

Proposal for Nandhaur Wildlife Sanctuary



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1 Introduction to TAL

The Tarai-Bhabar region in the Shiwaliks is one of the world's most magnificent landscapes with amazing faunal and floral biodiversity. This large landscape, which is also known as Terai Arc Landscape or TAL and is flanked by River Yamuna in India towards the west to River Bhagmati in Nepal towards east, stretching 16,000 kilometers and covering an area of about 50,000 sq. km. in its vast expanse.

TAL is a representative of Tarai-Duar Savana Eco-region, flanking the Himalayas in the southern slopes. It is a last remnant of the above eco-region. The whole TAL areas is now recognized as an important center of biodiversity, both at national and global level, which has manifested in declaration of as much as 13 protected areas in the whole landscape. In Uttarakhand, starting at the western limit is Rajaji National Park, home to both tigers and elephants followed by Corbett National in the middle and no protected area in the eastern Uttarakhand.

TAL has two physiographic regions – Tarai and Bhabhar. Tarai can be described as flat land with fine soil having very shallow water table while Bhabhar can be described as hilly area with coarse soils and boulders making it extremely porous, and hence having a deeper water table. The bhabhar area in the western limits is dominated by Sal (*Shorea robusta*) forests while Tarai has characteristic tall grasslands and swampy forests interspersed with Sal forests.

Among the mega-fauna found in this region, the most important ones are tigers, elephants, one-horned rhinoceros, leopards, sloth bears, swamp deer and numerous herbivores. The diverse fauna of this area enjoys equally diverse floral diversity. The diversity can be estimated considering the fact that the area has twenty seven types and sub-types of Champion and Seth classified forests. Apart from very diverse mega-fauna and plenty of charismatic species, this biodiversity rich area is also home to over 3 million people, half of which are below poverty line.

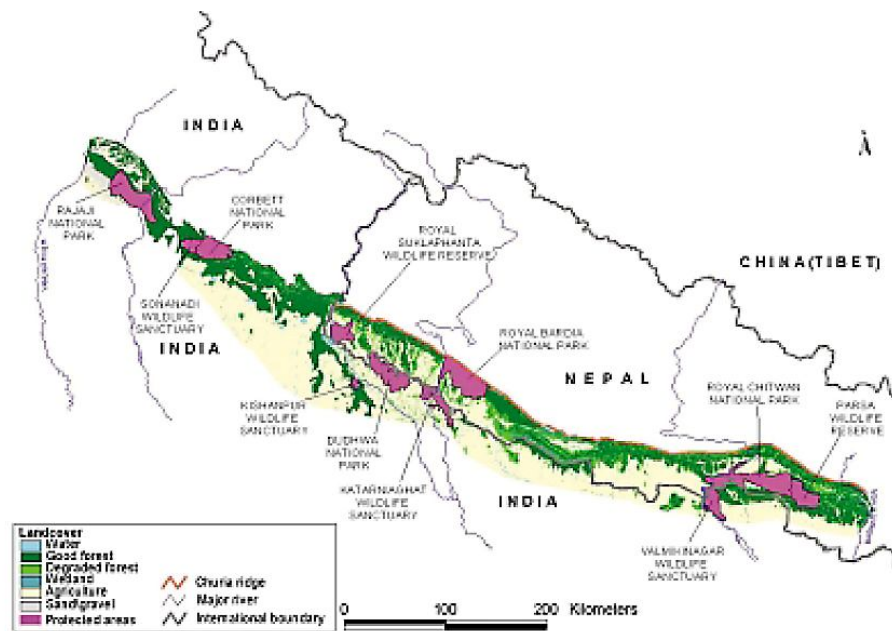


Figure 1: Map of Terai Arc Landscape (C) WWF India

The TAL in Uttarakhand can be roughly divided into three large landscapes as area between:

- 1) River Yamuna and River Ganga
- 2) River Ganga and River Gola
- 3) River Gola and River Sharda

The majority of Rajaji National Park lies in the first landscape mentioned above while part of Rajaji National Park and Corbett National Park lie in the second landscape. The Nandhaur landscape lies between River Gola and River Sharda.

1.1 Nandhaur landscape

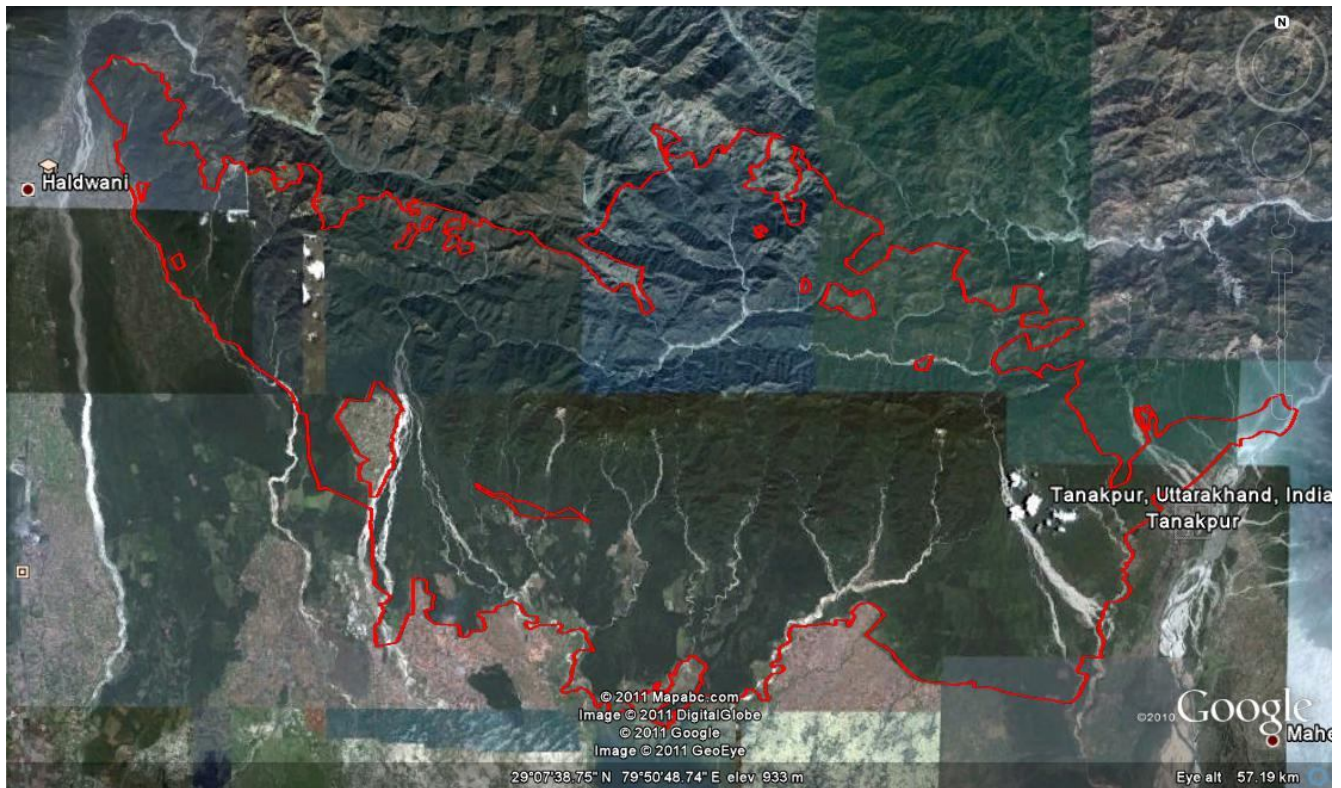


Figure 2 Landhaur valley landscape on Google Earth map

The Nandhaur area is the sub-landscape flanked by River Gola in the west and River Sharda in the east and intersected by River Nandhaur which flows east to west in the northern area and then turn south to cut the landscape into two before disappearing in the tarai area. Though there are many rivers in this landscape, but Nandhaur is the most significant among them and also is the only one which is perennial with substantial water. It also has large swathes of undisturbed forests which have virtually no habitation. It is a critical link for the wildlife populations to move across the Tarai Arc Landscape and therefore makes Nandhaur landscape a strong candidate to be declared as a national park or wildlife sanctuary.

The majority of Nandhaur landscape lies in Haldwani Forest Division, whose five ranges namely Chakata, Nandhaur, Jaulasal, Danda and Sharda cover about 600 sq. km. area. In the north-eastern side, the Dogadi range of Champawat Forest Division forms an important part of this landscape and is flanked by the forests of Kilpura, South Jaulasal and Ransali ranges of Tarai East Forest Division. The core of the Nandhaur Valley lies in parts of all ranges of Haldwani Forest Division and Dogadi range of Champawat Forest Division. The peripheral areas of the above ranges and the ranges of Tarai East Forest Division in the southern boundary provide an extension to the usage of forests by the animals and are very important for maintaining the connectivity of the forests with the other areas to the east and west.

