification No. 5-11/70-SF dated 27/03/1974 declaring its intention to constitute Talra Sanctuary in District Shimla.

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

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

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

The limits of the area of the Sanctuary shall be as under:
North: Thond and Bhagain forests Jubbal and Chhajpur Forests.
East: Salna Dehat forests, U.P. Boundary, Sainj and Saskari dehat.

South: Utter Pradesh territory and Khora forests.
West: Auli Dehat, Gurar Dehat, Sarach forests, Thanal forests, Rinja forests, Lallon forest.
Area: 40 Sq. Kms.

By order
Commissioner- cum- secretary (Fts.) to the
Government of Himachal Pradesh

Endst No. FFE-B-F(6)-21/99 Dated Shimla-2, the 01/11/1999

Copy forwarded for favour of information and necessary action:

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

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

Annexure 2

Final Notification under Wildlife (Protection) Act in 2013

GOVERNMENT OF HIMACHAL PRADESH
DEPARTMENT OF FORESTS

No.FFE-B-F(6)-11/2005-II/Talra **Dated Shimla-2,the 7th June,2013**

Notification

Whereas a notification under Section 26A of the Wildlife (Protection) Act, 1972 (53 of 1972) was issued by the Government vide Notification No. FFE-B-F (6) 21/99 dated 1-11-99, to declare Talra as Wildlife Sanctuary comprising an area of 40.00 sq.km;

And whereas, the matter with regard to rationalization of Wildlife Sanctuaries and National Parks in Himachal Pradesh was under consideration of the Hon'ble Supreme Court in IA No. 139/2010 in Writ Petition Civil No.337 of 1995 titled Centre for Environmental Law, WWF-1 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 Notification under Section 18 of the Wildlife (Protection) Act,1972, in respect of the Wildlife Sanctuaries and National Parks for which rationalization had been proposed;

And whereas, intention Notification under section 18 (1) of Wildlife (Protection) Act, 1972 was issued vide Notification No. FFE-B-F(6)-11/2005 dated 28th July 2010 to include an additional area of 6.08 sq. km to the existing Talra Wildlife Sanctuary having an area of 40 sq. km;

And whereas, the Hon'ble Supreme Court 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 26 A 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 Notification 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 Park in Himachal Pradesh ;

And whereas, as a consequence of rationalization of boundaries of Talra Wildlife Sanctuary, an additional area of 6.48 sq. Km (as per proclamation of Collector Shimla) is hereby included. The total area of 46.48 sq.Km (40.00sq. +6.48 sq. km) shall now constitute the Talra 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 46.48 sq.km as 'Talra Wildlife Sanctuary' with immediate effect for the purpose of protecting, propagating and developing wildlife and its environment;

The limits of Talra Wildlife Sanctuary shall be as under:

Sl. No.	Name of Wildlife Sanctuary	Constituents District Forest Division	Boundaries of Talra Wildlife Sanctuary
1.	Talra WL Sanctuary	i) Shimla ii) Shimla WL Division	**NORTH:** Northern boundary of the sanctuary starts from DPF Rawigarh C.5 to Bankot Tiba – Thanali ThachC.5 along Ashri Dhar C.6 – Retru Thach/ Sabla Thach upto C.9 along Chhachpur Nallah upto C.12 and C.13 of Chhachpur (Rohru Division) and touches to C.11 touching C.14 (b) up to boundary of C.15 Reserve Forests of Rohru Forest Division. The entire boundary touches to Rohru Forest Division. **EAST:** Boundary starts from C.15 RF alongwith Rohru Forest Division (C.17) upto Kashta (C.1) Forest boundary. The boundary falls between Rohru Forest Division and Uttrakhand State boundary. **SOUTH:** Uttrakhand State territory and Khora Forests (Chopal Forest Division). **WEST :** Separating Auli Dehat, Gurar Dehat, Sarach forests, Thanal forests, Rinja forest

			upto Lallon forest –Ravigarh forest C.6 and C.5 (top). Boundry as per scale 1:15000

This area is situated within the Geo-coordinates North Lat. 31° 03'44" N & Long. 77° 45'21" E, West Lat. 31° 01'56" N & Long 77° 48' 46" E, South 30°58'7" N & Long. 77°42' 36" E which falls on Survey of India topo Sheet No. 53E/12 , 53E/16, 53F/9 and 53F/13 on scale 1:50,000.

Area of Talra Wildlife Sanctuary = 46.48 sq. Km.

By Order

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

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

Copy forwarded to:

1. All the Administration Secretaries to the Govt. of H.P Shimla-2
2. All the Divisional Commissioners , Shimla, Mandi & Dharamshala, H.P
3. All the Heads of Department of HP.
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/ DFO's (Wildlife) in H.P.
7. All the Deputy Commissioners in H.P.
8. All the CCF's/C Fs/DFO's in H.P.
9. ALR-cum- Under Secretary Law to the Government of Himachal Pradesh.
10. The Commissioner, Municipal Corporation, Shimla.
11. The Controller H.P. Printing & Stationary Department Shimla-5 for publication in the Raj-Patra (Extra-ordinary) Five Copies of the Raj – Patra be sent to this Department.
12. Guard File.

Under Secretary (Forests) to the
Government of Himachal Pradesh

Eco-Sensitive Zone Notification

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
NOTIFICATION

New Delhi, the 21st November, 2017

S.O.3710(E).— WHEREAS, a draft notification was published in the Gazette of India, Extraordinary, vide notification of the Government of the India in the Ministry of Environment, Forest and Climate Change number S.O. 1969 (E) dated the 3rd June, 2016, inviting objections and suggestions from all persons likely to be affected thereby within the period of sixty days from date on which copies of the Gazette containing the said notification were made available to the public;

And Whereas, copies of the Gazette containing the draft notification were made available to the public on the 3th June, 2016;

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

And Whereas, the Talra Wildlife Sanctuary is situated in Shimla District of Himachal Pradesh and is spread over an area of about 46.48 square kilometers.

And Whereas, the flora and fauna represent rich biological significance of this sanctuary. The sanctuary is the habitat for leopard (*Panthera pardus*), Black bear (*Ursus americanus*), barking deer (*Muntiacus sp.*), ghoral (*Naemorhedus sp.*), and pheasants such as Kalij (*Lophura leucomelanos*), Red Jungle fowl (*Gallus gallus*), Monal (*Lophophorus sp.*), Koklash (*Pucrasia macrolopha*) and birds such as Black partridge (*Melanoperdix niger*), Vultures (*Aegypius Monachus*), eagle (*Haliaeetus sp.*), Chakor (*Alectoris chukar*), Owl (*Strigiformes sp.*), etc.;

And Whereas, it is necessary to conserve and protect the area the extent and boundaries of which are specified in paragraph 1 of this notification around the protected area of Talra Wildlife Sanctuary as Eco-sensitive Zone from ecological, environmental and biodiversity point of view and to prohibit industries or class of industries and their operations and processes in the said Eco-sensitive Zone;

NOW THEREFORE, in exercise of the powers conferred by sub-section(1) and clauses (v) and (xiv) of sub-section (2) and sub-section (3) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby notifies an area to an extent ranging from 0 metres to 3.87 kilometres around the boundary of Talra Wildlife Sanctuary in the State of Himachal Pradesh as the Talra Wildlife Sanctuary Eco-sensitive Zone (herein after referred to as the Eco-sensitive Zone) details of which are as under, namely:-

1. **Extent and Boundaries of Eco-sensitive Zone.-** (1) The Eco-Sensitive Zone covers an area of 22.56 sq. kms with an extent ranging from 0 metres to 3.87 kilometres around the boundary of Talra Wildlife Sanctuary. Zero extent is towards Southern side due to inter-state boundary with Uttarakhand.

(2) The map of Talra Wildlife Sanctuary demarcating the Eco-sensitive Zone is appended as **Annexure I**. The list of geo co-ordinates of the boundaries of Wildlife Sanctuary and Eco Sensitive Zone is at

Annexure I (A).

(3) The boundary description of the Eco-Sensitive Zone is at **Annexure II.**

(4) No villages fall within the Eco-Sensitive Zone.

2. **Zonal Master Plan for the Eco-sensitive Zone.-** (1) The State Government shall, for the purpose of the Eco-sensitive Zone prepare, a Zonal Master Plan, within a period of two years from the date of

publication of final notification in the Official Gazette, in consultation with local people and adhering to the stipulations given in this notification.

(2) The Zonal Master Plan so prepared shall commensurate with the stipulation specified in the Notification and include the environmental implications.

(3) The Zonal Master Plan shall be approved by the Competent Authority in the State Government.

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

(5) The Zonal Master Plan shall be prepared in consultation with all concerned State Departments, namely:-

(i) Environment;

(ii) Forest;

(iii) Urban Development;

(iv) Tourism;

(v) Municipal;

(vi) Revenue;

(vii) Agriculture;

(viii) Irrigation;

(ix) Public Works Department; and

(x) Himachal Pradesh State Pollution Control Board.

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

(7) The Zonal Master plan shall provide for restoration of denuded areas, conservation of existing water bodies, management of catchment areas, watershed management, groundwater management, soil and moisture conservation, needs of local community and such other aspects of the ecology and environment that need attention.

