

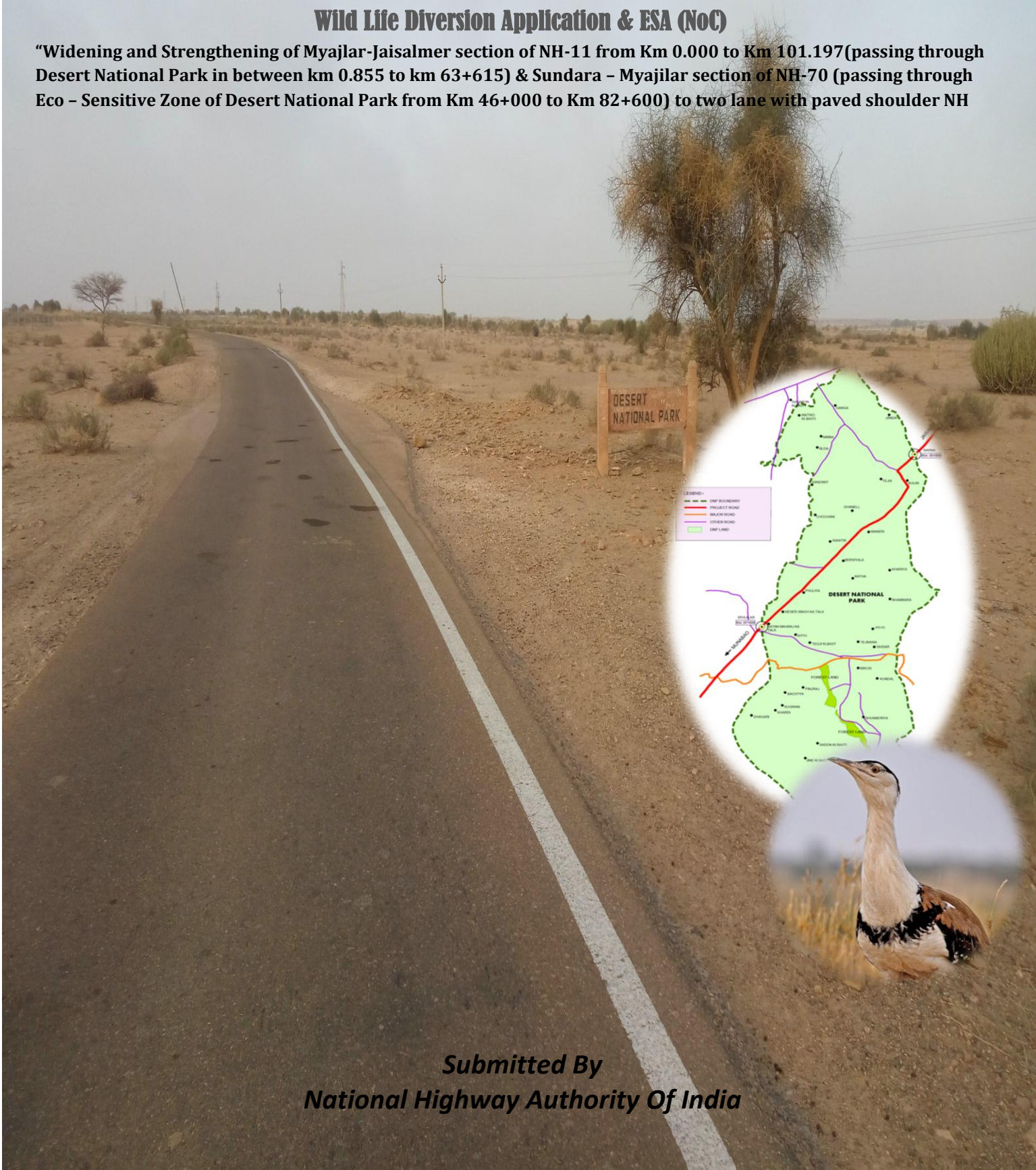
DESERT NATIONAL PARK

Bio-Diversity Report

For

Wild Life Diversion Application & ESA (NoC)

“Widening and Strengthening of Myajlar-Jaisalmer section of NH-11 from Km 0.000 to Km 101.197 (passing through Desert National Park in between km 0.855 to km 63+615) & Sundara - Myajilar section of NH-70 (passing through Eco - Sensitive Zone of Desert National Park from Km 46+000 to Km 82+600) to two lane with paved shoulder NH



Submitted By
National Highway Authority Of India

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BIODIVERSITY REPORT DESERT NATIONAL PARK

In order to protect the flora and fauna of the Thar Desert, the Government of India in the late 1970s started planning for establishment of a large sanctuary or a park where human presence and anthropogenic activity can be kept minimum and conservation of wildlife could be considered imperative. Human encroachment, animal's trapping, hunting, grazing by domesticated mammals, collection of fire wood and for other house hold requirement were most common.

DNP area prior to notification as wildlife protected zone was considered good resource ground. Mining were also one of the illegal activity in certain part of the DNP area in past. It has quick returned involve and the high demand for minerals at the regional and national market. The DNP area in certain patches has high potential of high grade limestone (with low percentage of silica) and soft sandstone, besides several other minerals. Even Oil India Limited and Oil & Natual Gas Commission, which is public sector undertakings, have carried out exploring for oil and natural gas in the DNP region.

Desert National Park Notification:

Rajasthan state has got three National Park, 26 Wildlife Sanctuary and 10 Conservation Reserve (Source: Government of Rajasthan, Rajasthan State Biodiversity Board). The total geographical are encompass under protected area network account to 10962.19 Km². Within the Thar Desert, Desert National Park with the purpose of conserving biodiversity was declared as a National Park in 1981 through wide letter attached as **Appendix-I**; Jaipur, dated 8.5.81 by Government of Rajasthan. The detailed boundary of DNP falling in Jaisalmer and Barmer district is shown in Figure 1.

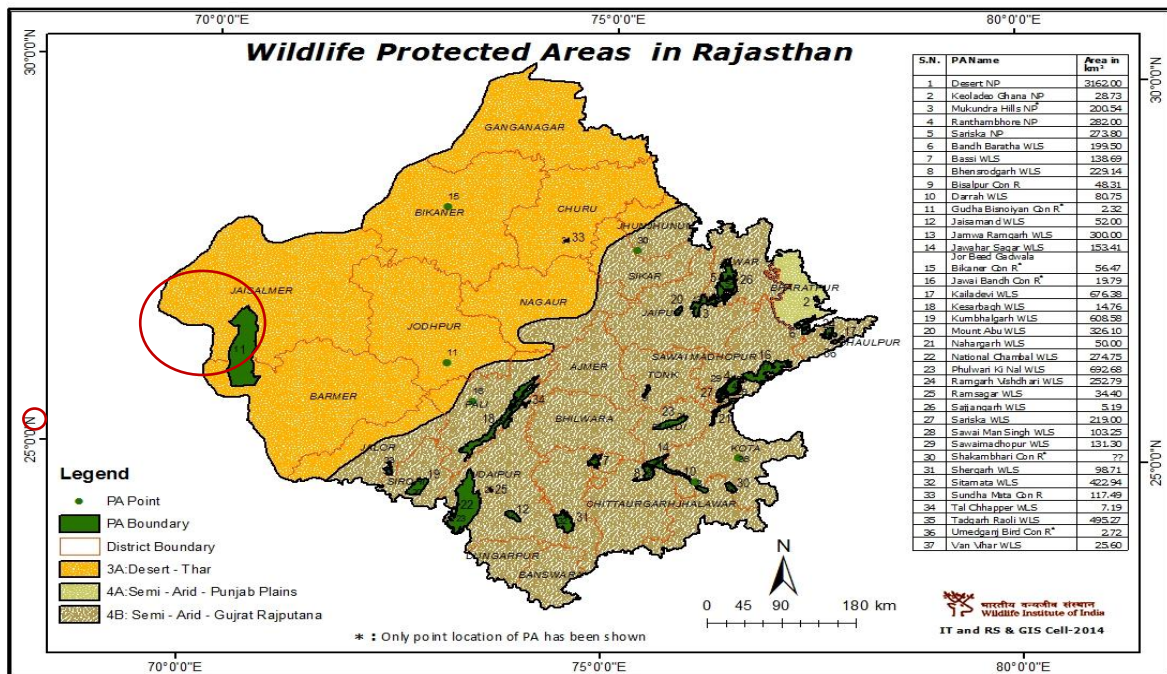


Figure 1: Wildlife Protected Area in Rajasthan

The DNP covers an area of 3162 km², which is situated approximately between altitude 25°46' to 26°47' North and longitude from 70°15' to 70°45' East. DNP is one of the largest adobe for highly endangered Great Indian Bustard (*Chiriotis nigriceps*). In fact DNP was delineated as National Park to protect the habitat of this large ground feeding birds mainly Great Indian Bustard and two Gype species of vulture. It comprises of crescent – shaped dune (Barchan), which is one type of sand dune produced by the action of wind. This

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national park has got 37 villages. The most important feature of this national park is the status of the land which is mostly under the category of padath (culturable waste), were as land status in other national park is under the category of ‘protected’ or ‘reserve forest’.

The Desert National Park:

The Desert National Park (DNP) covers an area of 3162 km² of which 1900 km² falls in the Jaisalmer District and the remaining 1262 km² in the Barmer district. This area falls in the extreme hot, arid region of very low rainfall zone of the country. The human population is low, 4-5 persons per km.



DNP Boundary near Shipala Village



DNP Boundary near Myajilar Village

1. TOPOGRAPHY:

The entire area of DNP is essentially grassland with few hills in the north-western side. Major portion of DNP is dominated by sand hills and sand dunes. Most of the dunes are Barchan type but tall; fixed and parallel dunes are also present. At places topography is gravelly and stony with few isolated ridges. There are no perennial river but seasonal streams are mostly seasonal nallah. The existing water table is very low.

2. CLIMATE:

The climate of the area is very extreme, in summer the day temperature reaches 49°C with surface temperature sometime touching 50°C. During the night time, the temperatures falls down and are cool. The temperature during the winter season falls to 2°C accompanied by strong high wind velocity. The area receives 100-150mm rainfall annually. Winter is quite cold while heat during summer season is intense and scorching.

3. GEOLOGY:

The region is characterized by an entire range of formation from the lower pre-Cambrian to the quaternary. Among the oldest are the Banded Gneissic complex. The sedimentary rocks and tertiary formations are sediment deposited in shallow neritic environment.

4. SOIL:

The desert as a whole does not contain sand, at many places it consist of gravels, bare rocks, sun baked mud and the loam. The sandy loam forms the bulk of the soil of the region. The major area, however consists of sandy plains.