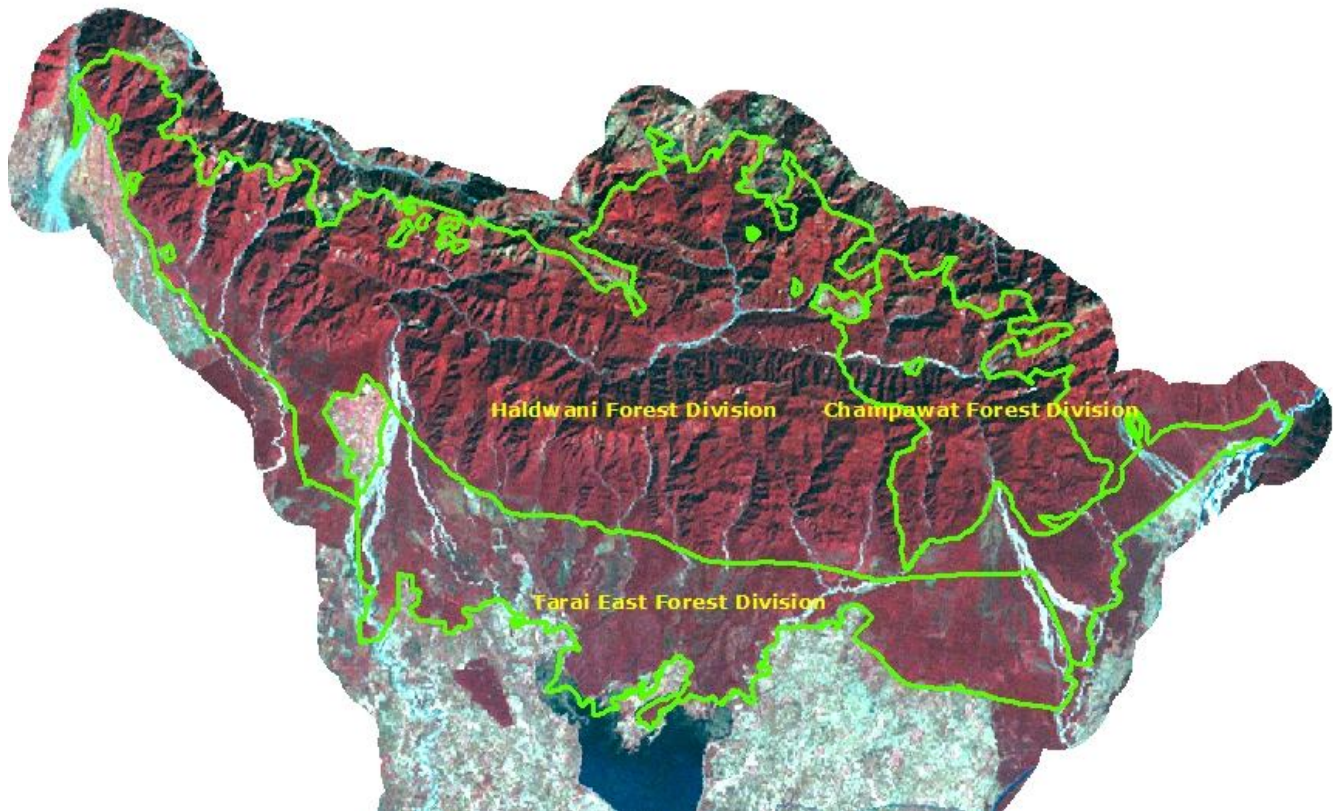


Figure 3 MSS images showing the division boundary

The Nandhaur landscape houses a very healthy population of Asian elephants, leopards and sloth bears. It is also home to tigers but the population is low with a great potential of rebound. The total area of the Nandhaur landscape is around 850 sq. kms. which makes the area practically viable for sustaining a thriving population of variety of mega-fauna.

2 Aim

The creation of Nandhaur Wildlife Sanctuary is envisaged with the following aims:

- 1) To serve as a major habitat for tiger and support 35-40 tigers in the landscape
- 2) To keep the eastern and western corridors viable and functional
- 3) To improve the habitat by replacing teak with miscellaneous forests and eradication of weeds
- 4) To increase the protection of the area against poaching/habitat destruction by bringing it under the PA network
- 5) To provide better livelihood options for people dependent on the area through ecotourism, participation in management of the area, eco-development activities through increased funding and relocation to better areas where possible
- 6) To conserve the rivers for irrigated agriculture, which results in very significant economic benefit

3 Area Description

A brief description of the area has already been mentioned in the above sections. The distribution of the ranges which are included in the proposal are shown in the thematic map below.



Figure 4 Ranges of core and buffer area of proposed Nandhaur Wildlife Sanctuary

The areas of the above ranges is given in the chart below.

S.No.	Division	Range Name	Area
1	Haldwani Forest Division	Chakata Range	84.62
2	Haldwani Forest Division	Danda Range	130.16
3	Haldwani Forest Division	Jaulasal Range	153.00
4	Haldwani Forest Division	Sarda Range	56.80
5	Haldwani Forest Division	Nandhaur Range	131.30
6	Champawat Forest Division	Dogadi Range	103.30
7	Tarai East Forest Division	Ransali Range	63.57
8	Tarai East Forest Division	Kulpura Range	56.16
9	Tarai East Forest Division	South Jaulasal Range	83.31
Total			862.23

(All areas are in sq. km., and are indicative only)

The area selection for the sanctuary has been done with the following considerations:

- 1) It is important to have a holistic approach and protect all parts of the landscape which are extensively used by mega-fauna
- 2) It should be possible to establish a viable breeding population of tigers
- 3) The areas near human habitations will be buffer area for the sanctuary

- 4) The areas having rights of villagers are not included in the sanctuary
- 5) The Nandhaur landscape is the only link between the eastern forests of TAL like Bramhadev and Sukhlaphata Wildlife Reserve of Nepal and western forests of Ramnagar and Tarai Central Forest Division. The area selection must be done with this fact in mind.
- 6) Natural boundaries are emphasized by selecting core and buffer areas along the existing beat/block boundaries

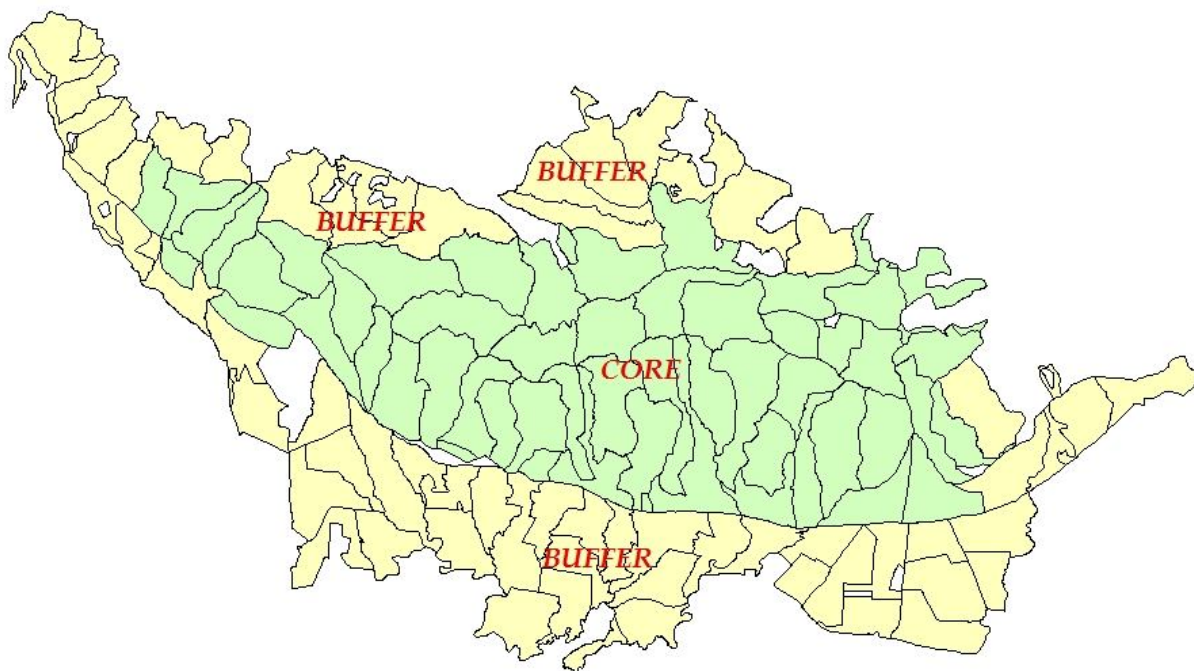


Figure 5: The core and buffer of the proposed Nandhaur Sanctuary

The distribution of beats between the core and buffer is as follows:

S.No.	Core/Buffer	No of Beats	Total Area
1.	Core	51	433.08
2.	Buffer	62	429.15
Total Area			862.23

The detailed list of names of beats in core/buffer is provided in appendix C.

The total area in the landscape is almost equally divided between the core and buffer area. The core area is proposed to be declared as a wildlife sanctuary while it is recommended that the buffer area may be declared as conservation reserve.