(8) The Zonal Master Plan shall demarcate all the existing worshipping places, villages and urban settlements, types and kinds of forests, tribal areas, agricultural areas, fertile lands, green areas such as parks and like places, horticultural areas, orchards, lakes, wetlands and other water bodies and also with supporting maps. The Plan shall be supported by Maps giving details of existing and proposed land use features.

(9) The Zonal Master Plan shall regulate development in Eco-sensitive Zone and shall follow prohibited, regulated and promoted activities specified in the Notification so as to ensure Eco-friendly development for livelihood security of local communities.

(10) The Zonal Master Plan shall be a reference document for the Monitoring Committee for carrying out its functions with respect to the provisions given in this notification.

3. **Measures to be taken by State Government.**-The State Government shall take the following measures for giving effect to the provisions of this notification, namely:-

(1) **Landuse.-** Forests, horticulture areas, agricultural areas, parks and open spaces earmarked for recreational purposes in the Eco-sensitive Zone shall not be used or converted into areas for commercial or industrial related development activities:

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

(i) Eco-friendly cottages for temporary occupation of tourists, such as tents, wooden houses, for Eco-friendly tourism activities;

(ii) Widening and strengthening of existing roads and construction of new roads; (iii) Small scale industries not causing pollution;

(iv) Rainwater harvesting; and

(v) Cottage industries including village industries, convenience stores and local amenities;

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

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

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

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

(2) **Natural Springs.-** The catchment areas of all natural springs shall be identified and plans for their conservation and rejuvenation shall be incorporated in the Zonal Master Plan and the catchment management plan shall be drawn up by the State Government in such a manner as to prohibit or and restrict development activities within the catchment areas.

(3) **Eco-Tourism.-**(a)The activity relating to tourism within the Eco-sensitive Zone shall be as per Eco-Tourism Master Plan, which shall form part of the Zonal Master Plan.

(b) The Eco-Tourism Master Plan shall be prepared by the Department of Tourism, Government of Himachal Pradesh in consultation with Department of Revenue and Forests, Government of Himachal Pradesh.

(c) The Tourism Master Plan shall form a component of the Zonal Master Plan.

(d) The activities relating to tourism shall be regulated as under, namely.-

(i) No new construction of hotels and resorts shall be allowed within 1 km from the boundary of the Talra Wildlife Sanctuary or upto the extent of the Eco-sensitive Zone whichever is nearer. However, beyond the distance of 1 km from the boundary of the Wildlife Sanctuary till the extent of the Eco-

Sensitive Zone, the establishment of new hotels and resorts shall be allowed only in pre-defined and designated areas for Eco-tourism facilities as per Tourism Master Plan.

(ii) all new tourism activities or expansion of existing tourism activities within the Eco-sensitive Zone shall be in accordance with the guidelines issued by the Central Government in the Ministry of Environment, Forest and Climate Change and the eco-tourism guidelines issued by National Tiger Conservation Authority (as amended from time to time) with emphasis on eco-tourism;

(iii) until the Zonal Master Plan is approved, development for tourism and expansion of existing tourism activities shall be permitted by the concerned regulatory authorities based on the actual site specific scrutiny and recommendation of the Monitoring Committee.

(4) **Natural Heritage.-** All sites of valuable natural heritage in the Eco-sensitive Zone such as the gene pool reserve areas, rock formations, waterfalls, springs, gorges, groves, caves, points, walks, rides, cliffs, etc. shall be identified and preserved and plan shall be drawn up for their protection and conservation, within six months from the date of publication of this notification and such plan shall form part of the Zonal Master Plan.

(5) **Man-made heritage sites.-** Buildings, structures, artefacts, areas and precincts of historical, architectural, aesthetic, and cultural significance shall be identified in the Eco-sensitive Zone and plans for their conservation shall be prepared within six months from the date of publication of this notification and incorporated in the Zonal Master Plan.

(6) **Noise pollution.-** The Environment Department of the State Government or Bihar State Pollution Control Board shall implement the regulations for control of noise pollution in the Eco-sensitive Zone in accordance with the provisions stipulated of The Noise Pollution (Regulation And Control) Rules, 2000 under the Environment (Protection) Act, 1986.

(7) **Air pollution.-** Regulations for the control of air pollution in the Eco-Sensitive Zone in accordance with the provisions of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) and rules made thereunder shall be complied with.

(8) **Discharge of effluents.-** The discharge of treated effluent in Eco-sensitive Zone shall be in accordance

with the provisions of the General Standards for Discharge of Environmental Pollutants covered under Environmental (Protection) Act, 1986 and rules made therein. –

(9) **Solid wastes. -** Disposal and Management of solid wastes shall be as under:-

(a) The solid waste disposal and management in the Eco-sensitive Zone shall be carried out in accordance with the Solid Waste Management Rules, 2016 and published by the Government of India in the Ministry of Environment, Forest and Climate Change vide notification number S.O. 1357 (E), dated the 8th April, 2016; the inorganic material may be disposed in an environmental acceptable manner at site identified outside the Eco-sensitive Zone.

Sl. No.	Activity	Remarks
(1)	(2)	(3)
	Prohibited Activities	
1.	Commercial Mining, stone quarrying and crushing units.	(a) All new and existing (minor and major minerals), stone quarrying and crushing units are prohibited with immediate effect except for meeting the domestic needs of bona fide local residents including digging of earth for construction or repair of houses and for manufacture of country tiles or bricks for housing and for other activities. (b) The mining operations shall be carried out in accordance with the order of the Hon'ble Supreme Court dated 04.08.2006 in the matter of T.N. Godavarman Thirumulpad Vs. UOI in W.P.(C) No.202 of 1995 and dated 21.04.2014 in the matter of Goa Foundation Vs. UOI in W.P.(C) No.435 of 2012.
2.	Setting of new saw mills.	No new or expansion of existing saw mills shall be permitted within the Eco-sensitive Zone.
3.	Use or production of any hazardous substances.	Prohibited (except as otherwise provided) as per applicable laws.
4.	Setting up of industries causing water or air or soil or noise pollution.	No new industries and expansion of existing polluting industries in the Eco-sensitive zone shall be permitted. Only non-polluting industries shall be allowed within ESZ as per classification of Industries in the Guidelines issued by Central Pollution Control Board in February 2016, unless so specified in this notification. In addition, non-polluting cottage industries shall be promoted.
5.	Establishment of new major hydro-electric projects.	Prohibited (except as otherwise provided) as per applicable laws.
6.	Commercial use of firewood.	Prohibited (except as otherwise provided) as per applicable laws.
7.	Discharge of untreated effluents in natural water bodies or land area.	Prohibited (except as otherwise provided) as per applicable laws

8.	Use of plastic bags by shopkeepers.	Prohibited (except as otherwise provided) as per applicable laws.
9.	Setting up of brick kilns.	Prohibited (except as otherwise provided) as per applicable laws
	Regulated activities	
10.	Commercial establishment of hotels and resorts	No new commercial hotels and resorts shall be permitted within one kilometre of the boundary of the Protected Area or upto the small temporary structures for Eco-tourism activities. Provided that, beyond one kilometre from the boundary of the protected Area or upto the extent of Eco-sensitive zone whichever is nearer, all new tourist activities or expansion of existing activities shall be in conformity with the Tourism Master Plan and Guidelines as applicable.
11.	Construction activities	No new commercial construction of any kind shall be permitted within one Kilometre from the boundary of the Protected Area or upto extent of the Eco-sensitive Zone whichever is nearer: (a) Provided that, local people shall be permitted to undertake construction in their land for their use including the activities listed in sub paragraph (1) of paragraph 6 as per building byelaws to meet the residential needs of the local residents such as: (i) Widening and strengthening of existing roads and construction of new roads; (ii) Construction and renovation of infrastructure and civic amenities; (iii) Cottage industries including village industries; convenience stores & local amenities supporting eco-tourism including home stays; and (iv) Promoted activities listed in this Notification.
12.	Discharge of treated waste water/effluents in natural water bodies or land area.	The discharge of treated waste water/effluents shall be avoided to enter into the water bodies. Efforts to be made for recycle and reuse of treated waste water. Otherwise the discharge of treated waste water/effluent shall be regulated as per applicable laws.
13.	Under taking other activities related to tourism area by hot air like over flying the ESZ balloon, helicopter, drones, Microlites, etc.	Regulated under applicable law
14.	Air, Vehicular and Noise Pollution.	Regulated under applicable laws.
15.	Commercial extraction of surface and ground water	Regulated under applicable law.

16.	Felling of Trees	(a) There shall be no felling of trees on the forest or Government or revenue or private lands without prior permission of the competent authority in the State Government. (b) The felling of trees shall be regulated in accordance with the provisions of the concerned Central or State Act and the rules made thereunder
17.	Migratory graziers.	Regulated under applicable laws and as per Zonal Master Plan.
18.	Erection of electrical and communication towers and laying of cables and other infrastructures.	Regulated under applicable law. Underground cabling may be promoted.
19.	Widening and strengthening of existing roads and construction of new roads	Shall be done with mitigation measures, as per applicable laws, rules and regulation and available guidelines.
20.	Fencing of existing premises of hotels and lodges.	Regulated under applicable laws.
21.	Collection of Forest produce or Non-Timber Forest Produce (NTFP).	Regulated under applicable laws.
22.	Commercial use of Natural water Resource including Ground water Harvesting.	Regulated under applicable laws.
23.	Movement of vehicular traffic at night.	Regulated for commercial purpose under applicable laws.
24.	Introduction of Exotic species.	Regulated under applicable laws.
25.	Commercial Sign boards and hoardings.	Regulated under applicable laws.
26.	Protection of Hill Slopes and river banks.	Regulated under applicable laws.
27.	Fishing.	Regulated under applicable laws
28.	Water Transportation.	Regulated under applicable laws
29.	Infrastructure including civic amenities.	Shall be done with mitigation measures, as per applicable laws, rules and regulation and available guidelines.
30.	Open Well, Bore Well etc. for agriculture or other usage	Regulated and the activity should be strictly monitored by the appropriate authority.
31.	Solid Waste Management.	Regulated under applicable laws
32.	Eco-tourism	Regulated under applicable laws
Promoted Activities		
33.	Ongoing agriculture and horticulture practices by local communities along with dairies, dairy farming, aquaculture and fisheries.	Permitted under applicable laws for use of locals.

