


**WILDLIFE MANAGEMENT PLAN
For Kiari Khinna Road Project
Solan Forest Division**

Total Cost of Plan : Rs 15,60,000.00
Treatment Period Maintenance : 2026-27 to 2027-28 + 7years
Location : Area around Kiari Khinna Road
Beat : Binnu
Block : Chail
Range : Chail


Executive Engineer
B&R Division
HPPWD Division
HPPWD Solan
Solan


Wildlife Warden

Cum

Divisional Forest Officer,
Solan Forest Division, Solan (H.P.)

Solan Forest Division

KIARI KHINNA ROAD PROJECT

WILDLIFE MANAGEMENT PLAN

Introduction:

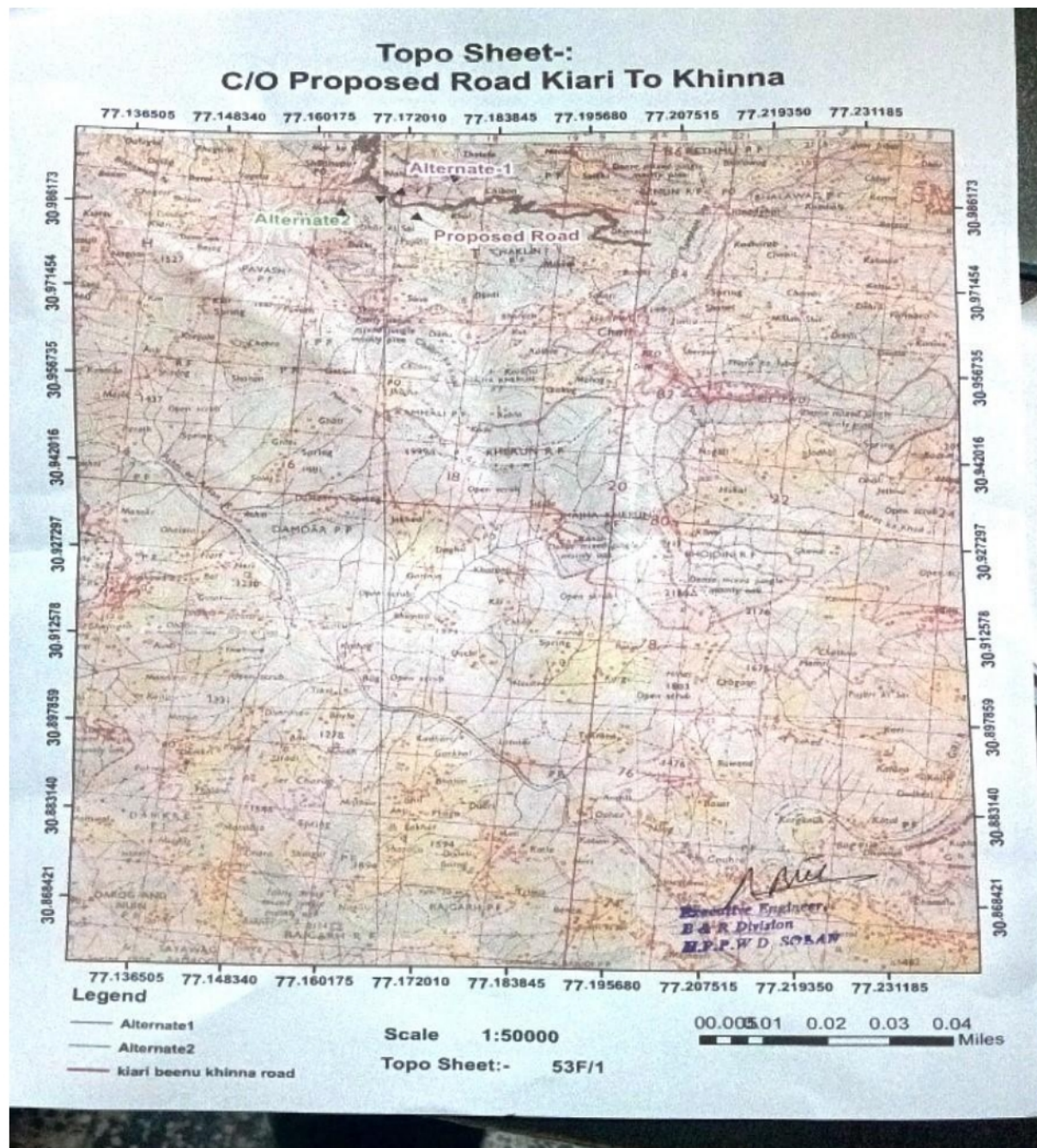
Proposal under FCA 1980 for diversion of 4.70 ha of forest land for construction of Kiari Khinna road in Kandaghat tehsil of district Solan (Solan Forest Division) has been submitted by Executive Engineer HPPWD Division Solan. Government of India, MoEF & CC vide letter No. FC/HPB/06/85/2022 dated 10.08.2022 (Para number 17) directed the State government to submit the wildlife management plan for area surrounding the proposed diversion area. This Wildlife management plan for the surround area of Kiari Khinna road is formulated in compliance of these directions given by the IRO, MoEF.