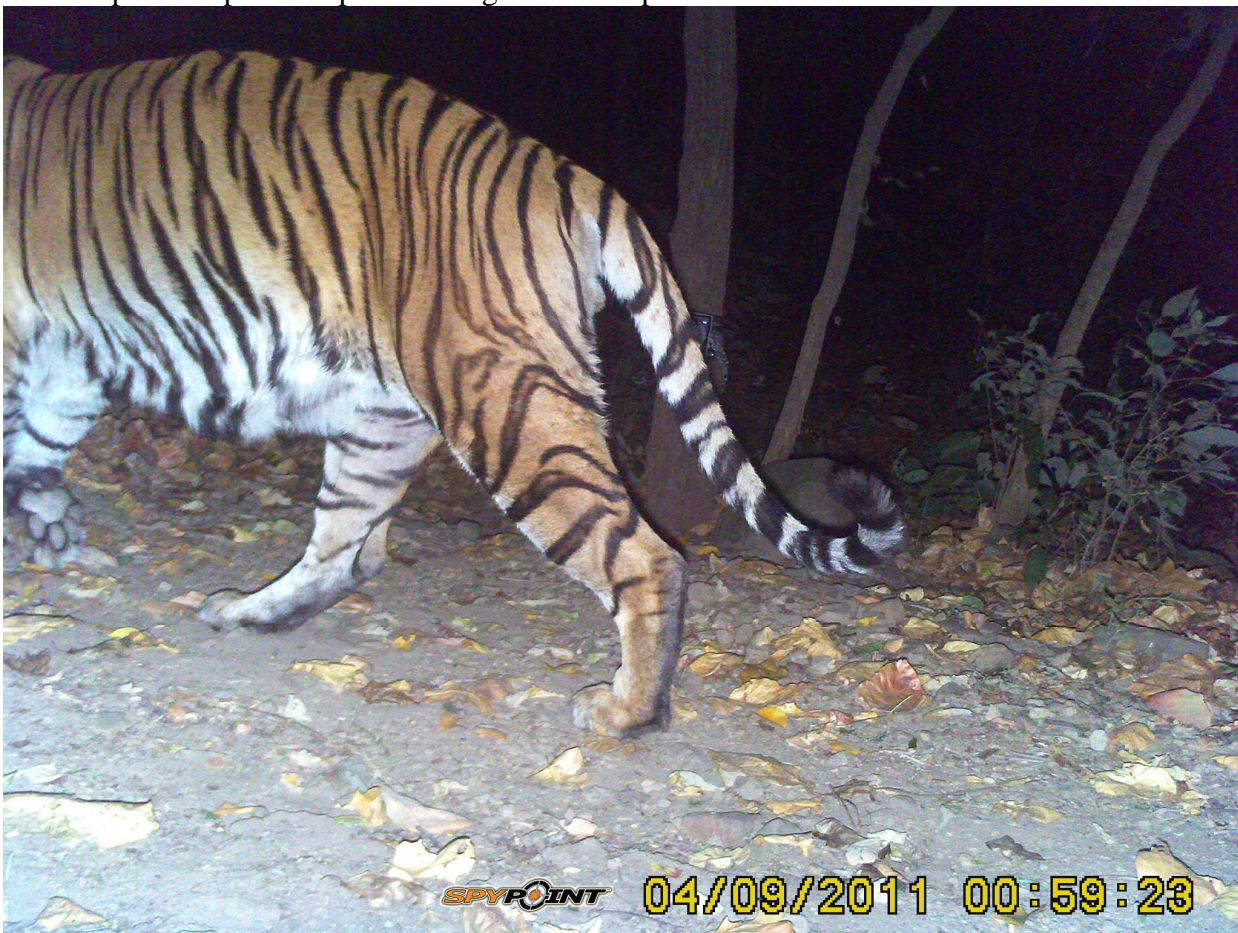
The area consists of mainly Shiwaliks and its importance has been recognized as an important wildlife habitat earlier by the state government by declaring it as Shiwalik Elephant Reserve. The notification for the above is given in Appendix E.

4 Biodiversity Description

The Nandhaur landscape is very rich area in terms of biodiversity. The area has more than 100 species of trees, 30 species of shrubs and 20 species of climbers and grasses. The area also has 27 different forest types and sub-types when classified according to the Champion and Seth forest classification. The area is predominately Sal forest covering about 70% of its area. Besides this, it also has Shisham, Bamboo, Teak, Chir Pine and riverine forest. Since the area lie in bhabhar belt, it is relatively dry and the composition of forest is affected by that. However, the Nandhaur river valley has water throughout the year and the best of the forests in the landscape are present along the river. The details of flora are given in appendix A.1.

The area is also home to about 25 species of mammals, 250 species of birds, 15 species of reptiles and 20 species of fishes. The major charismatic species of the area are Tiger, Leopard, Elephant, Sloth Bear, Mahaseer and Great Pied Hornbill. There have been constant threats to the area in terms of usage pressure, illegal poaching which can be curtailed by declaring the area as a wildlife sanctuary. The details of fauna are given in the appendix A.2

In an effort to document the biodiversity of the area, camera trapping was done in various ranges and some important species captured using camera traps have been listed below.



Photograph 1 The first Tiger photo captured in Nandhaur Valley through camera trapping



Photograph 2 Leopard



Photograph 3 Indian Palm Civet



Photograph 4 Wild boar feeding on Sambhar carcass



Photograph 5 Indian Porcupine

A systematic survey for finding out the biodiversity is usually done during the revision of working plan in the 10 year cycle. However, efforts are currently underway to do extensive camera trapping with the help of Wildlife Institute of India, Dehradun and World Wide Fund for Nature, India to find out the biodiversity of the area as well as conduct occupancy surveys for the large mammals using grid based methods, sign surveys and camera trapping. Besides this, elephant census is also being carried out by Line Transect (Indirect sighting) using Dung Decay Rate method under instructions from Chief Wildlife Warden, Uttarakhand.



Photograph 6 Sambhar



Photograph 7 Leopard



Photograph 8 Wild boar



Photograph 9 Sloth bear

5 Management of sanctuary

The management of the Nandhaur wildlife sanctuary will be done to achieve the aims stated in section 2. The overall guiding principle for the Director will be the management plan for the Nandhaur wildlife sanctuary, which will be made according to the Government of India guidelines. The preparation of the management plan will be participatory and the management plan will be written after taking suggestions of a committee comprising of local politicians, various stakeholders, prominent social & wildlife NGOs and scientists. The management plan shall also include the rehabilitation plan of any interested villages out of the remote area, major scientific work to be carried out in the area and protection & anti-poaching strategies.

The details of the staff required for the management of sanctuary is given in Appendix D. The day to day management of sanctuary will be done by Director of the sanctuary - a DCF level officer. The various Deputy Directors, entire field staff and office staff along with the special operation group will also be managed by the Director.

6 Economic benefits

There are tremendous economic benefits to the local people in declaring the area as a wildlife sanctuary. These are in the form of direct benefits like employment and jobs creation, indirect benefits like increased water availability, better value for real estate etc. The various economic benefits are discussed in subsequent sections.

6.1 Direct employment by forest department

The direct employment by the forest department will be for the following

a. Hiring for permanent posts

The forest department will hire in various positions like forest guard, battalion etc which will create many job opportunities for the youth. A core workforce of about 400 employees is suggested, whose details are given in the appendix D.

b. Hiring for temporary posts

The forest department will also be hiring for various temporary posts like security personnel, fire watchers, trackers, guides, room attendants, which will have maximum benefits for the local people.

c. Labour for carrying out departmental works

Once the area is declared as wildlife sanctuary, many civil works and other development activities like regular road maintenance, habitat improvement works, creating and maintenance of water holes, maintenance of chowkis and establishment of camps in remote areas etc. will be done in the area. The above will boost the labour opportunities for the upliftment of the poorest of the poor.

6.2 Indirect employment through ecotourism activities

a. Opportunities in guided tours

Once the area is declared as a wildlife sanctuary, the population rebound of mega-fauna inside the park will result in increased inflow of tourists. The tourists will visit the area on road or tracking paths. This will create plenty of employment opportunities for naturalists, trackers and vehicle drivers for taking the tourists inside the sanctuary.

It is expected that the area will become an important ecotourism destination as Haldwani area serves as a gateway to Kumaon and there is a huge inflow of tourists to Nainital and other hill destinations. Besides, with the increased awareness in public about nature, there is also a huge inflow of tourists to Corbett National Park which it is not able to cater to. A large number of such tourists can also be accommodated in the Nandhaur wildlife sanctuary ecotourism zone.

b. Local entrepreneurs

The local entrepreneurs will benefit immensely from the development of sanctuary and will have plenty of business opportunities to support the infrastructure required to cater to the tourists. This will include supply chain for food, contract works for construction of lodges, property business, photographers, local artifacts shops etc.

7 Settlement of rights

The people living near the forests have enjoyed certain rights over the forests. Great effort has been done while choosing the boundaries of the sanctuary that the existing rights are not affected by the declaration of the sanctuary. The final settlement will be done according to the procedure prescribed in sections 18-26(A) of Wildlife Protection Act, 1976 for declaration of sanctuary. It is strongly recommended that the using the section 26 – delegation of Collector's powers, the state government may authorize the DFO, Haldwani to execute the provisions of section 18-25.

The buffer areas of the Nandhaur landscape may be also be declared as Conservation Reserve under section 36A-B of Wildlife Protection Act, 1976.

The details of the rights of the people in various ranges are given in the Appendix B. None of the rights given in the table will be curtailed as adequate buffer area has been given in the periphery of the sanctuary to give the prescribed quantity of wood and other traditional rights to the villagers.

Appendix A

Flora

The flora is listed below:

Trees

S.No.	Species	S.No.	Species
1	Cassia fistula , linn	61	Grewia elastica, Royala,Syn.G.
2	Ailanthus excelsa, Roxb	62	Woodfordia fruticosa, urz.
3	Mangifera indica, linn	63	Erythrina suberosa,Roxb.
4	Spondias pinnata, linn	64	Lagerstroemia parviflora, Roxb.
5	Emblca officinalis, gaertn Syn.	65	Azadirachta indica,A.Juss.
6	Wrightia tomentosa, Roem&Sch.	66	Stereospermum Suaveolens. D.C.
7	Tamarindus indica, Linn .	67	Bischoffia javanica,Blume.
8	Sterculia villosa, Roxb	68	Dalbergia lonceolaria, Linn.f.
9	Bauhinia variegata, Linn .	69	Ficus religiosa, Linn.
10	Flacourtia indica, Merr.	70	Kydia calycina,Linn.
11	Zizyphus xylopyra, Willd .	71	Broussonetia papyrifera, Vent.
12	Haplophragma adenophyllum (Wall)	72	Mitragyna parvifolia,Korth.
13	Myrica sapida] wall	73	Grewia hainesiana,Hole, Syn.

