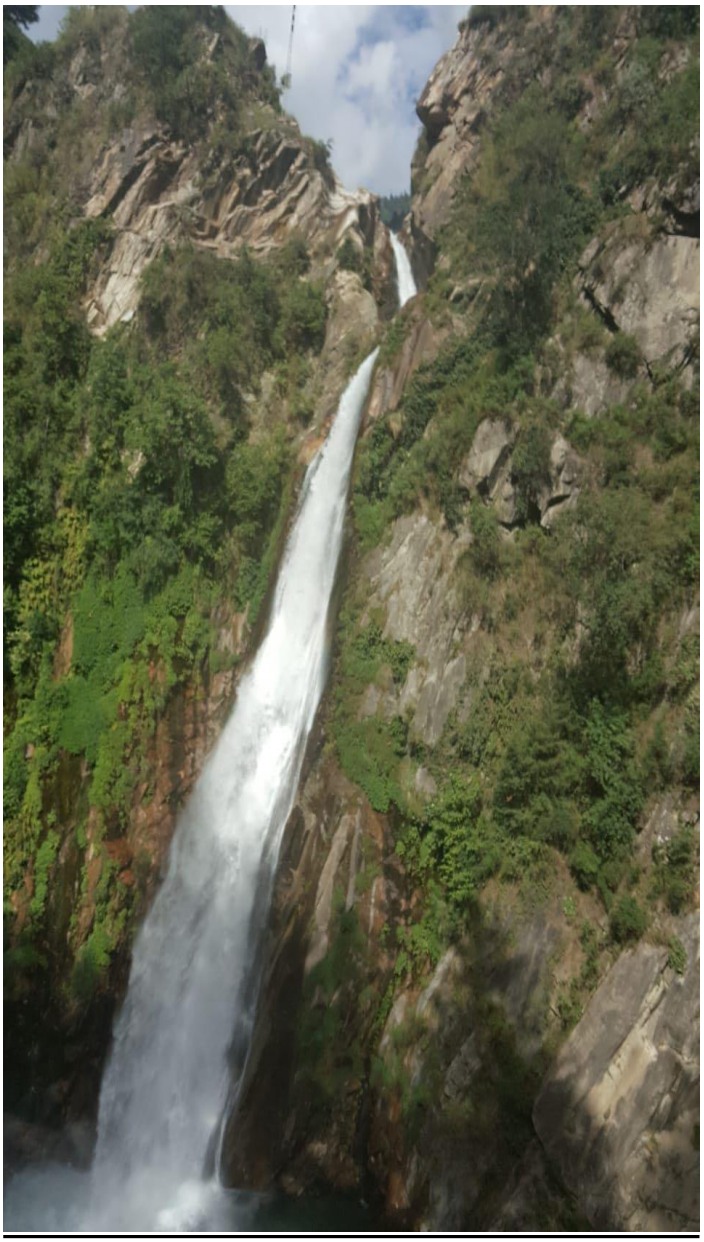
Qazi Nag Game Reserve Biodiversity Action Plan for Key Wildlife Species



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Acronyms & Abbreviations

1. AIS: Alien and invasive species
2. AJK: Azad Jammu & Kashmir
3. AMSL: Above mean sea level
4. ADP: Annual Development Plan
5. APO: Annual Plan of Operations
6. BSP: Biodiversity Social Projects
7. CBD: Convention on Biological Diversity
8. CDF: Conservation Development Framework
9. CITES: Convention on International Trade in Endangered Species
10. CPF: Coordinated Policy Framework
11. CLUZ: Conservation land use zoning
12. EEI: Environmental education and interpretation
13. EFR: Environmental flow requirement
14. EIA: Environmental Impact Assessment
15. EMP: Environmental Management Plan
16. EPA: Environmental Protection Agency
17. FET: Further education and training
18. FPC: Fire Protection Committee
19. hh: Household
20. HIA: Heritage Impact Assessment
21. HIL: High intensity leisure
22. HR: Human Resource
23. IDP: Integrated Development Plan
24. IMP: Integrated Management Plan
25. IS: Invasive species
26. JMC: Joint Management Committee
27. LIL: Low intensity leisure
28. LOC Line of Control
29. IUCN: The World Conservation Union
30. MNP: Machiara National Park