Need for Wildlife Management Plan:

During the last few decades, the pace of species extinction has increased dramatically as a result of human activities. Ecosystems are being fragmented or eliminated, and several species are in decline. The fragmentation, degradation, and loss of habitats pose serious threat to biological diversity. These losses are irreversible and pose a threat to our own well-being, considering our dependence on food crop and medicines and other biological resources. Human activities like agricultural expansion, road construction, urbanization, and other developmental activities are supposed to be major threats to biodiversity and wildlife, therefore, the most effective and efficient mechanisms for conserving biodiversity and wildlife is to prevent further destruction of degradation of habitats. Therefore, the management plan has been formulated for the conservation and management of the forest ecosystems in Kiari Khinna Road Project area. The formulation of a wildlife management plan for a developmental project is one of the steps towards the environment conservation. This Plan has been formulated after detailed field visits, inter actions with the concerned field staff of Solan Forest Division and also keeping in view the present management practices and requirements of the field in tune with the prescriptions of the Working Plan for Solan Forest Division. The financial Outlay of this management plan is **Rs. 15.60** Lacs and plan Period is two years for execution of new works and subsequent seven years maintenance of plantation.

Project Description:

Kiari Khinna road is located in Kandaghat tehsil of district Solan and the diversion area falls in Chail Range of Solan Forest Division. Total length of the road is 7.82 km out of which 5.225 km falls in the forest area involving 4.70 hectare of forest land.



Monitoring Committee of ESZ of Chail Wildlife Sanctuary:

Ministry of Environment Forests and Climate Change (MoEF & CC) has notified the Eco Sensitive Zone of Chail Wildlife Sanctuary vide its Notification dated 05-01-2022. A Monitoring Committee for monitoring the implementation of ESZ notification as per provisions of sub section (3) of Section-3 of Environment Protection Act, 1986 has been constituted vide the notification of MoEF & CC as below:

S.No.	Constituent of Monitoring Committee	Designation
1	Conservator of Forests (T) Solan	Chairman, ex officio
2.	Deputy Conservator of Forests (WL), Shimla	Member, ex officio
3.	One representative of Non-government Organization working in the field of environment (including heritage conservation) to be nominated by the State Government.	Member
4.	Regional Executive Engineer of State Pollution Control Board	Member, ex officio
5.	Senior Town Planner of the area	Member, ex officio
6.	An expert in the field of Ecology to be nominated by the State Government	Member
7.	An expert in the field of Biodiversity from State Biodiversity Board.	Member, ex officio
8.	Divisional Forest Officer Shimla	Member, ex officio
9.	Divisional Forest Officer Solan	Member-Secretary, ex officio

The recommendation of the Monitoring Committee is required for facilitating approval for diversion of forest land under FCA, 1980. Monitoring Committee in its meeting held on 07-02-2022 recommended the proposal for construction of Kiari to Khinna road (Kms 0/0 to 7/820) in the Eco Sensitive Zone of Chail Wildlife Sanctuary.