14	Buchanania lanzan, spreng Sym. Buchanania latifolia, Roxb.	74	Acacia nilotica,(Linn).Willd.
15	Gmelina arborea, Roxb	75	Terminalia bellerica, Roxb.
16	Albizzia odoratissima, Benth	76	Melia azedarach,Linn.
17	Acacia farnesiana, Willd.	77	Crataeva religiosa, Frost.
18	Careya arborea, Roxb	78	Ficus bengalensis, Linn.
19	Ficus cunia, buch &Ham.	79	Anogeissus latifolia, Wall.
20	Schleichera oleosa ,Lour. Syn	80	Pterocarpus marsupium, Roxb.
21	Holarrhena antidysenterica, Wall	81	Ficus scandens, Roxb.
22	Phoebe lanceolata, Nees.	82	Rhododendron arboreum,Smith.
23	Muchilus odoratissima, Nees	83	Qurcus leucotrichophora,
24	Terminalia chebula, Retz.	84	Aegle marmelos, Correa.
25	Holoptelea integrifolia Planch	85	Zizyphus mauratiana, limk.Syn.
26	Celtis tetrandra, Roxb	86	Zizyphus jujuba, Lamk.
27	Bauhinia malabarica, Roxb	87	Hymenodictyon excelsum, Wall.
28	Bridelia retusa, Spreng.	88	Semecarpus anacardium,(Linn) f.
29	Ficus infectoria, Roxb. Syn.	89	Grewia oppositifolia, Rodb.
30	Ficus rumphii Bl.	90	Madhuca indica,Gmel. Syn.
31	Sapium insigne, Benth.	91	Bassia latifolia Roxb.
32	Acacia catechu, Willd.	92	Zizyphus xylopyra, Willd.
33	Bauhinia purpurea, Linn.	93	Litsea glutinosa, C.B.Robinson
34	Trewia nudiflora Linn.	94	Randia dumetorum, Hook
35	Ficus racemosa, Linn. Var.	95	Eucalyptus hybrid L.Herth.
36	Boehmaria rugulosa, welld	96	Mallotus phillipensis, Mule Arg
37	Bridelia retusa	97	Cordia dichotoma, Forst.f.Sun.
38	Ehretia laevis, Roxb.	98	Cordia myxa, Linn.
39	Casearia elliptica, Willd.Syn.	99	Casearia graveolens, Dalz.
40	Wendlandia exserta, D.C.	100	Morus alba, Linn.
41	Diploknema butyracea (Roxb)	101	Dalbergia sissoo, Roxb.
42	Pinus roxburghi	102	Xylosma longifothum.Clos
43	Alstonia schelaris, Brown.	103	Shorea robusta, Gaerth,f.
44	Syzygium cumini, (Linn) &Keels	104	Ougeinia oojeinensis, Roxb.Syn.
45	Trema orientalis, Bl.	105	Tectona grandis, Linn.f.
46	Putranjiva roxburghii, Wall.	106	Albizzia chinensis, (Osbeck) Merr Syn.
47	Tamarix dioica, Roxb	107	Albizzia procera, Benth.
48	Lanea coromandelica, Hontt.	108	Moringa oleifera, Lamk.Syn.
49	Cinnamomum tamala, Nees.	109	Bombax ceiba, Linn . Syn.
50	Garuga pinnata, Roxb.	110	Terminalia alata, Heyne ex Reth.
51	Miliusa velutina, H.F. &Th.	111	Syn. Terminalia tomentosa, W. &A.
52	Butea monosperma	112	Nyctanthes arbortristis, Linn.

	(Lamk)Taub.Syn.		
53	Elaeodendron glaucum, Pers.	113	Adina cordifolia, (Roxb)Benth& Hook.F.
54	Sapium sebiferum, Roxb.		
55	Oroxylom indicum, (Linn) Vent.		
56	Cocculus laurifolius, D.C.		
57	Ficus roxburghii, Wall		
58	Toona ciliata, Roem . , Syn. Cedrela toona Roxb.		
59	Diospyros tomentosa, Roxb.		
60	Gardenia turgida, Roxb.		

Shrubs

S.No.	Species	S.No.	Species
1	Solanum verbascifolium, Linn.	21	Colebrookia oppositifolia, Smith.
2	Calotropis procera, R.Br.	22	Helicteres Isora, Linn.
3	Antidesma diandrum, Roth.	23	Cannabis sativa, Linn.
4	Helicteres isora, Linn.	24	Ardisia solonacea, (poir) Roxb.
5	Carissa spinarum, Linn.	25	Desmodium cephalotes, Wall.
6	Nerium indicum, Mill.	26	Clerodendrum viscosum, Vext.
7	Berberis spp. Linn.	27	Clerodendrum infortunatum, Gaertn.
8	Murraya koenigii, Spreng	28	Murraya paniculata, Linn Jack.
9	Cassia tora, Linn.	29	Mognania Spp. Roxb.
10	Crotalaria serica, Retz.	30	Lantana camara, Linn. Syn.
11	Achyranthes aspera, Linn.	31	Lantana aculeata, Linn.
12	Asparagus adscendens, Roxb.	32	Symplocos crataegoides, Buch-Ham.
13	Temarix dioica, Roxb.	33	Indigofera heterantha, WallSyn.
14	Phoenix acaulis, Buch, Ham.	34	Indigofera purpurascens, Roxb.
15	Callicarpa macrophylla Vahl	35	Asperagus racemosus, Willd.
16	Woodfordia fruticosa, Kurz	36	Vitex negundo, Linn.
17	Glycosmis pentaphylla, Corra.	37	Nyctanthes arnortrisatis, Linn
18	Grewia sapida, Roxb.	38	Rubus ellipricus, Smith
19	Adhatoda vasica, Nees Syn.		
20	Justicia adnatoda, Linn.		

Climbers

S.No.	Species	S.No.	Species
1	Caesalpinia sepiaria, Roxb.	18	Themeda arundinacea, Cav.
2	Acacia gageana, Craib.	19	Saccharum spontaneum, Linn.

3	Acacia senegal, Willd.	20	Heteropogon contortus, Linn.
4	Cuscuta reflexa, Roxb.	21	Narenga porphyrocoma, Hana.Bor
5	Smilax Spp. Linn.	22	Syn.Chrysopogon montanus
6	Tinospora cordifolia, Miers.	23	Vetiveria zizanioides, Nash.
7	Discorea Spp. Linn.	24	Erianthus ravennae Linn P.B. equir
8	Millettia auriculata, Baker.	25	imperata cylindrica, Linn.
9	Jasminum pubescens, Willd.	26	Cynodon dactylon, Pers.
10	Cryptolepis buechanani, Roem.	27	Arundo donax, Linn.
11	Vitis repanda W. & A.	28	Phragmites karka (Retz) Trin.
12	Calamus tenuis, Roxb.	29	Typha elephantina, Roxb.
13	Hiptage bengalensis, Kuiz.	30	Eulaliopsis binata, Retz. E.C.Hubb.
14	Celastrus paniculata, Willd.	31	Cymbopogon martinii, stapf.
15	Bauhinia vahlii, W. & A.	32	Erianthus munja, (Roxb)
16	Butea Parviflora, Roxb.	33	Themeda arundinacea, Ridl.
17	Capparis horrinda, Linn.	34	Thysanolenia agrostis, Nees.

Fauna

The fauna of the area is as follows:

Mammals

S.No.	Common Name	Scientific Name
1	Rhesus Macaque	<i>Macaca mulatta</i>
2	Common Langur	<i>Presbytis entellus</i>
3	Panther or Leopard	<i>Panthera pardus</i>
4	Jungle Cat	<i>Felis chaus</i>
5	Tiger	<i>Panthera tigris</i>
6	Common Mongoose	<i>Herpestes edwardsi</i>
7	Small Indian Mongoose	<i>Herpestes auropunctatus</i>
8	Jackal	<i>Canis aureus</i>
9	Indian Fox	<i>Vulpes bengalensis</i>
10	Sloth Bear	<i>Melursus ursinus</i>
11	Small Indian Civet	<i>Viverricula indica</i>
12	Blue Bull	<i>Boselaphus tragocamelus</i>
13	Barking Deer	<i>Muntiacus muntjak</i>
14	Spotted Deer	<i>Axis axis</i>
15	Sambhar	<i>Cervus unicolor</i>
16	Indian Wild Boar	<i>Sus scrofa</i>

17	Fivestriped Palm Squirrel	<i>Funambulus pennanti</i>
18	Porcupine	<i>Hystrix indica</i>
19	The Grey Musk Shrew	<i>Suncus murinus</i>
20	Rufoustailed Hare	<i>Lepus nigricollis ruficaudatus</i>
21	Flying Fox	<i>Pteropus giganteus</i>
22	Fruitbat	<i>Rousettus leschenaulti</i>
23	Indian Pangolin	<i>Manis cresichodata</i>
24	Indian Elephant	<i>Elephas maximus</i>