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5. FLORA:

Based on Secondary Resource (Available Literature, Books, DNP (DCF), DFO office Jaisalmer, Etc.), the DNP area is classified as Desert as per the Biogeographic Classification of India and 3A Desert -Thar as per Biotic Province of India. The vegetation of the area is sparse with limited number of species. The vegetation of the DNP is of following type based on landforms or habitat.

Rocky and hilly habitats are confined to the Northern most part of the Desert National Park. The plant communities growing on these rocky habitats are "mixed xerophytic thorn forest", in which the principal plants are *Euphorbia caducifolia*, *Acacia sellegal*, *Caparris decidua*, *Grewia tenax* etc.

The associated trees and shrubs of the above climax are *Salvadora persica*, *Maytenus enlarginata*, etc. A large number of climbers such as *Coculus pendulus*, *Asparagus racemosus*, *Ephedra foliata*, *Rhynchosia minima* and *Coccinia grandis*, are supported by the trees and shrubs. The plants of the ground floor are *Oropetium thomeum*, *Tephrosia uniflora*, *Enneapogon brackystachya*, *Lepidagathis bhanadaraensis* and *Barleria acanthoides*.

On flat terrain, made up of rock fragments and little amount of sand, the vegetation consists of *Acacia senegal*, *Zizyphus nummularia*, *Lycium barbarum* and other common trees. On the gravelly plain, semi-shrub type of vegetation is observed, *Caparris decidua* and *Zizyphus nummularia* are two common shrubs and their common associates are *Leptadellia pyrotechnica*, *Boerhavia diffusa*, *Heliotropium strigosum*, *Salvia aegyptica*, *Indigofera trigon elloides*.

Alluvial plains form the major part of the habitat. The vegetation has been grouped here as mixed xeromorphic wooded desert. The dominant tree species of this habitat are *Prosopis cineraria*, *Salvadora oleoides* and *Tecomella undulata*. The common associates of these trees are *Calotropis procera*, *Mimosa hamata*, *Acacia jacquemonti*, *Haloxylon salicornicum*, *Crotalaria burhia*, *Lasiurus indicus*, *Cenchrus biflorus*, *Cyperus rotundus*, *Indigofera cordifolia*, *Aerva persica* etc.

On the sand dunes the vegetation mostly consists of *Calligonum polygonoides*, *Panicum turgidum*, *Lasiurus indicus*, *Cenchrus biflorus*, etc.

Based on secondary data available about 168 species of vascular plant belonging to 111 genera under 45 families were reported. Whereas the DNP manual issued by Deputy Conservator of Forests (Wildlife), Jaisalmer. The bulk of the vegetation of the desert in general consist of stunted, thorny or prickly shrubs and perennial herbs capable of resisting draught. Some of the common shrubs, herbs and grasses of the DNP are Sewan (*Lasiurus indicus*), Phog (*Calliginum polygonoides*), Bhurut (*Cenchrus biflorus*), Bekar (*Indigofera cordifolia*), Karad (*Dicanthium annulatum*), Sinia (*Sporobolus marginatus*), Dab (*Desmostachya bipinnata*), Lana (*Haloxylon salicornicum*), Jhinjhnia (*Mimosa hamate*), Moorut (*Panicum turgidum*), etc. The Desert National Park Boundary is depicted in Figure 2.

6. FAUNA:

Mammals:

Based on the DNP manual, about 21 species of mammals are reported. The rare among them are Long Eared Hedgehog (*Hemiechinus collaris*), Pale Hedge Hog (*Hemiechinus micropus*), Desert Fox (*Vulpes vulpes pusilla*), Indian Fox (*Vulpes bengalensis*), Small Indian Mongoose (*Herpestes javanicus*), Desert Cat (*Felis sylvestris*), Desert Hare (*Lepus nigricollis dayanus*), Indian gazelle (*Gazella bennetti*), Balochistan's Gerbill (*Gerbillus nanus*), Hairy Footed Gerbill (*Gerbillus gleadowi*), Indian Desert Gerbill (*Meriones hurrianae*) and sand coloured rat (*Millardia gleadowi*).

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Avifauna:

About 107 species of birds are reported in the DNP area, among them it is adobe for the largest population of Great Indian Bustard in the world. Macqueen's Bustard is the migratory bird which visit the DNP in winter season. Other bird birds reported in the DNP area are Eagles, Vultures, Bee-Eaters, Shrikes, Larks, Demoiselle Crane, Macqueen's Bustard, Sand grouse, Long-Legged, Honey Buzzards, chats, babblers, kites etc. Based on the study conducted by Mukherjee (1995) about 47 endemic. 118 resident and 157 migratory species are reported.

Reptiles:

The DNP harbors rich diversity of reptiles, which include 11 lizards and 4 snakes. The lizard species reported are Keeled rock Gecko, Sindh Sand Gecko, Garden Lizard, Brilliant agama, Jaisalmer Toad Agama, Spiny tailed lizard, Indian Sand Fish, Indian fringe toed lizard, Punjab snaked eyed lacerta, Indian monitor Varanus, Desert monitor, etc.

The snakes recorded are Sand Boa, Sand snake, Saw scaled viper and Red Spotted Royal Snake.

Amphibians:

There is no seasonal and perennial rivers in the DNP area. The only water body reported are small ponds which get filled with water during rainy season and dried up 2 to 3 month after monsoon season. The species of amphibians reported are toad (*Bufo stomaticus*) and one species of frog (*Euphlyctis cyanophlyctis*).

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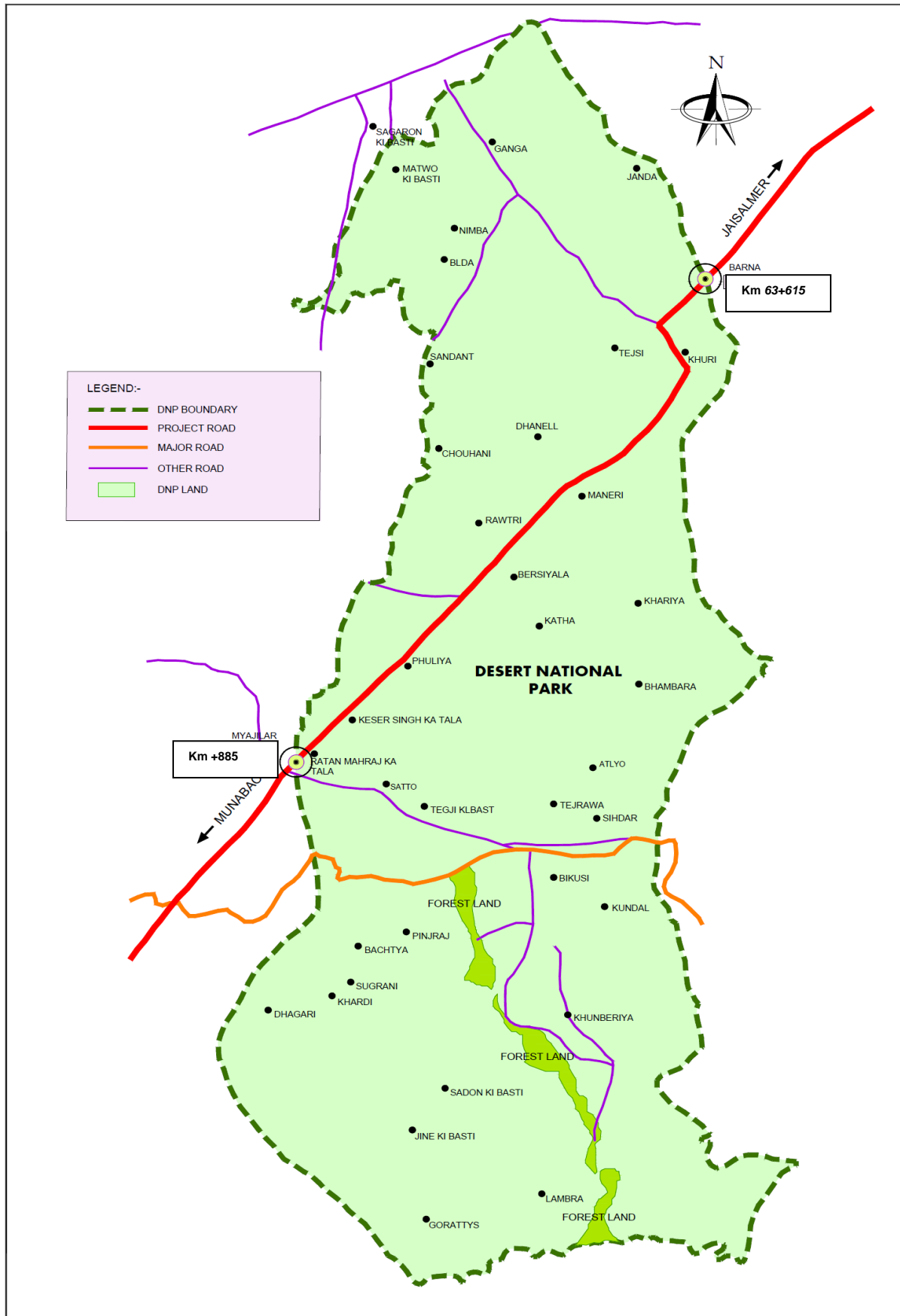


Figure 2: Desert National Park Boundary Along With Proposed Road

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7. THE PROJECT AREA DESCRIPTION:

The proposed alignment Start at km 00+00 at Myajilar and end point at Jaisalmer 101.197 km where it meets with the Bharatmala Package-4. Off the total length from 65.615 km to 101.197 comprises of urban (near end point) and mostly rural setup with scattered and sparse vegetation distribution. From km 0+855 near Myajilar to km 65.615 Barna village traverses through Desert National Park which comprises of scrub land, sand dune (Khuri, Dhaneli, Magsingh ki dhani, Meneri Ki Dhani, Phulia and at Myajilar) and sparse shrubs, grasses and trees.

Photographs of Start Point and End Point of proposed road in DNP Area



DNP Boundary at Chainage 35+00 km



DNP Boundary near Myajilar Settlements

The proposed project will involve widening /improvement work to 2 lane with paved shoulder within the existing Right of Way (RoW) avoiding the land acquisition, except for the locations having inadequate width.

8. HISTORIC BACK GROUND:

Based on historic information available the ERoW for Jaisalmer to Myajilar road is 36.60 which is having 3.5 meters black top with earthen shoulder configurations. During initial reconnaissance survey carried out with the different government office, it has been confirmed that the road land till date is revenue land. It was built by the People Welfare Department (PWD) in 1961, when it was under its jurisdiction. This road due to strategic importance from the military point of view was handed over to Border Road Organization (BRO). Till date this road is maintained and owned by the BRO 96 RCC (GREF).