34.	Organic farming.	Shall be actively promoted.
35.	Adoption of green technology for all activities.	Shall be actively promoted.
36.	Small scale non polluting industries.	Non polluting industries termed as White Category as per classification of industries issued by the Central Pollution Control Board in February 2016 and non-hazardous, small-scale and service industry, agriculture, floriculture, horticulture or agro- based industry producing products from indigenous materials from the Eco-sensitive Zone shall be permitted by the competent Authority.
37.	Rain water harvesting.	Shall be actively promoted.
38.	Cottage industries including village artisans, etc.	Shall be actively promoted.
39.	Use of renewable energy and fuels	Bio gas, solar light etc. to be actively promoted
40.	Agro-Forestry	Shall be actively promoted.
41.	Use of eco-friendly transport.	Shall be actively promoted.
42.	Skill Development	Shall be actively promoted.
43.	Restoration of Degraded Land/ Forests/ Habitat	Shall be actively promoted.
44.	Environmental Awareness	Shall be actively promoted.

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

(10)**Bio-medical waste. -** Bio medical waste management shall be as under:

(a) The bio-medical waste disposal in the Eco-sensitive Zone shall be carried out in accordance with the Bio-Medical Waste Management Rules, 2016 published by the Government of India in the Ministry of Environment, Forest and Climate Change vide Notification number GSR 343 (E), dated the 28th March, 2016, as amended from time to time.

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

(11) **Plastic Waste Management**. - The Plastic Waste Management in the Eco-sensitive Zone shall be carried out as per the provisions of the Plastic Waste Management Rules, 2016 published by the Government of India

in the Ministry of Environment, Forest and Climate Change vide notification number G.S.R 340 (E), dated the 18th March, 2016, as amended from time to time.

(12) **Construction and Demolition Waste Management**.- The Construction and Demolition Waste Management in the Eco-sensitive Zone shall be carried out as per the provisions of the Construction and Demolition Waste Management Rules, 2016 published by the Government of India in the Ministry of Environment, Forest and Climate Change vide notification number G.S.R 317(E), dated the 29th March, 2016, as amended from time to time.

(13) **E-waste**. - The E- Waste Management in the Eco-sensitive Zone shall be carried out as per the provisions of the E-Waste Management Rules, 2016 published by the Government of India in the Ministry of Environment, Forest and Climate Change and as amended from time to time.

(14) **Vehicular traffic**. - The vehicular movement of traffic shall be regulated in a habitat friendly manner and specific provisions in this regard shall be incorporated in the Zonal Master Plan and till such time as the Zonal Master plan is prepared and approved by the Competent Authority in the State Government, the Monitoring Committee shall monitor compliance of vehicular movement under the relevant Acts and the rules and regulations made thereunder.

(15) **Industrial units. –**

(a) No establishment of new wood-based industries within the proposed Eco-sensitive zone shall be permitted except the existing wood-based industries set up as per the law.

(b) No establishment of any new industry causing water, air, soil, noise pollution within the proposed Eco-sensitive Zone shall be permitted.

(16) The Central Government and the State Government shall specify other measures, if it considers necessary, in giving effect to the provisions of this notification.

4. **List of activities prohibited or to be regulated or promoted within the Eco-sensitive Zone.-** All activities in the Eco-sensitive Zone shall be governed by the provisions of the Environment (Protection) Act, 1986 (29 of 1986) and the rules made thereunder and shall be regulated in the manner specified in the Table below, namely:

5. **Monitoring Committee. -** The Central Government within three months of this Notification, constitutes a Monitoring Committee, for effective monitoring of the provisions of the final notification, comprising of the following, namely: -

(i) District Magistrate, Shimla – Chairman;
(ii) An expert in the area of ecology and environment to be nominated by the Government of Himachal Pradesh for a period of three years- Member;
(iii) One representative of non-Governmental Organisation - Member (Working in the field of environment including heritage Conservation) to be nominated by the Government of Himachal Pradesh for a period of three years- Member;
(iv) Member Secretary/Member or nominee from Himachal State Biodiversity Board- Member;
(v) Executive Engineer, Himachal Pradesh State Pollution Control Board – Member;
(vi) Senior Town Planner of the area – Member;
(vii) Deputy Conservator of Forests (Wildlife), Shimla – Member;
(viii) Divisional Forest Officer (Territorial), Rohru - Member-Secretary.

6. **Terms of Reference:**

(1) The Monitoring Committee shall monitor the compliance of the provisions of the final Notification.

(2) The tenure of the Monitoring committee is for three (3) years or till the Constitution of the new Committee by the State Government.

(3) The first Monitoring Committee shall be constituted within three months from the date of publication of this Notification.

(4) (3) The Monitoring Committee shall not allow the activities that are covered in the Schedule to the notification of the Government of India in the erstwhile Ministry of environment and Forests number S.O. 1533 (E), dated the 14th September, 2006, and are falling in the Eco-sensitive Zone,

including the prohibited activities as specified in the Table under paragraph 4 thereof. Only white categories of industries shall be considered as specified in the guidelines issued by the CPCB for "classification of Industries, 2016".

(5) The activities that are not covered in the Schedule to the notification of the Government of India in the erstwhile Ministry of Environment and Forests number S.O. 1533(E), dated the 14th September, 2006 and are falling in the Eco-sensitive Zone, except for the prohibited activities as specified in the Table under paragraph 4 thereof, shall be scrutinised by the Monitoring Committee based on the actual site-specific conditions and referred to the concerned Regulatory Authorities.

(6) The Member Secretary of the Monitoring Committee or the concerned Commissioner shall be competent to file complaints under section 19 of the Environment (Protection) Act, 1986 (29 of 1986) against any person who contravenes the provisions of this notification.

(7) The Monitoring Committee may invite representatives or experts from concerned Departments, representatives from Industry Associations or concerned stakeholders to assist in its deliberations depending on the requirements on issue to issue basis.

(8) The Monitoring Committee shall submit the annual action taken report of its activities as on 31st March of every year by 30th June of that year to the Chief Wild Life Warden of the State under intimation to this Ministry as per proforma appended at **Annexure III**.

(9) The Central Government in the Ministry of Environment, Forest and Climate Change may give such directions, as it deems fit, to the Monitoring Committee for effective discharge of its functions.

7. Additional measures. - Additional measures. - The Central Government and State Government may specify additional measures, if any, for giving effect to provisions of this notification.

8. Supreme Court, etc. orders; The provisions of this notification shall be subject to the orders, if any, passed, or to be passed, by the Hon'ble Supreme Court of India or the High Court or the National GreenTribunal.

[F.No.25/17/2016-ESZ-RE]

LALIT KAPUR, Scientist 'G'

ANNEXURE-I

Map of Talra Wildlife Sanctuary, Himachal Pradesh

15.	30^0 57' 47.811''N	77^0 45'15.845''E
16.	30^0 57' 4. 898''N	77^0 44' 53.521''E
17.	30^0 57' 38.37''N	77^0 43' 57.088''E
18.	30^0 58' 27.895''N	77^0 43' 10.562''E
19.	30^0 59' 31.063''N	77^0 43'30.523''E
20.	31^0 0'14.351'' N	77^0 44' 4.671''E
21.	31^0 1' 4.042''N	77^0 43' 36.665''E
22.	31^0 1'2.959'' N	77^0 42' 36.04''E
23.	31^0 1' 39.451''N	77^0 42' 22.821''E
24.	$31^0$1'51.836"N	$77^0$41'36.151"E
25.	$31^0$2'50.454"N	$77^0$41'34.182"E
26.	$31^0$3'17.67"N	$77^0$42'20.171"E
27.	$31^0$3'35.748"N	$77^0$42'57.159"E
28.	$31^0$3'59.01"N	$77^0$44'13.24"E

Annexure II

Boundary Description of Eco-Sensitive Zone of Talra Wildlife Sanctuary, Himachal Pradesh

NORTH: Starts from 77^0 49'48.859''E & 31^0 01'42.734''N, at Uttarakhand 506734''N, then up to Jakhu Mandir and along ridge up to wooden bridge and Nalli Khad. Then through Chhajpur RF up to 77^0 45'38.437''E & 31^0 04'28.843''N and along Rawingarh ridge and up to Johan Gad and then along ridge to 77^0 41'34.182''E & 31^0 2'50.454''N

EAST: It follows up to Som Khad at 77^0 42'22.821''E & 31^0 1'39.451''N through Rinja DPF and up to Chaikhari Nallah along Thanal DPF up to Real Nallah and along the ridge up to Gurar FRH, then along Sarech DPF and private lands of Katah, Makroh through 77^0 43'10.562''E & $30^0$58'27.895''N. Then along ridge up to 77^0 44'53.521''E & 30^0 57'4.898''N and the up to Uttrakhand State boundary.