Birds

S.No.	Common Name	Scientific Name
1	Black Partridge	<i>Francolinus francolinus</i>
2	Grey jungle fowl	<i>Gallus sonneratii</i>
3	Red jungle Fowl	<i>Gallus gallus</i>
4	Grey Partridge	<i>Francolinus pondicerianus</i>
5	Grey quail	<i>Coturnix coturnix</i>
6	Common peafowl	<i>Pavo cristatus linnaeus</i>
7	Jungle bush quail	<i>Perdicula asiatica</i>
8	Blue rock pigeon	<i>Columba livia</i>
9	Ring dove	<i>Streptopelia decaocto</i>
10	Common green pigeon	<i>Treron phoenicoptera</i>
11	Red turtle dove	<i>Streptopelia tranquebarica</i>
12	Spotted dove	<i>Streptopelia chinensis</i>
13	Little brown dove	<i>Streptopelia senegaleninsis</i>
14	Emerald dove	<i>Chalcophaps indica</i>
15	Little Grebe	<i>Tachybaptus ruficollis</i>
16	Little Cormorant	<i>Phalacrocorax niger</i>
17	Darter or Snake Bird	<i>Anhinga rufa</i>
18	Rosy or White Pelican	<i>Pelecanus onocrotalus</i>
19	Grey lag Goose	<i>Anser anser</i>
20	Bar headed Goose	<i>Anser indicus</i>
21	Brahminy Duck	<i>Tadorna ferruginea</i>
22	Nakta (comb duck)	<i>Sarkidiornis nelanotos</i>
23	Lesser whistling Teal	<i>Dendrocygna javanica</i>
24	Pintail	<i>Anas acuta</i>
25	Common Teal	<i>Anas crecca</i>
26	Mallard	<i>Anas platyrhynchos</i>
27	Gadwall	<i>Anas strepera</i>
28	Shoveller	<i>Anas clypeata</i>

29	Grey winged Teal	<i>Anas querquedula</i>
30	Red crested Pochard	<i>Netta rufina</i>
31	Comman Pochard	<i>Aythya ferina</i>
32	Tufted Pochard	<i>Aythya fuligula</i>
33	Scaup Duck	<i>Aythya marila</i>
34	Goosander	<i>Mergus merganser</i>
35	Black winged stilt	<i>Himantopus himantopus</i>
36	Stone curlew	<i>Burhinus oedicephalus</i>
37	Yellow wattled lapwing	<i>Vanellus malabaricus</i>
38	Redwattled Lapwing	<i>Vanellus Indicus</i>
39	Redshank	<i>Tringa totanus</i>
40	Wood or spotted andpiper	<i>Tringa glareola</i>
41	Common Sanddiper	<i>Tringa hypoleucos</i>
42	Indian Skimmer	<i>Rynchops albicollis</i>
43	Indian whiskered Tern	<i>Chlidonias hybrida</i>
44	Common Tern	<i>Sterna hirundo</i>
45	River Tern	<i>Sterna aurantia</i>
46	Large Egret	<i>Ardea alba</i>
47	Purple Heron	<i>Ardea purpurea</i>
48	Grey Heron	<i>Ardea cinerea</i>
49	Night Heron	<i>Nycticorax nycticorax</i>
50	Pond Heron	<i>Ardeola grayii</i>
51	Cattle Egret	<i>Bubulcus ibis</i>
52	Little Egret	<i>Egretta garzetta</i>
53	Chestnut Bittern	<i>Ixobrychus cinnamomeus</i>
54	Painted Stork	<i>Mycteria leucocephala</i>
55	Open bill Stork	<i>Anastomus oscitans</i>
56	White Stork	<i>Ciconia ciconia</i>
57	White necked Stork	<i>Ciconia episcopus</i>
58	Black necked Stork	<i>Ephippiorhynchus asiaticus</i>
59	White Ibis	<i>Threskiornis aethiopica</i>
60	Spoon Bill	<i>Platalea leucorodia</i>
61	Black winged Kite	<i>Elanus caeruleus</i>
62	Common Pariah Kite	<i>Milvus migrans</i>
63	Crested Goshawk	<i>Accipiter trivirgatus</i>
64	Shikra	<i>Accipiter badius</i>
65	Sparrow Hawk	<i>Nisus</i>
66	Buzzard	<i>Buteo buteo</i>
67	Lesser spotted Eagle	<i>Aquila pomarina</i>
68	Crested hawk Eagle	<i>Spizoctus cirrhatous</i>

69	Black Eagle	<i>Ictinactus malayensis</i>
70	Crested serpent Eagle	<i>Spilornis cheela</i>
71	Greyheaded fishing Eagle	<i>Icthyohpaga ichthyactus</i>
72	Marsh Harrier	<i>Cirrus acruuginosus</i>
73	Pale Harrier	<i>Circus macrourus</i>
74	Osprey	<i>Pandion haliactus</i>
75	Indian Longbilled Vulture	<i>Gyps indicus</i>
76	Whitebacked or Bengal Vulture	<i>Gyps bengalensis</i>
77	White scavenger Vulture	<i>Ncophron percnopterus</i>
78	Hobby	<i>Falco subbwico</i>
79	Peregrine Falcon	<i>Falco pcregrinus</i>
80	Kestrel	<i>Falco tinnunculus</i>
81	Cuckoo	<i>cuculus canorus</i>
82	Indian Cuckoo	<i>cuculus micropterus</i>
83	Common hawk Cuckoo	<i>cuculus varius</i>
84	Pied crested Cuckoo	<i>Clamator jacodinus</i>
85	Koel	<i>Eudynamys scolopacea</i>
86	Lesser Coucal	<i>Centropus toulous</i>
87	Coucal	<i>Centropus sinensis</i>
88	Grass Owl	<i>Tyto capensis</i>
89	Indian great horned Owl	<i>Bubo bubo</i>
90	Brown fish Owl	<i>Bubo zeylonensis</i>
91	Barred jungle Owlet	<i>Glaucidium radiatum</i>
92	Spotted Owlet	<i>Athene brama</i>
93	Jungle Nightjar	<i>Caprimulgus indicus</i>
94	Common Indian Nightjar	<i>Caprimulgus asiaticus</i>
95	Pied Kingfisher	<i>Ceryle rudis</i>
96	Small blue Kingfisher	<i>Alcedo atthis</i>
97	White breasted Kingfisher	<i>Halcyon smyrnensis</i>
98	Chestnut-headed Bee-eater	<i>Merpos leschenaulti</i>
99	Blue tailed Bee-eater	<i>Merpos philippinus</i>
100	Small green Bee-eater	<i>Merpos orientalis</i>
101	Roller or Blue Jay	<i>Coracias benghalensis</i>
102	Hoopoe	<i>Upupa epops</i>
103	Common Grey horn Bill	<i>Tockus birostris</i>
104	Indian Pied horn Bill	<i>Anthracoceros malabaricus</i>
105	Great Pied horn Bill	<i>Buceros bicornis</i>
106	Crimson breasted Barbet	<i>Megalaima haemacephala</i>
107	Little scaly bellied green wood Pecker	<i>Picus myrmecophoneus</i>
108	Lesser golden backed wood Pecker	<i>Dinopium benghalense</i>

109	Blue throated Barbet	<i>Magalaima asiatica</i>
110	Lineated Barbet	<i>Magalaima lineata</i>
111	Swallow	<i>Hirundo rustica</i>
112	Wire tailed Swallow	<i>Hirundo smithii</i>
113	Grey Shrike	<i>Lanius excubitor</i>
114	Bay backed Shrike	<i>Lanius vittatus</i>
115	Rufous backed Shrike	<i>Lanius schach</i>
116	Golden Oriole	<i>Oriolus oriolus</i>
117	Black headed Oriole	<i>Oriolus xanthornus</i>
118	Black Drongo	<i>Dicrurus adsimilis</i>
119	Racket tailed Drongo	<i>Dicrurus paradiseus</i>
120	Crow billed Drongo	<i>Dicrurus annectans</i>
121	Haircrested Drongo	<i>Dicrurus hottentottus</i>
122	Black headed Myna	<i>Sturnus pagodarum</i>
123	Indian Myna	<i>Acridotheres tristis</i>
124	Jungle Myna	<i>Acridotheres fuscus</i>
125	Bank Myna	<i>Acridotheres ginginianus</i>
126	Pied Myna	<i>Sturnus contra</i>
127	Tree Pie	<i>Dendrocitta vagabunda</i>
128	House Crow	<i>Corvus splendens</i>
129	Jungle Crow	<i>Corvus macrorhynchos</i>
130	Pied flycatcher Shrike	<i>Ceryle rudis</i>
131	Small Minivet	<i>Pericrocotus cinnamomeus</i>
132	Red whiskered Bulbul	<i>Pycnonotus jocosus</i>
133	Yellow breasted Bulbul	<i>Macronous gularis</i>
134	Common Babbler	<i>Turdoides caudatus</i>
135	Striated Babbler	<i>Turdoids earlei</i>
136	Large grey Babbler	<i>Turdoids malcolmi</i>
137	Jungle Babbler	<i>Turdoids striatos</i>
138	Brown Flycatcher	<i>Muscicapa latirostris</i>
139	Paradise Flycatcher	<i>Terpsiphone paradisi</i>
140	Verditer Flycatcher	<i>Muscicapa thalassina</i>
141	Grey headed Flycatcher	<i>Culicicapa ceylonensis</i>
142	Black headed blue Flycatcher	<i>Hypothymis azurea</i>
143	Streaked wren Warbler	<i>Prinia gracilis</i>
144	Ashy wren Warbler	<i>Prinia socialis</i>
145	Tailor Bird	<i>Orthotomus sutorius</i>
146	Striated marsh Warbler	<i>Megalurus palustris</i>
147	Paddy field Warbler	<i>Acrocephalus agricola</i>
148	Dull green leaf Warbler	<i>Phylloscopus trochiloides</i>