Based on the information furnished by BRO 96 RCC and Tehsildar office, Jaisalmer, Rajasthan; the existing RoW varies between 30 to 36.65 meters. The letter conforming existing RoW of 36.60 mtr width of Jaisalmer – Myajilar road has been issued by Officer Commanding 96 Road Construction Coy (GREF) through wide letter 2091/NHA/59/E2 dated 20 June, 2017. **Appendix -II**

9. DESIGN REQUIREMENT:

To improve the configuration and road design, addition widening/improvement for existing road in DNP area is imperative. This need additional land, but based on the land allocated in 1960, no addition land is required for widening/improvement except where curve improvement becomes vital. In the major portions, improvement will take place within the existing ROW which is 36.60 meters wide. Road Design within the ROW with 2-lane configuration if given in Figure 3.

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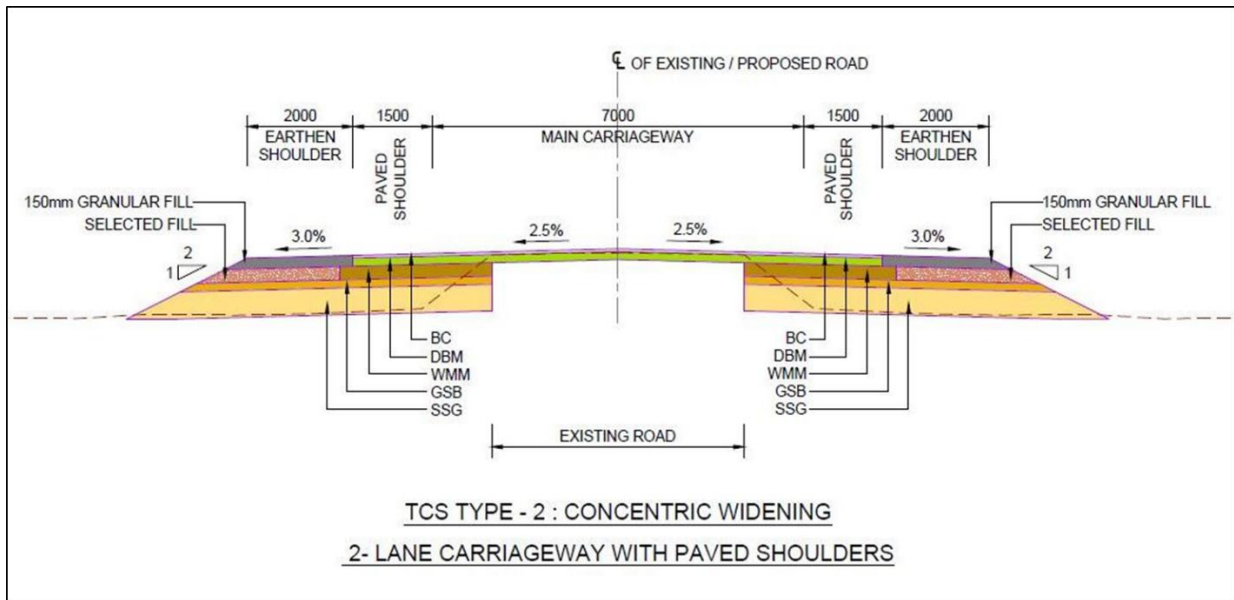


Figure 3: Road Design within ROW with 2-lane configuration

10. ISSUES WITH EXISTING ROAD:

Earlier this area, where DNP is notified 1980 as Eco-Sensitive Zone for conservation of Great Indian Bustard under “*The Indian Wildlife (Protection) Act, 1972*” was padath land (Agricultural Waste land) and till date the status of the land remains same even after DNP notification. Though the road traverse through DNP area, all the maintenance and black topping of the road is carried by the BRO. The BRO had to take interim permission prior to each improvement to maintain the pliability of road and for movement of military carven.



Existing Jaisalmer to Myajilar Road in DNP Area

11. REQUIREMENT FOR ROAD IMPROVEMENT:

a. Contribution in 1965 war with Pakistan:

This Road is shortest route to connect Jaisalmer to Munabao which is located on Indo – Pak Border. During Indo – Pak War of 1965 the Indian Army has used this road to reinforce the Munabao Sector and which resulted in defeating of advancing Pakistan Army. This route is currently used by the Indian Army for movements of troops, ammution and rations. Thus seeing the prudent requirement and for smooth movement of army convoy, two lane with paved shoulder is vital.

The existing road is Single Lane road, with 3.5 meter wide carriageway with earthen shoulder; whenever the military convoy moves, the entire road is blocked by the army and movement for civilian becomes difficult. The entire movement is in one direction. If any vehicles break down then entire road comes to halt, until repaired.

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BIODIVERSITY WITHIN DIRECT IMPACT ZONE:

12. PRIMARY SURVEY DATA

12.1 SURVEY METHODS ADOPTED:

The detailed study was carried out as an attempt to identify Flora & Fauna, the human wildlife interactions and people's perception dwelling within the national park. The field survey was carried in two phase, firstly to establish the need of the project within the DNP area based on one to one interaction with the dwellers and their dependence on DNP resource and secondly to established/correlate various species (Flora & Fauna) reported within the existing ROW and project impact zone (500 mts) from project boundary.

1. Initial interaction survey of was carried out in two phases on in extreme winter season- i.e 8th January 2016 to 25th January 2016.
2. Second survey was carried out in month of May - June (Extreme summer) from 28th May 2017 to 10th June 2017.

Methodology Adopted

The species richness, density, abundance and frequency of flora were estimated with the help of 50m x 50m quadrat, with 2 replicate samples at every random selected point. Species richness index was calculated using Margalef's Richness Index (RI), with the following formulae:-

1. Density = $\frac{\text{Total no.of individuals of the species in all the sampling unit (S)}}{\text{(Total number of sampling units studied (Q))}}$
2. Frequency (%) = $\frac{\text{Number of quadrats in which the species occurred} \times 100}{\text{Total number of quadrats studied}}$
3. Abundance = $\frac{\text{Total number of individuals of a species in all quadrats}}{\text{Total number of quadrats in which the species occurred}}$
4. Margalef's Richness Index (RI) = $(S-1)/ \ln N$
Where, S = Total number of species.
N = Total number of individuals

These two interaction and survey involve primary data collection in the DNP area gathered through interviews, group meetings, informal discussions, vegetation transects, point & line survey for fauna and direct observation within the ROW (which is unbuilt) and 500 mts on both side of existing roads. One to one interaction with the people were also carried out with respect to animals casualty, hunting by the dwellers in side DNP, animals approaching the settlements during night time, animals poaching by outsiders, domesticated animals preyed by wild scavengers and human – animals conflict etc.

13. OUTCOME OF ONE TO ONE INTERACTION:

During one to one interaction with the locals dwelling in the DNP area, they eagerly mentioned that the road should be upgraded to two lane. Due to DNP declaration, the villages residing inside the eco-sensitive zone lacks basic facilities like schools, mobile towers, water pipeline, etc. The DNP sanctuary is not rich in wildlife distribution, no one has seen large Indian Bustard near the existing roads, their presence is in far remote area. The Government of Rajasthan should carry out detailed study and should come up with new DNP boundary, where animals are reported. They also mention that those holding private land in DNP area, can't able to practice well established farming as many activities are restricted.

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Photograph of one to one interaction with the locals



One-one interaction in Bersiale Village in DNP



One to One interaction in Khuri Village in DNP

14. FLORA & FAUNAL STUDY IN CORE ZONE (ROW+ 500 MTS):

14.1 FLORA




To study the Floral and Faunal distribution within the core zone, survey was carried out at Dawn (5:30 A.M to 8:00 A.M) and Dusk (4:45 to 7:15). The survey was repeated for consecutive three days. Different survey methods like walk through, point source method, call detection, vegetation transects and direct observation were used.

Survey and recording was carried out at every two km at mile stone marked pillars in initial stretch after km 00+855, the survey point location was increased to three km and further to 4 km stretch seeing same type of landscape and sand cover area. The survey finally end at km 63+615, where DNP boundary on the RoW ends. The details of survey location with species of flora reported are given in Table 1.

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Table 1: Survey Location with Species of Flora Reported During Primary Survey

S. No	Survey Location	Photographs	Species of Plant Report	Animals/Birds Reported	Comments if any
1.	End of DNP Boundary Geographical Coordinate: 26°42'19.33"N 70°42'2.51"E Elev: 243mts		Sewan grass (<i>Lasiurus sindicus</i>), Aak (<i>Calotropis procera</i>) <i>Capparis decidua</i> , <i>Euphorbia caducifolia</i> , <i>Lasiurus indica</i> , <i>Panicum turgidum</i> . <i>Acacia sp.</i>	No animals sighted. Burrows of boreal animals are reported under bushes and shrubs. Birds – Red vented bulbul sound noted	The floral distributed are noted in patches and in scattered manner. Patches of grasses are notices.
2	Geographical Coordinated: 26°39'53.28"N 70°41'35.84"E Elev: 234 mts		<i>Calotropis procera</i> , <i>Capparis decidua</i> and Sewan grass (<i>Lasiurus sindicus</i>), <i>Panicum turgidum</i>	No animals reported	The random selected site scrub land with sparse vegetative growth. No trees reported
3	Geographical Coordinate: 26°40'59.40"N 70°41'41.05"E Elev: 147 mts		<i>Calotropis procera</i> , <i>Capparis decidua</i> and Sewan grass (<i>Lasiurus sindicus</i>).	No animals sighted, burrows are noticed. Birds like red vented bulbul, babbler, crow are noticed	The random selected site is abandoned agricultural land.