SOUTH: It moves along the Uttrakhand State boundary and Talra WLS boundary up to Phasa Dhar at 77^0 47'42.122''E & 30^0 58'6.767''N

WEST: The starting point of north boundary at 77^0 49'48.859''E & 31^0 01'42.734''N moves up to Talra WLS boundary and further moves along this up to 77^0 48'32.414''E & 310 01'34.088''N, then up to Ochha Khad and private lands of Daunehr village at 77^0 49'25.23''E & 31^0 0'33.995''N, then along Sainj village, Golthar Dhar up to Lodaru Khad, the along Shashan village. It further moves along Urin Gad and then along ridge up to 77^0 47'42.122''E & 30^0 58'6.767''N.

Annexure III

Performa of Action Taken Report: - Eco-sensitive Zone monitoring Committee.-

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

Annexure 4

Area Statement of Talra Wildlife Sanctuary

Block	Beat	Area (ha)
Chhajpur	Chhajpur	1318.86
	Panju	406.71
	Shashan	1435.82
Throach	Gurar	583.16
	Auli	898.02
	Total	**4642.57**

Annexure 5

Compartment wise Area of the Talra Wildlife Sanctuary

Sr.No.	Name of Forest	Legal status	Compartment No.	Area (ha)
1	Kangra	DPF	1(a)	207.20
2			1(b)	65.16
3			2	310.80
4			3	339.94
5			4(a)	126.30
6			4(b)	46.21
7			4(c)	130.20
8			5(a)	246.87
9			5(b)	8.50
10	Shashan	DPF	3	138.40
11			4	192.63
12			6	196.27
13			8	95.10
14			10	210.03
15	Kashata	DPF	1(a)	603.39
16	Chhajpur	RF	15	91.46
17		DPF	7	166.73
18			8	111.57
19			10	191.01
20			11	194.25
21			16	75.27
22			21	154.19
23			22	85.79
			Total	**3994.27**
a	Chhajpur	DPF	9	120.60
b			12	128.69
c			14(a)	62.90
d	Ravigarh	DPF	5	129.90
e			6	206.29
			Total	**648.30**
			Old area	**3994.27**
			New area	**648.30**
			G.Total	**4642.57**

Annexure 6

Average monthly rainfall in Talra Sanctuary

Month	Jan	Feb	Mar	Apr	May	Jun	Julu	Aug	Sep	Oct	Nov	Dec
Rainfall(mm)	87	73	84	45	30	20	260	229	131	31	42	60

Annexure 7

List of Mammals Found in Talra Wildlife Sanctuary

Sr. no.	Common Name	Local Name	Zoological Name	Schedule
1	Leopard	Tendua	*Panthera pardus*	I
2	Black Bear	Bhalu	*Selenarctos thibetanus*	II
3	Goral	Goral	*Nemorhaedus Goral*	III
4	Barking Deer	Kakkad	*Muntiacus muntak*	III
5	Rheshus Macaque	Bandar	*Macaca Mulatta*	II
6	Common Langoor	Langur	*Presbytis entellus*	II
7	Leopard cat		*Felis chaus*	II
8	Jungle cat	Ban Billa	*Hystrix indica*	II
9	Porcupine	Shail	*Martes flovigule*	IV
10	Yellow Throated Marten	Ooj	*Vulpes Vulpes*	II
11	Himalayan Fox	Feonta	*Vulpes Vulpes*	II
12	Himalayan Palm civet	Kothiya, Shikralu, Katheli	*Paguma larvata*	II
13	Common Giant Flying Squirrel	Ayn	*Petaurista petaurista*	II
14	Pica, Himalayan Mouse		*Ochotona roylei*	IV
15	Jackal	Gidad	*Canis aureus*	II

Annexure 8

CASE REPORT
JOURNAL 15(10): 334-338

ZOOS' PRINT

BIRDS OF TALRA WILDLIFE SANCTUARY IN LOWER WESTERN HIMALAYA, H.P., WITH NOTES ON THEIR STATUS AND ALTITUDINAL MOVEMENTS

Anil Mahabal

Zoological Survey of India, Western Regional Station, Vidya Nagar, Sector No. 29, Post Box 3053, P.C.N.T. Post, Near Akurdi Railway Station, Rawet Road, Akurdi, Pune, Maharashtra 411044, India. E-mail: zsipune@mah.nic.in

Abstract

The paper deals with the birds of Talra Wildlife Sanctuary situated in lower western Himalaya of Himachal Pradesh. Sixty-one species of birds belonging to 19 families were recorded. Out of these 32 species were resident birds confined to Himalayan ecosystem. Some of the birds were noticed as extending their altitudinal distribution range to higher elevations. Mixed hunting parties and pure feeding flocks of birds have been discussed along with their abundance in the Sanctuary area.

Keywords

Status, inventory, Talra Wildlife Sanctuarty, birds, abundance, altitudinal movements

Introduction

In the complex folded mountain chain like Himalaya the altitudinal variations, topographical and climatic conditions have greatly influenced the biotic diversity and its distribution, which directly or indirectly affects the life of birds inhabiting the various altitudinal belts or 'life zones' (Ali, 1949). This causes variations in the distribution pattern of birds in various regions of Himalaya.

To investigate this, a study of the avifauna of different districts and wildlife sanctuaries of Himachal Pradesh which forms a part of western Himalayan ecosystem, was undertaken during 1990-1993. The avifauna of Mandi and Chamba Districts, Kangra Valley, Naina Devi Wildlife Sanctuary, Siwalik Himalaya and Solan District has already been worked out by Mahabal and Mukherjee (1991), Mahabal (1992), Mahabal and Sharma (1992; 1993), Mahabal (1996) and, Sharma and Mahabal (1997) respectively. The present account deals with the status and abundance of birds occurring in the Talra Wildlife Sanctuary Shimla District of Himachal Pradesh.

Received 30 June 2000 ***Accepted 25 August 2000***

Study area and Methods

Talra Wildlife Sanctuary, falls partly in Chopal and partly in Jubbal Tehsils of Shimla District, Himachal Pradesh, India (Map 1). The area of the sanctuary is 40.49 sq.km. and its latitudinal range is $30^0$57' to $31^0$3'N and longitudinal range is $77^0$43' to $77^0$48' E. It is about 92 km. from Shimla and the nearest town Jubbal is about 35 kms. Entry in the Sanctuary from Shimla is via Jubbal and Chhachpur. There are no jeepable roads inside the Sanctuary. Altitude varies from 1500 to 3324 m. The mean average temperature ranges between -7^0C and 24^0C with a mean annual rainfall of 875 mm. The area remains covered with snow during November / December to March.

The general topography is of high and steep mountains with Lower Western Himalayan Temparate Forest and West Himalayan Upper Mixed Coniferous Forest. Vegetation comprises mainly Pine (*Pinus* sp.) and Oak (*Quercus* sp.) at lower elevations between 1500 and 2500 m. Mixed Coniferous Forest is mainly of Deodar (*Cedrus deodara*), Himalayan Silver Fir (*Abies pindrow*), Broad-leaf Maple (*Acer* sp.), Spruce (*Picea smithiana*), mixed with Dwarf Rhododendron (*Rhododendron arboreum*) at higher elevations above 2500 metres.

A preliminary survey of avifauna of the sanctuary and adjacent forests was undertaken during the post-monsoon season only during 20 September to 2 October, 1992. Observations on the birds were carried out with the help of 8 x 50 (zoom) binoculars. The identification of birds and their status, altitudinal range are based on Ali (1949) and Ali & Ripley (1983a;b). The birds sighted were categorised as resident (R), resident birds of Himalayan ecosystem (HE) showing winter-summer vertical movements, summer visitor (SV) for breeding purpose during March-September and birds showing seasonal altitudinal movements (AM). The birds were also categorised (as follows) based on their abundance