31.	MP:	Management Plan
32.	NBSAP:	National Biodiversity Strategy and Action Plan
33.	NCCW:	National Council for Conservation of Wildlife
34.	NGO:	Non-Governmental Organization
35.	NPT:	National Game Reserves Trust
36.	NJVCCDF	Velum Valley Cluster Coordination Development Forum
37.	NPAES:	National Protected Area Expansion Strategy
38.	P&C:	People and Conservation
39.	PCF	Predation Compensation Fund
40.	QNGR:	Qazi Nag Game Reserve
41.	QNNP:	Qazi Nag National Park
42.	SMME:	Small, medium and micro enterprises
43.	SSC:	Species of Special Concern
44.	TF	Taaleem Foundation
45.	UNESCO:	United Nations Educational, Scientific, Cultural Organization
46.	VCC:	Village Conservation Committee
47.	WMC:	Wildlife Management Committee
48.	WVCC:	Women Village Conservation Committee
49.	WWF-Pk:	Worldwide Fund for Nature Pakistan

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ACKNOWLEDGEMENT

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(Mohammad Yousaf Qureshi)

Team Lead Consultant of TF UNDP-GEF SGP

1. Executive Summary

Biological diversity or biodiversity encompasses the variety of all life on earth. Biodiversity manifests itself at three levels: species diversity which refers to the numbers and kinds of living organisms; genetic diversity which refers to genetic variation within species; and ecosystem diversity which denotes the variety of habitats, biological communities, and ecological processes.[1] Notwithstanding the fact that current knowledge of the number of species inhabiting the earth is still incomplete, estimates vary from 8 to 14 million species. To date, about 1.7 million species have been described while many more await discovery.

Pakistan has participated in almost all major international events on environment issues since the Stockholm Conference on Human Environment and Development in 1972. The country has contributed to and ratified several key multilateral agreements on environment issues including the Convention on Biological Diversity (CBD) in 1994. The Convention requires countries to prepare a national biodiversity strategy and action plan.

As part of the process for drafting Pakistan's National Biodiversity Strategy and Action Plan (NBSAP), a review of the BAP 2000 was undertaken in March 2014. The review revealed that so far no action was initiated on 52% of the targets of the BAP and 44.5% targets were either partially or fully completed. Main reasons for low progress of the ambitious BAP targets were inadequate financial resources, lack of institutional capacity and political will. The road map for revision was shared with the members of the Biodiversity Working Group (BWG), and consultative meetings were held with key resource persons, and other stakeholders.[2]

The provincial governments and other federating units will be implementing the NBSAP in the field; therefore their buy-in of the strategies and actions was of prime importance in the process. In order to create greater ownership of the NBSAP at provincial and regional levels, consultative meetings with stakeholders were organized in Karachi, Quetta, Lahore, Peshawar, Muzaffarabad, and Gilgit. In addition, meetings were also held with policy makers and planners in the provinces and regions. The provinces and other federating units were agreed to prepare their own Biodiversity Strategy and Action Plans, and the NBSAP preparation team guided them at every step of the process. The NBSAP is a sum total of provincial and regional biodiversity strategies and action plans plus some national level actions. The draft NBSAP was widely circulated to key resource persons and members of the

[1] https://www.scribd.com/document/109628161/Cop11-Brochure

[2] *(Pakistan BD Plan)*

BWG for peer review. The National Environment Policy (NEP) 2006 seeks to achieve balance and harmony between conservation and development. The policy is intended to mainstream environmental concerns in all development activities. The dominant theme of this policy is that while conserving the environmental resources it is necessary to secure livelihoods and wellbeing of all, the most secure basis for conservation is to ensure that people dependent on particular resources obtain better livelihoods from the fact of conservation, than from degradation of the resources. The NEP prescribes that human beings are at the center of concerns for sustainable.[3]

