

MANAGEMENT PLAN



COMMUNITY RESERVE FAZILKA, PUNJAB

**PANNIWALA MAHLA
GUMJAL
HARIPURA
DIWANKHERA**

2020-2029

**KALPANA K, I.F.S
Divisional Forest Officer
Ferozpur Wildlife Division
Punjab**

PREFACE

The Community reserve in Fazilka owes its uniqueness to the presence of Black Bucks. It is characterized by the presence of 4 revenue villages predominantly occupied by Bishnoi community. Mostly area is dry and irrigated by canals. Since time immemorial the local community have been protecting the wildlife in this area. This is the main reason that Black Bucks are available there. The Bishnois are India's original environmentalists who inspired the Chipko Movement. The famous Chipko Movement was inspired by the true story of Amrita Devi Bishnoi who refused to let the King's men cut trees in her village. Her head was severed and more than 300 people who did the same were killed for trying to protect the trees.

The community reserve, over the years have gone through a lot of changes in land use pattern, irrigation system, cropping patterns etc which pose severe threats owing to its private nature and it is a challenging task for the department to effectively carry out the management activities inside the community reserve. Any effort for conservation in the community reserve area is impossible without the will of the local people owing to private ownership of land and all rights are allowed here except hunting, shooting, killing and capturing of any kinds of animals and birds as per notification.

The management plan in its present shape is the first plan written for the community reserve. Non availability of adequate scientific baseline data and scientific documents has been a major constraint in preparing the plan and hence the plan has a lot of scope for improvement owing to the unique nature of the community reserve and complex problems associated with it owing to its private nature. This plan is written for the period 2020 to 2029 and it would provide a basis for scientific management of the area and would help in formation of a system for further management in landscape level by including the protected areas in the vicinity of the community reserve and by incorporating the migration pattern and distribution studies of the blackbucks and conservation of state animal of Punjab in the future.

Kalpana K I.F.S
Divisional Forest Officer
Ferozepur Wildlife Division

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I express my sincere thanks to local people of Panniwala Mahla, Gumjal, Haripura and DiwanKhera for their continuous support for the conservation and management of the community reserve and their valuable inputs to our department.

Kalpana K, I.F.S
Divisional Forest Officer
Ferozepur Wildlife Division

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PART-1

SUMMARY OF FACTS ON WHICH THE PROPOSALS ARE BASED

Chapter-1

General Description of Community Reserve

Community Reserve (Panniwala Mahla, Gumjal, Haripura and Diwan Khera) is situated in Fazilka district and is spread over an area of 16861 acres (6744.4 Ha) . It was declared as a Community Reserve under Govt. Notification no. 34/4/2015/Ft-5/44896211 dated 27/3/15. It comprises the area of 04 villages of Abohar Tehsil (Sub-Tehsil Khuian Sarvar) of Fazilka District i.e. Panniwala Mahla, Gumjal, Haripura and DiwanKhera. The concerned panchayats of four villages had given their consent in the form of resolutions to protect the wildlife to declare these villages as community reserve. Therefore, in exercise of the powers conferred by sub section 36(c) of Wild Life (Protection) Act,2002 the Governor of Punjab declared the area comprising 4 villages to be a Community Reserve for the purpose of protecting, propagating and developing wildlife and its environment. The entire area of the community Reserve belongs to private farmlands belonging to four villages. Like Abohar Wildlife Sanctuary, the people of these villages are mainly Bishnois. community reserve is a unique success story of wildlife Conservation where Bishnoi community on its own has joined hands to protect the State Animal, Black Buck which is considered sacred by them. Blue Bull is another mammal protected religiously.

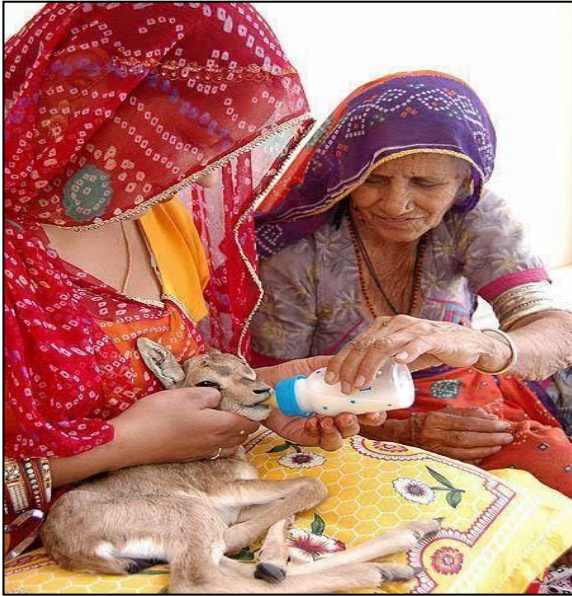


Figure 1.1:- Bishnoi Women feeding blackbuck

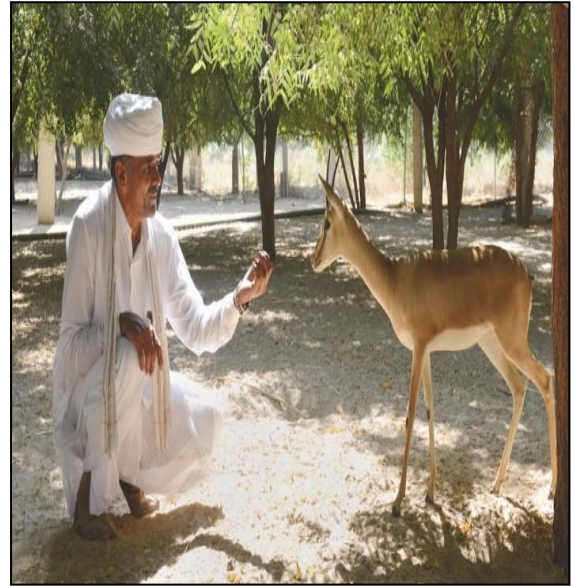


Figure 1.2:- Bishnoi Man and blackbuck

The people of these villages are mostly Bishnois. They help to conserve the whole wildlife. This is the reason that Black Buck, the precious species of wildlife is protected in Punjab. They fight against the poachers and help the wildlife staff in protection. The other communities which live in the villages also helpful to protect them. The soil of the area is fertile and the canal water is used for irrigation. Some land is Barani in Gumjal Village. The area is suitable for the Black Bucks according to their habitat. In summers the days are very hot and temperature touches to 50 degree Celsius. There are many types of crops like Wheat, Barley, Cotton, Pulses, Rice etc cultivated in this area. Some natural grasses are also available to feed the black Bucks. Usually the Black Bucks do not destroy the crops due to these grasses.

There are many other species of wildlife and plants in the community reserve area i.e. like Neel Gai, Jackal, Fox, Jungle Cat, Doves, Partridges, Blue node pigeon, pigeon, peacocks, parakeets and sparrows. In plants, Kikkar, Shisham, Beri, Safeda, Pipal, Jand etc. are the predominant one.

Figure 1.3:- Map depicting the location of community reserve in Punjab

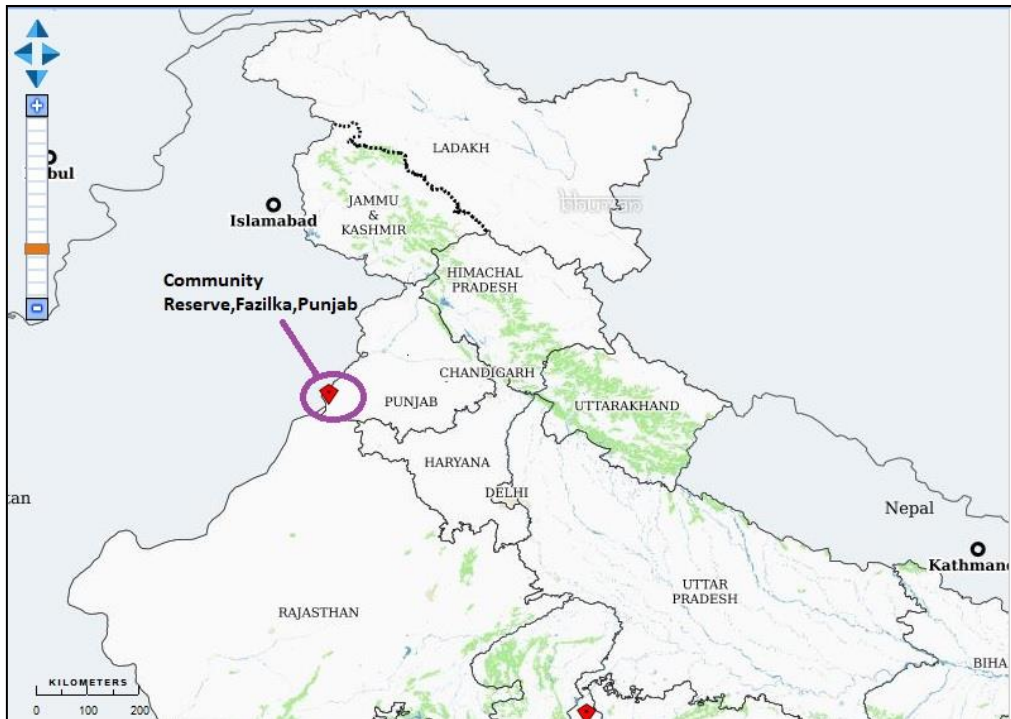


Figure 1.4:- Map depicts the four villages comprising the community reserve.