(+) - Rare or seen occassionally;
(++) - Common; and
(+++) - Abundant

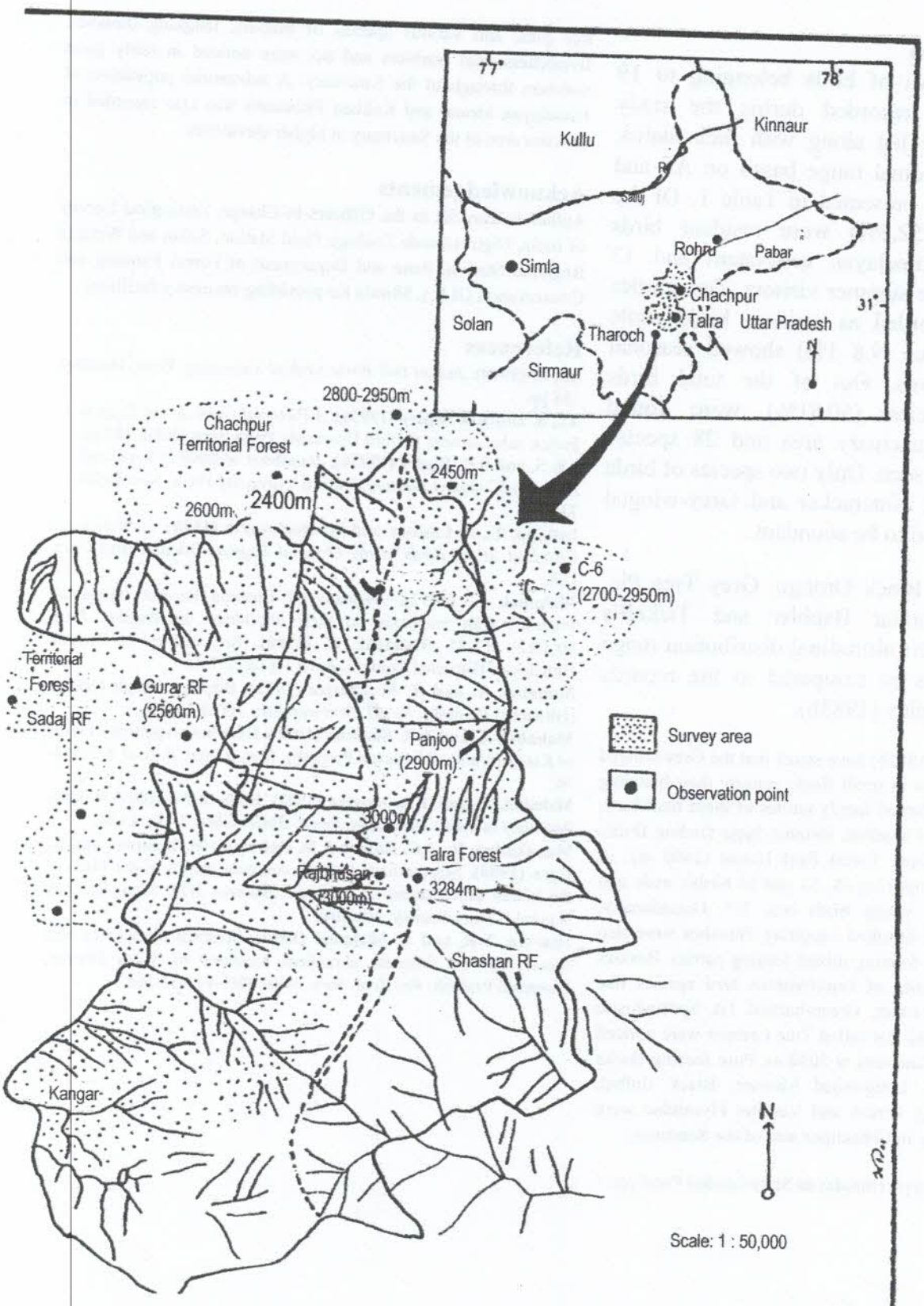


Figure 1. Map of Talra Wildlife Sanctuary (Shimla District), Himachal Pradesh

Result and Discussion

A total of 61 species of birds belonging to 19 families have been recorded during the study period. A systematic list along with their status, abundance and altitudinal range based on Ali and Ripley (1983a; b) is presented in Table 1. Of the total, 32 species (52.5%) were resident birds confined to this Himalayan ecosystem and 13 species (21.3%) were summer visitors. Ten species (16.4 %) were recorded as resident birds while remaining six species (9.8 1%) showed seasonal altitudinal movements. Out of the total birds recorded, 31 species (50.81%) were found commonly in the sanctuary area and 28 species (45.9%) were rarely seen. Only two species of birds (3.3%) viz. Spotted Nutcracker and Grey-winged Blackbird were found to be abundant.

It was noticed that Black Drongo, Grey Tree Pie, Rusty-cheeked Scimitar Babbler and Tickell's Thrush extended their altitudinal distribution range to higher elevations as compared to the records given by Ali and Ripley (1983b).

Further, Ali and Ripley (1983b) have stated that the Grey-winged Blackbirds keep singly or in small flocks outside their breeding season. However, a number of family parties of these blackbirds were seen to have joined together, forming large feeding flocks particularly near Chhachpur Forest Rest House (2400 m). In three of such flocks (comprising 38, 53 and 56 birds), male and female ratio, including young birds was 2:3. Occasionally, Eurasian Blackbirds and Streaked Laughing Thrushes were also observed in these flocks forming mixed feeding parties. Besides this, mixed hunting parties of insectivorous bird species like Yellow-browed Leaf Warbler, Green-backed Tit, Spot-winged Tit, Rufous-vented Tit and Bar-tailed Tree Creeper were noticed in the valley of Rajbhushan area at 3000 m. Pure feeding flocks of Spotted Nutcracker, Long-tailed Minivet, Black Bulbul, White-throated Laughing Thrush and Verditer Flycatcher were also seen very commonly in Chhachpur area of the Sanctuary.

In general, Griffon-Vultures, Himalayan Slaty-headed Parakeet, tree pies, and various species of bulbuls, laughing thrushes, flycatchers, leaf warblers and tits were noticed in fairly good numbers throughout the Sanctuary. A substantial population of Himalayan Monal and Koklass Pheasants was also recorded in the core area of the Sanctuary at higher elevations.

Acknowledgements

Author is thankful to the Officers-in-Charge, Zoological Survey of India, High Altitude Zoology Field Station, Solan and Western Regional Station, Pune and Department of Forest Farming and Conservation (H.P.), Shimla for providing necessary facilities.

References

Ali, S. (1949). *Indian Hill Birds*. Oxford University Press, Bombay, 188 pp.

Ali, S. and S.D. Ripley (1983a). *A Pictorial Guide to the Birds of Indian subcontinent.* Oxford University Press, New Delhi, 183 pp.

Ali, S. and S.D. Ripley (1983b). *Handbook of Birds of India and Pakistan (Compact Edition)*. Oxford University Press, New Delhi, 737 pp.

Inskipp, T., N. Lindsey and W. Duckworth (1996). *An Annotated Checklist of the Birds of the Oriental Region.* Oriental Bird Club, U.K.

Mahabal, A. (1992). Avifauna of Chamba District (Himachal Pradesh) with emphasis on their altitudinal distribution. *Pavo* 30(1&2): 17-25. **Mahabal, A. (1996).** Bird survey of Siwalik Himalay of Himachal Pradesh. *Pavo* 34(1&2): 7-16.

Mahabal, A. and R. Mukherjee (1991). Birds of Mandi District (Hirnachal Pradesh). *Newsl. Bird watchers* 31(1&2): 8-9.

Mahabal, A. and T.R. Sharrna (1992). Distribution pattern of birds of Kangra Valley (Himachal Pradesh). *Him. J. Env. & Zool.* 6(2): 85-96.

Mahabal, A. and T.R. Sharma (1993). Birds of NainaDevi Wildlife Sanctuary in Lower Himalayas. *Newsl. Birdwatchers* 33(3): 43-44.

Manakadan, R., J.C. Daniel, A.R. Rahmani, M. Inamdar and G. Ugra (1998). Standardized English common names of the birds of the Indian subcontinent - a proposal. *Buceros* 3(2): 55pp. Bombay Natural History Society, Mumbai.

Sharma, T.R. and A. Mahabal (1997). Seasonal changes of bird species in two different altitudinal locations of Solan District, Himachal Pradesh. *Rec.Zool. Sury. India* 96(1-4): 151-165.

A systematic list of birds of Talra Wildlife Sanctuary showing their status, abundance and altitudinal range.

HB #	Scientific Name	Common Name	Status	Abun.	Alt. range
Accipitridae					
148	*Accipiter nisus*	Eurasian Sparrow-Hawk	R/AM	+	1400-3500
180	*Gyps fulvus*	Eurasian Griffon-Vulture	R	++	-
181	*Gyps himalayensis*	Himalayan Griffon-Vulture	HE	++	800-4500
Falconidae					
222	*Falco tinnunculus*	Common Kestrel	R/AM	+	700-3300
Phasianidae					
307	*Catreus wallichii*	Cheer Pheasant	HE	+	1400-3500
290	*Lophophorus impejanus*	Himalayan Monal Pheasant	HE	++	2600-5000
293	*Lophura leucomelanos*	Kalij Pheasant	HE	+	600-3600
305	*Pucrasia macrolopha*	Koklass Pheasant	HE	++	1500-4000
Columbidae					
537	*Streptopelia chinensis*	Spotted Dove	R/AM	++	400-2400
531	*Streptopelia orientalis*	Oriental Turtle Dove	R/AM	+	500-4000
Psittacidae					
562	*Psittacula himalayana*	Himalayan Slaty-headed Parakeet	HE	++	600-2500
Cuculidae					
570	*Clamator jacobinus*	Pied Cuckoo	SV	+	~ -3800
Strigidae					
626a	*Bubo bubo*	Eurasian Eagle Owl	HE	+	2000-4200
Capitonidae					
777	*Megalaima virens*	Great Barbet	HE	+	1000-3000
Picidae					
836	*Dendrocopos himalayensis*	Himalayan Woodpecker	HE	++	1700-3300
809	*Picus canus*	Grey-faced Woodpecker	HE	+	~-2400
807	*Picus squamatus*	Scaly-bellied Woodpecker	HE	+	1000-3300
Dicruridae					
962	*Dicrurus macrocercus*	Black Drongo	R/AM/SV	+	~-2100
Sturnidae					
1006	*Acridotheres tristis*	Common Myna	R	+	~-3000
Corvidae					
1054	*Corvus macrorhynchos*	Jungle Crow	HE	+	1800-4500