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S. No	Survey Location	Photographs	Species of Plant Report	Animals/Birds Reported	Comments if any
4.	Geographical Coordinate: 26°38'19.56"N 70°41'37.11" Elev: 225mts		<i>Kikar tree abundant, followed Calotropis procera, Capparis decidua and Sewan grass (Lasiurus indicus), Panicum turgidum, Calligonum polygonoides, Cenchrus biflorus, Panicum turgidum</i>	Indian Gazelle (Gazella bennetti), ring dove, purple sun bird, hoopoe, red vented bulbul, common babbler, green bea eater, variable wheatear.	This site shows abundant growth of kikar tree, followed by prosopis sp. Acacia Senegal etc,
5.	Geographical Coordinate 26°36'30.10"N 70°42'27.07"E		The tree species reported are <i>Acacia nilotica, Acacia catechu, Acacia Senegal, prosopis sp., etc.</i>	Peacock, Plain leaf warbler, Desert lark, crested lark, babbler, etc.	This site shows abundance in Acacia sp. The ground growth are absent.
6.	Geographical Coordinate 26°35'55.12"N 70°41'52.29"E		Species of flora reported area <i>Capparius decidua, Acacia catechu, Acacia Senegal, Panicum turgidum, Calligonum polygonoides, Lasiurus indicus</i>	No bird species reported	The survey spot witness scattered growth of shrubs and few trees. Ground cover grasses are sparse




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S. No	Survey Location	Photographs	Species of Plant Report	Animals/Birds Reported	Comments if any
7.	Geographical Coordinate 26°33'26.68"N 70°40'3.89" Elev: 221mts		Trees and shrubs reported are <i>Acacia catechu</i> , <i>Acacia nilotica</i> , <i>Acacia Senegal</i> , <i>prosopis sp.</i> , etc	Animal's movement crossing was reported. The animals reported based on local area Indian Gazelle (<i>Gazella bennetti</i>), desert fox (<i>Vulpes vulpes pusilla</i>), indian fox (<i>Vulpes bengalensis</i>), Small indian mongoose, Desert Hare, Long eared hedgehog, etc	The stretched had been demarcated by forest department for animal movement.
8.	Existing Milestone No. 55 Geographical Coordinate 26°32'51.24"N 70°39'45.71"E Elev: 205		Tree/shrub reported are Capparis decidua and Calotropis procera	No animal and birds sighted	Land is mostly scrub land with poor vegetative cover.
9	Existing Milestone No 57 Geographical Coordinate 26°32'2.38" 70°38'57.14"E Elev: 199 mts		Trees absent, only shrubs and grasses reported <i>Calligonnum polygonoides</i> , <i>Leptadenia pyrotechnica</i> , <i>Panicum turgidum</i> , etc	Burrows of animals reported	Only growth of herbs and grasses noticed covering the ground.




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"Widening and Strengthening of Myajlar-Jaisalmer section of NH-11 from Km 0.000 to Km 101.197(passing through Desert National Park in between km 0.855 to km 63+615) & Sundara – Myajilar section of NH-70 (passing through Eco – Sensitive Zone of Desert National Park from Km 46+000 to Km 82+600) to two lane with paved shoulder NH configuration in the State of Rajasthan under BHARAT MALA Project

S. No	Survey Location	Photographs	Species of Plant Report	Animals/Birds Reported	Comments if any
10	Existing Milestone No 59 Geographical Coordinate 26°31'12.10"N 70°38'6.68"E Elev: 193 mts		<i>Cappris decidua</i> shrubs and trees reported few patches of <i>Calotropis procera</i> noticed.	Domesticated mammals like sheep and goats reported in herds Birds like leaf wabler, desert lark, desert babbler are sighted	Poor growth of vegetative cover due to sandy area
11	Existing Milestone No 61 Geographical Coordinate 26°30'49.16"N 70°37'3.57"E Elev: 185 mts		<i>Acacia nilotica</i> , <i>Calotropis procera</i> , <i>Calligonum polygonoides</i> , <i>Dicanthium annulatum</i> , <i>Grewia tenax</i> , <i>Panicum turgidum</i> , <i>Calotropis procera</i> , <i>Neem</i>	Wild mammals Gazelle (<i>Gazella bennetti</i>) reported adjacent to site, domesticated mammals like sheeps and goats noticed in large number, burrows of desert rats are reported where bushes are present	Sparse vegetative growth due to deposit of sand and scrub land
12	Existing Milestone No 64 Geographical Coordinate 26°30'1.10"N 70°35'30.87"E Elev: 193 mts		<i>Cappris decidua</i> , <i>Acacia catechu</i> , <i>Calotropis procera</i> , <i>Grewia tenax</i> , <i>Panicum turgidum</i> , <i>Zizipus</i> shrubs.	Birds reported is common babbler, Desert warbler, lark, common crow and mammals like domesticated goats. Reptiles like sand fish & Indian fringe toed lizard	Sparse vegetative growth due to deposit of sand and scrub land. Patched of grasses at few location




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S. No	Survey Location	Photographs	Species of Plant Report	Animals/Birds Reported	Comments if any
13	Existing Milestone No 66 Geographical Coordinate 26°29'21.25"N 70°34'33.44"E Elev: 168 mts.		<i>Dominant is capparidis decidua followed by Prosopis sp., Acacia catechu, Calligonnum polygonoides, Grewia tenax,</i>	No animals reported	Sparse vegetative growth due to deposit of sand and scrub land. No grasses present.
14	Existing Milestone No 69 Geographical coordinate 26°27'57.97"N 70°33'36.01"E Elev: 164 mts		<i>Capparis decidua, Calligonnum polygonoides, Lasiurus indicus, Grewia tenax</i>	Sheep and goats grazing in large number in the area, red vented bulbul	Shrubs growth noticed in abundance.
15	Existing Milestone No 73 Geographical Coordinate 26°26'8.96"N 70°32'18.92"E Elev: 154 mts		<i>Calligonnum polygonoides, Dicanthium annulatum, Grewia temix, Panicum turgidum, Prosopis sp., Capparis decidua</i>	Burrows of desert rat noticed in large number, birds like red vented bulbul, partridges and larks	Shrubs growth noticed in abundance



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S. No	Survey Location	Photographs	Species of Plant Report	Animals/Birds Reported	Comments if any
16	Existing Milestone No 77 Geographical Coordinate 26°24'19.53"N 70°30'59.91"E Elev: 149 mts		<i>Capparis decidua</i> , <i>Lasiurus sindicus</i> , <i>prosopis sp.</i> , <i>Acacia catechu</i> , <i>Panicum turgidum</i> , <i>Grewia temax</i> , <i>Calligonnum polygonoides</i> , <i>Mimosa</i> <i>hamate</i> , <i>Cenchrus biflorus</i> , <i>Maytenus emarginata</i> , <i>Zizipus</i> <i>nummularia</i> , <i>Oropetium thomeum</i> ,	Burrow of Desert Rat, Red Vented Bulbul, lark	Mixed vegetation type comprising of medium size trees and shrubs growth.
17	Existing Milestone No 84 Geographical Coordinate 26°21'37.17"N 70°28'11.81"E Elev: 145 mts		<i>Trees reported are Acacia senegal</i> , <i>Acacia catechu</i> , <i>Maytenus</i> <i>emarginata</i> , <i>Zizipus nummularis</i> , <i>Capparis decidua</i> . <i>The grasses and</i> <i>herbs reported are Oropetium</i> <i>thomeum</i> , <i>Panicum turgidum</i> , <i>Leptadenia pyrotechnica</i> , <i>Grewia</i> <i>temax</i> , <i>Calligonnum polygonoides</i>	Red vented Bulbul, purple sunbird, lark, crested lark, wheatear, etc	Mixed vegetation type comprising of trees, herbs, grasse, etc.
18	Existing Milestone No 90 Geographical coordinate 26°19'14.49"N 70°25'47.63"E Elev: 127 mts		<i>Calligonnum polygonoides</i> , <i>Capparis</i> <i>decidua</i> , <i>Leptadenia pyrotechnica</i> , <i>Prosopis sp.</i> , <i>Dicanthium annulatum</i> , <i>Grewia temax</i> , <i>panicum turgidum</i> , <i>Zizipus nummularis</i> , <i>Lasiurus indica</i> .	Red Vented Bulbul, crested lark, common babbar, Desert warbler, wheatear	Mixed vegetation type comprising of trees, herbs, grasse, etc.

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S. No	Survey Location	Photographs	Species of Plant Report	Animals/Birds Reported	Comments if any
19	Existing Milestone No 94 Geographical Coordinate 26°17'20.12"N Elev: 124 mts		<i>Capparis decidua</i> , <i>Dicanthium annulatum</i> , <i>Grewia temax</i> , <i>Leptadenia pyrotechnica</i> , <i>Calotropis procera</i> , <i>Lasiurus indicus</i> , <i>Acacia sp.</i> , <i>Zizipus nummularis</i> , <i>Lasiurus indica</i> , <i>Panicum turgidum</i> , <i>Oropetium thomeum</i> etc.	Gazelle (<i>Gazella bennetti</i>), domesticated goat, sheep. Birds like Red Vented Bulbul, Peacock, Desert Lark, common babbler, etc.	Mixed vegetation type comprising of trees, herbs, grasse, etc.
20	Start of DNP boundary Geographical Coordinate 26°15'37.78"N 70°23'2.23"E Elev: 119 mts.		<i>Acacia sp.</i> , <i>Prosopis sp</i> , <i>Zizipus Nummularis</i> , <i>Calotropis procera</i> , etc	Domesticated cow, ox, camel. Birds domestic sparrow, peacock, common babbler, red vented bulbul	Only trees and bushes of <i>Acacia sp.</i> noticed.

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Table 2: Species Richness Calculation by Using Quadrant Methods

S.No	Plant Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total No. Of individual of species	Total No. of Quadrant of Occurrence	No. of Quadrant Studies	Frequency %	Density	Abundance	Richness Index
1	Capparis decidua	1	1	-	3	-	5	2	2	-	2	2	3	5	2	1	3	2	2	11	-	47	16	20	80	2.35	2.94	8.325
2	Calotropis procera (Shrubs)	3	5	-	5	-	1	-	1	-	-	-	-	-	-	3	5	-	7	-	-	30	8	20	40	1.5	3.75	5.248
3	Prosopis sp.	-	-	-	3	3	-	11	-	-	-	-	-	1	1	2	2	3	1	3	2	32	11	20	55	1.6	2.9	5.561
4	Acacia Nilotica	-	-	-	4	8	2	13	-	-	1	-	-	-	-	-	-	2	3	2	14	49	9	20	45	2.45	5.4	8.687
5	Acacia catechu	-	1	-	2	11	1	17	-	-	1	-	2	1	-	-	3	1	1	1	12	54	13	20	65	2.7	4.15	9.952
6	Acacia Senegal	-	-	-		5	-	1	-	-	-	-	-	-	-	-	1	1	-	3	3	14	6	20	30	0.7	2.3	2.352
7	Zizipus Nummularis	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	2	3	-	5	4	18	6	20	30	0.9	3	3.076
8	Maytenus emarginata	-	-	-		-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	2	2	20	20	0.1	1	0.180
9	Azadirachta indica	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	3	5	3	20	15	0.25	1.6	0.723
	Total																					251						

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14.2 FAUNA

a. Methodology Adopted

Faunal survey was carried out by point count, call detection, line transect, walk through, etc. The survey was mainly carried out during the dawn (early morning) dusk (evening) as animals are most active during these hours.

Animal's movement, feeding ground, daily route of movement were also studied so as to propose animals underpass, if required. The density and area where it is frequently noticed were also recorded. The nesting patterns of birds, bats and small arboreal mammals were also taken care off.