GOOGLE EARTH MAP OF FOUR VILLAGES IN COMMUNITY RESERVE

Figure 1.5:- VILLAGE DIWANKHERA

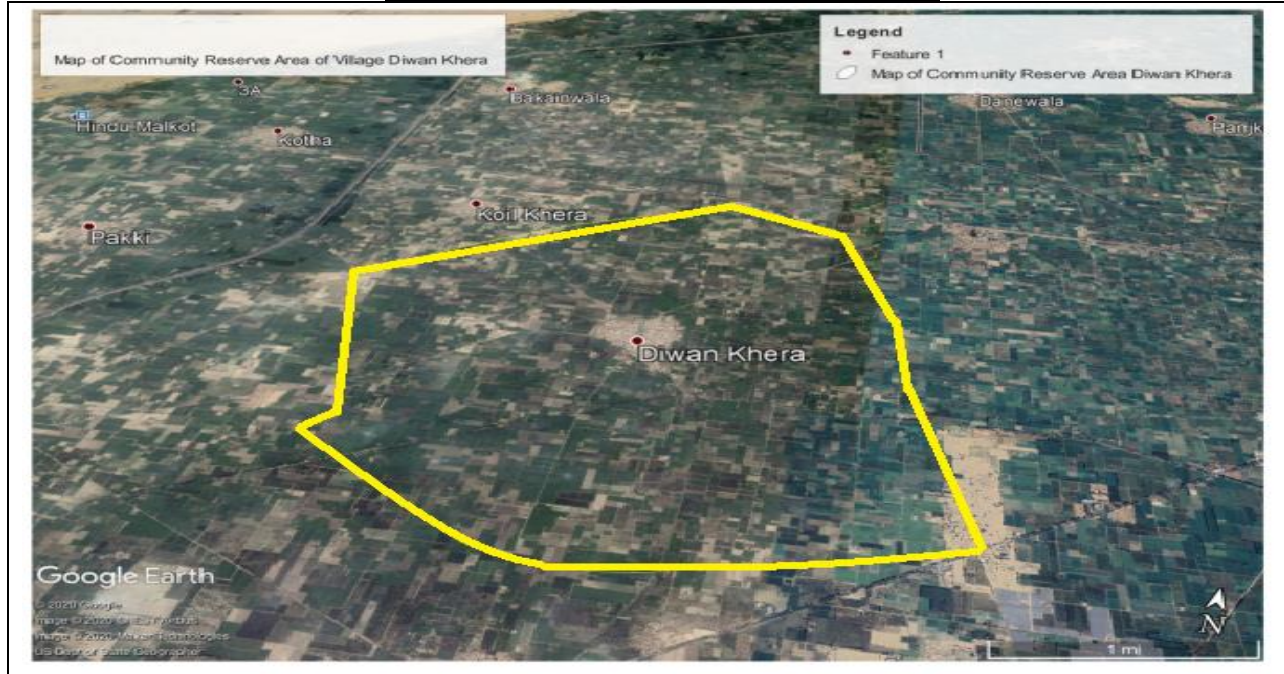


Figure 1.6:- VILLAGE HARIPURA

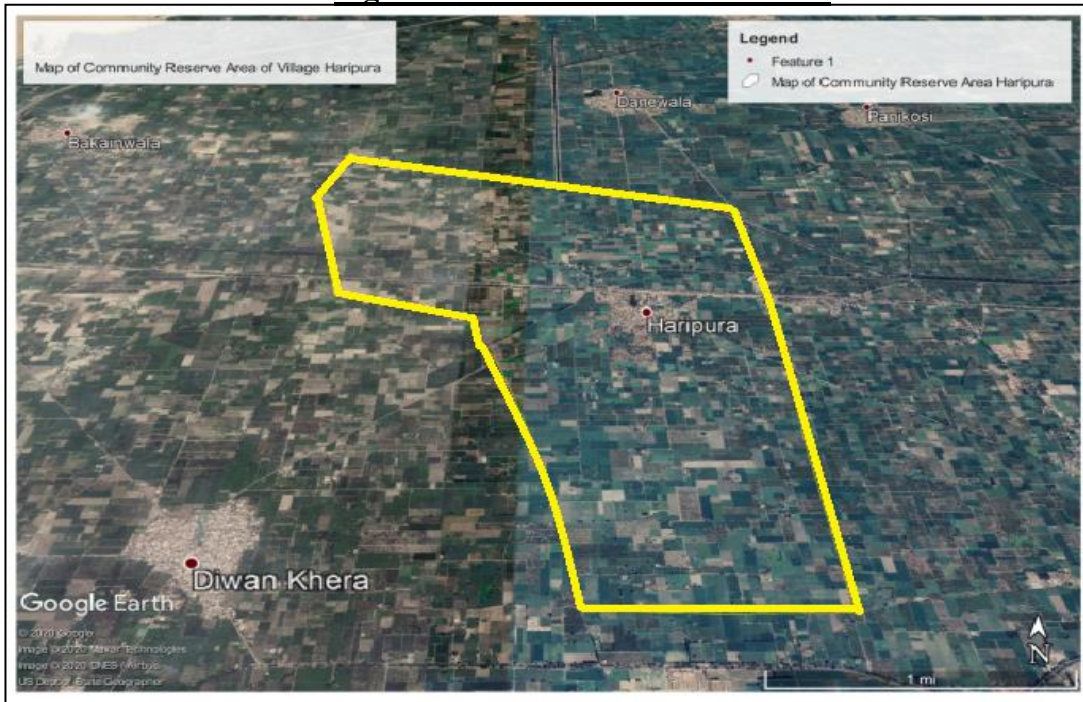


Figure 1.7:- VILLAGE PANNIWALA

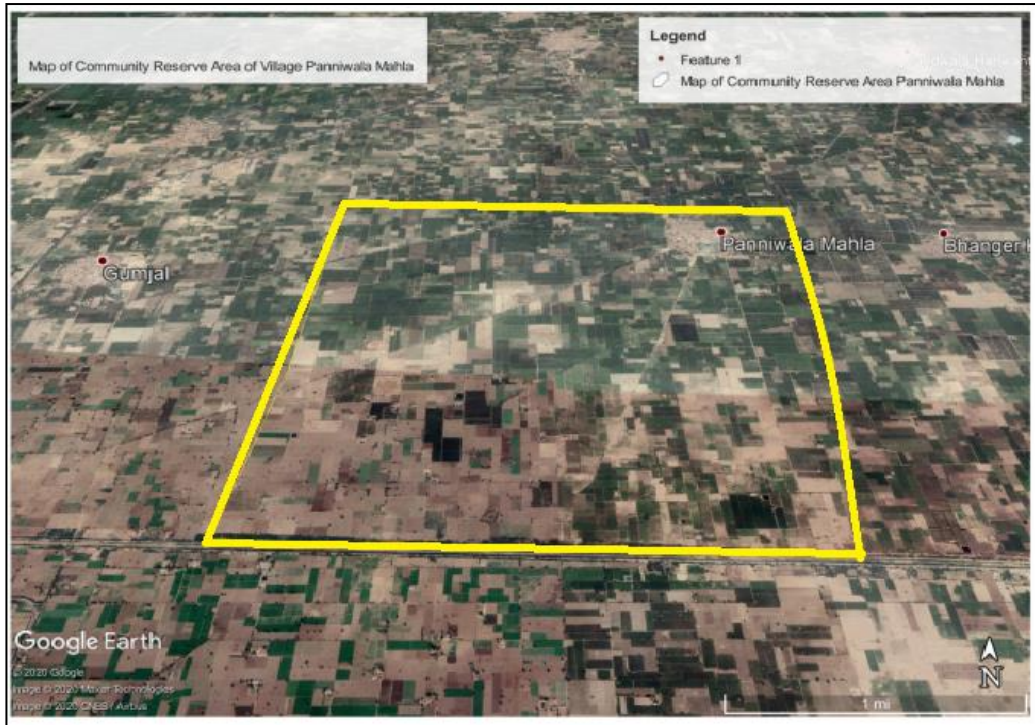
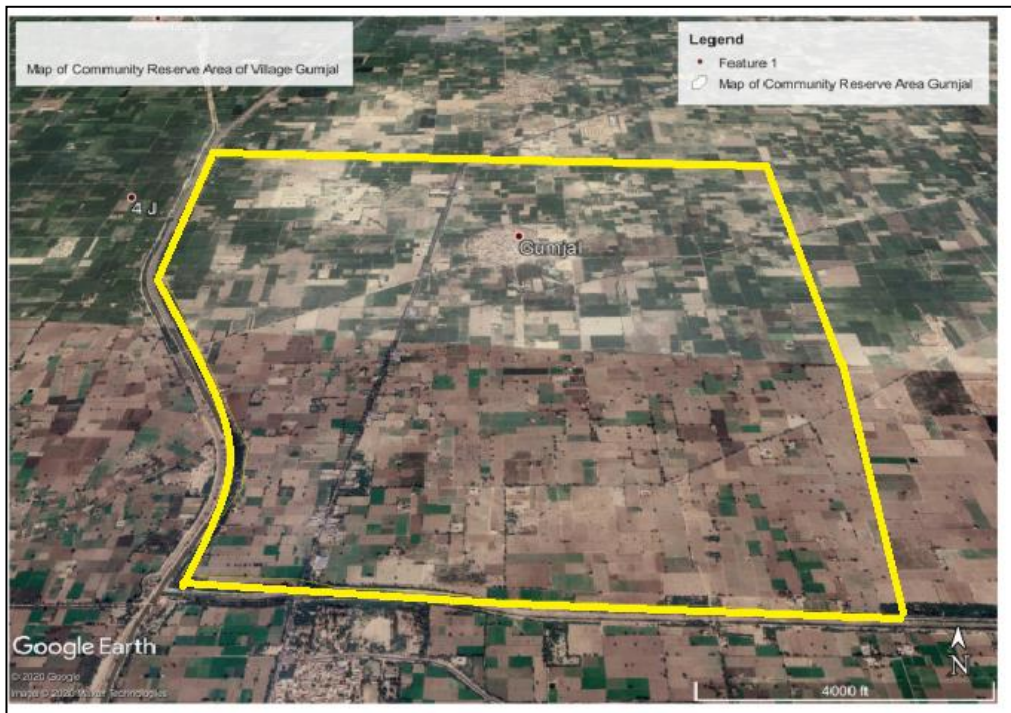


Figure 1.8:- VILLAGE GUMJAL



1. Name, Location, Constitution and Extent of Area.

Community Reserve in Fazilka basically comprises of four villages, Panniwala Mahla, Gumjal, Diwan Khera & Haripura . It falls in Abohar Tehsil (Sub-Tehsil Khuian Sarwar), Fazilka District (Punjab). The roadsides and canal sides are forest area. Four villages are located in the Community Reserve and in all villages the people are mostly Bishnois. The entire 3996 acre area of village Panniwala Mahla, 3762 acre area of village Gumjal, 3414 acre area of village Haripura and 5689 acre area of village Diwan Khera comprises the community reserve. Total Area under Community Reserve in Fazilka is 16861 Acres (6744.4 Ha.

1.1 Physical & Bio-Geographical Location

The community reserve is covering an area of 16861 acres. Panniwala Mahla Village of Community Reserve is situated on Abohar-Sri Ganganagar Road and NH62. It is about 32.4 Km from Abohar. Gumjal Village of Community Reserve is attached to Abohar-Sri Ganganagar Road and NH62 through link road. It is about 35.2 Km from Abohar. The North Boundaries of these Villages consisting of Village Usman Khera and Kallar Khera. In East of these villages, there is Bhangar Village. In South Village Sadhuwali and Chak Ganesha wala of Rajasthan State are there and in west there is state boundary of Rajasthan. Haripura Village of Community Reserve is attached to Abohar-Sri Ganganagar Road through link road via khuian Sarwar. It is 19.2 Km from Abohar via Abohar-Sri Ganganagar Road, 22.7 Km Via NH-62 and 21.3 Km via Hindumalkot and Nh-62. It is at a distance of 22.8 Km from Panniwala Mahla Village of community reserve and 25.3 Km from Gumjal Village of community reserve. Diwan Khera Village of Community Reserve is situated on Abohar-Sri Ganganagar Road and Diwan Khera-Khuian Sarwar Road. It is

about 20.8 Km from Abohar. It is at a distance of 18 Km from Gumjal Village, 15.5Km from Panniwala Mahla Village and 4.3 Km from DiwanKhera village. The North Boundaries of Haripura and Diwankhera village comprises Koel Khera, Danewala and Bakainwala. In East there are Khuian Sarwar and Daulatpur village. In South there are Daulatpura and Gidrawali Village and in West koel Khera, Bakainwala and Panjawa Villages are there.

1.2 Approach and Access

The Community Reserve is approachable both by Bus and by Rail. The nearest railway station is Abohar. It is possible to reach there from Abohar-Sri Ganga Nagar Road and Hindumalkot and Nh-62. . The nearest Airport is in Bhatinda. In the Community Reserve area there are pucca roads and kacha roads to approach to see the Black Bucks in the fields.

1.3 Statement of Significance

The community reserve is famous for Black Bucks. In Punjab Abohar Wildlife Sanctuary and community reserve area is the only area which has Black Bucks. Mostly area is dry and irrigated by canals. Whole area is under cultivation as it comprises of private lands. There are so many species of wildlife and plants.

The people are mostly Bishnois. This is the main reason that Black Bucks are available there. The other communities living in the areas are Jats and Harijan. Bishnois have already setup an N.G.O All India Jeev Raksha Bishnoi Sabha which is doing a good job to protect the wildlife with the cooperation of wildlife department.

They give every information about poachers to the department and help the wildlife staff when needed.

Why the Bishnois protect the wildlife? In brief their sentimental and religious thinking force them to do it. Their religion was initiated by their **Guru Shri Guru Jambeshwar(or Jambaji)** about 500 years ago. The Guru propagated 29 tenets, giving his followers the name ‘Bishnoi’ or ‘Twenty-niners’. Two of the main tenets are; “**Jeev Daya Palani**” which means Be compassionate / kind / merciful to all living beings and “**Runkh Lila Nahi Ghave**” which means Don’t cut green trees. In this way Shri Guru Jambeshwar Ji had made rules for his followers to the goodness of human being and taught not to kill any creation of God. Therefore Bishnois are bound to protect wildlife.

Bishnois have a great history. About 363 Bishnois (men & women) sacrificed their lives to save the green trees at Khajri in Rajasthan. Now this area is development as symbol of save environment and annual function is held there every year by All India Jeev Raksha Bishnoi Sabha to remember their sacrifice to protect the plants so that the new generation can get a lesson.



Figure 1.9:- Event that inspired Chipko Movement

In their religious views Shri Guru Jambheshwar Ji helped those who save both animal & trees. They generally said where there is Krishan Mirg (Black Buck Deer), there is original Love and Krishan Mirg is available only where there is holy land so where the Black Buck remains that region is holy region.

Every village of the Community Reserve has its own school. There are Higher Secondary, High, Middle & Primary schools. All villages are connected with roads.

The Black Bucks are living in the fields of the Community Reserve area. They eat grasses and some little crops and do not harm the big crops. In 1980-81, Gurcharan singh, Wildlife Inspector did an experiment about this, in the fields of Sh. Sant Kumar Bishnoi, President, All India Jeev Raksha Bishnoi Sabha. He with the help of master vishwas fenced two acres of wheat with barbed wire and did not allow any Black Buck in that 2 acres. Equal water and fertilizers were put in adjoining fields. The yields of fenced and unfenced area was not different.

So the Black Bucks are not so harmful to crops of the area. This is also the reason why people help to protect the Black Buck in the area

There are so many other animals and birds in the Community Reserve area such as Nilgai, Jackal, Fox, Jungle Cat and so many other birds like peacocks, Partridges, dove, pigeon, parakeets, wood cutter, Kathphora, Manos, Owls, Shikra, Crow, Green Bee eaters etc. and so many reptiles like snakes, kandiala etc. In the village ponds Tortoise, Frogs and fish etc. are available.

Vegetation , Plants and crops

This area is mostly fertile and agriculture has been done in the whole area. The main crops are Cotton, Sugarcane, Govara, Jawar, Wheat Barely ,Mustard and some green fodder are also cultivated here. Malta, Mosumi, Kinnow, Lemon, Grapes, Jamun,

Badam and Ber are more important fruit bearing species that are cultivated in Community Reserve area.

Irrigation System

The Canal Water is only way to irrigate the fields. When the canals go dry there is a big problem of drinking and irrigation water. The earth water is much deep, about 50 feet to 120 feet and ground water is not fit for the crops and as well as human being.

Temperature

This is a dry area. In Summer the heat reaches its peak mercury goes upto 48⁰ Celsius in May & June and in Winter it ranges from 2⁰ Celsius to 10⁰ Celsius.

Economic status

The area is mostly fertile and the people are rich. The main occupation of people in this area is agriculture. Some land lords have large holdings of land and some small farmers but all live a good life. The labour person also get good daily wages. Mostly all land lords have their own tractors and own agriculture instruments. Cars, Jeeps, Scooters and Motor Cycle are common vehicle in the area. Most of the people have their own conveyance. Every village has bus service .Some people depend on goats & sheep rearing, who are known as Bajigar.

Figure 1.10:- View of Community Reserve, Fazilka



1.4 Perceived values of Community Reserve

The community reserve is of immense significance as described below:

1.4.1 Ecological and environmental value

The area acts as a unique ecosystem for the state animal of Punjab “Blackbuck” due to its unique semi arid environment and helps in maintaining ecological balance and ecological security of, thus making it an important conservation unit of Punjab.

1.4.2 Zoological value

It is a home to wide variety of fauna and plays a great role in maintaining the unique biodiversity of our country. This relatively small area plays a vital role in protecting habitat for wide-ranging species such as blackbuck, nilgai, jackal etc, which require

large tracts of habitat and often disperse beyond the boundaries of nearby protected areas.

1.4.3 Botanical Value

The Original terrestrial vegetation of the area can be classified as "Northern Tropical Dry Deciduous Forest". The vegetation is semi arid in nature and consists of semi arid trees, shrubs, grasslands and also agricultural fields and orchards which serve as a suitable habitat for species like blackbuck and nilgai.

1.4.4 Cultural and historical value

This protected area was declared at the request of Bishnoi community who play a huge role in the protecting the wildlife. There are many Bishnoi temples. In their religious view, Shri Guru Jambheshwar Ji helps those who save both animal & trees. They generally believe where there is Krishan Mirg (Black Buck), there is original Love and Krishan Mirg is available only where there is holy land. So, where the Black Buck remains that region is considered a holy region.

1.4.5 Recreational Value

The community reserve provides tremendous recreational value for nature tourism. Moreover, wildlife and nature viewing opportunities help in environmental education, and to help bring about a sense of responsibility for the conservation of nature in humans. The area has a huge scope for eco tourism.

Chapter 2

Background Information and Attributes

2.1 Boundaries

Boundaries of Village Panniwala Mahla and Gumjal comprises of the following villages as boundaries:-

North:- Village Usman Khera and Kallar Khera.

West: State Boundary Rajasthan.

East: Village Bhangar Khera.

South: Village Sadhuwali and Chak Ganesha wala (Rajasthan).

Boundaries of Village Haripura and DiwanKhera comprises of the following villages boundaries:-

North:- Village Koel Khera, Danewala and Bakainwala.

West: Village Koel Khera, Bakainwala and Panjawa.

East: Village Khuian Sarwar and Daulatpur.

South: Village Daulatpura and Gidranwali.

2.2 Roads

The 04 Villages of Community Reserve are situated on Abohar-Sri Ganganagar Road. The main road has so many link roads and every village is connected with it.

2.3 Drainage and Water bodies

This Community Reserve area is dependent upon canals for irrigation and drinking water. All villages have their own water works for clean water for the use of human beings. Canal water is stored in large tanks after clearing supply to the public.

According to its need there are so many canals in the area to irrigate it.

- (1) Malookpur Minor (Panniwala Mahla, Gumjal)
- (2) Abul Khurana Drain (Haripura)
- (3) Daulatpur Minor (Diwan Khera)
- (4) Panjawa Minor (Haripura)
- (5)

2.4 Terrain

This area is a plain area and there is no hilly terrain.

2.5 Soils

The whole area is a dry area which is irrigated with canals and rain only.

2.6 Forest

The area under forest is 8% of the total area including Govt. land & private land forest. Govt. land is only on the sides of the Roads & Canals which has kikar, shisham, safeda, neem, pipal, jand etc. In Barani area there are little plants.

2.7 Climate, temperature, and rainfall

Community Reserve experiences four yearly season:-

(i) **Monsoon** beginning in July end and terminating by the end of September during which the maximum rainfall is recorded. The annual rainfall recorded is 600mm approx.

(ii) **Winter** period starts from November to March and characterized by little sporadic rainfall, heavy fog, frost and dew is recorded after rain.

(iii) **Summer** starts from April to mid July which are the hottest months of the year with a temperature reading upto 48°C. Hot winds, full of dust are quite common during the summer. Sometime normal rainfall and thunder storm slowdown the temperature but it reaches its peak within a day or two. There is a significant difference between day & night temperature.

(iv) **Spring** appears between summer and winter for a very short period, during when flowers bloom and season change.

2.8 Wild life

There is quite a good stock of Black Buck and Nilgai, Hare, Jungle Cat, Jackal, Mongoose etc. Birds of many kinds are also available in the Community Reserve. They are partridges, peacock, parakeet, pigeon, dove, house sparrow, drongo, common myna, crow, shikra, owl. They are all fully protected by the wild life department with the help of local people. The list of flora and fauna in the community reserve are attached as Appendix III.IV and V.

Chapter 3

The Flora and Fauna

3.1 The Flora

The flora of the Community Reserve is dominated by crops in the field and plantation along roads & canals. However the terrestrial flora play significant role in the ecosystem.

3.1.1 Terrestrial Area

Composition and condition of the crop:

The Original terrestrial vegetation of the area can be classified as Northern Tropical Dry Deciduous Forest". There is good ground and shrub cover. The existing stand comprises of the following main tree species:

1. *Acacia nilotica*(Kikkar/Babul)
2. *Dalbergia sissoo* (Shisham)
3. *Eucalyptus tereticornis* (Safeda)
4. *Albizia lebbbeck* (Siris)
5. *Azadirachta indica* (Neem)
6. *Prosopis spicigera* (Jand)
7. *Zizyphus jijuba* (Ber)
8. *Ficus religiosa* (Pipal)
9. *Ficus bengalensis* (Bohar)
10. *Mangifera indica* (Mango)

The undergrowth cover mostly comprises of *Zizyphus nummularia*, *Calotropis procera*, *Capparis aphylla*, *Cassia tora* etc. There is conversion of crop areas into orchards. There is an increasing trend to establish rice and kinnow crops(orchards). Such gardens are affecting the habitat of the Black bucks.

3.1.2 Over wood: *Prosopis cineraria* (Jand/khejri), *Dalbergia sissoo* (Shisham), *Acacia nilotica* (Kikkar/Babul), *Eucalyptus tereticornis* (Safeda), *Mangifera indica* (Mango), *Morus alba* (Toot), *Syzygium cumini* (Jamun), *Albizia lebbbeck* (Siris), *Acacia leucophloea* (Reru), *Azadirachta indica* (Neem), *Melia azadirachta* (Drek) and *Zizyphus mauritiana* (beri).

However, there is also scattered presence of other species like *Ficus bengalensis*, *Ficus religiosa* (Pipal), *Butea monosperma* (Dhak), *Phoenix sylvestris* (Khajur) and *Cassia* species.

3.1.3 Under growth: It consists of *Zizyphus nummullaria* (Mullah), *Artemisia scoparia* (Jhau), *Calotropis procera* (Akk), *Capparis sapiaria* (Mins) *Cannabis sativa* (Bhang), *Capparis aphylla* (Karir), *Carissa spinarum* (Karonda), *Cassia tora* (Panwar), *Lantana camara* (Punj Phulli) and *Adhatoda vasica* (Basuti).

3.1.4 Ground Flora: The vegetation is characteristic of normal forest strips of the adjoining areas as it comprises of considerably a large number of grasses, herbs and shrubs. *Cenchrus species* (Amjan) grow in sandy places and *Demostachya bipinnata* (Dab) flourishes under dry conditions.