Flora of the Project area:

The lower elevations of the project are dominated by Chir Pine and grasslands. However, the Ban Oak forests are also present throughout the area. It is further home to wide variety of flowering plants including the Rhododendron and endemic medicinal plants. In general, the top storey is open and is comprised of a mixture of chir pine and deciduous species. Pure patches of Chir pine are common and are scattered all over the forest area. Forest types present in the area as per Champion and Seth are Himalayan Chir Pine Forest: 9C1(b), Western mixed conifer Forest: 12C1(d), Ban Oak Forest: 12 C 1(a), Moist Deodar Forest: 12 C1(c), Himalayan Sub Tropical Scrub: 9C1/DS1.

Fauna of the area:

The nearest protected area the Chail Wildlife Sanctuary is a notable herbivore haven with Sambar, Himalayan Goral, Barking deer found in good numbers. The Common Leopard is the apex carnivore. Small mammalian fauna including Red Giant flying squirrel, yellow throated marten, Himalayan fox, Langurs are also found.

Avifauna:

The Cheer Pheasant is the flagship species of conservation in Chail Wildlife Sanctuary. The Chakor, Khali, Red Jungle fowl are other pheasant species in sanctuary. Apart from pheasant, sanctuary has wide variety of parakeets, flycatchers, tits, barbets etc. that make it a unique bird haven.

Reptiles:

Collared black snake, Himalayan Trinket, Checkered Keelback, Common Wolf snake being recorded here. Apart from snakes, several species of lizards, skinks, geckos and frogs are found in the area including the Himalayan Agama, Asian Common Toad.

Threats perceived for the Wildlife and the Forests:

Illicit cutting, encroachments, frequent fires, over grazing, un-sustainable removal of NTFP, poaching and spread of contagious diseases by the domestic cattle are very common threats for the wildlife and the forest areas of Solan

Forest Division. Besides this, fragmentation of forest area due to various reasons, loss of habitat and draught are also other factors. Man-Animal conflict on account of crop raiding, human injury/death, cattle injury/kill are occasionally experienced on the fringe areas, resulting into apathy towards protection of forests and Wildlife therein amongst the local populace. These threats result into degradation and / or loss of habitat besides fragmentation, which triggers the vicious circle of loss of habitat thereby straying of wild animals into habitations resulting into Man-Animal conflict.

a)Hunting and poaching:

Animals are hunted mainly for meat, skin, teeth, feather, beaks and other parts, which are used as a part of traditional dresses and ceremonies. Pheasants, and barking deer are the commonly hunted wild species for food and for trophies. Awareness about wildlife laws is low.

b)Illegal cutting of trees:

The local population depends upon forest for their day-to-day timber needs. This results in tremendous pressure on the forests. The demand for timber and other wood produce is high in the area for various activities like the construction of houses, agriculture and other development activities.

c)Grazing pressure:

The forest area is also under heavy grazing pressure by the livestock and is susceptible to damage by stray cattle. Goat is considered as the main culprit for the failure of the plantations due to heavy browsing and trampling of seedlings.

Objectives of the Management Plan:

Keeping in view of the anticipated impacts, a Wildlife management plan has been proposed for Kiari Khinna Road Project. The main objectives of said plan are as follows:

- I. Maintenance of ecological balance
- II. Conservation and preservation of natural habitats in and around project area
- III. Mitigation and control of project induced biotic and abiotic influences that may affect the natural habitats
- IV. Habitat improvement for Wildlife in project area and catchment area by taking up afforestation and soil conservation measures
- V. Creating all round awareness regarding conservation and ensuring people's participation in the conservation efforts and minimizing man-animal conflict.