HB #	Scientific Name	Common Name	Status	Abun.	Alt. range
1037	*Dendrocitta formosae*	Grey Tree Pie	H E	++	600-2100
1020	*Garrulus glandarius*	Eurasian Jay	H E	+	1500-2500
1022	*Garrulus lanceolatus*	Black-headed Jay	H E	+	1500-2500
1043	*Nucifraga caryocatactes*	Spotted Nutcracker	H E	+++	2000-3300
1085	*Pericrocotus ethologus*	Long-tailed Minivet	SV	++	1200-3000
1025	*Urocissa flavirostris*	Yellow-billed Blue Magpie	H E	++	1600-3300
Pycnonotidae					
1148	*Hypsipetes leucocephalus*	Black Bulbul	H E	++	1000-2400
1125	*Pycnonotus leucogenys*	Himalayan Bulbul	H E	++	500-2400
Muscicapidae					
1445	*Eumyias thalassina*	Verditer Flycatcher	SV	++	1200-2700
1423	*Ficedula tricolor*	Slaty Blue Flycatcher	AM	+	1800-3300
1273	*Garrulax albogularis*	White-throated Laughing Thrush	H E	++	1800-2900
1314	*Garrulax lineatus*	Streaked Laughing Thrush	H E	++	1200-3000
1279	*Garrulax striatus*	Striated Laughing Thrush	H E	++	1200-2700
1396	*Heterophasia capistrata*	Western Black-capped Sibia	H E	+	1200-2700
1407	*Muscicapa dauurica*	Brown Flycatcher	SV	++	900-1800
1409	*Muscicapa ruficauda*	Rufous-tailed Flycatcher	SV	++	2100-3600
1729	*Myiophonus caeruleus*	Blue Whistling Thrush	H E	++	1200-3600
1181,	*Pomatorhinus erythrogenys*	Rusty-cheeked Scimitar Babbler	H E	++	450-2200
1182					
1679	*Rhyacornis fuliginosus*	Plumbeous Redstart	H E	+	1200-3700
1705	*Saxicola ferrea*	Grey Bush Chat	AM	++	1500-3300
1697	*Saxicola torquata*	Common Stone Bush Chat	SV	+	1500-3000
1750	*Turdus boulboul*	Grey-winged Blackbird	R/AM	+++	1800-2300
1752	*Turdus merula*	Eurasian Blackbird	R/AM	+	~-2300
1748	*Turdus unicolor*	Tickell's Thrush	SV	+	1200-2100
Sylviidae					
1594	*Phylloscopus chloronotus*	Lemon-rumped Warbler	AM	++	2200-3300
1590	*Phylloscopus inornatus*	Yellow-browed Leaf Warbler	SV	++	2100-3600
1602	*Phylloscopus trochiloides*	Greenish Warbler	SV	+	2700-3700
1614	*Seicercus burkii*	Gold-spectacled Warbler	SV	+	1800-3000
1616	*Seicercus xanthoschistos*	Grey-hooded Warbler	H E	++	900-2700
Cisticolidae					
1527	*Prinia criniger*	Brown Hill Prinia	H E	++	1200-2800
Paridae					
1792	*Parus major*	Great Tit	H E	++	1000-2400
1799	*Parus monticolus*	Green-backed Tit	AM	+	1500-3000

HB #	Scientific Name	Common Name	Status	Abun.	Alt. range
1802	*Parus melanolophus*	Spot-winged Tit	AM	++	2000-3300
1804	*Parus rubidiventris*	Rufous-vented Tit	H E	++	2700-3600
1813	*Sylviparus modestus*	Yellow-browed Tit	H E	+	1200-2400
	Aegithalidae				
1818	*Aegithalos concinnus*	Chestnut-capped Tit	R/AM	++	1400-2400
	Certhidae				
1847	*Certhia himalayana*	Bar-tailed Tree Creeper	H E	++	1500-3600
	Passeridae				
1873	*Anthus sylvanus*	Upland Pipit	AM	+	1200-3000
1887	*Motacilla alba*	White Wagtail	SV	+	2500-2800
1884	*Motacilla cinerea*	Grey Wagtail	SV	+	1800-3900
	Fringillidae				
1990	*Carduelis spinoides*	Yellow-breasted Greenfinch	SV	++	1800-2700

R Resident
H E Resident Birds of Himalayan Ecosystem
SV Summer Visitor (March - September, for breeding)
AM Seasonal Altitudinal Movements
(+) Rare or seen occasionally
(++) Common
(+++) Abundant

The scientific names and taxonomic classification is after Inskipp *et al.* (1996) and the common names

Sanctioned posts in the Sanctuary

Annexure 9

Post	No.
Forest Rangers	1
Deputy Rangers	2
Forest Guards	6
Animal Attendant	1
Forest Workers	1
Daily Wage Sweeper	1

Annexure 10

List of Natural Water Sources

Sr No	Forest	Status
1	Kangar C No. 1	Perennial
2	2	Perennial
3	3	Perennial
4	4	Perennial
5	5	Perennial
6	4(c)	Seasonal
7	5(a)	Seasonal
8	1(b)	Seasonal
9	2	Seasonal
10	Chhajpur C No. 11	Seasonal
11	16	Seasonal
12	7	Seasonal
13	11	Perennial
14	6	Perennial
15	15	Perennial
16	12	Perennial
17	Shashan C 4	Perennial
18	6	Perennial
19	8	Seasonal
20	10	Seasonal

Annexure 11

List of Villages outside the PA boundary with Human Population, Cattle Population and Agriculture Area (Ha)

Sr.No.	Name of Village	Human Population	Cattle Population	Agricultural Area (ha)
1	Sanog	415	1115	27
2	Saraji	175	65	14
3	Salna	290	360	21
4	Dhadi	137	95	17
5	Chhajpur	225	120	53
6	Dharmana	190	140	23
7	Saskri	145	295	11
8	Ruildhar	256	195	25
9	Auli	125	195	12
10	Gurar	48	115	7

Annexure 12

List of Roads

Sr. No.	Name of Road	Length(km)	Description
1	Tharoach to Kuva Nala	4Kms	Road touches the boundary of the sanctuary
2	Trailer (Chhajpur) C. NO. 15	10Kms	In side Sanctuary
3	Panju Kainchi to C.No. 7	4Kms	In side sanctuary
4	Chhajpur to Kali mandir	12Kms	Road touches the boundary of the sanctuary

Annexure 13

List of Bridle Paths

Sr. No.	Name	Length(Km)	
1	Kuva Nala to Gurar	6Kms	B-path touches the boundary of the sanctuary
2	Gurar to Talra	8 Kms	In side sanctuary
3	Gurar to Auli	12 Kms	In side sanctuary
4	Shashan to Talra	16 Kms	In side sanctuary
5	Panju to Talra	8 Kms	In side sanctuary
6	Kashata to Sajj Top Panju	14 Kms	In side sanctuary
7	Chhajpur to C.No.7 & 14	22 Kms	In side sanctuary
8	Talra to Auli	10 Kms	In side sanctuary

Annexure 14

List of Buildings of Talra wildlife Sanctuary

Sr. No.	Name of Building	Location	Department	Year of Construction	No.
1	Range Office-cum RO Residence	Tharoch	HPFD	1989-90	1
2	B.O. quarter	Tharoch	HPFD	1998-99	1
3	Guard Hut	Gurar	HPFD	1991-92	1
4	B.O. quarter	Chhajpur	HPFD	1987-88	1
5	Store	Chhajpur	HPFD	1993-94	1
6	Guard Hut	Chhajpur	HPFD	2011-89	1
7	Inspection Hut	Shashan	HPFD	1988-89	1
8	Guard Hut	Shashan	HPFD	1988-89	1

Annexure 15

Expenditure from Centrally Sponsored Scheme in Talra Wildlife Sanctuary from 2014-15 to 2018-19.

Sr.No.	Name of work	2014-15		2015-16		2016-17		2017-18		2018-19		
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Total
1	Regeneration of Forest	5ha.	60000	-	-	-	-	-	-	-	-	60000
2	Improvement of I/path-B/path	10km	50000	15km	300000	62km	496000	-	-	L/S	46500	892500
3	Wildlife Census	-	10000	-	-	-	-	-	-	-	-	1000
4	Construction of Chek Dam	20	100000	-	-	-	-	-	-	-	-	100020
5	Sign Board	2	25000	-	-	-	-	-	-	-	-	25000
6	Wildlife Awareness Camp	5	10000	-	50000	L/S	50000	L/S	25000			135000
7	Celebration of WL week	1	25000	-	-	-	-	1	50000	1	35000	110000
8	Improvement of I/Hut at Shashan	1	200000	-	-	-	-	-	-	-	-	200000
9	Completion of FGd Hut at Chhajpur	1	100000	-	-	-	-	-	-	-	-	100000
10	Provision of LPG to poor HHS	50	175000	-	-	-	-	-	-	-	-	175000
11	Maintenance of Nursery	1	20000	-	-	1	50000	1	100000	-	-	170000
12	Cleaning of fire line/path	-	-	-	100000	-	-	20km	60000	10km	50000	210000
13	Participatory anti poaching & fire protection	-	-	-	50000	L/S	100000	-	-	-	-	150000
14	Group patrolling & equipments	-	-	L/S	100000	1	70000	1	30000	-	-	300000
15	Construction of water pond	-	-	-	-	1	25000	-	-	-	-	25000
16	Improvement of staff quarter & proving of Brest wall and boundary wass	-	-	-	-	4	300000	-	-	-	-	300000
17	Office contingency	-	-	-	-	L/S	5000	L/S	50000	-	-	55000
18	Purchase of camera trap	-	-	-	-	-	-	2	42000	-	-	42000
19	Bio-Engineering works	-	-	-	-	-	-	L/S	150000	L/S	100000	250000
20	Eradication of unwanted weeds	-	-	-	-	-	-	10ha	100000	-	-	100000
21	Mobile connectivity field staff	-	-	-	-	-	-	L/S	25000	L/S	6000	31000
22	Plantation of fodder, fruit	-	-	-	-	-	-	-	-	5ha	117500	117500

	species											
23	Restoration of water resources	-	-	-	-	-	-	-	-	7	70000	70000
24	Desilting of existing water pond and construction of new water bores	-	-	-	-	-	-	-	-	10&4	125000	125000
25	Conversion of existing store Chhajpur in FGd Hut for Panju beat.	-	-	-	-	-	-	-	-	1	150000	150000
26	Improvement furniture and furnishing articles to Range office	-	-	-	-	-	-	-	-	L/S	150000	150000