3.2 The Fauna:

Community reserve is home of several other wild animals apart from black bucks. Nilgai, hare, jungle cat, jackal, mongoose etc are wild animals found in community reserve. It comprises agricultural private land of 04 Bishnoi villages.

3.2.1 Birds: The forest and wildlife Department has not carried out a detailed study with regards to census of population estimation, species distribution and pattern etc. However, by utilizing the available data carried out by various agencies and by ground verification on sample basis, the current species list for Abohar consisting of avian species. Partridges, Parakeets, Peacock, Pigeon, Doves, Sparrows, Cocktails, Shikras, Howks, Mynas, Bulbuls, Sunbirds, Tails Birds, Common myna, Crow culture, Owls.

3.2.2 Mammals: Community reserve consists of Black buck (*Antelope cervicapra*), Nilgai (*Boselaphus tragocamelus*), Jackal (*Canis aureus*), common Mongoose (*Herpestes edwardsii*) and Common Indian hare (*Lepus nigricollis*).

The species of snakes are also recorded. *Enhydros enhydris*, *Natrix* (*Xenochropis piscator*), *Indian cobra* (*Naja naja*), *Indian Rat snake* (*Ptyas mucosa*) etc are the common one. Porcupine and squirrels are also common.

3.2.3 Amphibians: Frog species are: *Haplobatrachus tigerinus*, *Euphlyctis hexadactylus* and *Euphlyctis cynoplyctis*.

3.2.4 Fishes: Fishes are found in village ponds and drain inside the community reserve. The Common species are *Notopterus Chitala*, *Notopterus notopterus*, *Channa punctatus*, *Channa striatus*, *Catla catla*, *Labeo rohita*, *Wallago attu*, *Cirrhinus mrigala* etc.

The List of flora and fauna in the community reserve are attached as **Appendix III,IV and V**.

Chapter 4

Past History of Management and Current Practices

Declaration of community reserve and Activities & work done by the Wildlife Department.

4.1 Legal status :

This area has been declared as Community Reserve in the year 2015 under Punjab government notification no. 34/4/2015-Ft-5/448962/1 dated 27.3.2015. The notification is attached as **Annexure II**.

4.2 Current management Activities carried out by the wildlife staff:

4.2.1 Control over Poachers: The Wildlife Department Punjab has done its best to control the poachers and to prevent the poaching of wild animals and birds. The bishnoi community and the other local people play a huge role in providing intelligence, evidence and also transport facilities and such is the dedication of the local community.

4.2.2 Rescue and rehabilitation of wildlife: The range staff along with the local community treat the injured wild animals in an adhoc manner in the area where they are injured with the help of the local veterinarian and trained watch and ward of the department with first aid medicines and release and rehabilitate them in the safe areas. The animals are usually taken care until full recovery by the local people themselves. Keeping this in view, a small centre to treat the animals was built in the year 2019 in range complex near Abohar Wildlife Sanctuary and there is no animal rescue center in the community reserve.



Figure 4.1:-Field staff taking care of rescued animal



Figure 4.2:- Field staff rescuing injured animal

Besides the above mentioned activities the range staff carry out operations that are approved as per the annual plan of operation under different schemes and see to that they are implemented successfully in the field.

4.2.3 Data collection and monitoring:

The data regarding the movement of blackbucks outside the community reserve have been collected by the field staff in the year 2019, during their field patrolling to understand the trend of movement of the species outside the protected area due to various threats within the reserve like habitat degradation, change in land use, fencing, stray dogs, stray cattle and competition from other ungulates like blue bulls. A fool proof method of carrying out the population estimate of the wild animals in the region should be carried out by expert institutions like Wildlife Institute of India, Dehradun.

Table 4.1:-Sighting of Blackbuck outside Community Reserve Area

Period	G.P.S. Location	Black Buck			Remarks
		Male	Female	Total	
May 2019	29.962454, 73.966079	04	12	16	These black bucks were sighted in village Bhagsar of Shri Ganganagar District, State Rajasthan (Boundary village Panniwala Mahla)
May 2019	29.963687, 73.937117	02	08	10	These black bucks were sighted in village Bhagsar of Shri Ganganagar District, State Rajasthan (Boundary village Panniwala Mahla)
January 2020	30.1068481 , 74.0324108	07	-	07	Sh. Jagtar Singh S/o Sh. Inder Singh informed the staff that he saw these wild animals in his agriculture fields in Daulatpura Village of Fazilka District (Boundary village Haripura and Diwan Khera).
January 2020	30.1432130 , 74.0288746	02	-	02	These blackbucks were sighted outside community reserve village Haripura of Fazilka District near land of Sh. Mohinder Kumar.
January 2020	30.1546052 , 74.0028233	01	01	02	These blackbucks were sighted in agriculture fields of Sh. Randhawa Singh Village Bakainwala of Fazilka District (near Boundary of village Haripura).
January 2020	30.1059633 , 73.9507033	02	01	03	These black bucks were sighted in village Panjawa of Fazilka District near Bikaner Canal of Fazilka District (Near Boundary of village Haripura).
16-3-20	30.1033786 , 74.3137051	01	01	02	During survey, these black bucks were sighted in village Dhaban Kokriyan (Fazilka District).
16-3-20	30.1028623 , 74.3371945	02	06	08	During survey, these black bucks were sighted in village Dhaban Kokriyan (Fazilka District).
16-3-20	30.118774, 74.355348	01	01	02	During survey, these black bucks were sighted in village Malookpur (Fazilka District).
16-3-20	30.1133435 , 74.3861894	01	03	04	During survey, these black bucks were sighted in village Jodhpur (Fazilka District).
16-3-20	29.9579893 , 74.2811075	02	06	08	During survey, these black bucks were sighted in village Kular (Fazilka District).

16-3-20	29.968468, 74.266981	03	03	06	During survey, these black bucks were sighted in village Kular (Fazilka District).
16-3-20	29.9959458 , 74.4181718	02	-	02	During survey, these black bucks were sighted in village Modi Khera (Fazilka District).
16-3-20	30.1207215 , 74.3561839	03	05	08	During survey, these black bucks were sighted in village Bahadar Khera (Fazilka District).
16-3-20	30.0182983 , 74.4130933	01	02	03	During survey, these black bucks were sighted in village khuban (Fazilka District).
16-3-20	30.06143, 74.41039	02	05	07	During survey, these black bucks were sighted in village Bhai Ka Kera (Shri Muktsar Sahib District)
16-3-20	30.06239, 74.39393	03	04	07	During survey, these black bucks were sighted in village Bhai Ka Kera (Shri Muktsar Sahib District)
16-3-20	30.0443252 , 74.4175542	04	06	10	During survey, these black bucks were sighted in village khema Khera (Shri Muktsar Sahib District)
16-3-20	30.0942806 , 74.3790179	04	06	10	During survey, these black bucks were sighted in village Mahni Khera (Shri Muktsar Sahib District)
16-3-20	30.06437, 74.40725	-	02	02	During survey, these black bucks were sighted in village Baloach Kera (Shri Muktsar Sahib District)
17-3-20	29.9374540 , 74.3319019	04	08	12	During survey, these black bucks were sighted in Village Mala Rampura (Rajasthan state)
17-3-20	29.9333218 , 74.334538	04	07	11	During survey, these black bucks were sighted in Village Rasuwala (Rajasthan state)
17-3-20	29.9222413 , 74.3246817	05	10	15	During survey, these black bucks were sighted in Village Indergarh (Rajasthan state)
18-3-20	30.1619827 , 73.9988141	04	08	12	During survey, these blackbucks were sighted in Village Bakainwala of Fazilka District (Boundary village Haripura).
18-3-20	30.1059633 , 73.9507033	04	11	15	During survey, these black bucks were sighted in village Panjawa of Fazilka District near Bikaner Canal of Fazilka District (Boundary village Haripura).

18-3-20	30.1629926 , 74.0228913	01	01	02	During survey, these black bucks were sighted in village Danewala of Fazilka District (Boundary village Panniwala Mahla)
18-3-20	29.962454 73.966079	04	11	15	During survey, these black bucks were sighted in village Bhagsar of Shri Ganganagar District, State Rajasthan (Boundary village Panniwala Mahla)
18-3-20	29.963687 73.937117	03	09	12	During survey, these black bucks were sighted in village Bhagsar of Shri Ganganagar District, State Rajasthan (Boundary village Panniwala Mahla)

A field survey was also conducted by the staff of Abohar Wildlife Range to collect data regarding movement and sightings of Blackbuck from 16.3.2020 to 18.3.2020 . Extensive area was covered outside the sanctuary and community reserve area by different field teams to collect the movement and sighting data of blackbuck sightings in villages in Fazilka District, Muktsar District and also in bordering villages of Rajasthan. The data indicates that the blackbuck are moving in batches through different routes to suitable location where threats like intense fencing, stray dogs and stray cattle are comparatively less severe unlike Abohar Sanctuary and community reserve. A detailed study in the landscape level has to be carried out regarding the movement of the wild animals from the Abohar wildlife sanctuary to community reserve and in neighboring districts and villages near Rajasthan border and also about the migration pattern during different seasons by reputed wildlife institutes and experts.

Chapter 5

Summary of threats in community reserve

5.1 Fencing of fields and kinnow orchards:

The problem of stray and feral cattle is one of the huge threats to existence of wildlife. The farmers are under huge stress due to grazing of their agricultural crops by feral cattle and as a result of it they have fenced almost all their fields and plantations with cobra, barbed wires and also chain link fencing in the boundary of the fields. This not only restricts the movement of the wildlife and causes fragmentation of the habitat but also leads to injury to wild animals which get caught in the wires when stray dogs chase them from the fields. The traditional mud walls which were the characteristic feature of this region have drastically reduced and only barbed wire fencing with cobra wires have been used to protect the fields from grazing by the stray cattle presently.

Figure 5.1:- Barbed wire fencing in community reserve area:



Beside this the number of kinnow Orchards are increasing in community reserve area which is a cause of habitat fragmentation of Black Bucks.

Figure 5.2:- The picture depicts kinnow orchards in private fields in Community Reserve



5.2 Feral Cattle : Stray cattle also pose a huge threat to the black bucks. The people inside the community reserve area have tolerance to the crop damage by black bucks, but not to that of stray cattle. The stray cattles are mainly cattles that are unproductive in nature (non milching cows and hybrid bulls) and which are difficult to be maintained by the local community. So the local villagers tend to release the same in open when they become an economic burden. The free ranging cattle then becomes a huge menace since they start grazing the agricultural fields. So, the people start fencing their fields with barbed wires and cobra wires. The black bucks get hurt by these and are injured badly.

Figure 5.3:- Feral cattle in community reserve area



5.3 Stray Dogs: Stray dogs are a huge menace in community reserve area. They prey on the fawns and also chase the adult animals, which go and get hit and hurt in the cobra wires and barbed wires that are fixed along almost all the agricultural fields resulting in injury and mortality.

Figure 5.4:- Stray Dogs



Wildlife deaths have been attributed to injury of the animals due to them getting stuck in the fences when the stray dogs chase them from their habitat.

5.4 Chemical farming:

The farming done by the local community is influenced by the green revolution where huge amount of chemical and inorganic pesticides, fertilizers and



insecticides are used and hence it poses a serious threat for wildlife like bio-magnification and paves way for diseases due to consumption of crops grown in this

Figure 5.5:- Chemical Farming

way by the wild animals and the increase in the trend of chemical farming would pose a serious threat by contaminating the ground water table.

5.5. Habitat fragmentation and land use change

The villages comprising the community reserve has underwent land use changes due to development of agriculture and along with this, fencing of the agricultural fields and orchards have resulted in huge change in the habitat of wildlife and restricts the free movement of wildlife.

5.6 Changes in the economic aspiration of the community:

Unlike older generation who lived in close harmony with the animals and when their economic aspirations were limited, the present generation of Bishnois, though are ardent animal lovers and also provide full support to the department for preventing any poaching activities and for rescue and rehabilitation works, are drifting towards economic activities which are not in sustainable in nature

conversion of the semi arid lands to agricultural field and orchards, replacing mudwalls with cemented walls,katcha nature friendly houses replaced by pucca cemented structures,fixing of cobra wire and barbed wires, release of unproductive cattle etc.

The management plan mainly focuses on addressing the above mentioned threats and to bring about a balance where both the wildlife and local community can live in a sustainable and harmonious way.

Chapter 6

Infrastructure, Human Resources and Other Facilities

6.1 Range office:

The range office is more than 20 kms from the community reserve area and has been condemned and is in a very bad shape and there is a requirement of construction of a new range office for wildlife staff.

6.2 Interpretation Center

The range complex is more than 20 kms from the community reserve and it consists of an Interpretation center where most of the extension activities and awareness camps are held. Fixing of creative signage, dioramas, awareness materials and audio visual facilities to promote conservation of wildlife areas have to be developed to enable the local community and tourists to gain knowledge about the importance of the community reserve. An interpretation center dedicated to the community reserve area in the future subject to the availability of land from the local people would pave a great way for spreading awareness about the area among the local community and tourists.

6.3 Rescue center:

A small rescue center for wild animals was built in the financial year 2018-2019 under PUNCAMPA scheme in Range complex which is around 20kms away from the community reserve area looking at the immediate requirement for a safe place to isolate the animal from the field and recuperate before their rehabilitation for animals

both in sanctuary and community reserve area. The center has its own limitations being small in size with two recovery rooms, one operation room and doctor room and two water holes. It can cater to only two animals at a time. There is a need for a dedicated doctor, medical assistant, tools, equipment and infrastructure for its effective functioning.

Figure 6.1:- Rescue Center in Range complex, Abohar:



Also procurement of rescue, rehabilitation and survey equipment dedicated for community reserve should be done. A new rescue center is also required in the community reserve area subject to the land availability since the area comprises of mostly private agricultural lands.

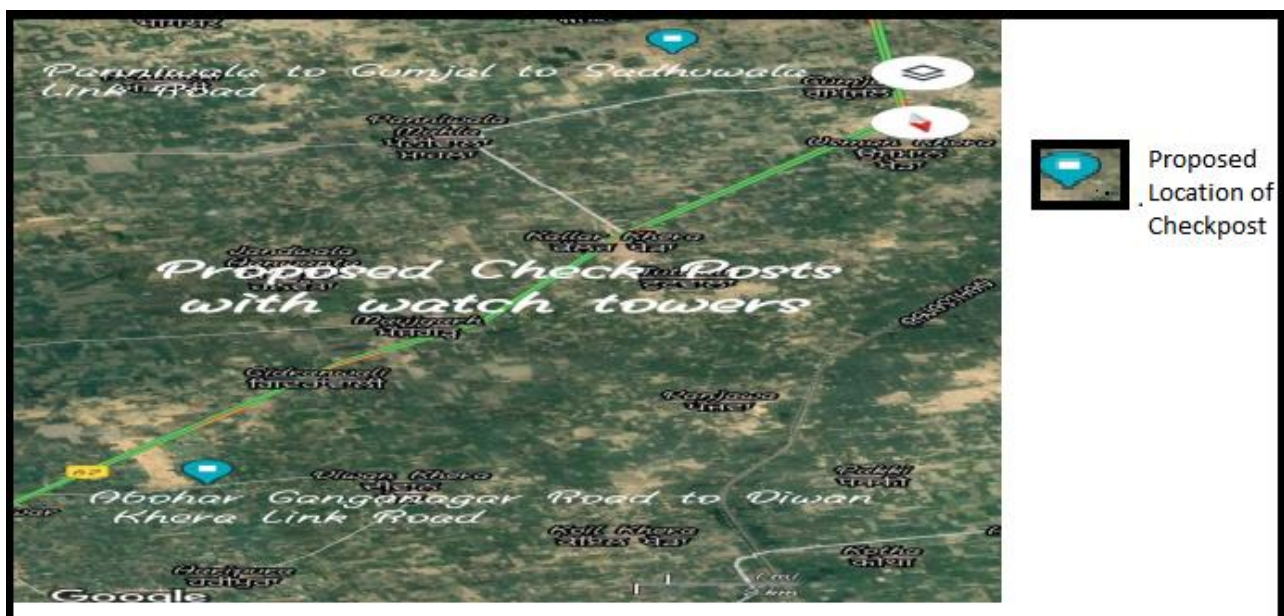
6.4 Check posts and Watch tower :

Department had not constructed any check post and watch tower in community reserve area. There is need of construction of 02 check posts with watch tower in Abohar community reserve area. So the following two places are proposed for construction of check posts with watch tower in Abohar community reserve area. The check posts with watch tower will be constructed according to the availability of land with the consultancy of local community .The location and numbers proposed may be changed as per field requirements.

Table 6.1:- Proposed locations of check posts :

Sr.No.	Village Name	Location
1.	Panniwala	Panniwala to Gumjal to Sadhuwala Link Road (G.P.S. Location = 29.984722, 73.929812)
2.	Diwan Khera	Abohar-Ganganagar Road to Diwan Khera Link Road (G.P.S. Location = 30.106745, 74.028925)

Fig 6.2 Map depicting proposed location for Checkposts



6.5 Water holes:-

Department had not constructed any water hole in community reserve area. So it is proposed that at least one water hole will be constructed in each village of Abohar community reserve area according to the availability of land by consulting with local community .The number may be changed as per the field requirement and availability of land.