149	Blue Chat	<i>Erithacus brunneus</i>
150	Magpie Robin	<i>Copsychus saularis</i>
151	Shama	<i>Copsychus malabaricus</i>
152	Black Redstart	<i>Phoenicurus ochruros</i>
153	Brown rock Chat	<i>Cercomela fusca</i>
154	Pied bush Chat	<i>Saxicola caprata</i>
155	Blue rock Thrush	<i>Monticola solitarius</i>
156	Black Bird	<i>Turdus merula</i>
157	Chestnut bellied Nuthatch	<i>Sitta castanea</i>
158	Grey Wagtail	<i>Motacilla cinerea</i>
159	White Wagtail	<i>Motacilla alba</i>
160	Large pied Wagtail	<i>Motacilla maderaspatensis</i>
161	Yellow backed Sunbird	<i>Aethopyga siparaga</i>
162	Purple Sunbird	<i>Nectarinia asiatica</i>
163	White Eye	<i>Zosterops palpebrosa</i>
164	House Sparrow	<i>Passer donesticus</i>
165	Finn's Baya	<i>Ploceus megarhynchus</i>
166	Black headed Munia	<i>onchura Malacca</i>
167	White throated Munia	<i>Lonchura malabarica</i>
168	Rose Finch	<i>Carpodacus erythrinus</i>
169	Black headed Bunting	<i>Emberiza melanocephala</i>
170	Roseringed Parakeet	<i>Psittacula kraneri</i>
171	Alexandrine or Large Indian Parakeet	<i>Psittacula eupatria</i>
172	Himalayan slatyheaded Parakeet	<i>Psittacula himalayana</i>
173	Blossom headed Parakeet	<i>Psittacula cyanocephala</i>

Reptiles

S.No.	Common Name	Scientific Name
1	Indian tent Turtle	<i>Kachuga tentoria</i>
2	Shoft-shelled Turtle	<i>Trionyx spp.</i>
3	Elongated Tortoise	<i>Indotestudo elongata</i>
4	Monitor Lizard	<i>Varanus spp.</i>
5	Garden lizard	<i>Calotes spp.</i>
6	Common house Gecko	<i>Hemidactylis spp.</i>
7	Ratsnake	<i>Ptyas mucosus</i>
8	Sand boa	<i>Eryx conicus</i>
9	Common green whip snake	<i>Dryophis nasutus</i>
10	Indian python	<i>Python molurus</i>
11	Common krait	<i>Bangarus caeruleus</i>

12	King cobra	<i>Naja Hannah</i>
13	Himalayan pit viper	<i>Ancistrodon himalayanus</i>
14	Cobra	<i>Naja naja</i>
15	Russell's viper	<i>Vipera russelli</i>
16	Banded krait	<i>Bangarus fasciatus</i>

Appendix B – Rights/Concessions of Villagers

gY}kuh ou iHkx esgd&gdw iDr xkxdk jktokj foj.k

kte I Hkk dk uke	xtkx dk uke ftllga gd&gdw Lohdr gs	gd@ fj ; k ; kr	jat dk uke	xtV ukfVfQd's ku uEcj	xtV fokflr ds vuq kj ns izdk"B ?kOQw/ ea			
1	2	3	4	5	6	7	8	
y[kue.Mh	y[kue.Mh	gd	uU/kkS jkft	424/XIV-62 Dt. 08.06.1932	82	395	640	
	eYyk i pku; k	gd		424/XIV-62 Dt. 08.06.1932	56	70	530	
	eYyk plj xfy; k	gd		424/XIV-62 Dt. 08.06.1932	114	70	1120	
	npsY cMk	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	16	9	30	
	; kx				268	544	2320	
u; kxk dVku	dVku	gd	uU/kkS jkft	424/XIV-62 Dt. 08.06.1932	118	175	1280	
	menij u0&1	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	40	21	80	
	rYyk i pku; k	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	60	36	130	
	cktij ijxbz	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	24	14	50	
	; kx				242	246	1540	
i ppk[kMk	plj xfy; k rYyk	gd	uU/kkS jkft	424/XIV-62 Dt. 08.06.1932	82	80	1050	
	i ppk[kMk	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	106	51	210	
	QjI jkeij	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	70	37	140	
	menij u0&2	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	40	21	80	
	thokctij	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	40	21	80	
	Xakij	fj ; k ; r		5063/XIV-B Dt. 18.01.1966	34	18	70	

	gjhij	fj; k; r		5063/XIV-B Dt. 18.01.1966	40	21	80
	/kjeij	fj; k; r		5063/XIV-B Dt. 18.01.1966	50	27	100
	nøij l uoky	fj; k; r		5063/XIV-B Dt. 18.01.1966	34	10	70
	/kjex<+	fj; k; r		5063/XIV-B Dt. 18.01.1966	46	23	90
	; ks				542	309	1970
Hkokuhi j	[kuoky dVku	fj; k; r	uU/ks jkft	5063/XIV-B Dt. 18.01.1966	106	53	210
	Hkokuhi j	fj; k; r		5063/XIV-B Dt. 18.01.1966	50	27	100
	t; ij	fj; k; r		5063/XIV-B Dt. 18.01.1966	66	36	130
	xksolnij	fj; k; r		5063/XIV-B Dt. 18.01.1966	86	44	170
	gfjfd'kuij	fj; k; r		5063/XIV-B Dt. 18.01.1966	56	31	110
	nøij nukbz	fj; k; r		5063/XIV-B Dt. 18.01.1966	66	36	130
	enuij	fj; k; r		5063/XIV-B Dt. 18.01.1966	50	27	100
	; ks				480	254	950
gjh'krky	vke	gd	uU/ks jkft	424/XIV-62 Dt. 08.06.1932	48	40	400
	; ks				48	40	400
ddkM+	ddkM+	gd	uU/ks jkft	424/XIV-62 Dt. 08.06.1932	92	40	530
	; ks				92	40	530
i Vjkuh	i Vjkuh	gd	uU/ks jkft	424/XIV-62 Dt. 08.06.1932	6	10	40
	; ks				6	10	40
1	2	3	4	5	6	7	8
[kM/k	[kM/k	gd	Ndkrk jkft	424/XIV-62 Dt. 08.06.1932	226	0	0
	; ks				226	0	0
cMf	cMf	gd	Ndkrk jkft	424/XIV-62 Dt. 08.06.1932	14	20	70
	; ks				14	20	70
vk[ky<kk	vk[ky<kk	gd	Ndkrk jkft	424/XIV-62 Dt. 08.06.1932	86	310	130
	fMUMj	gd		424/XIV-62 Dt. 08.06.1932	10	0	50
	fl j kM/h	gd		424/XIV-62 Dt. 08.06.1932	8	30	40
	[kekjh	gd		424/XIV-62 Dt. 08.06.1932	12	80	120
	; ks				116	420	340

dkØrk	dkØrk	gd		424/XIV-62 Dt. 08.06.1932	28	0	280
	; kx				28	0	280
i l ksyh	i l ksyh	gd	Ndkrk jkft	424/XIV-62 Dt. 08.06.1932	98	540	600
	; kx				98	540	600
L; Mlk	L; Mlk	gd	Ndkrk jkft	424/XIV-62 Dt. 08.06.1932	28	60	130
	; kx				28	60	130
i fu; keg rk	i fu; keg rk	gd	Ndkrk jkft	424/XIV-62 Dt. 08.06.1932	80	340	600
	; kx				80	340	600
xøkyxkø	xøkyxkø	gd		424/XIV-62 Dt. 08.06.1932	50	250	460
	; kx				50	250	460
jkš' ky	jkš' ky	gd	Ndkrk jkft	424/XIV-62 Dt. 08.06.1932	198	1170	386
	; kx				198	1170	380
dqMy	dqMy	gd	MkMk jkft	424/XIV-62 Dt. 08.06.1932	18	90	150
	; kx				18	90	150
YokM+	YokM+	gd	MkMk jkft	424/XIV-62 Dt. 08.06.1932	86	0	790
	; kx				86	0	790
xkš; kjks	xkš; kjks	gd	MkMk jkft	424/XIV-62 Dt. 08.06.1932	54	0	500
	; kx				54	0	500
ddubz	ddubz eYyh	gd	MkMk jkft	424/XIV-62 Dt. 08.06.1932	0	109	21
	ddubz rYyh	gd		424/XIV-62 Dt. 08.06.1932	26	0	260
	, jkl h l kšV	gd		424/XIV-62 Dt. 08.06.1932	6	50	10
	; kx				32	159	291
Mkš/k	Mkš/k rYyk	gd		424/XIV-62 Dt. 08.06.1932	30	0	300
	Mkš/k eYyk	gd		424/XIV-62 Dt. 08.06.1932	40	0	452
	; kx				70	0	752
vetM+	vetM+	gd	MkMk jkft	424/XIV-62 Dt. 08.06.1932	0	84	16
	; kx				0	84	16
Møjh	Møjh	gd	MkMk jkft	424/XIV-62 Dt. 08.06.1932	16	84	16
	; kx				16	84	16
l økdkš/ i kš[kjh	l økdkš/ i kš[kjh	gd	MkMk jkft	424/XIV-62 Dt. 08.06.1932	16	0	90
	l ydokj	gd		424/XIV-62 Dt. 08.06.1932	12	40	30