Secondary information regarding animal's movement outside the DNP near settlement was also noted. In the core zone area number of nest reported on the trees were also recorded. Even study was also targeted to records the avifauna approaching the roads in search of small grain size pebbles, which they consume for proper functioning of their gizzard.

b. The outcome of the study

Mammals

During primary survey the mammalian species directly sighted and recorded based on direct sighting, pug mark and consultation with villagers dwelling in the DNP boundary are given in Table 3

Table 3: List of mammalian species reported during primary survey

S. No	Common Name	Scientific Name	Survey method	Wild/ Domesticated	Reported Area	IWPA-72 Schedule
1.	Gazelle	<i>Gazella bennetti</i>	Line Transect	Wild	Core Zone	I
2.	Camel	<i>Camelus bactrianus</i>	Line Transect	Domesticated	Core Zone	-
3.	Desert Fox	<i>Vulpes vulpes pusilla</i>	Walk through	Wild	Buffer Zone	I
4.	Indian Fox	<i>Vulpes bengalensis</i>	Interaction with villagers	Wild	Buffer Zone	II
5.	Sand colour rat	<i>Millardia gleadowi</i>	Point Method	Wild	Core/Buffer Zone	-
6.	Desert hare	<i>Lepus nigricollis dayanus</i>	Villagers	Wild	Buffer Zone	-
7.	Small Indian mongoose	<i>Herpestes javanicus</i>	Line Transect	Wild	Core/Buffer Zone	II
8.	Sheep	<i>Ovis aries</i>	Line transect	domesticated	Core/Buffer Zone	-
9.	Coat	<i>Carpra</i>	Point & line	Domesticated	Core/buffer	-

Among the mammals reported during the primary survey goats, sheep, cows are most dominance species in wild as well as domesticated. The villages residing in the DNP boundary are found of animal's husbandry as source of income. The raise large herds of domesticated animals and leave them in the wild to graze DNP grasses, herbs, leavers of small trees as fodder. Due to presence of large number of domesticated mammals uniformly distributed all over the DNP area, the National park is under threat. The species of plant required for habitat of Great Indian Bustard has been degraded due to extensive grazing. The same has been reported by the WII, DNP, and other experts.

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Photographs of animals recorded during primary survey



Domesticated Camel in DNP Area



Domesticated Cow near Khuri Village in DNP



Grazing by sheep in DNP area



Gazelle in wild in DNP within the core zone

Avifaunal Study:

To record the avifaunal distribution in the core and buffer zone repetitive survey was carried out at dawn and dusk using various survey methods as discussed previously. Even interaction with DCC (WL) DNP office was also consulted in this regards. Consultations with villagers residing in the DNP area were also carried out. Based on the survey, about 27 species of birds were reported which is discussed in Table 4:

Table 4: Species of Avifauna Reported in the Core and buffer zone ROW

S. No	Local Name	Scientific Name	Survey Methods	Reported Area	IWPA-72 Schedule
1.	Variable Wheatear	Oenanthe Picata	Walk through	Core Zone	IV
2.	Desert Lark	Ammomanes deserti	Line Transect	Core Zone	IV
3.	Asian Desert Warbler	Sylvia minula	Point survey	Core Zone	-
4.	Plain Leaf Warbler	Phylloscopus neglectus	Point survey	Core Zone	-
5.	Crested lark	Galerida cristata	Line transect	Buffer Zone	IV
6.	Common Crow	Cornus splendens	Walk through	Core Zone	V
7.	Black winged kite	Elnus caeruleus	Point survey	Buffer Zone	-
8.	Steppe eagle	Aquila nipalensis	Point survey	Core/buffer	-
9.	Great Indian Bustard	Ardeotis nigreiceps	DFO, DNP	-	I
10	Common Crane	Grus grus	Villagers	Buffer zone	IV

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S. No	Local Name	Scientific Name	Survey Methods	Reported Area	IWPA-72 Schedule
11	Red Vented lapwing	Vanellus indicus	Line transect	Core/buffer	-
12	Little Ring Plover	Charadrius dubius	Point survey	Buffer Zone	IV
13	Common Sandpiper	Actitis hypoleucos	Walk through	Buffer zone	IV
14	Indian Courser	Cursorius coromandelicus	Line transect	Buffer zone	-
15	Rock Pigeon	Columbia livia	Point survey	Buffer zone	IV
16	Euraian Turtle Dove	Streptopelia orientalis	Line transect	Core/buffer	IV
17	Laughing Dove	Streptopelia senegalensis	Line transect	Core/buffer	IV
18	Green – Bea eater	Merops orientalis	Point survey	Core zone	IV
19	Black Drongo	Dicrurus macrocercus	Villagers	Buffer zone	IV
20	Red vented Bulbul	Pycnonotus leucotis	Line transect/point survey	Core/buffer zone	IV
21	Common babbler	Turdoides caudate	Line transect	Core/buffer zone	IV
22	Desert whitethroat	Sylvia minula	Line transect	Buffer zone	-
23	Red tailed wheatear	Oenanthe xanthopyrma	Point count	Buffer zone	-
24	Purple sunbird	Cinnyris asiaticus	Transect line	Core zone	IV
25	White wagtail	Motacilla alba	Villagers	Buffer zone	-
26	Tawny pipit	Anthus campestris	Transect line	Core Zone	IV
27	House sparrow	Passer domestica	Point count	Core Zone outside DNP, buffer zone in villages	IV
28	Peafowl	Pavo cristatus	Transect line	Buffer zone near Khuri Village	I

Conclusion: based on the primary survey for avifauna we can say that majority of species reported belongs to Scheduled –IV as per 'The Indian Wildlife (Protection) Act – 1972. Only two species, i.e Peafowl noticed in Khuri and Myajilar and Great Indian Bustard (*Ardeotis nigriceps*), which are Scheduled –I species which need conservation.

Great Indian Bustard (*Ardeotis nigriceps*):

Status: Critically Endangered

Citation: IUCN Red List of Threatened Species, Version 2017 -1

Schedule: I as per IWPA – 1972

Population: Nearly 200 in number as per DCF DNP office.

One of the main purpose of establishment of Desert Nation Park was to protect the Great Indian Bustard (*Ardeotis nigriceps*) and two species of Gype vulture which are still noticed in the park and is under threat.

Locally called 'Godavan', which is a large territorial bird of grass land. Its habitat consists of large expanses of dry grassland and scrub. Its breeding season start from March to September. Adult bustards have territories of up to 1-2 sq.km. To defend the territories fight among adult bustard are common and aggressive. The male does not allow any intruder in their territories. They prefer grass land and select a prominent place from which it can have a panoramic view of its territories.



Photograph Great Indian Bustards

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The diets comprises of grains, drupes of Zizyphus, berries of Carissa, insect, small lizards and snakes.

Reptiles:

No reptiles species were sighted within the project area (core & buffer zone). Based on the interaction with villagers the common species of reptiles reported are Desert Skink (*Ophiomorus tridactylus*), Spiny tailed lizard, common monitor lizard, keel rock gecko, garden lizard, brilliant agama, etc.

15. LAND USE WITHIN CORE AREA OF ROW:

The existing land-use within the core zone (500 mts from boundary of RoW) of the project site comprise of 51.5% barren and sandy land followed by scrub land 25.0%, undulating terrain 14% and minimum area is built-up area i.e 1%. Table 5 gives detailed land-use distribution within core zone area.

Table 5: Land-Use within Core Zone Area of RoW

SI No	Class	Ha	Total Area	Percentage
1	Residential and Built Up area	63.0	6389.8	1.0
2	Scrub land	1598.2	6389.8	25.0
3	Agriculture	269.0	6389.8	4.2
4	Vegetation	271.3	6389.8	4.2
5	Barren and Sandy land	3293.9	6389.8	51.5
6	Undulating Terrain	894.3	6389.8	14.0
	Total	6389.762		100

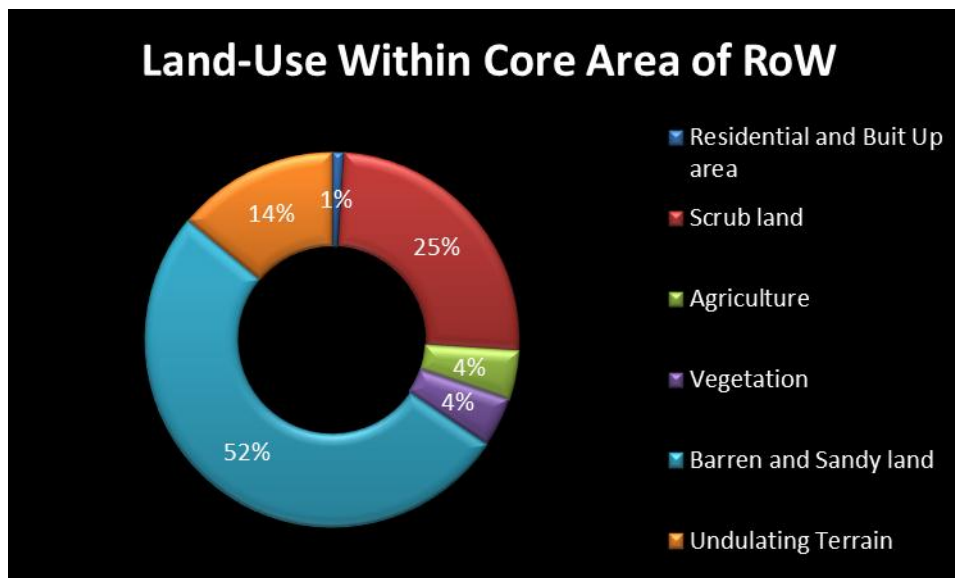


Figure 4: Graphical Representation of Land-Use within Core Area.

Conclusion: Based on the study of land-use distribution it can be concluded that the PRow area is mostly barren Land devoid of vegetative cover.

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16. MOVEMENT CORRIDOR OF ANIMALS:

No well-established animal movement corridors have been reported. Survey was carried out both the day to records the animals crossing at dawn, at dusk and peak hours of day. Interactions with locals in all the villagers were carried out residing near the RoW area. No defined or fixed route is noticed by the locals. They reported that animal's movement is not fixed. The forest department has identified and earmarked animals crossing area near Khuri Village of the Right of Way on the existing Jaisalmer – Myajilar Roads. Care will be taken that during design and implementation phase, proper animal's underpass is provided in consultation with the DCF DNP office. Sign Board where ever required by the DCF (DNP) will be provided. Appropriate speed regulator will be provided to prevent animals' casualty if they approach the roads during night time.



Animals Crossing at Km 45+ 400

Six locations has been identified by the DCF, Wildlife, Jaisalmer where animals casualty was commonly reported and need animals crossing in from of animals underpass to prevent animals approaching the roads. Even animal accident and crossing area signboard need to be placed 500 mts ahead on both the side of roads.