Annexure 16

Expenditure under State Plan in Talra Sanctuary from 2014- 15 to 2018-19

Sr. No.	Name of work	2014-15		2015-16		2016-17		2017-18		2018-19		
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Total
1	Maintenance of B.O.quarter at Chhajpur	1	10000	-	-	-	-	-	-	-	-	10000
2	Maintenance of FGd Hut at Gurar	1	10000	-	-	-	-	-	-	-	-	10000
3	Improvement of FGd Hut Shashan	-	-	-	-	1	75000	-	-	-	-	75000
4	Maintenance of fire path	-	-	-	-	10km	100000	-	-	-	-	100000
5	Maintenance of Temp. Nursery at Shashan	-	-	-	-	-	-	1	100000	-	-	100000
6	Rain Water Harvesting Structure	-	-	-	-	-	-	1	100000	-	-	100000
7	maintenance of Plantation	-	-	-	-	-	-	1	16300	-	-	16300
8	Maintenance of B.O. quarter at Chhajpur	-	-	-	-	-	-	-	-	1	30000	30000
9	Improvement of FGd Hut GURAR	-	-	-	-	-	-	-	-	1	30000	30000

Annexure 17

List of persons holding firearms licenses within villages inside the PA boundary and within a zone of 10km width surrounding the external PA boundary, and within the buffer whichever is larger.

Sr No.	Name of person	Village
1	Sh. Nant Ram	Sasker
2	Sh. Hari Ram	Shashan
3	Sh. Sukh Ram	Sasker
4	Sh. Raghubir	Sasker
5	Sh. Kirat Singh	Sasker
6	Sh. Sant Ram	Auli
7	Sh. Daulat Ram	Auli
8	Sh. Chet Ram	Auli
9	Sh. Kewal Ram	Auli
10	Sh. Mangat Ram	Auli

Annexure 18

Format for recording field observation

Data Sheet-1

Data sheet for Leopard & other Carnivore Sign Encounter Rate

Observer Name:_____ Date:_____
Start Time:_____ End Time:_____
Begin GPS: Lat:_____ N, Long:_____ E,
Forest Circle _____ Forest Division:_____
Range:_____ Beat:_____
Total Kms. Walked:___Km. Time Spent in any other activity___Min.

Sr. No.	^Carnivore Species	*Sign Type	Forest Type	Terrain Type	Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

^Carnivore Species to be recorded: Leopard
*Sign Types to be recorded are pugmark, scats, scraps, rake, vocalization, and direct sighting.

Data Sheet-2

Encounter Rate on Line Transects

Observer name: .....
Date: .....
ID No. of Line Transect: .....
Forest Circle: .....
Range: .....
Transect Forest Type: .....
Weather condition: Cloudy/ Clear Sky
Beginning GPS Lat: .....N
End GPS Lat: .....N

Start Time: .....
End Time: .....
Total Length: ..... Km
Forest Division: .....
Beat: .....
Transect Terrain Type: .....
Long: .....E
Long: .....E

Sr. No.	Time	*Species	Total Number (Adult&Young)	Young	Forest Type	Terrain Type	Remarks
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

*Species that need to be recorded on the transect: Goral, Barking Deer, Sambar, Langoor, and other mammalian species seen.

Data Sheet-3A

VEGETATION

Name of Observer: .....
Forest Circle: .....
Range:
ID No. of Line Transect: .....

Date: .....
Forest Division: .....
Beat: .....

Distance of the plot from beginning of transect in metres	**Canopy Cover** (0-1)	**Tree Species** (Descending Order of Abundance, all veg.>6ft.)					**Shrub Species** (Descending Order of Abundance, all veg.>20 cm &<6 ft.)					**Shrub Abundance** 0 to 4, 0-absent,4-very high	**Weed/ Invasive Species** (Descending Order of Abundance)			**Remarks**
		1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**		**1**	**2**	**3**	

0-absent to 4-very high

Data Sheet-3B

Recording Ground Cover (1 m radius or 2m diameter plot)

Name of Observer:................. Date: ....

Forest Circle: .... Forest Division:..............

Range: .... Beat: ....

Distance of the plot from beginning of transect in meters	Dry leaf litter %	Ground Cover (The following 5 columns should total 100%)					Grass Species (Report in descending order of numbers)			Herb Species (Report in descending order of numbers)			Remarks
		Dry Grass %	Green Grass %	Herb(Small Plants) %	Weeds %	Bare Ground %	1	2	3	1	2	3	

ID No. of Line Transect: ....

Data Sheet-4

Pellet Counts of Ungulates

Name of Observer: .....
Date: .....
Forest Circle: .....
Forest Division: .....
Range: .....
Beat: .....
ID No. of Line Transect: .....

Distance of the plot from beginning of transect in metres	Forest Type	Terrain Type	Goral	Barking Deer	Langoor	Porcupine	Cattle	Goat & Sheep	Other Wild Animals/	Other Domestic Livestock
*Present/Absent										

To the best of your knowledge do the above mentioned species occurs in the sampled beat irrespective of whether their dung was recorded or not.

1. Do goat/ sheep graze in the sampled area?

2. In case pellets are obtained in large piles then these could be categorised into the following categories:

No. of Pellets	Category
50-100	A
100-200	B
>200	C

Data Sheet-5

Bird Count using Variable Radius Point Count Method

Date: .... Time: .... Place: ....
Location:....... Climate: ..... Transect Name: ....
Starting Time: .... End Time: ...... Length of Transect: ......
Altitude: .... Habitat: Natural/Plantation

Plot No.	Species	Numbers	Perpendicular Distance	Activity	Remarks

Data Sheet 6

Line Transect: Ungulates & other mammals

Transect No. Name: Date:
Weather: Length of Transect: Area:
Bearing: Time Start: Time End:
Terrain: Hills/ Plain

Time	Species	No.	Left/Right	Sighting Angle	Angular Sighting Distance	Remarks (Age&Sex etc.)

Data Sheet 7

Estimating relative abundance of animals based on pellet/dung density

Team: Date: Starting Time: End Time:
Place: Terrain: Bearing: Weather:

Plot No.	No. Of Goral Pellets	No. of Barking Deer Pellets	No. Cattle Dung

Method: Circular plot-(10 m^2) Belt Transect-(2x 30m)
Barking Deer: 20-26 Pellet groups/day/per deer
Goral: 20-26 ? pellets groups/day/goral

Data Sheet 8

Road side habitat and animal monitoring

Team: Date: Starting Time: End Time:
Place: Terrain: Bearing: Weather:

500m Segment	Animals			Vegetation Type		Terrain Type		Presence of		Livestock	Visibility	
	Species	No	PSD	L	T	L	R	Water	Human		L	R

Vegetation Type:
Terrain types: (Plain, Undulating, Hilly) L-Left side, R-Right side, PSD- Perpendicular sighting distance

Data Sheet 9

Block Count (Ungulates & other major mammals)

Team: Date: Starting time: End time:

Place: Weather: Bearing: Area:

Time	Species	No.	Adult		Y	UN	Movement (L/R)	Remarks	
			M	F					

Data Sheet 10

Reptile Quantification (Encounter rate method)

Date: Time: Place: Location:
Climate: Transect Name: Starting Time: End Time:
Area covered: Altitude: Habitat/Undisturbed/Partially disturbed

S No	Species	Numbers	Microhabitat	Activity

Control Forms

Form 1:

Creation of new artificial waterbodies

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

Note:
Category: Masonry anicut, earthen bund, lined depression, borewell and pump, reservoir, spring fed, aquifer; permanent or temporary
Location: By compartment or by a named feature and name given if any
Performance: Successful, partially successful, failure (give reason for the latter two)

Form 2:

Maintenance of Waterbodies: Natural

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

Note:
Category: Spring, seep, natural depression, a flowing stretch, reservoir
Location: By compartment or by a named feature and name given if any
Nature of work: Desilting, provision of apron, any other category
Performance: Successful, partially successful, failure (reason for the last two)

Form 3:

Maintenance of waterbodies: Artificial

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

Note:
Category: Masonry anicut, earthen bund, lined depression, spring fed, aquifer etc.
Location: By compartment or named feature and name given if any.
Year: Year of maintenance, with year of establishment in parenthesis
Nature of work: Desilting, repairing leaks, closing anicut openings, any other work.
Performance: Successful, partially successful, failure (reason for the latter two).