	;ks				28	40	120
'kkjnk	ekguig	fj;k;r	'kkjnk	6778/XIVB Dt. 06.12.1965	&	&	&
	dy ;ks				2820	4700	13245

uk/& ou l j {kd}if'peh oRr uShrky ds i=k d 1564@43&2 fn0 23 vi&y 207 ds vuq kj xtV ds vuq kj
 ns mDr ek=k dk 42 ifr'kr gh ns gA
 xtV ea ek=k nf'kr ugha gSorZku ea 20 ?kOeh0 iRFkj o jrk fn;k tk jgk gA

Appendix C - List of beats in core/buffer

S.No.	DIVISION	RANGE	BEAT	CORE/BUFFER	Area
1	Champawat	Dogadi	Chela	Core	5.62
2	Champawat	Dogadi	Dulagad East	Core	10.08
3	Champawat	Dogadi	Dulagad West	Core	12.55
4	Champawat	Dogadi	Kalaunia East-1	Core	6.88
5	Champawat	Dogadi	Kalaunia East-2	Core	7.00
6	Champawat	Dogadi	Kalaunia West	Core	7.41
7	Champawat	Dogadi	Kathaul	Core	4.54
8	Champawat	Dogadi	Mathiabanj	Core	9.05
9	Champawat	Dogadi	Sarra East	Core	7.86
10	Champawat	Dogadi	Sarra South	Core	4.93
11	Champawat	Dogadi	Sarra West	Core	8.63
12	Haldwani	Chakata	East Patrani Beat	Core	5.52
13	Haldwani	Chakata	Jampokhra-I Beat	Core	5.57
14	Haldwani	Chakata	Jampokhra-II Beat	Core	6.37
15	Haldwani	Chakata	North Dholpokhra Beat	Core	2.86
16	Haldwani	Chakata	West Patrani Beat	Core	5.74
17	Haldwani	Danda	Bethlar Beat	Core	11.49
18	Haldwani	Danda	Chila Beat	Core	8.11
19	Haldwani	Danda	Durgapipal Beat	Core	8.78
20	Haldwani	Danda	Gauniarao Beat	Core	10.48
21	Haldwani	Danda	North Kholgarh Beat	Core	11.75
22	Haldwani	Danda	Sarra Beat	Core	11.76
23	Haldwani	Danda	South Kholgarh Beat	Core	9.10
24	Haldwani	Jaulasal	Bhargot-I Beat	Core	10.31
25	Haldwani	Jaulasal	Bhargot-II Beat	Core	9.82
26	Haldwani	Jaulasal	Birgot Beat	Core	10.47
27	Haldwani	Jaulasal	East Chamuadhunga Beat	Core	7.70
28	Haldwani	Jaulasal	East Chugad Beat	Core	11.43
29	Haldwani	Jaulasal	East Jaulasal Beat	Core	8.09
30	Haldwani	Jaulasal	East Labar Beat	Core	13.40

31	Haldwani	Jaulasal	Hanspur Beat	Core	7.07
32	Haldwani	Jaulasal	Hatgadh Beat	Core	7.93
33	Haldwani	Jaulasal	Jubliganj-I Beat	Core	6.10
34	Haldwani	Jaulasal	Jubliganj-II Beat	Core	7.26
35	Haldwani	Jaulasal	Kumia-I Beat	Core	7.39
36	Haldwani	Jaulasal	Kumia-II Beat	Core	6.75
37	Haldwani	Jaulasal	West Chamuadhunga Beat	Core	9.35
38	Haldwani	Jaulasal	West Chugad Beat	Core	9.68
39	Haldwani	Jaulasal	West Labar-I Beat	Core	11.67
40	Haldwani	Jaulasal	West Labar-II Beat	Core	8.58
41	Haldwani	Nandhaur	Asni Beat	Core	10.17
42	Haldwani	Nandhaur	Bhalseni Beat	Core	11.83
43	Haldwani	Nandhaur	Karakot-I Beat	Core	5.45
44	Haldwani	Nandhaur	Karakot-II Beat	Core	7.37
45	Haldwani	Nandhaur	Khonani Parao Beat	Core	12.22
46	Haldwani	Nandhaur	Nandhaur Beat	Core	7.90
47	Haldwani	Nandhaur	Selani Beat	Core	12.92
48	Haldwani	Nandhaur	Sumanthapla Beat	Core	5.77
49	Haldwani	Nandhaur	Sunkheri Beat	Core	7.73
50	Haldwani	Sarda	Chela Beat	Core	8.90
51	Haldwani	Sarda	Jubliganj Beat	Core	7.74
Total					433.08
1	Tarai East	Kilpura	Dogaddi-I Beat	Buffer	5.64
2	Tarai East	Kilpura	Dogaddi-II Beat	Buffer	3.85
3	Tarai East	Kilpura	Dogaddi-III Beat	Buffer	4.80
4	Tarai East	Kilpura	East Kilpura-I Beat	Buffer	8.27
5	Tarai East	Kilpura	East Kilpura-II Beat	Buffer	9.46
6	Tarai East	Kilpura	East Kilpura-III Beat	Buffer	4.80
7	Tarai East	Kilpura	West Kilpura-I Beat	Buffer	5.93
8	Tarai East	Kilpura	West Kilpura-II Beat	Buffer	5.47
9	Tarai East	Kilpura	West Kilpura-III Beat	Buffer	7.94
10	Tarai East	Ransali	Hanspur-A Beat	Buffer	7.74
11	Tarai East	Ransali	Hanspur-B Beat	Buffer	4.30
12	Tarai East	Ransali	Kailash-I Beat	Buffer	6.80
13	Tarai East	Ransali	Kailash-II Beat	Buffer	9.26
14	Tarai East	Ransali	Kalega-I Beat	Buffer	11.36
15	Tarai East	Ransali	Kalega-II Beat	Buffer	4.25
16	Tarai East	Ransali	Nandhaur Beat	Buffer	6.59
17	Tarai East	Ransali	Ransali-I Beat	Buffer	6.67
18	Tarai East	Ransali	Ransali-II Beat	Buffer	6.60

19	Tarai East	South Jaulasal	Baira Beat	Buffer	4.51
20	Tarai East	South Jaulasal	Central-East Jaulasal Beat	Buffer	5.38
21	Tarai East	South Jaulasal	Devipura Beat	Buffer	2.17
22	Tarai East	South Jaulasal	East Jaulasal(North) Beat	Buffer	5.59
23	Tarai East	South Jaulasal	Jaulasal East Beat	Buffer	6.61
24	Tarai East	South Jaulasal	South-East Jaulasal Beat	Buffer	9.02
25	Tarai East	South Jaulasal	South-West Jaulasal Beat	Buffer	8.97
26	Tarai East	South Jaulasal	Sudlimath Central Beat	Buffer	6.48
27	Tarai East	South Jaulasal	Sudlimath South Beat	Buffer	6.54
28	Tarai East	South Jaulasal	Sudlimath-I Beat	Buffer	9.27
29	Tarai East	South Jaulasal	Sudlimath-II Beat	Buffer	6.30
30	Tarai East	South Jaulasal	West Jaulasal Beat	Buffer	6.57
31	Tarai East	South Jaulasal	West-Central Jaulasal Beat	Buffer	5.89
32	Champawat	Dogadi	Chhini Beat	Buffer	10.65
33	Champawat	Dogadi	Dandakathauti	Buffer	8.10
34	Haldwani	Chakata	East Shimlia Beat	Buffer	5.21
35	Haldwani	Chakata	Garkharak-I Beat	Buffer	6.91
36	Haldwani	Chakata	Garkharak-II Beat	Buffer	4.86
37	Haldwani	Chakata	Kalukhera-I Beat	Buffer	5.20
38	Haldwani	Chakata	Kalukhera-II Beat	Buffer	4.41
39	Haldwani	Chakata	North Khera Beat	Buffer	6.22
40	Haldwani	Chakata	Ratighat Beat	Buffer	7.66
41	Haldwani	Chakata	South Dholpokhra Beat	Buffer	5.70
42	Haldwani	Chakata	South Khera Beat	Buffer	3.91
43	Haldwani	Chakata	Sultannagri Beat	Buffer	2.58
44	Haldwani	Chakata	West Shimlia Beat	Buffer	5.91
45	Haldwani	Danda	Aligadh-I Beat	Buffer	8.77
46	Haldwani	Danda	Aligadh-II Beat	Buffer	8.14
47	Haldwani	Danda	Deota Beat	Buffer	12.01
48	Haldwani	Danda	Kundal Beat	Buffer	11.39
49	Haldwani	Danda	North Lowaranala Beat	Buffer	9.86
50	Haldwani	Danda	South Lowaranala Beat	Buffer	8.50
51	Haldwani	Nandhaur	Ballot Kakod Beat	Buffer	6.88
52	Haldwani	Nandhaur	Ballot Patrani Beat	Buffer	10.02
53	Haldwani	Nandhaur	Ratarao Aam Beat	Buffer	8.21
54	Haldwani	Nandhaur	Ratarao Beat	Buffer	11.74
55	Haldwani	Nandhaur	Sela-I Beat	Buffer	5.87
56	Haldwani	Nandhaur	Sela-II Beat	Buffer	7.21
57	Haldwani	Sarda	Duan Beat	Buffer	8.71
58	Haldwani	Sarda	Karrali-I Beat	Buffer	4.01

59	Haldwani	Sarda	Karrali-II Beat	Buffer	7.88
60	Haldwani	Sarda	Nadhan Beat	Buffer	6.75
61	Haldwani	Sarda	North Gulapani Beat	Buffer	8.48
62	Haldwani	Sarda	South Gulapani Beat	Buffer	4.34
Total					429.15