The Location of wild life accident as identified through wide letter no F ()Mis./DCFW LJSM/2016-17/ 2398 is given in Table 6.

Table 6: Locations of Animal's Accident area

S. No	Locations	Mitigations Measures
1.	Malan bhi ka Mandir	<ul style="list-style-type: none"> Animals Underpass Signboards of animals accident prone area Speed Limit Board Speed breakers CCTV installation if possible No Honk Zone
2.	Near Khuri Village	
3.	Bersiyala Fanta	
4.	Kesar Singh ka tala village	
5.	Fulia closure	
6.	Myajlar closure	

Google image showing the locations of animal's accident area is Appendix-III

PROJECT AREA REQUIREMENT:

The proposed construction and upgradation of existing road to two lanes with paved shoulder configuration involved diversion of 188.24 Ha, comprising private and DNP area. Out of the total area about 166.43 Ha of lands falls in the DNP. The Total area of existing road in the DNP is 21.813 Ha. The total area available with BRO as per their record considering 36.60m existing Right of Way (RoW) on both side of existing road is 229.701 Ha. This RoW was allocated to BRO by the PWD in 1961, when it was under its jurisdiction.

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17. IMPACT ASSESSMENT STUDY:

Based on the baseline study carried out within the DNP area and seeing the magnitude of the project Impact has been identified. To minimize the predicated impacts mitigation measures has been proposed.

1. Impact during Preparation Phase of the project:
2. Impact during Construction Phase of the Project
3. Impact during Operation Phase of the Project.

1. *Impact during Preparation Phase of the project*

a. Establishment of Labours Camps:

Mostly Local labours will be employed, for semi – skilled and highly skilled labours, labours camps will be established outside the National park boundary near the settlements.

Mitigation Measure: The location of the labour camps will be far away from the DNP Boundary. It will be identified in consultation with the DCF (DNP) office. No camping even temporary will be allowed within the DNP boundary.

b. Movement of Heavy Vehicles or Machineries:

To start the construction work, during planning phase heavy vehicles and machinery will be mobilized to the store yard. This uncontrolled movement within the DNP existing roads may leads to animals casualty or disturbance due to noise generated during the night time.

Mitigation Measures: During preparation phase, all the heavy vehicles will be moved to the material stack yard by the alternative route available in the study area. If no such routes are available, all care will be taken during the plying, speed limits will be as per park area norms. No night time movement of vehicles will be allowed.

c. Stacking of construction materials:

Stacking of construction material during preparation phase, in the project area may leads to animal's ill effect, if it contains hazardous material.

Mitigation Measures: No staking of material will be anticipated within the DNP boundary during preparation and construction phase of the project. Finished material, ready to be used will be brought to the construction site. All the left over material will be carried back to the stack yard during night time.

d. Setting of Hot Mixed Plant

The fumes and debris of hot mixed plant may affect the flora and fauna of the DNP. Animal casualty may be anticipated if they approach the Hot Mix Plant site. Animals may get stick to the hot bituminous if left uncovered.

Mitigation Measures: The location of the hot mixed plant will be as per the guideline for setting of hot mixed plant as mention in the Environment Protection Act 1986. The minimum distance at which it will be located will be 1km from DNP boundary. Permanent/temporary walls will be erected surrounding the hot mixed plant site and stack yards. Guards will be employed which will supervise the stack yard area.

d. Resource identification before start of Work:

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No raw materials like quarry stones, earth material required for road material, fire woods to fire hot mix plants, fuel woods for labours, herbs or wild vegetables, fruits, seed, nuts will be bought from the locals villagers sourced from the DNP area. Care should be taken that no wild meats consumption are allowed in the labours camps and as working labours. A noticed should be send form the DCF (DNP) as warning in this regards to labour camps, highlighting the punishment under the wildlife (Protection) Act-1972.

2. Impact during Construction Phase:

Major impacts anticipated during the construction phase, when cutting, levelling, pressing, filling, erection of culverts and bridges will be carried out. It will involve increase in plying of vehicles, increase in noise level due to vehicles movement; cutting, pressing, aerial lighting during night time, operation of D.G sets, etc.

Mitigation Measures: All the work will be carried under regulated and controlled condition. No night time work or aerial lighting will be allowed, no night time camping in the DNP area will be allowed, even discard of food and drinks material which can attract the animals or choke the animals intestine will be allowed in open. The contractor should have van in which the labours will have their food and left over will be discarded at the designated landfill site. The local labours will carry away the leftover food, plastic and other items along with themselves or the contractor should provide dustbins, which will be carried away at the end of work every day.

All the cutting, drilling, blasting if required will be carried in the presence of experts. All the D.G sets operating in the DNP area should have noise enclosure and thickly padded to prevent vibration generated. There should be daily noise monitoring carried out 1 meter distance form D.G sets location. The monthly report of which should be submitted to the DCF (DNP) office. The speed limits of all the vehicles should be within the Norms as laid down by the DCF (DNP) Jaisalmer. There should be training of all the drivers in this regards and helper should be provided on each vehicles to see if no animals are near the roads or are crossing the roads.

If young once of animals are reported or noticed during excavation of earth, it should be quickly handover to the DNP office or guards available in DNP area. The phone number of all the official of DNP official should be there with supervisor.

The best way of construction should be such that the contractor should hire an individual in consultation with the DCF (DNP), who should act as independent supervisor and report daily on phone to the DCF (DNP) through phone. He should be free from any type of interference from the contractor and should be available at the construction site. He should submit independent progress report to the DCF DNP monthly. He should be trained by the DCF (DNP) office on need to need basis.

3. Impact during Operation Phase:

The anticipated impact expected during operation phase will be continuous if not mitigated.

- a. Check Post: Currently the DNP has got three check post one near Myajilar Village and other near Sipala Village. There is one check post near Khuri Village which is functional. The two checks post at both the end are not functional and the contractor under the EMP budget should develop proper check post with camera installed. This online camera should be linked to DCF (DNP) office and recording of 24 hours should be on computer records. Hidden cameras should be installed at designated location in consultation with DNP office and all attached to centralized computer system. This will act as best supervision of roads and other activities of trans passé.
- b. No Honk signboard should be provided inside the DNP area.
- c. No Discard of waste, plastic, food signboard should be provided in the DNP area.

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- d. Speed limit and speed regulator and speed check instrument should be installed inside the DNP. The Guard at check post should fine such person on over speeding, on regular basis.
- e. Green Planation along the RoW should be carried out by the DNP and Budgets of plantation and maintenance be paid by the contractor.
- f. Regular checking of vehicles to see if no trap animals or hunt are carried in vehicles. Random check of vehicles will keep pressure on trans-passe not to hunt or trap wild animals.
- g. Animals crossing hooding should be placed and speed breaker be erected ahead of such locations.
- h. No night time plying is allowed until under emergency condition and travelling/tourist coming from different state. No vehicles are allowed to stop in DNP area without any reasons.
- i. The DCF (DNP) office should identify tourist location and list be published and are made available at all the check post. This will result in tourist directly going to tourist destination without intermediate halt.

राजस्थान सरकार
राजस्व/गुण-8/विभाग

क्रमांक एफ 3/1/73 [राजस्व/गुण-8/73 जयपुर, दिनांक 8.5.81

अधिसूचना

यतः राज्य सरकार को यह प्रतीत होता है कि इससे सम्बन्धित उपाबंध में परिनिश्चित क्षेत्र को उसमें पाये जाने वाले वन्य जीवों के संरक्षण, पुष्कारण एवं उनके विकास पर्यावरण के प्रयोजनार्थ उसके पारिस्थितिक, प्राणीजातीय, वनस्पति, भू संरचना तथा प्राणी विज्ञान संबंधी सहयोजन और महत्व के कारण राष्ट्रीय उद्यान के रूप में गठित करने की आवश्यकता है।

अतः वन्य जीव [संरक्षण] अधिनियम, 1972 [1972 का केन्द्रीय अधिनियम सं053] की धारा 35 की उप-धारा [1] के अधीन प्रदत्त शक्तियों के प्रयोग में, राज्य सरकार, उक्त क्षेत्र को एक राष्ट्रीय उद्यान जिसे कि "मरुस्थल राष्ट्रीय उद्यान जैसलमेर" के नाम से उदघोषित किया जायेगा, के रूप में गठित करने के अपने आशय की इसके द्वारा घोषणा करती है।

उपाबंध

मरुस्थल राष्ट्रीय उद्यान का सीमा कान

क्रम संख्या	निम्नलिखित जिले	विवरिणियाँ
उत्तरी सीमा	जैसलमेर	जैसलमेर धनाना सड 11 किलोमीटर स्टोन सं034 से सम तड जैसलमेर धनाना सड के साथ।

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पश्चिमी सीमा

- 2- * जैसलमेर सीमा से मेधालों की छावरी के लिए स्थित क्षेत्राधिकृत भाग तक सम-लुनार मार्ग के साथ
- 3- * साथ मेधालों की बाडी तक मार्ग के साथ
- 4- * छावरी गांव तक मार्ग के साथ
- 5- * इतानी गांव तक मार्ग के साथ ।
- 6- * कांरिया गांव तक मार्ग के साथ ।
- 7- * कांरिया वैद्य भाग तक मार्ग के साथ ।
- 8- * हतर गांव तक भाग के साथ ।
- 9- * झाक गांव तक भाग के साथ
- 10- * मियाजलार गांव तक मार्ग के साथ उसरा सं0868 के उत्तरी कोने तक
- 11- मियाजलार गांव जिला जैसलमेर में से उसरा सं0 000 के उत्तरी पश्चिमी कोने से सं0 852 के दक्षिण कोने तक । दक्षिण की ओर ।
- 12- * उसरा सं02024 के पश्चिमी कोने तक । गांव के मार्ग के साथ सं0 सं02016 दक्षिण पश्चिम की ओर ।
- 13- * सं0 सं02129 के दक्षिण पश्चिम के कोने तक । दक्षिण की ओर ।
- 14- * सं0 सं02153 के उत्तरी पश्चिमी कोने से पश्चिम की ओर ।
- 15- * सं0 सं02173 के दक्षिणी पश्चिमी कोने तक । दक्षिण की ओर ।
- 16- * सं0 सं02675 के उत्तरी पश्चिमी कोने तक । पश्चिमी की ओर ।
- 17- * सं0 सं02683 के दक्षिण पश्चिमी कोने तक । दक्षिण की ओर ।
- 18- * सं0 सं02670 के उत्तरी-पश्चिमी कोने तक । पश्चिम की ओर ।
- 19- * सं0 सं0 2626 के दक्षिणी कोने तक । दक्षिण की ओर ।
- 20- * मियाजलार गांव जिला जैसलमेर में से सं0 सं02624 के दक्षिणी कोने तक ।