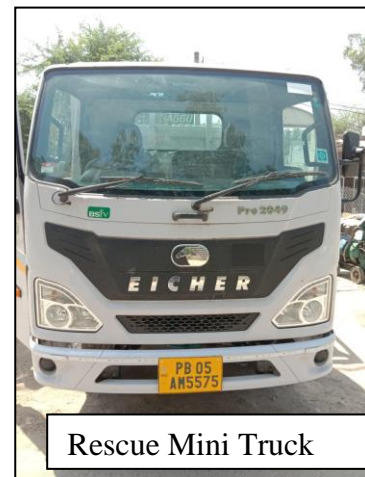
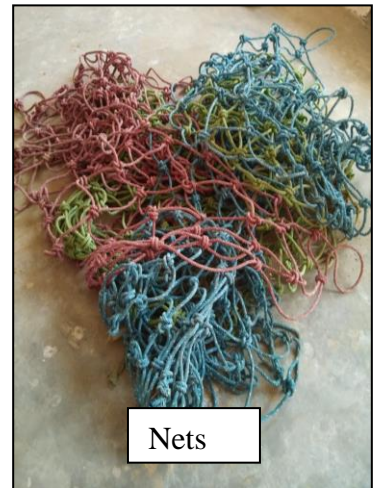
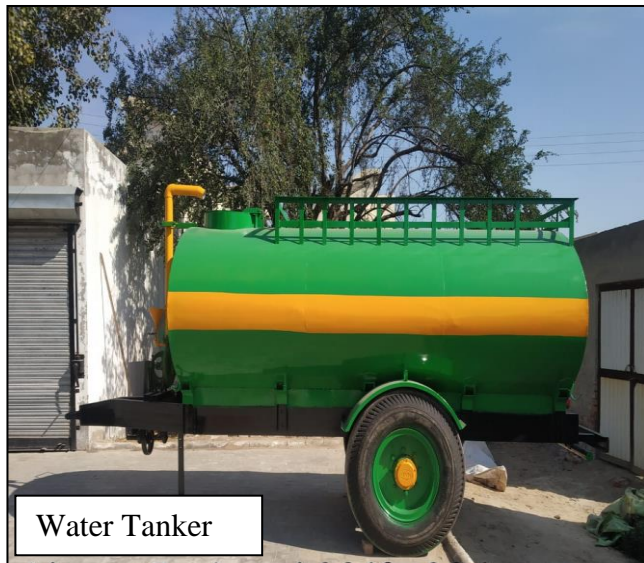
Table 6.2:- No. Of Water holes proposed village wise

Sr. no.	Village Name	No. of Water holes
1.	Haripura	01
2.	DiwanKhera	01
3.	Gumjal	01
4.	Panniwala	01

6.6 Vehicles and equipments:

A tractor, trolley and water tanker with few cages and nets are present in the sanctuary for rescue and rehabilitation of wildlife and also for wildlife conservation. A rescue vehicle was purchased in the year 2019-20 under Mitigation Fund for Abohar, Sito Gunno Dabwali road widening project in Abohar sanctuary. The vehicles and equipments are used for all the wildlife protection works and conservation efforts in community reserve as well. Dedicated equipments, vehicles and tools should be purchased in the future for the sole purpose of usage in the community reserve area.

Fig 6.3:- Vehicles,Tools and Equipments available in Range Complex,Abohar



6.7 Staff strength:

Staff ,labour availability and utilization is an important component of management. Permanent staff at the level of foresters and guards have to be increased to manage the sanctuary,community reserve and adjoining areas within the Fazilka District since the whole district comes under the jurisdiction of Range officer,Abohar.

Table 6.3:- Field staff details of Abohar Wildlife Range.

S.No	Name of post	Sanctioned	Working
1	Divisional Forest Officer	1	1
2	Wild Life Ranger/Deputy Ranger	1	0
3	Wild Life Foresters	2	1
4	Wild Life Guards/Forest Guards	7	7
5	Driver	1	1

As it can be seen from the above table, there is an shortage of field staff in the Ranger/Deputy Ranger and Forester as per the approved cadre strength.The range is managed by a forester and hence presence of Direct Range Officer/Deputy Ranger would definitely enhance the working sufficiency in the Range.Apart from the permanent staff, daily wage labourers are employed in the division on requirement basis to serve as watch and wards to protect the sanctuary and community reserve from any illegal activities and also to rescue and rehabilitate the injured wild animals.

PART-II

FUTURE MANAGEMENT DISCUSSED AND PRESCRIBED

Chapter-I

Management Plan Objectives And Strategies

1.1 General Objects of Management

Why Management?

There is almost nothing in nature that could be called stable environment. The element which the manager wishes to preserve in an area can easily be lost through the lack of management as the nature of Community Reserve changes rapidly. The kind of management depends upon the objectives of given area. Good planning is a simple management tool, not an end in itself. The management plan guides and controls the management of resources in the area and development of facilities needed to support the management.

The general objects of management of this management plan shall be as under:-

- *To conserve and improve the fragile and highly threatened ecosystem of the community reserve .*
- *To maintain the integrity of the ecosystem and arrest further degradation of the ecosystem by providing adequate protection, strengthening existing infrastructure etc.*
- *To create eco-friendly environment in and around the area by various other alternate livelihood options and eco-development through active participation of people and stakeholder engagement to make them partners in development.*
- *To promote the ecotourism and create conservation awareness in and around the community reserve area.*

- *To facilitate the research, training and capacity building of communities and staff and strengthening social engineering skills.*
- *To create and develop ideal habitats for fauna by undertaking habitat improvement works and protection measures.*
- *To increase the vegetative cover of the area by undertaking plantations of indigenous and site specific species beneficial for wildlife.*
- *To create awareness among the various stakeholders about the importance of conserving wildlife.*
- *To improve the rescue, rehabilitation, treatment and transport facilities.*
- *To enable the staff through training, capacity building and provide necessary infrastructure to the field staff.*

1.2 Strategies to be adopted:

In order to fulfill the above objectives the following approach should be adopted:

- i. Creation of baseline data: As the management of the community reserve needs specific prescriptions to address specific issues, it is very important to have a baseline data on wildlife, the habitat, socio economic factors that influence the habitat, historical data. This would include field works like surveys of topography, demography, socio-economic dynamics, census, population estimates, experiments, as well as interpretation and extrapolation of the data so gathered to draw inferences and arrive at certain conclusions. Existing literature as well as the expertise of expert institutions, scientists and NGOs who have already worked on the area shall be utilized.

- iii. Formation of theme plans so that similar problems are grouped, categorized in a scientific manner so that a common prescription can be given and that the available resource is optimally utilized.
- iv. To move towards sustainable and scientific management of the wild life in the community reserve and towards landscape level of management and protection of black buck by understanding their migratory corridor and the movement of the animals in and out of the community reserve in various seasons.
- v. Involvement and participation of the people living in community reserve in the management of the area.
- vi. Give special impetus to generating awareness among the public through publicity campaign to highlight the importance, values as well as the problems of the reserve.
- vii. Ensuring that all agencies/line departments responsible for management of specific issues of the community reserve cooperate with each other and work in tandem so that all the resources and expertise available are utilized meaningfully.
- viii. Appropriate and adequate training of the field staff in wild life management and capacity building for the staff to implement the themes and strategies adopted to effectively manage the area.

1.3 Constitution of Management Theme plans:

Community reserve in Fazilka District is a unique place being graced with great natural resource and beauty. It is one of few places like Abohar Sanctuary in Punjab where Black Bucks are sighted . The area is also beset with many problems as mentioned previous chapters. The management of this region has become complicated

because of various factors influencing the area. The area being privately owned , can be efficiently management only when the local community themselves come forward to protect the habitat from destruction. It is envisaged that objectives laid out in this plan and the prescriptions made herein would go a long way in better management of the area.

In order to achieve the general objectives of this Management Plan and keeping in view the method of treatment to be adopted, the following theme plans shall be formulated and implemented.

1. *Wildlife protection plan*
2. *Wildlife health management plan*
3. *Habitat management plan*
4. *Inter departmental coordination plan*
5. *Landscape level management plan*

1.4 Abstract of the theme plans

An abstract of the different theme plans proposed and their salient features are outlined below:-

(A) Wildlife protection plan: This theme plan deals with the protection of the Community Reserve from poachers and other offences occurring in the Community Reserve area and implementation of wildlife protection act,1972.

(B) Wildlife health management plan:- Although no big epidemic so far has been reported from this area but management should keep itself ready for any disaster or emergency situation by coordinating with other departments and agencies.

(C) Habitat Management plan:- Habitat management in wildlife areas primarily involves restoration of natural vegetation, protection of undisturbed habitat, proper water regime, improvement of ecological balance etc with adoption of suitable practices for the long term conservation.

(D) Inter departmental coordination plan: The area is being private in nature, requires inter departmental coordination in various activities like management of stray dogs, stray cattle, prevention of habitat destruction and fencing and unsustainable agricultural practices.

(E) Community engagement plan: The formation of the community reserve is based on the personal interest of the local people in protecting wildlife. So without the participation of the community no management practice will be feasible in this Community Reserve consisting of private lands.

(F) Landscape level management plan :

There is a huge mortality of the wild animals due to stray dogs and fencing in all the private lands and the wild animals are migrating to suitable habitats away from fenced areas and since the area is in close vicinity to Ganganagar and Hanumangarh districts of Rajasthan a landscape level approach is required in the future to protect the blackbucks.

1.5 Period of the Management Plan

This Management Plan will be for a 10 years i.e. from the year 2020-21 to 2029-30. The Management Plan may be reviewed in the year 2025-26 in the light of prevailing conditions at that time.

1.6 Wildlife Protection Theme Plan

1.6.1 General Description:-

The protection of the area and its resources from various threats like poaching, predation and other activities harming community reserve area is very important so that the habitat is protected. This theme plan is formed for the main purpose of focusing on the issues related to the protection of community reserve area from such threats. It will cover the whole of community reserve area.

1.6.2 Special objective of the theme plan:- The special objectives of the theme plan are :-

1. Identification of the threat perceptions faced by the area, their cause and possible remedies.
2. To take suitable measures for the protection of the area from such threat perceptions.
3. To involve the local people in the protection and management of the reserve.

1.6.3 Strategies to be adopted:-

The methods to be adopted in order to achieve the objectives are as follows:

(a) Survey and Mapping:-

It goes without saying the presence of survey sheets and maps are vital for the management and protection of the community reserve. In light of the above, it is very imperative that a proper and detailed survey is conducted for the main purpose of demarcation and fixing the boundary and limits of the community reserve. This has become more important after the final declaration of the area as a community reserve and the application of the provisions of the Wild Life (Protection) Act, 1972.

For the survey, the main strategy would be :

1. The earlier works carried out by revenue department and other agencies would be referred. Involvement of institutes like Forest Survey of India, Wildlife Institute of India in carrying out scientific survey in the community reserve should be promoted.
2. As the staff of the community reserve has negligible knowledge and skills regarding survey works, the service of staff from the revenue department, retired patwari / kanugos, and experts may be requisitioned.
3. The wildlife staff of the community reserve would also be trained so that they gradually take over the work in future so that any component of the management of the community reserve does not suffer because of dependence on other agencies.
4. The use of modern technologies like GPS and GIS and satellite data like remote sensing data should be done with the help of Forest Survey of India and other technical institutes.

(b) Fencing :-

As the community reserve is on private land of 4 villages, traditional fencing like mudwalls can be promoted. Intensive Cobra, barbed wires, chain link fencing must be discouraged and stakeholder meetings need to be held to frame solutions to remove the fences or modify the fences into animal friendly fences. The complete fencing of the boundary of the villages instead of individual agricultural fields with the agreement of land owners should be explored to prevent habitat fragmentation.

(c) Intelligence gathering ,Patrolling and prosecution of offenders:

Informers can be used to tackle the problem of poaching. It can be best done with the help of villagers and the local community. As the boundary is porous it is important to take preventive measures like regular patrolling by the field staff and the local watch and ward. The staff also has to keep constant vigil and take appropriate legal action against the offenders under Wildlife Protection Act, 1972. One of the important aspects of protecting the community reserve is to keep strict vigil by regularly patrolling the area and also by conducting surprise checks, raids . The patrolling is to be done by taking the local community into confidence.

(d) Protection from stray dogs and Cobra wires:-

Stray dogs are the main problem for the wild animals specially the young fawns which get injured due to bite of these stray dogs. Therefore artificial birth control programme (ABC) for the stray dogs should be implemented with the help of the concerned line departments like animal husbandry, local bodies and also ensuring that a pivot role is played by the district administration to ensure that the respective departments play their role in carry out the activities to which are responsible for stray dog control. Apart from this the stray dogs can be translocated to other places with the coordination of animal husbandry department, district administration and local panchayats. The another major threat is deadly cobra wire with bladed edged iron wire mesh on the periphery of agricultural fields that are fixed by the villagers to avoid damages from stray cattle. Though, the department has made serious efforts to persuade people to remove cobra wires, still the fencing of agriculture fields with the barbed wires, chain link fences continues and it also restricts the free movement of black bucks, putting them under stress, besides

causing severe and fatal injuries, especially during dog chase incidents. The injured animals are very easily predated upon by dogs. Fencing of the village boundaries and also usage of animal friendly fencing should be explored as viable options for tackling the threat of dangerous fencing adopted by the people. The local people must be convinced to remove the deadly fences as a first measure and legal action must be taken as a secondary option since the community reserve is basically a product of the conservation attitude of the people and it would be wrong if legal action is taken as the only measure against the local community to prevent the cobra and barbed wire fencing.

(e) Plantation and Enhancement of Green Cover:-

The following measures may be adopted, over and above the measures already outlined before.

1. Identification of areas in the surrounding villages for plantation of trees having fuel wood and fodder qualities. These areas may be office complexes, school grounds, panchayat lands, link roads, gurudwaras etc.
2. Create public awareness to encourage people to protect and manage the plantations so raised and to cause minimum damage to the habitat.

(f) Infrastructure, tools and equipments.

One of the important features of protection which often is overlooked is the acquisition/ up gradation of the infrastructure needed for protection works. Some of the important ones are highlighted below:-

1. Rescue vehicle/ambulance: For use in patrolling and rescue, rehabilitation and transport of injured animals. Patrolling vehicles like motorcycles to forest guards to cover large areas.
2. For better management of the area it is important that the staff are present at their headquarter and the residential provisions need to be looked after. The Range complex

in the headquarters at Abohar has no adequate facilities for the staff, and there is no residential provisions for the wildlife RO, foresters, guards, peons etc.. The following buildings are recommended.

- ✓ Range office and Range Quarters in Abohar
- ✓ Wildlife Range/block Officer residence at Abohar.
- ✓ Guard quarter in Abohar
- ✓ Inspection huts in community reserve subject to availability of land.
- ✓ Up gradation and repair of the existing Interpretation Centre in Range complex and addition of soft components like audiovisuals.
- ✓ A small rescue and rehabilitation center for wild animals should be constructed in the community reserve with the consent of the local community and land should be made available by the community to cater to the needs of rescued animals so that they need not be shifted to sanctuary area whenever any treatment of the wild animal is required.

3. Necessary equipment like binoculars, range finders, compass, cages, nets, net guns, tranquilizer gun, camera traps and other rescue tools for carrying out survey, monitoring, rescue, research is to be purchased solely dedicated for the community reserve area.

4. There is no check post and watch tower in community reserve area. There is need of construction of 02 check posts with watch tower in Abohar community reserve area. So the following two places are proposed for construction of check posts with watch tower in Abohar community reserve area. The check posts with watch tower will be constructed according to the availability of land with the consultancy of local community .The location and number may change in the future as per the field requirements.

Table 1.1:- Proposed locations for Checkposts :

Sr. No.	Village Name	Location
1.	Panniwala	Panniwala to Gumjal to Sadhuwala Link Road
2.	Diwan Khera	Abohar-Ganganagar Road to Diwan Khera Link Road

(g) Rescue and Rehabilitation of injured animals

The staff should rescue the injured wild animals and treat the injured wild animals with the help of the trained staff and veterinary doctors and rehabilitate the animals with the available facilities. The fully recovered animals must be released and rehabilitated in the wild within the reserve when they have recovered after rescue and treatment. The rescued and infirm animals which are not suited to be released in the wild and requires a secured and safe place for protection should be transported and released in suitable areas like zoos in the state like Ludhiana, Patiala and Chattbir Zoo.

(h) Human resources:-

Staff ,labour availability and utilization is an important component of management. Permanent staff at the level of foresters and guards have to be increased to manage the Abohar sanctuary, community reserve and adjoining areas within the Fazilka District.