Appendix D – Staff requirements

S.No.	Position Name	Headquater	Number	Total
1	Director (DCF)	Chorgalia	1	1
2	Deputy Director (ACF)	Chorgalia	1	2
		Tanakpur	1	
3	Range Officer	Chakata	1	6
		Nandhaur	1	
		Jaulasal	1	
		Dogadi	1	
		Sharda	1	
		Danda	1	
4	Deputy Range Officer	Chakata	1	6
		Nandhaur	1	
		Jaulasal	1	
		Dogadi	1	
		Sharda	1	
		Danda	1	
5	Section Officer	Forester level staff to be posted in various capacities	50	50
6	Beat Officer	Forest Guards to be posted beats, gates, patrolling units etc.	250	250
7	Rapid action anti-poaching force	1 Battalion	50	50
8	Office staff	Director's office	19	29
		Deputy Director Chorgalia	5	
		Deputy Director Tanakpur	5	
Total				400

Appendix E – Notification of Elephant Corridor

उत्तरांचल शासन
वन एवं पर्यावरण अनुभाग-2

अधिसूचना

28 अक्टूबर, 2002 ई0

संख्या 1777/1(2)/40ग्रा0वि0/2002-19(9)/2002-भारत सरकार, पर्यावरण एवं वन मंत्रालय, नई दिल्ली के पत्र संख्या-7-2/00(पीई), दिनांक 14-02-2002, द्वारा प्रदत्त अनुमोदन के क्रम में निम्नलिखित अनुसूची में वर्णित क्षेत्र को श्री राज्यपाल 'शिवालिक एलिफेण्ट रिजर्व' क्षेत्र घोषित करने की सहर्ष स्वीकृति प्रदान करते हैं :-

अनुसूची

(क) क्षेत्रफल व जनपद : क्षेत्रफल-5405.07 वर्ग किमी0
जनपद-देहरादून, हरिद्वार, गढ़वाल, नैनीताल, ऊधमसिंह नगर एवं चम्पावत

जिला	वन प्रभाग का नाम	वनों का क्षेत्रफल (वर्ग किमी0 में)
देहरादून	कालसी भूमि संरक्षण वन प्रभाग	99.07
	देहरादून वन प्रभाग	369.52
	राजाजी राष्ट्रीय पार्क	236.40
हरिद्वार	हरिद्वार वन प्रभाग	159.38
	राजाजी राष्ट्रीय पार्क	333.62
गढ़वाल	राजाजी राष्ट्रीय पार्क	250.40
	लैन्सडौन वन प्रभाग	376.42
	कालागढ़ टाइगर रिजर्व प्रभाग (कॉर्बेट टाइगर रिजर्व)	606.60
नैनीताल	रामनगर टाइगर रिजर्व प्रभाग (कॉर्बेट टाइगर रिजर्व)	350.40
	रामनगर टाइगर रिजर्व प्रभाग (कॉर्बेट टाइगर रिजर्व)	311.00
	तराई पूर्वी वन प्रभाग	187.26
अल्मोड़ा	रामनगर वन प्रभाग	292.54
	तराई केन्द्रीय वन प्रभाग	192.38
	हल्द्वानी वन प्रभाग	674.01
	कालागढ़ टाइगर रिजर्व प्रभाग (कॉर्बेट टाइगर रिजर्व)	20.00
ऊधमसिंह नगर	तराई पश्चिमी वन प्रभाग	105.29
	तराई पूर्वी वन प्रभाग	288.33
	तराई केन्द्रीय वन प्रभाग	209.35
टिहरी	नरेन्द्रनगर वन प्रभाग	194.32
चम्पावत	चम्पावत वन प्रभाग	148.78
योग :		5405.07
कुल क्षेत्रफल का विवरण	-	5405.07 वर्ग किमी0
गैर वन भूमि का विवरण	-	रिक्त
वन भूमि का क्षेत्रफल	-	5405.07 वर्ग किमी0

(2)

(ख) सीमाओं का विवरण :

1. कोर क्षेत्र : इसके अन्तर्गत राजाजी राष्ट्रीय पार्क, कॉर्बेट राष्ट्रीय पार्क एवं सोना नदी वन्य जीव विहार के सम्पूर्ण क्षेत्र सम्मिलित होंगे।

2. बफर क्षेत्र : इसके अन्तर्गत निम्न क्षेत्र सम्मिलित होंगे :

वृत्त/प्रभाग का नाम	वन राजि
कालसी भूमि संरक्षण प्रभाग	तिमली
देहरादून वन प्रभाग	आसारोड़ी, मल्हान, थानो, लच्छीवाला, बड़कोट व ऋषिकेश
हरिद्वार वन प्रभाग	श्यामपुर व चिड़ियापुर
लैन्सडौन वन प्रभाग	लालबाग, कोटद्वार, कोटरी व दुगड़डा
तराई पश्चिमी वन प्रभाग	उत्तरी जसपुर व दक्षिणी जसपुर
तराई पूर्वी वन प्रभाग	गौला, किशनपुर, रन्साली, दक्षिणी जौलासाल, किलपुरा डौली
रामनगर वन प्रभाग	कोसी, कोटा, देचौरी, कालादुंगी, फतेहपुर
तराई केन्द्रीय वन प्रभाग	गदगदिया, भाखड़ा, टोंडा, पीपलपड़ाव, हल्द्वाना, बरहनी
हल्द्वानी वन प्रभाग	छकाता, नन्धौर, डान्डा, जौलासाल, शारदा
चम्पावत वन प्रभाग	बूम व दोगाड़ी
नरेन्द्रनगर वन प्रभाग	शिवपुरी
कॉर्बेट टाइगर रिजर्व	कॉर्बेट राष्ट्रीय पार्क व सोनानदी वन्य जीव विहार की सीमाओं के अतिरिक्त अन्य आरक्षित वन क्षेत्र।

आज्ञा से,
(केशव देसिराजु)
सचिव।

FORESTS & ENVIRONMENT SECTION-2

NOTIFICATION

October 28, 2002

No. 1777/1(2) Va. Gra. Vi./2002-19(9)/2002--In pursuance of the approval given by the Ministry of Environment & Forests, Govt. of India vide letter no. 7-2/00(PE), dated 14-02-2002, the Governor is pleased to declare the areas scheduled below to be 'Shivalik Elephant Reserve';

Schedule

(A) Area and Districts	Area -- 5405.07 km ²	
	Districts -- Dehradun, Hardwar, Garhwal, Nainital, Udham Singh Nagar and Champawat	
District	Forest Division	Forest Area (km ²)
Dehradun	Kalsi Forest Division	99.07
	Dehradun Forest Division	369.52
	Rajaji National Park	236.40
Hardwar	Hardwar Forest Division	159.38
	Rajaji National Park	333.62
Garhwal	Rajaji National Park	250.40
	Lansdowne Forest Division	376.42
	Kalagarh Tiger Reserve Division (Corbett Tiger Reserve)	606.60
	Ramnagar Tiger Reserve Division (Corbett Tiger Reserve)	350.40

(3)

17/5/03

Nainital	Ramnagar Tiger Reserve Division (Corbett Tiger Reserve)	311.00
	Tarai East Forest Division	187.26
	Ramnagar Forest Division	292.54
	Tarai Central Forest Division	192.38
	Haldwani Forest Division	674.01
Almora	Kalagarh Tiger Reserve Division (Corbett Tiger Reserve)	20.00
Udhamsingh Nagar	Tarai West Forest Division	105.29
	Tarai East Forest Division	288.33
	Tarai Central Forest Division	209.35
Tehri	Narendra Nagar Forest Division	194.32
Champawat	Champawat Forest Division	148.78
Total :		5405.07
Total Area	-	5405.07 km ²
Non Forest Area	-	Nil
Forest Area	-	5405.07 km ²

(B) Description of Boundaries :

1. **Core Area** : This will include Rajaji National Park, Corbett National Park and Sonanadi Wildlife Sanctuary.
2. **Buffer Area** : This will include the following areas :

Circle/Division

Forest Ranges

Kalsi Soil Conservation Division	Timli
Dehradun Forest Division	Asarodhi, Malhan, Thano, Lachhiwala, Barkot & Rishikesh
Hardwar Forest Division	Shyampur & Chiriyapur
Lansdowne Forest Division	Laldhang, Kotdwar, Kotari & Dugadda
Tarai West Forest Division	North Jaspur & South Jaspur
Tarai East Forest Division	Gaula, Kishanpur, Ransali, South Jaulasal, Kilpura, Dauli
Ramnagar Forest Division	Kosi, Kota, Dechori, Kaladhungi, Fatehpur
Tarai Central Forest Division	Gadgadia, Bhakhara, Tanda, Pipal Parao, Haldwani, Barhani
Haldwani Forest Division	Chakata, Nandhaur, Danda, Jaulasal, Sharda
Champawat Forest Division	Boom and Dogari
Narendra Nagar Forest Division	Shivpuri
Corbett Tiger Reserve	Other Reserved Forest except the boundaries of Corbett National Park & Sonanadi Wildlife Sanctuary.

By Order,

(KESHAV DESIRAJU)

Secretary.

दिप्यणी-राजपत्र, दिनांक 30-11-2002, भाग 1 में प्रकाशित।

[प्रतिलिपि सूचनार्थ प्रेषित-]

पी०एस०यू० (आर०ई०) ०७ वन एवं पर्यावरण/७२७-१७-०१-२००३-५०० (कम्प्यूटर/रीजियो)।

मानविकीकार
को. के. के. के. के. के.