Form 4:

Restoration of Habitat: Weed control, Initial Operation

Sr. No.	Location & Name of site	Year	Extent of area (Ha)	Species of weed	Operation	Total Cost	Cost per ha	Remarks
1	2	3	4	5	6	7	8	9

Note:
Location: By compartment, site name or land feature
Operation: Uprooting, cutting, burning, ploughing, manual or by using animals or machinery
Remarks: Measure of success and/or problem faced.

Form 5:

Restoration of Habitat: Weed Control, Subsequent Operations

Sr. No.	Location & name of site	Year	Extent of area (ha)	Complete or partial coverage	Species of weed	Operation	Total cost	Cost per ha	remarks
1	2	3	4	5	6	7	8	9	10

Note:
Location: by compartment, site name or land feature
Operation: Uprooting, cutting, burning, ploughing, manual or by using animals or machinery.
Remarks: Percent cover of weeds before operation, problems, if any.

Form 6:

Restoration of Habitat: Control of Regeneration of Woody species in Grasslands

Sr. No.	Location & Name of site	Year	Extent of area (ha)	Species Controlled	Operation	Total cost	Cost per ha	Remarks
1	2	3	4	5	6	7	8	9

Note:
Location: By compartment, site name, etc.
Species controlled: List of species.
Operation: Uprooting, cutting, burning etc. manual or mechanised methods.
Remarks: The measure of success, suitability of methods, problems encountered.

Form 7:

Restoration of Habitat: Prescribed Burning

Sr. No.	Location & Name of Site	Year	Extent of area (ha)	Area treated (ha)	Period	Total cost	Cost per ha	Remarks
1	2	3	4	5	6	7	8	9

Note:
Location: By compartment or name of site.
Period: Date of starting operation and completion.
Remarks: Mention resultant structure e.g. a mosaic, % burnt, % intact.
Problems encountered in conducting the operation e.g. fire escape.

Form 8:

Restoration of Habitat: Soil Conservation Measures- Initial Operations and Subsequent Maintenance

Sr. No.	Location & name of site	Year	Extent of area(ha)	Area treated	operations	Total Cost	Cost per ha	Remarks
1	2	3	4	5	6	7	8	9

Note:

Location: by compartments, name of site or landmarks.

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

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

Operation: Structures involved such as gully plugs, trench-cum-mound, terracing, spurs and bunds etc. quote quantity nos. and m^3 of earthwork.

Remarks: Mention if initial work or maintenance.

Form 9

Restoration of Habitat: Planting, Sowing, etc.

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

Note:

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

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

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

Remarks: Mention operational problems if any.

Form 10:

Animals: Measuring Trends in Population

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

Note:
Population estimation: e.g. pugmark, line transect, roadside count etc., area covered, sampling intensity, data treatment, extrapolation where involved. In case of indices of density or dung count, mention those figures under the remarks column. Describe age classes for each species.
Remarks: Operational problems, protection problems, any other useful information. Indices of density or dung count details to be recorded here.

Form 11:

Animals: New Records

Sr. No.	Species	Location	Year	How Discovered	Detail of Number, age, Sex	Habitat Description	Remarks
1	2	3	4	5	6	7	8

Note: Animals will include vertebrates and invertebrates.
How Discovered: Sighting, dead specimen, reliability of sighting, captured specimen, incontrovertible other evidence.
Number, age, sex etc.: As applicable to vertebrates.
Habitat description: Broad Habitat description such as vegetation, and elements such as water, large old trees, den trees, snags, down log material. Use habitat descriptors only if relevant.
Remarks: Any other useful information.

Form 12:

Animals: Mortality other than that attributable to an offence

Sr. No.	Species	Location	Year	Sex & Age	Number	Discovered in What Condition	Cause of mortality	Remarks
1	2	3	4	5	6	7	8	9

Note:
Location: By compartment, landmark etc.
Sex & age: As per parameters for age class. Sex, if possible to identify.
Discovered in what condition: Carcass, complete or partial. Skull or any other recognisable remains collected where only some remains of an animal are found.
Cause of mortaility: If known e.g. territorial fight, accident, possible disease(following post-mortem results), old age, cause difficult to determine, predation etc.
Remarks: Any other useful information.

Form 13:

Animals: Mortality Attributed to Poaching or an act of Vandalism

Sr. No.	Species	Location	Cause of Mortality				Remarks
			Number	Sex	Age	Class	

Note: Location: By compartments or landmarks. Cause of mortality: Whether the animal was intact or remains found, article or trophy to be recorded. Cause if known e.g. animal snared, shot or poisoned etc. Remarks: Any other useful information, especially matters of illegal trade.

Form 14:

Animals: Killing of human by wildlife or injury caused

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

Note: Location, circumstances and species: Location by Compartment Number, activity, species responsible on proof.

Form 15:

Plants: New Records

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

Note: Habitat: Description by vegetation associates at various levels, % canopy closure if relevant, soil/site, microhabitat elements such as higher level of moisture, woody debris or humus etc. Status: A broad idea on its frequency, national status e.g. endangered, rare, endemic etc.

Remarks: any specific information.

Form 16:

Plants: Disease and Mortality

Sr. No.	Species	Location	Year	Particulars of disease morbidity & mortality	Area affected	Remarks
1	2	3	4	5	6	7

Note:
Location: By compartment or landmarks.
Particulars of disease: In case of trees, the mortality by diameter classes and number, symptoms, insect pest activity or any other external indicators if visible, none if not seen. No mortality but infestation detected, mention that as morbidity.

Form 17:

Construction/Maintenance of Infrastructure: Roads & Bridges (existing/ new)

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

Note:

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

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

Name or Number: As the case may be.

Cross drainage type: e.g. culverts, hume pipe culvert etc.

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

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

Form 18:

Construction/ Maintenance of Infrastructure: Buildings (existing/ new)

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

Note: Nature of the building: e.g. residential, office, store, chauki, watch tower, tourist facility, hide, barrier, patrolling camp (temporary or permanent) etc. Location: By compartment or landmark as appropriate. Type of construction: Masonry (brick/stone), log or wooden, metal, local material etc.
Status: Completed or ongoing.

Form 19:

Development/ Maintenance of Infrastructure: Vehicles (Existing/ New)

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

Note: Kind of vehicle: Jeep, motorcycle, bicycle etc.
Intended use: Management support, patrolling/ anti-poaching, tourism etc.
Remarks: Any other useful information. Mention written off vehicles.

Form 20:

Developing Infrastructure: Construction of Boundaries, fences etc. (Existing/ New)

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

Note: Category: Kind of boundary e.g. compartment, block, zone etc. In case of fences: barbed wire fence, inter-linked chain fence, others.
Location: By compartment or suitable landmark.
Numbers: Number of pillars etc.
Specification: As applicable to the construction: dry rubble, chain link, local material, height, area, depth, width etc.
Remarks: Any other relevant information.

Form 21:

Developing Infrastructure: Fire lines (Existing/ New)

Sr. No.	Range	Fire line category and width	Name of points connected	Length(m)	Cost	Remarks
1	2	3	4	5	6	7

Note: Category: Main or subsidiary etc.

Form 22:

Tourism

Sr. No.	The category of visitors by month & number					Indian		Revenue
	Adult			Children	Foreigners	Rural	Urban	
	Month	Male	Female					
1	2	3	4	5	6	7	8	9

Form 23:

Eco-tourism: Visitors Aspirations

Visitor Category						Number								
Indian			Foreigners				Plants	Bird watching	Animal sighting	Photography	Scenic places	Historical sites	Trekking	Other
Male	Female	Children	Male	Female	Children									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Form 24:

Outbreak of Fires

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

Note: Location: By compartment
Reasons: Established or suspected
Estimated loss: e.g. number of trees damaged wild animal's dead, particulars of sensitive sites affected, other property or life destroyed.
Remarks: State particularly problems encountered in detection and suppression and any other useful information. State also, whether, the extent of fires has been mapped.

Form 25:

Offence cases detected

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

Note:

Category: e.g. illegal cutting of trees, illegal fire-wood, poaching, encroachment, illegal cattle grazing etc.

Remarks: Any other useful information.

Form 26:

Survey and Monitoring

Sr. No.	Title of survey, inventory activity	Completed	ongoing	New	By PA	By other agency	Remarks
1	2	3	4	5	6	7	8

Form 27:

Eco - development Programme: Targets and Implementation

Sr. No.	Nature of the Programme	Sector (Central/State) or NGO sponsored	Target set		Achievements		Village	Remarks
			Physical	Financial	Physical	Financial		
1	2	3	4	5	6	7	8	9

Note:

Nature of the programme: e.g. pasture development, fodder plantations, livestock improvement, revival of local skills such as handicraft, water harvesting systems etc.

Remarks: State problems, state failures and reasons thereof, reasons for not attaining targets, for non-implementation or deviation etc.

References

Management Plan of Talra Wildlife Sanctuary (2004-05) .

Rodgers,W.A. and H.S. Panwar. 1988. Planning a Bioggeoraphy Based Protected Area Network for India. Wildlife Institute of India, Dehradun.

Wildlife Institue of India 2003. Conservation Project –II (Endangered Wildlife in H.P.)