Table 1.2:- Field staff details of Abohar Wildlife Range.

S.No	Name of post	Sanctioned	Working	Proposed	Justification
1	Wild Life Ranger/Deputy Ranger	1	0	1	-
2	Wild Life Foresters	2	1	3	To manage the sanctuary area and wildlife protection activities in abohar sanctuary,community reserve and Fazilka district
3	Wild Life Guards/Forest Guards	7	7	12	Five more guards are required to permanently guard the check posts in sanctuary and community reserve area.
4	Driver	1	1	0	-

As it can be seen from the above table , since the community reserve is managed by the Range Officer there is an shortage of field staff in the Ranger/Deputy Ranger and Forester level.The range is managed by a forester and hence presence of Direct Range Officer/Deputy Ranger would definitely enhance the working efficacy in the management of the range as a whole.

1.7 Habitat Improvement Theme Plan

1.7.1. General Description:

It is an abode for Black Buck which is the state animal and schedule-I mammal. Taking into consideration the above discussed points, it is very important that the natural habitat of blackbucks needs to be maintained and improved so that the rich biological heritage is conserved and preserved.

1.7.2 Special Objective of theme plan :- The special objects of management of this theme plan are:

- i. To improve the habitat for the wild birds and animals residing in the area.
- ii. To identify important feature and areas critical to the habitat and to take appropriate measure for their protection and improvement.
- iii. To prescribe specific measures for habitat improvement.
- iv. To best utilize the resources of the area in a sustainable manner without damaging the habitat.
- v. To involve people in the process of habitat improvement.

1.7.3 Strategies to be adopted :-

(a) Plantation :-

The presence of trees, forests and woodland is very important in the eco-system of community reserve. It is therefore very important to take up plantation to :-

- Preserve the biodiversity of the area.
- Create ideal habitats for black buck to breed.
- To reclaim barren and problematic areas.
- To check and control over use of pesticides.

(b) Identification of areas for plantation:-

The total area of Community Reserve area is 16861 acre. The roads and canal sides are available for plantations as they are already declared as protected forests and are under the control of forest division, Muktsar.. During the course of management barani land will be reclaimed and made available for plantation. in consultation with the people of the villages. Peripheral plantations along the boundary of the private agricultural fields and plantations in village common lands should be carried in

consultation with the local people in the Community Reserve. Fruit and fodder trees for wild animals which are suitable to this habitat may be planted.

(c) Creation of water holes and ensuring water supply in the holes during summer months:-

Certain remedial measures are to be adopted to improve the water quality. Water holes could be created at best suitable sites and ensure water supply in the holes during summer months. Department had not constructed any water hole in community reserve area. So it is proposed that at least one water hole will be constructed in each village of Abohar community reserve area according to the availability of land by consulting with local community .

Table 1.3:- Water Holes proposed for Community Reserve

Sr. no.	Village Name	No. of Water holes
1.	Haripura	01
2.	DiwanKhera	01
3.	Gumjal	01
4.	Panniwala	01

The number and the location can be changed as per the field requirement and subject to the land availability.

(d) Wildlife Corridor Management:-

Wildlife corridor usually are areas of habitat connecting wildlife populations separated by human activities .However the Community reserve of Abohar area along with its parent sanctuary Abohar wildlife sanctuary, are fully private areas which have bustling human activities and unlike other protected areas throughout the country which are located on government land and hence have a dedicated jurisdiction towards wildlife management , Abohar wildlife sanctuary and community reserve area is saturated with Agricultural fields and the original habitat of "Tibbas" has become negligible along with enumerable threats like habitat fragmentation, Intense fencing of agricultural

fields ,rapid change in the land use and diminishing original habitat, menace of stray dogs and stray cattle menace, usage of chemical fertilizers ,thereby rendering the concept of wildlife corridor management very complex.

There have been ocular evidences of Blackbuck movements outside these protected areas i:e the four Villages of Community reserve and thirteen villages of the sanctuary, which have been depicted in the maps below-

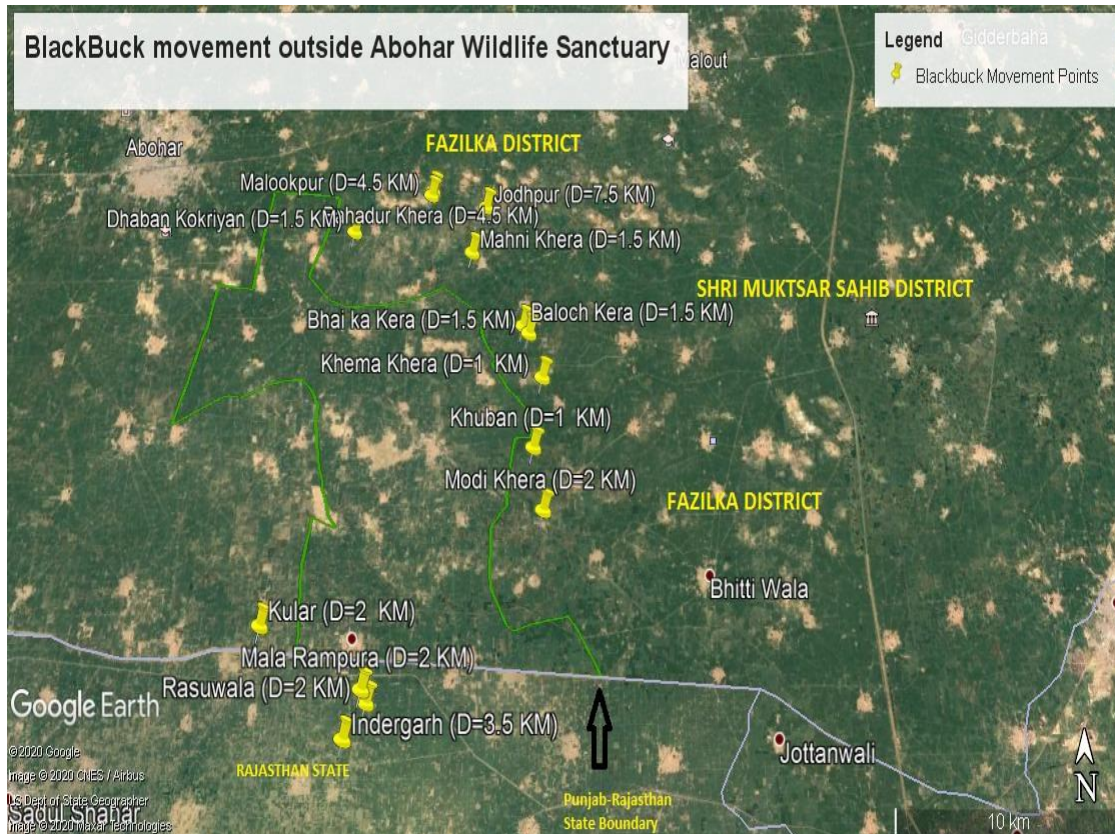


Figure 1.1 Blackbuck Movement outside Abohar wildlife Sanctuary

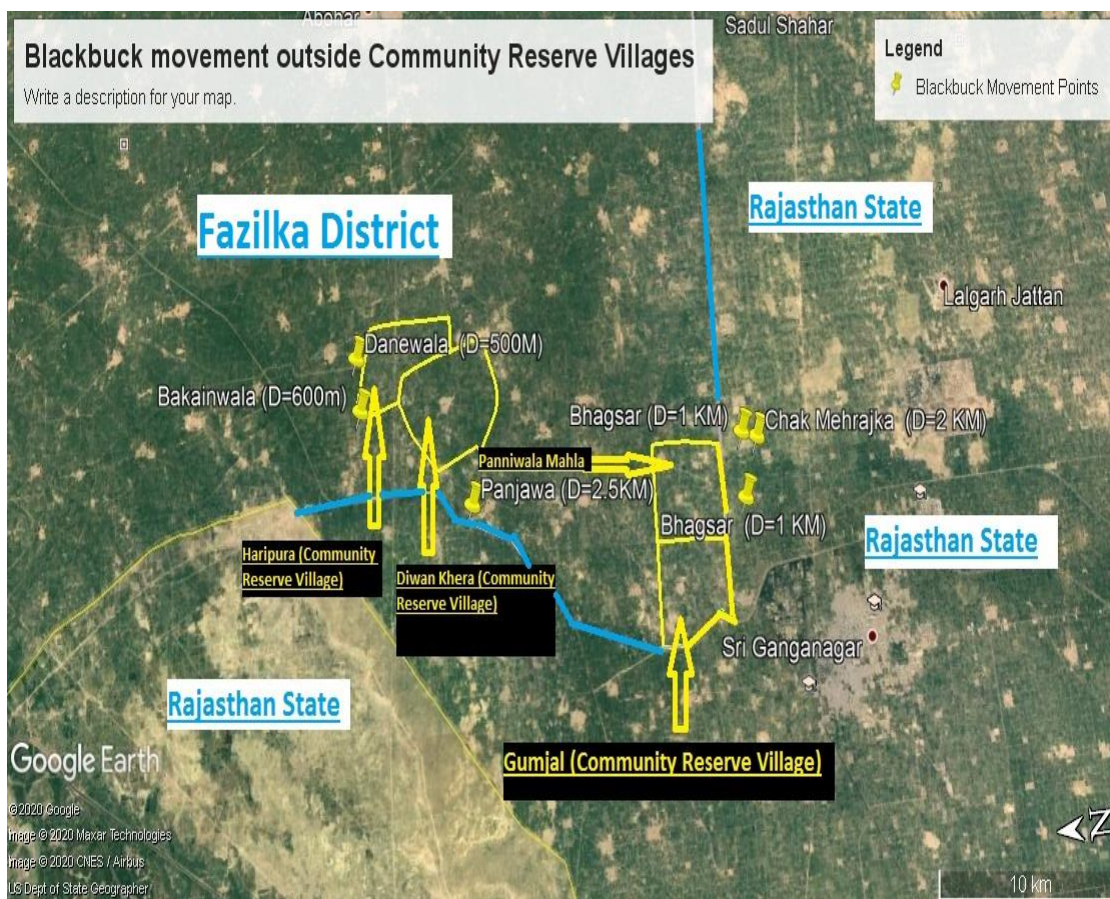


Figure 1.2 Blackbuck Movement outside Community Reserve Villages

Table 1.4:- Sighting of Blackbuck

These sightings are further illustrated in the Table Mentioned below- :-

Date	G.P.S. Location	Black buck			Remarks
		Male	Female	Total	
16-3-20	30.1033786, 74.3137051	05	10	15	During survey, these black bucks were sighted in village Dhaban Kokriyan (Fazilka District).
16-3-20	30.118774, 74.355348	07	11	18	During survey, these black bucks were sighted in village Malookpur (Fazilka District).
16-3-20	30.1133435, 74.3861894	04	10	14	During survey, these black bucks were sighted in village Jodhpur (Fazilka District).
16-3-20	29.9579893,	06	13	19	During survey, these black bucks were

	74.2811075				sighted in village Kular (Fazilka District).
16-3-20	29.9959458, 74.4181718	08	14	22	During survey, these black bucks were sighted in village Modi Khera (Fazilka District).
16-3-20	30.1207215, 74.3561839	09	14	23	During survey, these black bucks were sighted in village Bahadar Khera (Fazilka District).
16-3-20	30.0182983, 74.4130933	04	10	14	During survey, these black bucks were sighted in village khuban (Fazilka District).

Date	G.P.S. Location	Black buck			Remarks
		Male	Female	Total	
16-3-20	30.06143, 74.41039	06	09	15	During survey, these black bucks were sighted in village Bhai Ka Kera (Shri Muktsar Sahib District)
16-3-20	30.0443252, 74.4175542	04	08	12	During survey, these black bucks were sighted in village khema Khera (Shri Muktsar Sahib District)
16-3-20	30.0942806, 74.3790179	04	06	10	During survey, these black bucks were sighted in village Mahni Khera (Shri Muktsar Sahib District)
16-3-20	30.06437 74.40725	06	10	16	During survey, these black bucks were sighted in village Baloach Kera (Shri Muktsar Sahib District)

Date	G.P.S. Location	Black buck			Remarks
		Male	Female	Total	
17-3-20	29.9374540, 74.3319019	07	15	22	During survey, these black bucks were sighted in Village Mala Rampura (Rajasthan state)
17-3-20	29.9333218, 74.334538	04	11	15	During survey, these black bucks were sighted in Village Rasuwala (Rajasthan state)
17-3-20	29.9222413, 74.3246817	05	10	15	During survey, these black bucks were sighted in Village Indergarh (Rajasthan state)

					state)
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Date	G.P.S. Location	Black Buck			Remarks
		Male	Female	Total	
18-3-20	30.161982 7, 73.998814 1	04	08	12	During survey, these blackbucks were sighted in Village Bakainwala of Fazilka District (Boundary village Haripura).
18-3-20	30.105963 ,3 73.950703 3	04	11	15	During survey, these black bucks were sighted in village Panjawa of Fazilka District near Bikaner Canal of Fazilka District (Boundary village Haripura).
18-3-20	30.162992 6, 74.022891 3	03	05	08	During survey, these black bucks were sighted in village Danewala of Fazilka District (Boundary village Panniwala Mahla)

Date	G.P.S. Location	Black Buck			Remarks
		Male	Female	Total	
18-3-20	29.9624 54 73.9660 79	07	15	22	During survey, these black bucks were sighted in village Bhagsar of Shri Ganganagar District, State Rajasthan (Boundary village Panniwala Mahla)
18-3-20	29.9636 87 73.9371 17	06	14	20	During survey, these black bucks were sighted in village Bhagsar of Shri Ganganagar District, State Rajasthan (Boundary village Panniwala Mahla)
18-3-20	-	-	-	40	During Survey, local people told that there are about 40 Black Bucks in Village Chak Mehraj Ka of Shri Ganganagar District, State Rajasthan (Boundary village Panniwala Mahla)

The above data has been collected in a non scientific way only by ocular sightings during patrolling done by the Forest Guards and information given by local villagers. Although these evidences clearly suggest that the habitat of the blackbuck is widely

distributed outside the protected areas and is strongly linked with the nearby state of Rajasthan, precise boundary mapping of the wildlife corridor with scientific data on seasonal migration or movement of the Blackbucks in and out of the corridor and protected areas is yet to be studied in detail in a scientific manner by an expert agency in wildlife, like Wildlife institute of India (WII), Dehradun. Such study only would pave a clear pathway for creation of Wildlife corridor management plan and Strategy.

Evidences collected by the Field staff clearly depict that Blackbucks have widespread movement in adjacent districts of Muktsar, Fazilka and state of Rajasthan. The territorial jurisdiction of Wildlife Range Abohar comprises Abohar Sanctuary, Community Reserve and all other areas in Fazilka District. It is impertive that to scientifically manage the Wildlife Corridor in future for the blackbucks , the areas comprising of Muktsar District and the State of Rajasthan also have to be included through there jurisdiction managers i:e Forest department.

(e) Miscellaneous Activities:-

Besides the above mentioned measures which are treated in detail, the following points should be focused for sensitization since the Community Reserve has privately owned fields.

- i. Dead, dry and fallen trees should not be removed as these are ideal habitats for the birds, insects and other organisms.
- ii. Snags, dens nests and other such structures used by the animals and birds should not be disturbed.
- iii. Termite hills, honeycombs etc. should not be destroyed or removed.
- iv. Snags should be maintained at the tibbas where animals like the Black Buck and Nilgai survives.
- v. Animal friendly fencing around individual farm land so as to bring more area under natural habitat for the movement of wild animals.

- vi. The huge menace of stray cattle and stray dogs have to be tackled in a systematic manner and solutions to this menace will only pave way for the removal of fences done by the local community. Stray cattle management and stray dogs management by all the concerned departments and district administration is the need of the hour to save the wildlife.

1.8 Wildlife Health Management Theme Plan

1.8.1 General Description: Although no big epidemic so far has been reported from this area but management should keep itself ready for any disaster or emergency situation by coordinating with other departments and agencies.

1.8.2 special objects of management

1. To introduce and maintain the wildlife health monitoring protocol and disease surveillance system
2. To prevent and control the epizootic diseases to the wild animals
3. To improve wild animal rescue and rehabilitation facilities.

1.8.3 Strategies to be adopted

Presence of stray cattle, stray dogs ,lack of expertise and infrastructure,funds ,lack of trained staff, gaps in inter departmental coordination are some of the constraints in adopting these strategies.

- i) Wild animals need protection against contagious diseases transmitted through domestic cattle/dogs. The most important prevention is to immediately drive out stray cattle and dogs from community reserve.This can be ,made possible only when the district administration,local panchayats and animal husbandry department take focused measures in

the 4 villages of the community reserve. Since the community reserve is open in nature, a suitable habitat for the domestic cattle and dogs have to be established since they cannot be released in the same area after capture. Stray dogs play a huge menace and every year wildlife death takes place in large numbers due to stray dogs menace in the villages.