Management Measures:

Following measures are proposed for habitat improvement

1. Enrichment plantation:

For habitat improvement, enrichment plantation will be carried out over 5-hectare forest area in D-47 Birni Shillai C2. Plantation of indigenous species will be taken up in the stretch with an admixture of food and cover plants. Planting of seedlings @ 800 per ha is suggested. Plantation maintenance work will be done during subsequent seven years. Plantation site will be fenced with barbed wire and brushwood fence, for the protection from cattle grazing. With the improvement in habitat of wildlife the incidences of human wildlife conflict will accordingly reduce. The estimated cost for Enrichment plantation and maintenance is **Rs. 690000.**

- 2. Farm Ponds:** The farm ponds shall be dug into the ground in a naturally low-lying area. Some of the soil that is removed can be used to construct an earthen berm around the pond, which should be planted with trees and grasses for stability. The shade and wind protection provided by the raised mound and vegetation will reduce evaporative losses. Greater depth of the pond and less surface area will also reduce evaporative losses. Farm ponds are opened across the water ways by digging the soil. The excess rain water is harvested and the harvested water can be used for various activities including drinking water to animals and birds. A total of 2 farm ponds are proposed to be constructed at a total cost of Rs. 120,000.



Figure 1 Farm Pond

3. Dry Stone Masonry Check Dams:

Larger gullies have to be treated to prevent further deepening and widening. The purpose of a check dam is to reduce the gradient and reduce the flow velocity. The water is guided safely from a higher elevation to a lower elevation without causing erosion at the gully/nullah bed and banks. The water pools behind the dam promotes the percolation into the soils. Masonry Check Dams are the most commonly used structures both in case of larger gullies and small nalas/ stream. These are generally constructed in upper reaches of eroding nallahs to reduce the bed slope, stabilize the grade and check the bed scouring and retain silt, sand and pebbles. The structure is supplemented by planting seedlings and cutting of suitable species along the banks on the upstream side. These are stone masonry structures constructed across deep nala with the objective of controlling runoff water, reducing sedimentation of water sources, providing drinking water for the cattle and wild life & to recharge underground water table. A total of 25 dry stone check dams are proposed to be constructed at a total cost of Rs. 300000.