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एकरी 2623 के उत्तरे होने तक

26.	"	खसरा संख्या 2623 के पश्चिमी कोने तक खसरा संख्या 2536 के उत्तरी-पश्चिमी कोने तक पश्चिमी की ओर
	"	खसरा संख्या 2584 के उत्तरी-पश्चिमी कोने तक दक्षिण की ओर
	"	खसरा संख्या 2575 के उत्तरी-पश्चिमी कोने तक पश्चिम की ओर
27.	सुन्दरी गाँव जिला बाड़मेर में से	खसरा संख्या 2573 के दक्षिणी-पश्चिमी कोने तक दक्षिण की ओर। गाँव मियाजलार जिला जैसलमेर की ओर गाँव-सुन्दरा जिला-बाड़मेर के बीच सीमा पर
28.	"	मियाजलार तथा सुन्दरा गाँव की सीमा के साथ खसरा संख्या 1140 के उत्तरी कोने तक।
29.	"	खसरा संख्या 158 दक्षिण-पश्चिम की ओर के पश्चिमी कोने तक
30.	"	खसरा संख्या 158 दक्षिण पूर्व की ओर के दक्षिणी कोने तक
31.	"	खसरा संख्या 160 के पश्चिमी कोने तक खसरा संख्या 159 तथा 160 दक्षिण पश्चिम की ओर की पश्चिमी सीमा के साथ।
32.	"	खसरा संख्या 156 के उत्तरी कोने तक उत्तर एवं पश्चिम की ओर
33.	सुन्दरा गाँव जिला-बाड़मेर में से	खसरा संख्या 226 के पश्चिमी कोने तक खसरा संख्या 158, 153, तथा 226 की पश्चिमी सीमा के साथ, दक्षिण पश्चिम की ओर
34.	"	खसरा संख्या 232 के उत्तरी कोने तक दक्षिण पूर्व की ओर
35.	"	खसरा संख्या 236 के पश्चिमी कोने तक खसरा संख्या 232, 236 की पश्चिमी सीमा के साथ दक्षिण पश्चिम की ओर
36.	"	खसरा संख्या 241 के दक्षिणी कोने तक खसरा संख्या 241 को धरने वाली सीमा के साथ।
37.	"	खसरा संख्या 298 उभे धरते होंगे के दक्षिणी कोने तक
38.	"	खसरा संख्या 820 के उत्तरी कोने तक गाँव के रास्ते के साथ, खसरा सं. 837 दक्षिण पूर्व की ओर।
39.	"	खसरा संख्या 820 के पश्चिमी कोने तक दक्षिण पश्चिम की ओर
40.	"	खसरा सं. 800 के पूर्वी कोने तक खसरा सं. 799 तथा 800 की उत्तरी सीमा के साथ दक्षिण पूर्व की ओर खसरा संख्या 801 के पश्चिमी कोने तक खसरा संख्या 800 की पूर्वी सीमा के साथ दक्षिण पश्चिम की ओर

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62.	सुन्दरा गाँव में से जिला बाजमेर	सुन्दरा सं. 3624 के उत्तरी कोने तक सुन्दरा संख्या 3626 में से दक्षिण पूर्व की ओर
63.	"	सुन्दरा संख्या 3633 के पूर्वी कोने तक सुन्दरा संख्या 3624, 4025, 4024, 3632 तथा 3633 की उत्तरी पूर्वी सीमाओं के साथ, उन्हें अपवर्जित करते हुये, दक्षिण पूर्वी की ओर
64.	"	सुन्दरा संख्या 3999 के पूर्वी कोने तक सुन्दरा संख्या 3633, 4007, 4006, 3973, 4003 तथा 3999 की उत्तरी पूर्वी सीमाओं के साथ, उन्हें अपवर्जित करते हुये ।
65.	घ	सुन्दरा संख्या 3995 के उत्तरी कोने तक उत्तर पूर्वी की ओर
66.	"	गाँव के रास्ते के संगम तक सुन्दरा संख्या 3882, तथा सुन्दरा सं. 3993 की उत्तरी पूर्वी सीमा दक्षिण की ओर गाँव के रास्ते के साथ
67.	"	सुन्दरा संख्या 4227 के दक्षिण कोने तक दक्षिण पूर्व की ओर
68.	"	सुन्दरा संख्या 4248 के दक्षिणी पश्चिमी कोने तक सुन्दरा संख्या 3989 की उत्तरी तथा पूर्वी सीमा के साथ, उसे अपवर्जित करते हेयु
69.	"	सुन्दरा संख्या 4242 के दक्षिणी कोने तक सुन्दरा संख्या 4248, 4244, 4243 तथा 4242 की दक्षिणी तथा पश्चिमी सीमाओं के साथ, उन्हें घेरते हुये
70.	"	सुन्दरा सं. 4259 के पूर्वी किनारे तक सुन्दरा सं. 4253, 4259 की उत्तरी सीमाओं के साथ साथ, उन्हें अपवर्जित करते हुये
71.	"	सुन्दरा सं. 4227 की उत्तरी सीमा के संगम तक तथा ग्राम सुन्दरा और ग्राम जैसिन्धर के बीच की सीमा
72.	दक्षिणी सीमा ग्राम जैसिन्धर, में से जिला बाजमेर	सुन्दरा ग्राम के सुन्दरा सं. 4257 की उत्तरी पूर्वी सीमा के संगम और ग्राम सुन्दरा तथा जैसिन्धर के बीच की सीमा सुन्दरा सं. 189 के पश्चिमी कोने तक गाँव की सीमा के साथ-साथ उत्तर पूर्व की तरफ
73.	"	सुन्दरा सं. 310 का उत्तरी कोना सुन्दरा संख्या 317, 315, 314, 313, 312, और 130 की उत्तरी सीमाओं के साथ-साथ, उन्हें अपवर्जित करते हुए
74.	ग्राम जैसिन्धर में से जिला बाजमेर	सुन्दरा सं. 199 के पूर्वी कोने तक सुन्दरा सं. 310, 309 और 298 की उत्तरी तथा पूर्वी सीमा के साथ-साथ उन्हें अपवर्जित करते हुये
75.	"	सुन्दरा संख्या 297 के पश्चिमी कोने तक सुन्दरा सं. 298 की उत्तरी तथा पूर्वी सीमा के साथ-साथ, उन्हें अपवर्जित करते हुए
76.	"	सुन्दरा संख्या 287 के उत्तरी कोने तक सुन्दरा सं. 295, 290 तथा 287 की उत्तरी सीमाओं के साथ-साथ उन्हें अपवर्जित करते हुये
77.	"	सुन्दरा संख्या 273 के उत्तरी कोने तक सुन्दरा सं. 287, 288, 272 तथा 273 की उत्तरी सीमाओं के साथ साथ, उन्हें अपवर्जित करते हुए यह सिरा भी ग्राम जैसिन्धर तथा मेदसार करते हुये यह सिरा भी ग्राम जैसिन्धर तथा मेदसारत की ग्राम सीमा पर है ।
78.	ग्राम जैसिन्धर में से	जैसिन्धर की सीमा स्तम्भ सं. 343 और मेदसार की सं. 15

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क्र.सं.	विवरण	विवरण
	जिला-बाड़मेर	के साथ साथ, दक्षिण की तरफ ।
79.		खसरा सं. 99 के दक्षिणी कोने तक । खसरा सं. 147, 90, 91, 92, 106, 104, 103 तथा 100 की उत्तरी सीमाओं के साथ साथ उन्हें अपवर्जित करते हुए । पूर्व की तरफ ।
80.		खसरा सं. 368 के पूर्वी कोने तक । खसरा सं. 361, 369 तथा 368 की उत्तरी सीमाओं के साथ साथ, उन्हें अपवर्जित करते हुए पूर्व की तरफ ।
81. उ		खसरा सं. 399 के दक्षिणी कोने तक । खसरा सं. 388, 390, 399, 394, 395, 396 और 397 की उत्तरी सीमाओं के साथ साथ उन्हें अपवर्जित करते हुए, पूर्व की तरफ ।
82.		खसरा संख्या 538 के उत्तरी कोने तक । खसरा सं. 398, 559, 553, 552, 547, 540, 539, तथा 538 की उत्तरी सीमाओं के साथ साथ, उन्हें अपवर्जित करते हुए पूर्व की तरफ ।
83.		खसरा सं. 308 के उत्तरी कोने तक । उत्तर की तरफ ।
84.		खसरा सं. 612 के उत्तरी कोने तक । उत्तरपूर्व की तरफ ।
85.		खसरा सं. 621 के पूर्वी कोने तक । खसरा सं. 624, 619, 620 तथा 629 की उत्तरी सीमाओं के साथ साथ, उन्हें अपवर्जित करते हुए, दक्षिण पूर्व की तरफ ।
86.		खसरा सं. 746 के दक्षिणी कोने तक । खसरा सं. 656, 654, 652, 650, 740 तथा 745 की उत्तरी सीमाओं के साथ साथ, उन्हें अपवर्जित करते हुए, पूर्व की तरफ ।
87.		खसरा सं. 234 के पूर्वी कोने तक । खसरा सं. 746, 847, 846, 837, तथा 234 की दक्षिणी सीमाओं के साथ साथ, उन्हें घेरते हुए, पूर्व की तरफ ।
88. क		खसरा सं. 815 के दक्षिणी कोने तक । उत्तर पूर्व की तरफ ।
88.		खसरा सं. 824 के दक्षिणी कोने तक । खसरा सं. 837 की उत्तरी सीमा के साथ साथ, उसे अपवर्जित करते हुए, पूर्व की तरफ ।
89.		खसरा सं. 828 के उत्तरी कोने तक । खसरा सं. 824 तथा 802 की दक्षिणी सीमा के साथ साथ, पूर्व की तरफ घेरते हुए ।
90.		खसरा सं. 1784 के दक्षिणी कोने तक । खसरा सं. 1776 के ग्राम पथ के साथ साथ, दक्षिण पूर्व की तरफ ।
91.		खसरा सं. 1786 के पूर्वी कोने तक । खसरा सं. 1784 तथा 1786 की दक्षिणी एवं पूर्वी सीमा के साथ साथ, उन्हें घेरते हुए, पूर्व की तरफ ।
92. क	ग्राम हरसानी में से जिला बाड़मेर	सीमा स्तम्भ सं. 1686 के पश्चिमी कोने तक खसरा सं. 1948 में से, पूर्व की तरफ ।
92.	ग्राम मेदसार में से जिला बाड़मेर	सीमा सं. 386 तक । ग्राम मेदसार तथा हरसानी, जिला बाड़मेर ।
93.	ग्राम हरसानी में से जिला बाड़मेर	खसरा सं. 1669 के दक्षिणी कोने तक । खसरा सं. 1655, 1685, 1680, 1678, 1664 तथा 1669 की दक्षिणी सीमाओं के साथ उन्हें घेरते हुए पूर्व की तरफ ।
94.		खसरा सं. 1715 के दक्षिणी कोने तक । खसरा सं. 1670 की उत्तरी सीमा के साथ साथ, उसे अपवर्जित करते हुए ।