- ii) Measure should be taken to vaccinate all the cattle of all villages. Immunization should be ensured with certificate or tagging of the animals by the department of animal husbandry.
- iii) Help of local animal husbandry department will be taken for immunization, prevention and control of diseases.
- iv) All cases of major cattle and poultry diseases etc in adjoining areas will be reported by the animal husbandry department to wildlife department.
- v) General health of wild animals will be regularly monitored with the involvement of animal husbandry department. Staff will be trained in collecting samples and study disease symptoms by taking appropriate training from concerned departmental experts.
- vi) The rescue and rehabilitation facility for treatment of diseased animal needs to be strengthened. Selected staff will be trained in tranquilizing and rescue operations.

1.9 Inter departmental Coordination Theme plan

1.9.1. General Description:

The area was notified as a community reserve to protect the black bucks in its own habitat. A serious issue which the department faces in this community reserve management is though the bishnoi community protect the blackbuck and other wildanimals from hunting and poaching and coordinate with the department by

providing information regarding the illegal activities by offenders, the habitat has been transformed by the same local community into vast agricultural lands and kinnow orchards by flattening the tibbas and fencing the cultivated areas intensively. The problem of stray cattle throughout the area has resulted in fixing up of barbed, cobra wire and chain link fences in large numbers and the mud walls which were nature friendly are a rarity these days. The stray dogs have also increased in numbers and pose a huge threat to fawns and even adult wild animals when they are vulnerable. Large number of deaths are due to the problem of stray dogs and wild animal injury due to cobra and barbed wire. Though district administration has banned cobra and barbed wire the community still have done intense fencing in the fields and they have requested the district administration to manage the stray cattle menace to make their fields fence free.

The wildlife staff play a huge role in rescuing the injured animals, providing treatment and rehabilitating the injured wild animals with the cooperation of the local people. So, inter departmental coordination is the need of the hour to save these wild animals in Abohar.

1.9.2 Role of Line Departments in management of the Community Reserve:-

Animal Husbandry: The issues like stray cattle and stray dogs are a huge threat to the existence of wild animals in the community reserve area. The department has been raising this issue with the Animal husbandry department and also with district administration to find solutions and coordinate with the wildlife department and tackle the issue of stray dogs and stray cattle which is outside the mandate of this department since the area is being dominated by private agricultural fields and lands.

Revenue Department

Since the community reserve is undergoing habitat and land use changes to a drastic extent, the wildlife department is hugely dependent on the revenue department to identify lands that can be acquired from private people to develop suitable habitat of the blackbucks in the future since the tibbas and the natural habitat of the wild animals have shrunk to a large extent.

Police Department

The wildlife department co-ordinates with the police department for controlling wildlife crimes and also for taking strict action against cobra wire. The district administration has banned the use of cobra wire/barbed wire and has directed the police administration to take strict action against people who use cobra/barbed wires. Also as per the field reports, the people from areas outside the sanctuary and community reserve tend to illegally transport and unload feral cattle in Abohar as result of which the local community has hugely fenced their private fields to prevent crop damage. The department has urged the district administration to direct the police department to act against such miscreants.

Local Government:

The department of local government is responsible for managing the population of stray dogs and stray cattle in the 4 villages which falls inside the community reserve. The wildlife department requires a lot of support from the local governments and panchayats to tackle the issue.

1.9.3.Objective of the theme plan:

1. To formulate strategic plans to conserve the community reserve by coordinating with district administration and other line departments like animal

husbandry, police department, local government to tackle issues outside the purview of wildlife department like problem of stray cattle and stray dogs.

2. To conduct regular meetings with field staff of other departments to frame solutions for cattle and stray dog menace.

3. To promote capacity building of local veterinary doctors to provide treatment for wild animals by coordinating with animal husbandry department.

4. To acquire lands from private/panchayat and establish the area as a safe, animal friendly habitat for wildlife.

1.9.4 Strategies to be adopted

1. The district administration will be urged to take strict action against people who do fencing that cause damage to wild animals. To persuade the district administration to formulate plan and solutions for the issue of stray dogs and stray cattle by directing the concerned departments to tackle the issue thereby facilitating wildlife conservation.

2. Suitable habitats like barren lands and tibbas that are conducive to accommodate the wild animals like blackbuck and nilgai should be identified with the help of revenue department and land can be purchased from the local people in and around the abohar sanctuary and community reserve to develop such areas into secured habitats free of stray cattle and stray dogs in coordination with the local panchayats and revenue department.

3. The animal husbandry department and the local government must be seriously urged to tackle the issue of stray dogs and stray cattle under the leadership of district collector so that suitable solutions can be implemented to tackle the threat. Prime focus should be given on these 4 villages to tackle the menace of stray

dogs and stray cattle and to develop infrastructure with the help of the concerned departments to accommodate the stray animals.

4. The police department will be asked to provide strong support to the wildlife department to act against people using fences harmful to wildlife and also issues like illegal transport of stray cattle from the nearby areas and unloading the animals in abohar area.

5. The animal husbandry department in coordination with the wildlife department should provide training in wildlife health management, rescue, treatment and rehabilitation of wild animals by organizing training and workshops for veterinary officers and doctors.

6. The agriculture department also must be urged to promote organic farming facilities in the wildlife area so that the habitat of wildlife is protected and conserved.

7. Department of local government will be involved to spread awareness in the 4 villages regarding various threats like stray cattle, stray dogs and frame solutions to tackle the problems of stray cattle and dogs.

The above said strategies can be effectively implemented when all the departments come together to manage the habitat of this community reserve.

1.10 Landscape level management theme plan

1.10.1 General Description

This theme plan focuses on future planning for this community reserve area. With tremendous change in land use, irrigation facilities, economic activities, the management of the blackbuck should be slowly switching to landscape level. The bishnoi community who are animal friendly in nature have protected these animals since time immemorial but with the coming generations and changes in economic aspirations the conducive habitat for these animals to coexist with the community has

degraded. There is movement of these wild animals outside community reserve area to nearby districts Rajasthan like Ganganagar and Hanumangarh, also due to a lot of problems like intense fencing, stray dogs, lack of shrub land and tibbas and fence free habitats.

1.10.2 Objectives of the theme plan:

To move towards a wholistic approach of management of blackbuck species by doing a detail study on the migratory pattern of the blackbuck in a landscape level.

1.10.3 Strategies to be adopted:

1. Involving experts and scientists from reputed institutes like Wildlife Institute of India to carry out landscape studies and distribution pattern of the blackbucks in the region.

2. To carry out focused migration study and seasonal movements and behavioral studies of the blackbucks in the region.

3. To collect the data and research studies done on the landscape level and gradually shift the focus towards species specific (Blackbuck) conservation and creation of suitable habitat for the species and management of same since the Community Reserve has drastically shifted into habitat unsuitable for existence of these species due to various problems like intense fencing, stray dogs, stray cattle and conversion of the land into orchards and agricultural fields.

4. Efforts will be made to ensure enhanced monitoring programme of interstate movement of animals so as to take suitable management measures accordingly.

1.11 Community Engagement Theme Plan

1.11.1 General Description

In today's world of globalization and increased empowerment of the people it would be absurd to keep away people's involvement in the very things which were

meant to benefit them. Basically, it envisages conservation of biodiversity by addressing both the inputs of the local people on the protected area and the protected area on the local people.

It is with this observation that the need of giving a separate theme plan was felt so that the issue is addressed head on and the benefits of people involvement are reaped.

1.11.2 Objective of the theme plan

1. To involve people participation in management of Community Reserve Area.
2. To win the confidence of the people in the area so that general interest of community reserve Area is safeguarded .
3. To create certain assets which would be beneficial for the general public.
4. To promote land practices compatible with the objective of biodiversity conservation in the villages.
5. To create awareness and a sense of responsibility among the people to not only protect the animals but also the habitat on which the wild animal resides..
6. To involve the community in the decision making process and management of the sanctuary area.

1.11.3 Strategies to be adopted

1. Creation of social connectivity with conservation of the community reserve is the need of the hour. The management plan to protect and enhance the environmental, social and economic assets of the land related to communities for the benefit of present and future generations, must be promoted and implemented at the grassroots level. A partnership ensuring a legacy of diverse ecosystems, plantation, economic and social well being in the area surrounding communities through innovative planning. Local

community participation through Income Generation Activities (IGA's) to generate their interests in community reserve and to protect area for wildlife.

2. Environmental education is to be promoted in the community reserve area to teach about how natural environments function and, particularly, how human beings can manage their behavior and ecosystem in order to live sustainably. The term is often used to imply education within the school system, from primary to post-secondary. However, it is sometimes used more broadly to include all efforts to educate the public and other audiences, including print materials, websites, media campaigns, etc. Related disciplines include outdoor education and experiential education. Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action. This can be carried out by activating the school clubs and eco clubs and village volunteers who would help in promoting a sense of awareness among community regarding wildlife conservation.

3. To facilitate revenue generation in the community and to generate income in rural areas which could lead to poverty reduction and growth in rural areas. This revenue generating facilities can be generated for the Community Reserve villagers like Bread & Breakfast model, crafts center, camping sites, etc. The local community can be employed as tour guides, bird watchers etc to promote revenue generation.

Since the area under consideration is all private lands community engagement in protecting the habitat of the wild animals will not be possible without the involvement of district administration and other departments which should give a special focus to the people's needs in these 04 villages.

Chapter-II

Miscellaneous Regulations

2.1 Monitoring and Evaluation

The effects and results of the prescriptions given in the Plan and their implementations, like habitat improvement measures, plantation and other treatments will be monitored and evaluated yearly preferably by a separate unit set up for the purpose. The corrective measures will be taken, if need be, on the basis of the results of the study.

2.2 Research and Development

The Management of Community Reserve depends largely on the data availability i.e data on the problem and threat perceptions, their causes, possible solutions, interrelationship between various biotic & abiotic factors etc. Without having these data, appropriate remedies cannot be prescribed. Not many studies have been carried out on the ecology of Community Reserve.

It is therefore recommended that an integrated approach is adopted where research work treats Community Reserve as an ecological unit and the various factors involved in it.

Some of the possible areas of study are:-

1. The potential of Community Reserve Area ecosystem.
2. Documentation of the biological diversity existing in the area, right from the microbes to mammals, their inventory and establishing the role of the organisms in the ecosystem.
3. The population estimate of fauna by experts.
4. Minimum vegetation area required for providing feeding and breeding for Black Buck.

5. The physiology and dynamics of animal migration within area and also study about the wildlife corridors that are linked with this area and other protected areas.
6. Land use management in the entire community reserve area.
7. The role of Eco-development and their impact on the people.

2.3 Publicity and awareness

Even though Community Reserve area has gained national recognition, there is still very little awareness among the people. It is very important that the unique features of the area, its enchanting beauty, its aesthetic, environmental and economic values as well as the threats faced by it are highlighted and widely publicized, so that awareness is created. This can be achieved by:-

- Promoting ecotourism, as discussed in the next chapter.
- Utilizing the services of local media
- Publication of information brochures, pamphlets containing all types of information about the area.
- Setting up of signboards containing vital information at the International Airport at Amritsar, the Railway station and Bus stands in the immediate vicinity of the area as well as in major cities and around the state.
- Large scale celebration involving public participation on occasions like World Environment Day and wildlife week etc.
- Utilizing the facilities available at the Interpretation center for educating the local people as well as students and groups visiting the Community Reserve.

Chapter III

Eco tourism

3.1 Concept of Eco-Tourism

The concept of eco tourism has evolved over the past decade due to an increased awareness of the world's dwindling biological diversity, and as a reaction against mass tourism. The major underlying assumption of successful eco tourism is that visitor can provide the necessary economic incentives to achieve local conservation and development. That is, ecotourism is able to generate revenue, which can be used to protect and conserve the exiting biodiversity and natural environmental that draw visitor to a particular site. Eco tourism's objectives therefore, include visitor education, non-alteration of ecosystems and local economic benefits.

Ecotourism is basically a very specific type of nature based tourism, in which small groups of people are taken to experience various aspects of nature and participate in Wildlife viewing, nature trekking, education tours and so on. Special care is taken to prevent negative impacts of the ecosystems, and tourist education in matter related to the environment is given high priority. The distinguishing feature of ecotourism is that it emphasizes the ecological fragility, carrying capacity and biodiversity conservation of the region, while acting as a liaison between communities and tourism industry.

Community Reserve due to its unique biodiversity and enchanting beauty has a great potential for ecotourism. Keeping in view the huge potential of ecotourism in the area, and for the purpose of this Management Plan, the following measures are recommended:

Utilization of existing facilities and new facilities (created for management purpose) to facilities visitors as well. These features may include:-

- Bicycling routes for animal lovers through villages.
- Development of visitor education facilities.
- Setting up of museum exhibits, audio-visuals nature shop having books, souvenirs, local handicraft etc. at the Interpretation centre.
- Utilization of check-post as kiosks for making available information brochures, books, guides etc.

3.2 Constraints

- 1) No previous activities of eco tourism
- 2) Remote wildlife sightings
- 3) Vegetation cover is not very attractive for people.
- 4) Lack of funding and Infrastructure.
- 5) Private land ownership

3.3 The Strategies

New infrastructure and various facilities can be developed in different villages under existing policies and guidelines. A separate nature trail can be developed on which visitors will be allowed. The different villages can be earmarked for the development and promotion of ecotourism in the Community Reserve.

3.3.1 Identification of villages

The tourism zone in Community Reserve will be covering/passing through all the 4 villages.

3.3.2 Development of Infrastructure/Eco tourism facilities

After the creation/development of infrastructure, habitat improvement and renovation of existing important structure for tourism, the eco tourism activities can be started.

The existing interpretation center in the range complex has to be upgraded with various audio visual models can be installed. Camps of school student can be allowed with prior permission from competent authority. Various theme based photo-galleries can be created viz. Animal, Plants, type of Forest, Impact of anthropogenic activities/ Population over forests, wildlife and environment etc.

3.3.3 Strategies for the promotion of conservation education

Conservation education is the process of educating people for conservation of flora, fauna, environment and ecology. Conservation education for Community Reserve will be achieved through eco-tourism. eco-development and interpretation activities besides involvement of schools, villagers and celebration of various events.

The following strategies can be adopted:-

1. Display of wild life related movies in nearby schools on a particular day/date after coordination with school authorities. Film shows can be organized in villages after Panchayat meeting to involve the villagers.
2. Conducting tours and visits of students and teachers to wild life area's in the state like Chhatbir Zoo, Deer Park, Patiala.
3. Organizing work shops, various competitions, bird watching etc. for schools, colleges city/village residents, other department to sensitive them towards the wildlife and conservation.
4. Involvement of volunteer students, activating eco clubs in schools, creating youth rakshaks from villages and training them in rescue operations or post rescue care activities.

5. People from villages, students, youth may be involved in landscaping, and can serve as a great help to staff in various activities like participation in conservation efforts.
6. Local people can be promoted to open shops for traditional clothes, food etc to attract visitor outside the area.
7. Distribution of pamphlets, stickers, caps, photographs etc in the schools and to the visitors.
8. Promotion of Home stays and eco huts in the village areas for accommodation of tourists thereby promoting revenue generation for local villagers.
9. Training of local villagers as tour guides and generating employment opportunities for them.

3.4 Regulations, Monitoring and Evaluation

Regulation and monitoring will be done as follows:-

1. Guidelines to be followed in tourism zone will be published and displayed at all locations/ important points to generate awareness. Guidelines will be given to all visitors while allowing the entry.
 2. All the relevant rules and regulations will be obeyed within the area.
 3. Involvement of local people will also be an indicator for evaluation. Local people participation in conservation efforts as guides will be a significant indicator
-

Chapter IV

RESEARCH, MONITORING AND TRAINING

4.1 Introduction

There is no history of specific research and monitoring of the Community Reserve. Further, it is also well established that research, monitoring and training plays very important role in evaluation and better implementation of the management plan.

Strategies:

1. An ecological study can be done to know the existing food chains and food webs and their interrelationship.
2. Inventory of bird species visiting/ resident of community reserve should be made to estimate avian biodiversity of the Community Reserve.
3. Habitat occupancy maps (HOM) should be prepared to know the habitat and niche of different species and their interrelationships.
4. Study for possibilities of corridor for different wildlife species should be carried out.
5. Study to know the socio-economic and ecological impacts of community reserve on villages and vice-versa.
6. Efforts will be made through FSI/IIRS to prepare digital map/digitization of map.
7. Providing opportunities for research and monitoring.

4.2 Monitoring

Strategies

1. Indicators for various discipline viz biological, ecological, socio-economical will be prepared separately to know the impacts.
2. Protocols for monitoring will be developed for all level of staff.

3. Monitoring will be done to study the improvement in vegetation cover, increase in the number of animal or birds, creation of infrastructure etc.