Figure 2 Dry Stone Masonry Check Dam

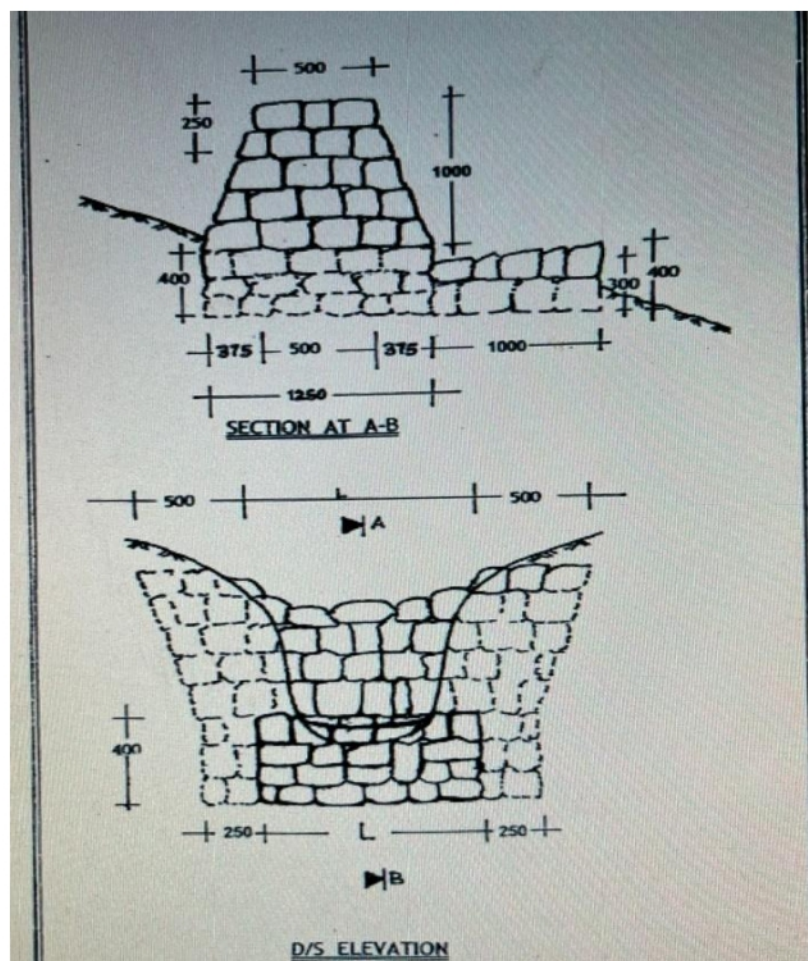


Figure 3 Dry Stone Masonry Check Dam

4. Wire Crate Check Dams:

Wire crate check dams are used for retention of debris in the main nullahs and are constructed by filling of stones in wire mesh cage. The size of the wire mesh is generally kept 15cm x 15 cm and the wire used for these cages is galvanized iron wire of 8 - 7 gauge (4 - 4.5 mm). These structures are widely adopted for the treatment of drainage lines because they are flexible (bend without breaking), and water can seep through them. Wire crate check dams are used in the main drainage channels receiving relatively large quantities of runoff and debris. Since such check dams do not attempt to pond back water therefore complete stopping of seepage is not important, however, the stability of the structure against overturning and being washed away by flowing water is ensured. These are dams made of wire-woven baskets filled with stones placed in trench of suitable size across steep-sloped gullies to trap erosion debris during rains, reducing sedimentation of water sources, providing drinking water for the cattle and wild life & to recharge underground water table. A total of 5 wire crate check dams are proposed to be constructed at a total cost of Rs. 250000.