Desert National Park Bio-diversity Report

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92. ग्राम हरसानी, उत्तरा सं-1756 के पूर्वी कोने तक, उत्तरा सं। 714। 713, में से जिला 1712, 1750, 1751 और 1756 की उत्तरी सीमाओं बाड़मेर के साथ साथ, उन्हें अपवर्जित करते हुए, पूर्व की तरफ।
96. " उत्तरा सं- 1769 के दक्षिणी कोने तक, उत्तरा सं- 1757, 1783 1782, 1781, 1771 और 1770 की पूर्वी तथा उत्तरी सीमाओं के साथ साथ, उन्हें अपवर्जित करते हुए, पूर्व की तरफ। यह स्थल शिव गदरा रोड़ पर है।
97. " शिव गदरा रोड़ पर किलोमीटर स्टोन सं-88 तक
- पूर्वी सोमा
98. जिला बाड़मेर शिव गदरा रोड़ पर किलोमीटर स्टोन सं-68 से हरसानी में से डामर रोड़ के साथ साथ, उत्तर की तरफ।
99. जिला बाड़मेर डीजर रोड़ तक, ट्रेक के साथ साथ, उत्तर की तरफ।
100. में से, गिरब तक, ट्रेक के साथ साथ, उत्तर की तरफ।
101. " क्वासारी तक, उत्तर की तरफ ट्रेक के साथ साथ।
102. " क्वासारी, उत्तर की तरफ ट्रेक के साथ साथ।
103. " जिला जैसलमेर में सोदर तक, ट्रेक के साथ साथ, उत्तर की तरफ।
104. जिला जैसलमेर अठिया तक, ट्रेक के साथ साथ, उत्तर की तरफ।
105. में से बमाड़ा तक, ट्रेक के साथ उत्तर की तरफ।
106. " कहाड़िया तक, ट्रेक के साथ साथ, उत्तर की तरफ।
107. " खड़ी तक वाया नखतर की टाणी, नहारतह की टाणी ग्राम ट्रेक के साथ साथ, उत्तर की तरफ।
108. " जैसलमेर पर किलोमीटर स्टोन सं-35 तक मियाजिनार रोड़, डामर रोड़ के साथ साथ, उत्तर की तरफ।
109. " कुम्हार कोठा तक, ग्राम ट्रेक के साथ साथ, उत्तर की तरफ।
110. " जमरा तक, ग्राम ट्रेक के साथ साथ, पूर्व की तरफ।
111. " लनोर्ड तक, ट्रेक के साथ साथ, उत्तर पूर्व की तरफ।

3 वादेश,
 (जानन्द मोहन छाल)
 जयसम सचिव

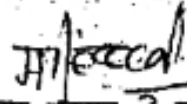
Desert National Park Bio-diversity Report

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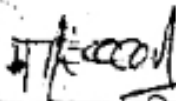
प्रतिलिपि निम्न को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है:-

1. निदेशक, मृदुण एवं लेखन सामग्री, राजस्थान, जयपुर को असाधारण राजपत्र में प्रकाशनार्थ ।
2. मुख्य वन संरक्षक, राजस्थान, जयपुर ।
3. मुख्य वन्य जीव प्रतिसालक, राजस्थान, जयपुर ।
4. वन संरक्षक, महस्थल राष्ट्रीय उद्यान, जैसलमेर ।
5. उप वन संरक्षक, बाड़मेर ।
6. पुलिस महानिरीक्षक/महानिरीक्षक सीमा सुरक्षा दल, जोधपुर ।
7. उप महानिरीक्षक पुलिस, जोधपुर रेंज ।
8. उप महानिरीक्षक, आर०ए०सी०जोधपुर ।
9. पुलिस अधीक्षक, बाड़मेर/जैसलमेर ।
10. जिलाधीश, बाड़मेर/जैसलमेर* वे कृपया वन्य जीव सुरक्षा अधिनियम 1972 की धारा 35(3) के अन्तर्गत उक्त अधिनियम की धारा 19 से 26 तक दोनों को शापित करते हुए के अनुसार जांच आदि की आवश्यक कार्यवाही करें एवं इन सम्बन्ध में की जाने वाली कार्यवाही से राज्य सरकार को समय समय पर अवगत करावें ।
11. कार्मिक एवं प्रशासनिक विभाग, प्रशासनिक अनुभाग-8 विभाग को । अतिरिक्त प्रतियों सहित ।


उप शासन सचिव

प्रतिलिपि निम्न को भी सूचनार्थ प्रेषित है:-

1. समस्त सचिव/आयुक्त, राजस्थान, जयपुर ।
2. सचिव, राज्यपाल, राजस्थान, जयपुर ।
3. सचिव, मुख्य मन्त्री, राजस्थान, जयपुर ।
4. समस्त निजी सचिव मंत्रीगण/राज्य मंत्रीगण ।
5. निजी सचिव, मुख्य सचिव, राजस्थान, जयपुर ।
6. सचिव, राजस्थान विधान सभा, जयपुर ।
7. रजिस्ट्रार, राजस्थान उच्च न्यायालय, जोधपुर/जयपुर ।
8. रक्षी पत्रावली ।


उप शासन सचिव

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Appendix-II

BRO Letter

96 Road Constr Coy (GREF)

PIN - 930096

C/O 56 APO

20 Jun 2017

2091/NHAI/ 59 /E2

Project Director

NHAI

PIU

Bikaner (Raj)

PREPARATION OF FEASIBILITY STUDY/DETAILED PROJECT REPORT OF SELECTED STATE ROAD STRETCH FOR TWO/FOUR LANING WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA SCHEME - WIDTH OF EXISTING RIGHT OF WAY (ROW) FOR JAISALMER TO MYAJLAR ROAD - REG

Sir,

1. Reference your office letter No. 16010/1/2017/Bharat Mala (Pkg-07)/2835 dated 14 Jun 2017.
2. It is intimated that as per available record with this office, the width of existing RoW of Jaisalmer-Myajlar is 36.60 Mtr.
3. This is for your information please.


(Krishna Prasad)
Maj
Officer Commanding

Copy to

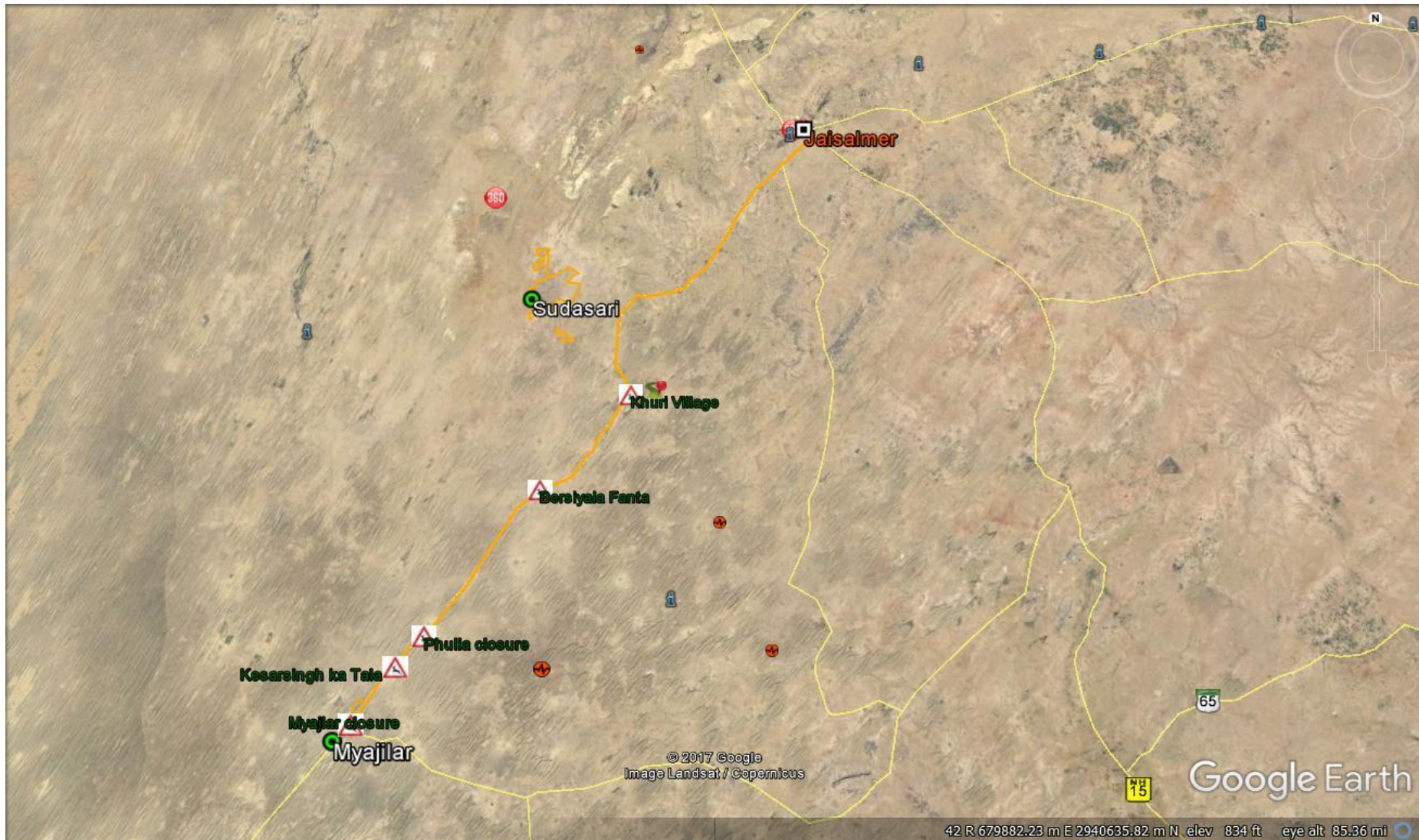
1 HQ 45 BRTF
C/O 56 APO

- For info please wrt NHAI letter mentioned at Para 1 above.

"Widening and Strengthening of Myajjar-Jaisalmer section of NH-11 from Km 0.000 to Km 101.197(passing through Desert National Park in between km 0.855 to km 63+615) & Sundara – Myajjar section of NH-70 (passing through Eco – Sensitive Zone of Desert National Park from Km 46+000 to Km 82+600) to two lane with paved shoulder NH configuration in the State of Rajasthan under BHARAT MALA Project

Appendix-III

Locations of Wild Animal's Accident Area



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