4.3 Training

Strategies:

1. Training of all field level staff viz. watcher, forest guard, forester, Deputy Ranger/ RFO, Dy. DFO, DFO, about laws, eco tourism, management communication , survey techniques, population estimate techniques, regular monitoring techniques, rescue operations etc.
2. Training of EDC members/ villagers for tourist guide, entry point activities, running of souvenir shop etc.
3. Coordination with various training institutes such as WII, ICFRE, FRI, IGNFA Dehradun, PAU Ludhiana, Punjab University, Patiala etc.
4. Establishing a permanent learning centre for knowledge dissemination.

4.3.1 On the job training

(A) Application of laws and regulations:-

1. Various training will be organized for all level of staff for laws, various related acts useful for the staff to update their knowledge
2. Training for laws and procedures will be organized to train the staff about law, filling of cases, court procedure including procedure for investigation, collection of evidences etc.

(B) Post mortem and wild life health management

1. Training will be provided to field staff about essentials of post mortem, collection & preservation of samples and their dispatch to laboratory.
2. Training will be organized to provide knowledge to the staff about common disease of animals, animal health indicators on regular basis.

3. Training for the staff will be organized for improving proficiency in identification of WL signs and their interpretation on a regular basis.

4. Participatory management training and social, communication skills and public dealing will be given to the staff to work in harmony with the community.

4.3.2 Formal training courses

1. Formal training courses may be organized or staff may be allowed to join these courses to upgrade their skills, better scientific management in various disciplines like conservation, GIS and computer applications, law and procedures, ecotourism etc.

2. Support from various institutes like W.I.I Dehradun, Police department etc. may be taken to train the staff in field research techniques, weapon handling and maintenance etc.

4.3.3 Establishment of a learning center:- A learning center should be established at community ceseve as a part of continuing informal and formal training and it will also serve as a platform of experience sharing etc subject to the availability of land.

CHAPTER V

ORGANISATION AND ADMINISTRATION

As the area is constituted as Community Reserve, any measure to manage, administer and improve the protected area requires consensus and approval from the local stakeholders. The community reserve has a legal sanctity under amended Wildlife Protection Act. Hence, in order to strengthen the people's active participation in the day to day management of the reserve, a series of committees are proposed to be constituted.

5.1 Constitution Of Community Reserve Management Committee

Under section 36D of Wildlife Protection Act, 1972 (amended up to 2006), the state government is required to constitute a management committee to manage the affairs of the community reserve. The sections are reproduced below:

- (1) The State Government shall constitute a Community Reserve management committee, which shall be the authority responsible for conserving, maintaining and managing the community reserve.
- (2) The committee shall consist of five representatives nominated by the Village Panchayat or where such Panchayat does not exist by the members of the Gram Sabha and one representative of the State Forests or Wild Life Department under whose jurisdiction the community reserve is located.
- (3) The committee shall be the competent authority to prepare and implement the management plan for the community reserve and to take steps to ensure the protection of wild life and its habitat in the reserve.

(4) The committee shall elect a Chairman, who shall also be the Honorary Wild Life Warden on the community reserve.

(5) The committee shall regulate its own procedure including the quorum.

As the Community Reserve falls in four villages, all the villages need representation. Hence it is proposed to have the following committee for the purposes of management.

Constitution of Community Reserve Management Committee:-

1. Sarpanch – Village Panchayat Panniwala Mahla - Member
2. Sarpanch – Village Panchayat Gumjal- Member
3. Sarpanch – Village Panchayat Haripura- Member
4. Sarpanch – Village Panchayat DiwanKhera- Member
5. Panchayat Member of any of the four villages
6. Range Officer (Wildlife), Abohar - Member Secretary

The committee will elect its chairman on rotation of one year basis. The terms and conditions of the committee will have to be decided at the time of constitution by the state government. The committee will deliberate upon the management issues, expenditure and revenue from the reserve and will be final authority for decision making. The proceedings, decision making and planning including the quorum will be decided by the committee itself. Importantly, any revenue arising out of eco tourism and other major activities will be maintained by the committee and will be utilized for the development of the reserve and the villages of the community reserve on 50:50 sharing basis.

5.2. Constitution Of Inter Departmental District Coordination Committee:-

Since the Community Reserve falls under multiple land uses, a District level Inter Departmental Coordination Committee is necessary for general coordination and to ease out differences arising due to application of Wildlife Protection Act. The committee is important in the wake of issues arising from time to time. This committee can be constituted by the Deputy Commissioner, Fazilka. The committee will meet at least once in two months and decide about the issues pertaining to the reserve and regulate its proceedings on its own including the quorum.

Constitution of District Inter Departmental Coordination Committee:-

1. Deputy Commissioner, Fazilka – Chairman
2. Divisional Forest Officer (Wildlife), Ferozepur - Member Secretary
3. Divisional Forest Officer (Territorial), Muktsar - Member
4. District Revenue Officer, Fazilka – Member
5. Sub Divisional Magistrate, Abohar – Member
6. District Development & Panchayat Officer, Fazilka - Member
7. Supt.Engineer / XEN, Drainage, Fazilka – Member
8. Chief Agricultural Officer, Fazilka – Member
9. Deputy Director, Animal Husbandary, Fazilka – Member
10. Deputy Director, Fisheries, Fazilka – Member
11. Public Representatives, Conservationists, Chairman of the Community Reserve Management Committee / Reputed NGO's on special invitation by Chairman or Member Secretary
12. Range officer, Wildlife, Abohar

5.3. Constitution Of Village Eco-Development Committees:-

The village level eco-development committees are formed with purpose of implementing any future eco-development projects. This committee is proposed on the lines of Joint Forest Management guidelines issued by Government of Punjab. The constitution of the committee will be decided at the time of preparation of detailed eco-development project for the Community Reserve.

Divisional Forest Officer (Wildlife) would be approving authority for village level eco-development committees. The Range officer,(Wildlife),Abohar will be the coordinator and the forest guard incharge of the community reserve would be the member secretary.

The quorum and other issues regarding frequency of meetings and decisions will be placed before the Community Management Committee for approval. The project works will be approved on detailed estimates prepared and submitted to Divisional Forest Officer (Wildlife) through Range Officer, Abohar(Wildlife).

In order to strengthen Nature and Environmental Awareness among School children, it is proposed to constitute Ecoclubs and wildlife Clubs in all the schools in and around the Reserve and conduct workshops.

5.4. Involvement Of Other Organisations & N.G.Os

The involvement of the reputed Non Governmental Organisations on the Wildlife Conservation work in the reserve to boost the people's participation in conservation work will be encouraged. The NGOs and other interested individuals can contribute much to the development and management of the Community Reserve.

Chapter-VI

The Plan Budget

6.1 The Plan Budget The plan budget refers to the budget required to operate the management plan strategies irrespective of classification of funds. As funding is the main running force for the implementation of a plan. The budget is always a constraint for the management of Community Reserve Area. Presently no separate fund is available exclusively for Community Reserve area, which is the main hurdle to undertake development work.

1. *For proper funding various schemes of Government of India, State government, International agencies must be explored.*
2. *Funds can also be sought through research projects from Department of science and technology, environment.*
3. *All the developmental schemes must be linked with eco-development. A special component must be allocated to the eco-development of villages at the periphery of the Community Reserve.*
4. *Uniforms, shoes, equipment etc. should be purchased through collaboration with NGOs and other agencies.*
5. *A Community Reserve Management Fund can be formed to secure the funding through various agencies.*
6. *Funding can be explored through CSR activities from the private organization and other profit making agencies, business entities.*

6.2 Financial Forecasts

The Financial forecasts for the plan period 2020-2021 to 2029-30 has been given in **Annexure I.**

Description of works	Proposed details with unit cost and physical target	Tentative Year wise phasing of the financial forecast (in Lakhs)										Grand Total (in lakhs)
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
5.Wildlife Health Management and Rescue and Rehabilitation Works												
Rescue and rehabilitation including transportation,labour,medicines,equipments,cages,tools,instruments and other expenditure related to rescue works	Rescue and Rehabilitation Works(Lumpsum)	5	5	5	5	5	5	5	5	5	5	50
Establishing Rescue Rehabilitation,Treatment centre and running cost of the center subject to availability of land	Rescue Centre and running cost(lumpsum)	-	-	40	5	5	5	5	5	5	5	75
	Purchase of Remote Injection Gun,Tranquilizers,Pistol short range,Blow pipes,Net guns,Cages and other equipments for rescue and health management(L/s)	2	2	2	2	2	2	2	2	2	2	20
Total of 5		7	7	47	12	12	12	12	12	12	12	145
6.Ecotourism, Interpretation and Awareness												
Creation of Documentaries and educational films,websites	Movies and films for awareness (L/s)	1	1	1	5	-	-	2	2	2	-	14

Description of works	Proposed details with unit cost and physical target	Tentative Year wise phasing of the financial forecast (in Lakhs)										Grand Total (in lakhs)
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Audio visuals and other awareness generation materials for interpretation center	LCD screen,Furniture,Tables and chairs,Electrical fittings,Multi-media / LCD projector,Audio visual Device, Printed laminated panels,diaromas and other awareness creation equipments and models,furniture etc. (L/s)	10	10	5	2	1	1	5	5	2	2	43
Awareness	Awareness generation and Education camps/ workshops activities in the community, schools and colleges (L/s)	2	2	2	2	2	2	2	2	2	2	20
Signage & Boards	Signage boards in different locations of the Community	2	-	2	-	-	2	2	-	-	4	12
Library	One library with collection of 500 books (L/s)	0.25	0.25	-	-	-	-	-	0.25	-	-	0.75
Publicity material	Publicity material, films, brochure, pamphlets, hoardings , website development, booklets, checklists(Lumpsum)	1	1	1	1	1	1	1	1	1	1	10
Machan and hides, view points,bird stands,etc	As per field requiremnts and sighting areas (Lumpsum)	2	2	2	2	2	2	2	2	2	2	20
Total of 6		18.25	16.25	13	12	6	8	14	12.25	9	11	119.75
7.Research, Monitoring & Training												

Description of works	Proposed details with unit cost and physical target	Tentative Year wise phasing of the financial forecast (in Lakhs)										Grand Total (in lakhs)
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
External training	Suitable organizations such as WII, BNHS, and other resource persons should be requested for imparting training in areas such as estimating habitat quality, monitoring of introduced species, behavioral ecology of wild ungulates etc (L/s)	2	2	2	2	2	2	2	2	2	2	20
Total of 7		11	11	36	13	13	13	13	13	13	13	149
8.Eco development and Income Generating Activities												
Entry points activities in 4 villages	Entry Point activities in 04 Villages (Rs 2.00 lacs per village four	8	-	-	8	-	-	8	-	-	8	32
Base line and impact assessment of villages through PRA, RRA in 4 villages	Rs.50000 in each village two times in ten years (L/s)	-	-	-	-	-	2	-	-	-	2	4
Promotion of Income Generating Activities including training and exposure visits	Lumpsum	5	5	5	5	5	5	5	5	5	5	50
Formation and training of SHG's	Lumpsum	2	2	2	2	2	2	2	2	2	2	20
Awareness of Organic farming	Lumpsum	1	1	1	1	1	1	1	1	1	1	10
Total of 8		16	8	8	16	8	10	16	8	8	18	116
9.Other Recurring expenditure												

Description of works	Proposed details with unit cost and physical target	Tentative Year wise phasing of the financial forecast (in Lakhs)										Grand Total (in lakhs)
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Repair and Maintenance of Infrastructure	Repair and Maintenance of range complex, rescue center, Interpretation center	2	2	2	2	2	2	2	2	2	2	20
Check post	-do-	-	-	-	-	1	-	-	1	-	1	2
wireless / patrolling kit	-do-		-	0.5	-	0.4	-	0.5	-	0.5	0.6	2.5
Electronic items	-do-	-	-	0.2	0.2	0.4	0.4	0.6	0.6	0.8	0.8	4
Staff Amenities	Awards/ incentives	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2
Rescue Vehicles(POL/equipment)	Repair & maintenance	3	3	3	3	3	3	3	3	3	3	30
Total of 9		5.2	5.2	5.9	5.4	7	5.6	6.3	6.8	6.5	7.6	60.5
Grand total		71.85	133.85	147.30	92.80	88.10	70.70	82.40	77.15	71.60	83.70	921.25

1. Salaries and other office related expenditure are excluded and above financial forecast can be vary while planning for operations every year based on the field conditions and requirements during management.

2. The detailed estimates for the works and other activities will be prepared with consultancy of Community Reserve Management Committee and approved by D.F.O as per the budget allotted every year.

3. The works will be as per the Forest Department schedule of rates, PWD rates for the buildings and civil works.

4. The contractual staff will be need based and for the project period only to be recruited on contract basis.

5. The buildings will be departmental property though land will be acquired /purchased or allotted free of cost to the department.

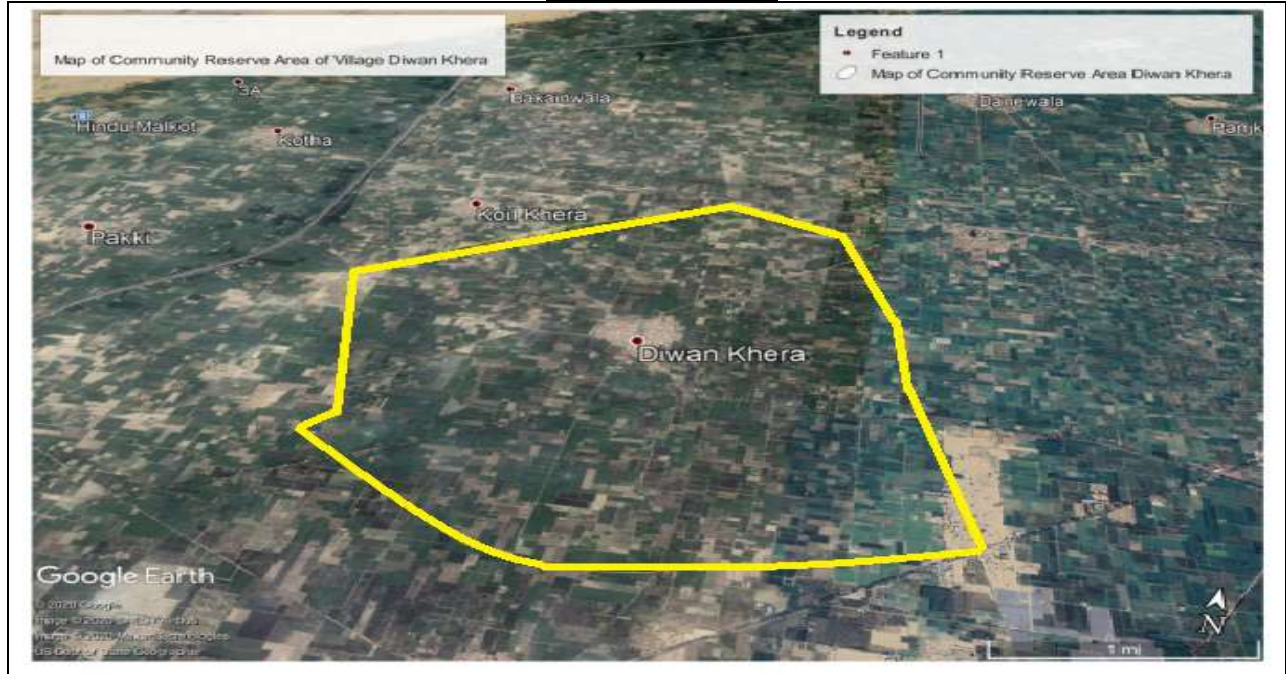
6. Any revenue obtained from the community reserve will be deposited to the Community Reserve Management Committee funds and will be utilized for the development of Community Reserve as decided by the committee.