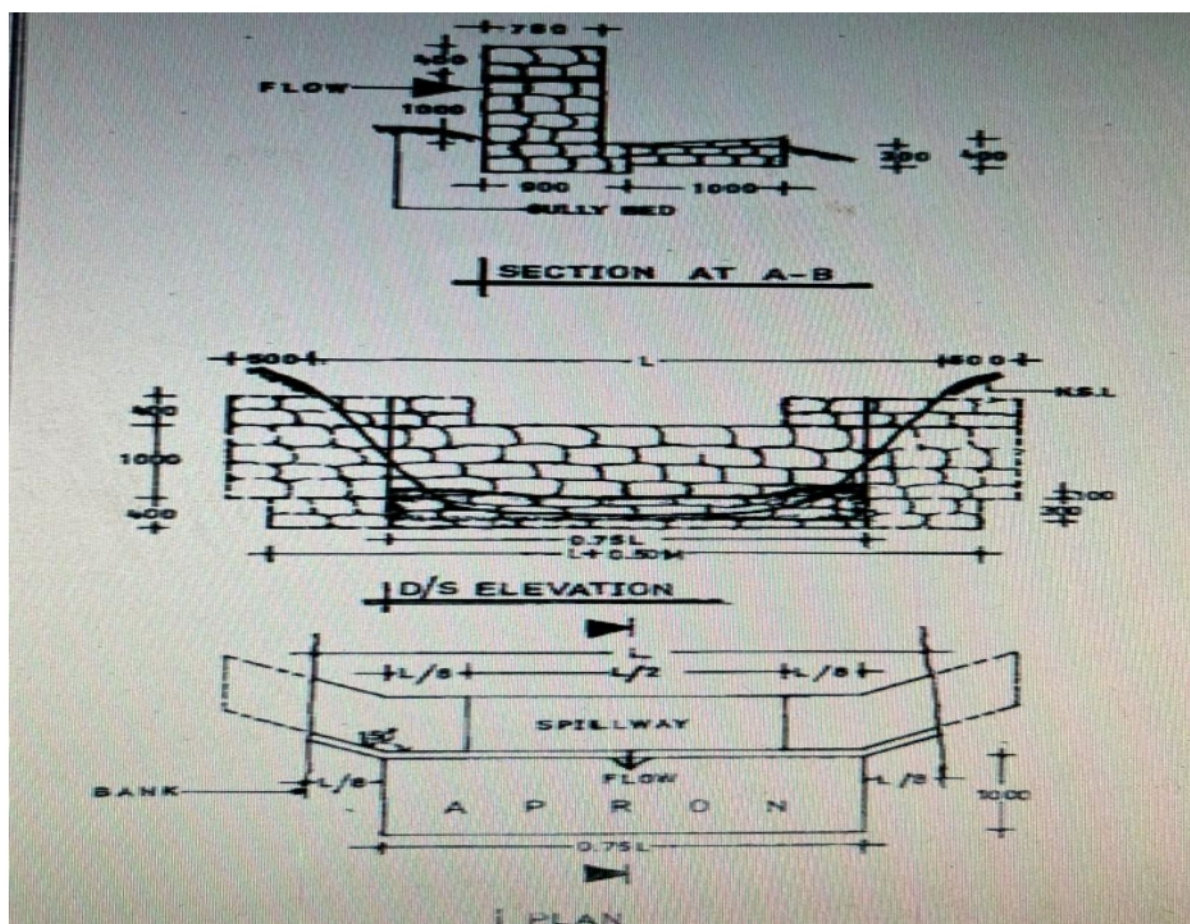


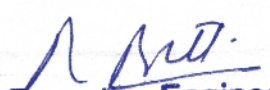
Figure 4 Wire Crate Check Dams

5. Contour Tranches:

To improve soil & moisture regime for enhanced growth of grasses and other vegetation, staggered trenches of size 1x0.3x0.3m are proposed in the forest area D-47 Birni Shillai C2 and D-48 Birni Shillai C2. The staggered trenching involves the excavation of trenches of shorter length in a row along the contour with interspace between them. These trenches are arranged in straight line (staggered form). In the alternate row, the trenches are located directly below one another. The trenches in successive rows are thus staggered, with the trenches in the upper row and the interspace in the lower row being directly below each other. 1980 Rmt trenches shall be constructed with expenditure of Rs. 198000.

6. Community Participation:


To increase the awareness among the local people and enlist their participation in conservation and protection of Forests and Wildlife a Village Forest and Wildlife Protection Committee shall be constituted and registered under Himachal Pradesh Societies Act, 2006. Role and responsibilities of this committee shall be clearly defined in the MoU.



Executive Engineer
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Physical and Financial Outlay

Sr.No	Name of Activity	Name of Forest	Qty	Units	Estimated Cost	Lat	Long
1	Farm Ponds	D-48 Birni Shillai C1	1	No	60000	30.59'632	77.11'966
	Farm Ponds	D-47 Birni Shillai C1	1	,,	60000	30.0'456	77.10'235
2	Enrichment Plantation 800 Plants / ha. Fruit bearing plants	D-47 Birni Shillai C2	5	Ha	470000	30.00, 378	77.10,748
	Maintance of plantation for 7 years				220000		
3	Dry Stone Check Dams	D-48 Birni Shillai C2 in Shillai Nallah	5	Nos	60000	30.59'970	77.11.444'
	Dry Stone Check Dams	D-48 Birni Shillai C2 in Binnu Nallah	5	Nos	65000	30.0,104	77.10''412
	Dry Stone Check Dams	D-48 Birni Shillai C2 in Binnu Nallah	5	Nos	75000	30.0''365	77.10''758
	Dry Stone Check Dams	D-47 Birni Shillai C1	10	,,	100000	30.0'456	77.10''235
4	Gabion Crate Wire Structure	D-47 Birni Shillai C1 Tharolla Ka Nallah	5	,,	250000	30.0'456	77.10''235
5	Contour Tranches	D-47 Birni Shillai C2	990	Rmt	99000	30.0'678	77.10''856
	Contour Tranches	D-48 Birni Shillai C2 in Binnu Nallah	990	Rmt	99000	30.0''365	77.10''758
			Grand Total		15,60,000.00		


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