PART-III

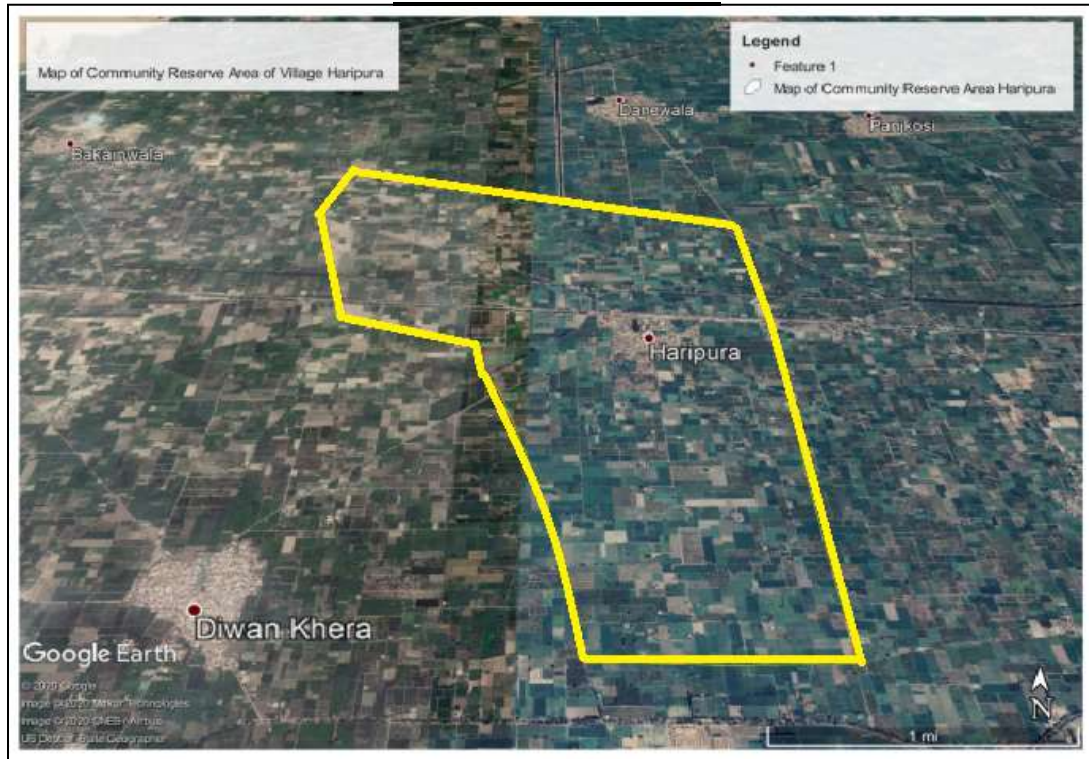
MAPS AND APPENDICES

GOOGLE EARTH MAP OF FOUR VILLAGES IN COMMUNITY RESERVE

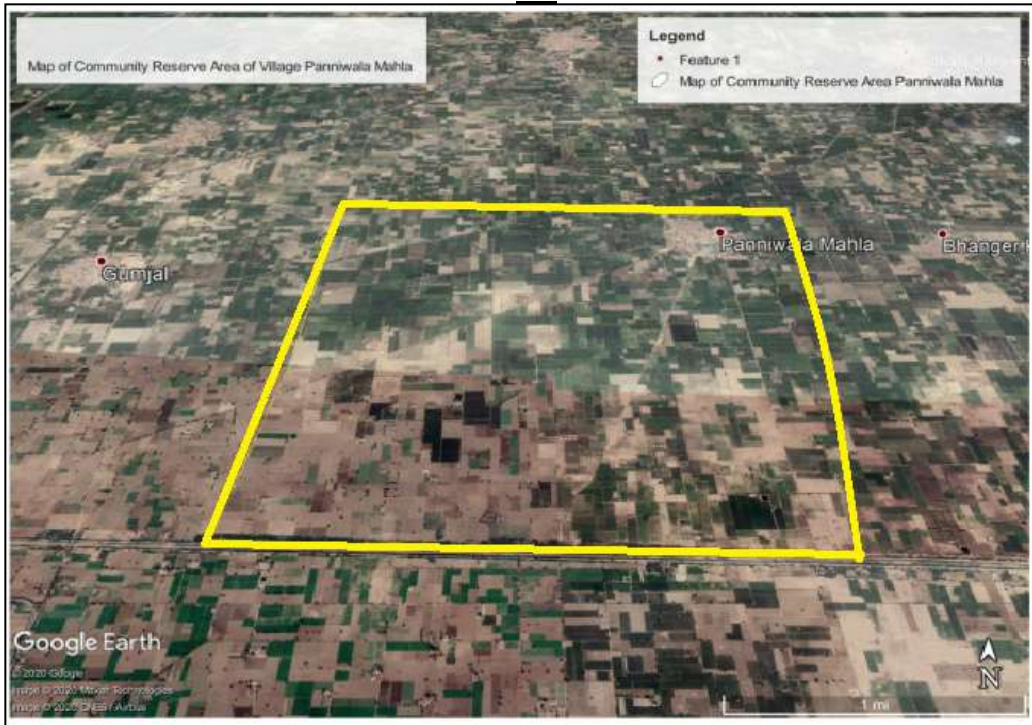
DIWANKHERA



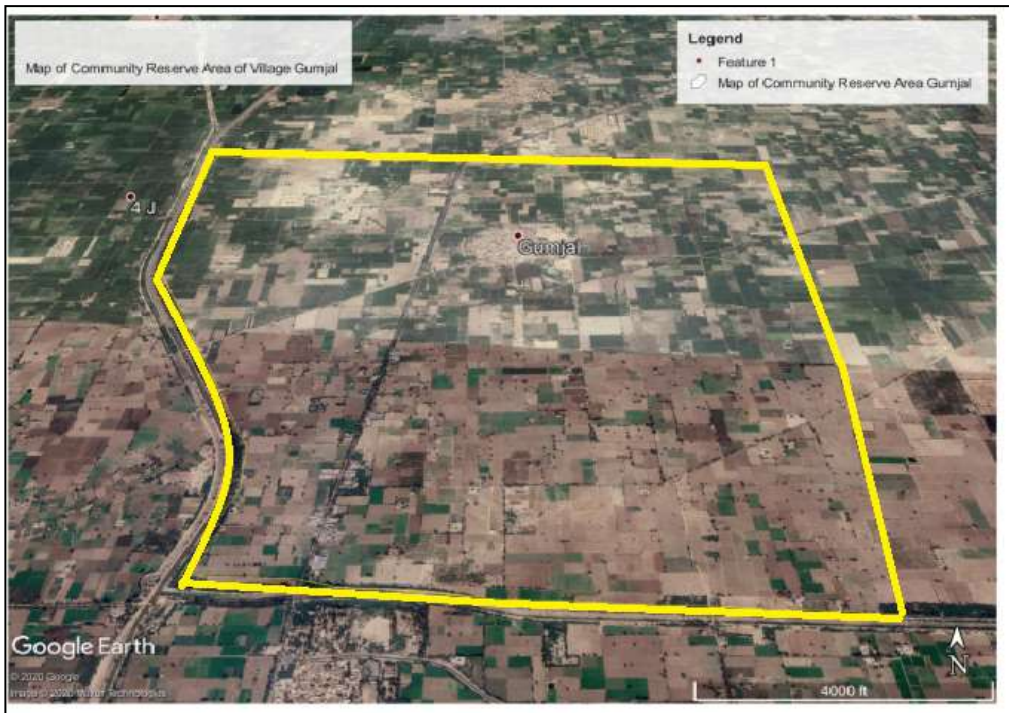
VILLAGE HARIPURA



VILLAGE PANNIWALA



VILLAGE GUMJAL



VILLAGE BOUNDARY MAP OF 4 VILLAGES IN COMMUNITY RESERVE



APPENDIX I
WILDLIFE SIGHTINGS IN ABOHAR COMMUNITY RESERVE



Blackbucks sighted in Community Reserve



Nilghai sighted in Kinnow Orchards

APPENDIX II

Notification

No. 34/4/2015-FT-5/448962/1

Dated 27.3.2015

Where as the area specified below is considered by the State Government to be of adequate Zoological, faunal, floral, geomorphologic, natural and ecological significance for the purpose of protecting, propagating and developing wild life and associated ecosystem. The area mentioned in the following schedule shall be declared as a Community Reserve in Fazilka District of Punjab. The concerned Panchayats following under community reserve Haripura, Panniwala Mahla, Gumjal and Diwankhera in Fazilka District have given their consent in the form of resolutions.

Now, therefore, in exercise of the powers conferred by sub section 36 (c) of Wild Life (Protection) Act, 1972 as amended by Wild Life (Protection) Act, 2002, the Governor of Punjab is pleased to declare the area specified below to be a community reserve for the purpose of protecting, propagating and developing wild life and its environment from the date of issue of this notification in the official gazette. The provisions of sub section (2) of section 18, sub section (2), (3) and (4) of section 27, section 30, 32 and clauses (b) and (c) of section 33 of the Wild Life (Protection) Act 1972 as amended from time to time shall also apply to the Community Reserve being notified.

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Name of District	Name of the Land	Boundaries
Ferozepur	1) The entire 3996 acre area of the Village Panniwala Mahla, Had Bast No. 98, entire 3762 acre area of Vill. Gumjal Had Bast No. 99,	North:- Village Usman Khera and Kallar Khera. East:- Village Bhangar Khera. South:- Village Sadhuwali and Chack Ganesha wala (Rajasthan). West:- State Boundary Rajasthan.
	2) The entire 3414 acre area of Vill. Haripura Had Bast No.106 and entire 5689 acre area of the Vill. Diwankhera Had Bast No.104	North:- Village Koel Khera, Danewala and Bakainwaka East:- Village Khuian Sarwar and Daulatpur. South:- Village Daulatpura and Gidran Wali. West:- Village Koel Khera, Bakainwala and Panjawa.
TOTAL		16,861 Acres (6744.4 Ha).

(VISWAJEET KHANNA)
 Financial Commissioner (Forests) &
 Secretary to Govt. of Punjab.
 Deptt. of Forests & Wildlife Preservation.

A copy is forwarded to the following for information and necessary action:-

- 1- PS/Forest Minister, Punjab.
- 2- PS/Financial Commissioner, Forests, Punjab.
- 3- Principal Chief Conservator of Forests, Punjab, Forest Complex Sector-68, S.A.S Nagar
- ✓ 4- Chief Wildlife Warden, Punjab, Forest Complex Sector-68, S.A.S Nagar
- 5- Commissioner, Ferozepur Division Ferozepur.
- 6- Deputy Commissioner, Ferozepur.
- 7- Controller, Printing & Stationary, Punjab, Chandigarh along with a spare copy to publish the notification in the ordinary Gazettee. He is requested to send the 50 copies of the printed copies of the notification. Copy has already been sent through e-mail.

J

Special Secretary to Govt. of Punjab.
Deptt. of Forests & Wildlife Preservation.

322/21
दि 04/15

पुं० नं० ३११-१६

पुं० नं० १०४/२०१

उपरोक्त ची प्रकृत गैर निवास के प्रकृत मंड
केरवी नगरपाली केत केनी गरी है:-

- 1. हरपाल ठिकेपुर मकर ठिकेपुर
- 2. हरमकर मकर (जी.जी.) ठिकेपुर
- 3. डिपटी केकर पटियाला/ठिकेपुर/ठिकेपुरा मंडे घरेडा

J

उपरोक्त प्रकृत मंड हरपाल (जी.जी.)
मंडे मंड केरवी गरी हाउस,
पटियाला, मकर. ई. मकर मंड।
पुं० नं० १०४/२०१
20/4/15
S. Singh
04/15

APPENDIX III

LIST OF TREES, SHRUBS AND GRASSES (BOTH INDIGENOUS AND EXOTIC)

S.no	Local Name	Botanical Name	Family	Habit
1	2	3	4	5
	TREES			
1	Arjuna	<u>Terminalia arjuna</u>	Combretaceae	A large ever green tree
2	Ber/Beri	Ziziphus mauritiana	Rhamnaceae	A fruit tree
3	Bohar/Banyan	Ficus benghalensis	Moraceae	A large sized deciduous tree
4	Bahera	Terminalia bellirica	Combretaceae	A large ever green tree
5	Bel	Aegle marmelos	Rutaceae	Evergreen armed tree
6	Dhak, flame of the forest	Butea monosperma	Fabaceae	A moderate deciduous tree
7	Hins	Capparis sepieria	Capparaceae	A large size deciduous
8	Jand/Khejri	Prosopis cineraria	Fabaceae	Deciduous tree
9	Kikar	Vachellia nilotica	Fabaceae	A moderate to large deciduous thorny tree
10	Kala siris	Albizia lebbeck	Fabaceae	A medium sized deciduous tree
11	Karonda	Carissa carandas	Apocynaceae	A large size

				deiduous tree
12	Khajoor/Date palm	Phoenix dactylifera	Arecaceae	Evergreen tree
13	Lasura	Cordia myxa	Boraginaceae	A medium sized tree
14	Mesquite	Prosopis juliflora	Fabaceae	A shrub to middle size thorny tree
15	Mulberry Toot	Morus alba	Moraceae	A large size deciduous free
16	Neem	Azadirachta Indica	Meliaceae	A large sized Evergreen tree
17	Phalahi	Acacia modesta	Leguminosae	A small to middle sized thorny tree
18	Peepal	Ficus religiosa	Moraceae	A large size deciduous tree
19	Rehru	Acacia leucophloea	Leguminosae	A small size shrub on tree
20	Safeda	Eucalyptus	Myrtaceae	A large sized Evergren tree
21	Shisham/Tahli	Dalbergia sissoo	Fabaceae	A large sized Evergreen tree
22	Simbal	Bombax ceiba	Bombacaceae	A deciduous silk cotton tree
23	Teak, Sagwan	Tactona grandis	Lamiaceae	A large size deciduous tree
	<i>SHRUBS</i>			

1	Ak	Calotropis procera	Asclepiadaceae	A shrub
2	Bathu	Chenopodium album	Amaranthaceae	A annual weed
3	Bhang	Cannabis sativa	Cannabaceae	A tall annual weed
4	Karira	Capparis decidua	Capparaceae	A thorny Shrub
5	Karaunda	Carissa carandas	Apocynaceae	A thorny Shrub
6	Puthkanda	Achyranthes aspera	Amaranthaceae	An erect shrub
7	Mallah	Zizphus Nummularia	Rhamnaceae	A spiny Shrub
8	Giloy	Tinospora cordifolia	Manispermaceae	A twining large sized tree
	GRASSES			
1	Anjan	Cenchrus ciliaris	Gramineae	A much branched perennial grass
2	Dab	Desmostachya bipinnata	Gramineae	A perennial tall sand binder economic grass
3	Kabal/Doob	Cynodon dactylon	Gramineae	A variable perennial grass
4	Kahi	Saccharum spontaneum	Gramineae	A perennial used for paper pulp

APPENDIX-IV

CHECK LIST FOR WILD ANIMALS

Sr.No	Common name	Scientific Name
1	Blue bull/Neelgai	<i>Boselaphus tragocamelus</i>
2	Black Buck	<i>Antilope Cervicapra</i>
3	Common Indian Hare	<i>Lepus nigricollis</i>
4	Common Mongoose	<i>Herpestidae edwardsi</i>
5	Common house rat	<i>Rattus rattus</i>
6	Common squirrel	<i>Funambulus palmarum</i>
7	Indian Cobra	<i>Naja naja</i>
8	Fruit bat	<i>Rousettus leschenaultia</i>
9	Indian porcupine	<i>Hystrix indica</i>
10	Jackal	<i>Canis aureus</i>
11	Jungle Cat	<i>Felis Chaus(Gille tenstaedt)</i>
12	Common Krait	<i>Bungarus caeruleus</i>
13	Monitor Lizard	<i>Varanus</i>
14	Rhesus Monkey	<i>Macaca mulatta</i>
16	Smaller Indian Civet	<i>Viverricula indica</i>
17	Viper	<i>Daboi russelii</i>

APPENDIX-V

Check list of Wild birds

S.No	Common Name	Scientific Name
1	Pond Heron	<i>Ardeola grayii</i>
2	Cattle Egret	<i>Bubulcus ibis</i>
3	Black-winged kite	<i>Elanus careuleus</i>
4	Brahminy Kite	<i>Haliastur indus</i>
5	Shikra	<i>Accipiter badius</i>
6	Scavenger vulture	<i>Neophron percnopterus</i>
7	Black partridge	<i>Melanoperdix niger</i>
8	Grey partridge	<i>Perdix perdix</i>
9	Pea fowl	<i>pavo cristatus</i>
10	Red Wattled lapwing	<i>Venellus indicus</i>
11	Indian ring dove	<i>Streptopelia decocto</i>
12	Spotted Dove	<i>Spilopelia chinensis</i>
13	Large Indian parakeet	<i>Psittacula eupatria</i>
14	Rose Ringed parakeet	<i>Psittacula krameri</i>
15	Black drango	<i>Dicrurus macrocerus</i>
16	Pied Myna	<i>Gracupica contra</i>
17	Bank Myna	<i>Acridotheres ginginianus</i>
18	House crow	<i>Corvus splendens</i>
19	Indian robbin	<i>Saxicoloides fulicatus</i>
20	Red vented Bulbul	<i>Pycnonotus cafer</i>
21	Common babbler	<i>Turdoides caudata</i>
22	Jungle babbler	<i>Turdoides striata</i>
23	Magpie robin	<i>Copsychus Sacularis</i>

24	Purple sunbrid	<i>Cinnyris asiaticus</i>
25	Indian weaver bird	<i>Ploceus philippinus</i>
26	Red Munia	<i>Amandava amandava</i>
27	Brahmany Mynah	<i>Strunia pagodarum</i>
28	Tailor Bird	<i>Orthotomus sutorius</i>
29	Koel	<i>Eudynamys scolopaceus</i>
30	Hoopoe	<i>Upupa epops</i>
31	Cuckoo	<i>Cuculus canorus</i>
32	Pariah Kite	<i>Milvus migrans</i>