Habitat fragmentation, degradation and loss and shrinking of genetic diversity Habitat destruction is identified as the main threat to biodiversity. Under diverse natural conditions, millions of people in rural and urban areas live in harmony under a democratic system in AJK. Their pressing needs for food, fiber, shelter, fuel, and fodder combined with compelling need for economic development exert enormous pressure on natural resources. With 13% of total State land under agriculture, and approximately 46 per cent under forests[4], the protection of diverse habitats poses a formidable challenge. The loss and fragmentation of natural habitats affect all animal and plant species. We need not only to stop any further habitat loss immediately but also restore a substantial fraction of the wilderness that has been depleted in the past. Various species of plants and animals are on the decline due to habitat fragmentation and over-exploitation, e.g. Cheer Pheasant in Jhelum Valley and Hillan in AJK, its population is almost on extinct in Margalla Hills in Islamabad. The major impact of developmental activities involves diversion of forest land and encroachments. Habitat fragmentation and loss is also one of the primary reasons leading to cases of man-animal conflict. Common property resources like pastures and village forests, which served as buffer between wildlife habitat and agriculture, have been gradually encroached upon and converted into agricultural fields and habitation. Due to this the villagers are brought into a direct conflict with wild animals. The usual cases regarding man-animal conflicts relate to leopards, elephants, tigers, monkeys, blue-bulls and wild boars.

Loss of habitats and over- exploitation have led to depletion of genetic diversity of several wild animals and cultivated plants. Shrinking genetic diversity leads to more vulnerability to diseases and pests and lesser adaptability to environmental changes. This lesson has

[3] *(Pakistan BD Plan)*
[4] *(AJK Statistical Book 2016)*

emerged from the world-wide experience of drastically curtailed genetic diversity in agricultural biodiversity following the so-called Green and White Revolutions in agriculture-based economies.

Environmental pollution and ecology was included in the list of subjects on which both federal and provincial government could legislate, however, under the 18th constitutional amendment of 2012, it was made the exclusive domain of the Provincial Assemblies. The Pakistan Environmental Protection Act of1997 (PEPA) had been the key environmental legislation instrument for the entire country until the 18th amendment transferred the responsibility of environmental legislation and management to the provinces.[5] Responding to the need, some of the provinces have already enacted their provincial environmental protection acts while others are in the process of doing so. All the provincial governments and federating units have laws and regulations governing forestry, wildlife, and fisheries. AJK Forest and Wildlife Departments have revised their laws very recently and enacted in the State with the approval of the Legislative Assembly.

In order to effectuate the United Nations Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973, the Pakistan Trade Control of Wild Fauna and Flora Act, 2012 [6] was promulgated which extends to whole of Pakistan. It prohibits export, re-export, and import of any specimen included in any Appendix of CITES and fixes punishment for contravention. This law has significant implications for sustainable harvesting of non-timber forest products, especially medicinal and aromatic plants as it would not only help check unsustainable harvesting practices but would also encourage the beneficiary communities to make sure that such species are conserved and protected so that a sustainable use regime could be put in place to take full advantage of such species.

A legislation to provide for facilitating access to genetic resources and their derivatives for environmentally sound uses, protecting associated traditional knowledge, equitably sharing benefits derived from them, and promoting technology transfer, and building scientific knowledge and technological capacity associated with them was drafted in 2012. The bill is a legislative requirement under the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) to which Pakistan is a Party. The draft bill protects community rights in respect to genetic resources, i.e., (1) the inalienable right to use their traditional

[5] *(Pakistan BD Plan)*
[6] (CITES Act)

knowledge in their customary ways, (2) the right to regulate the access to their traditional knowledge, and (3) the right to share the benefits arising out of the utilization of their traditional knowledge.

Table 1: Major multilateral environment agreements (MEAs) mostly ratified by Pakistan

MEAs	**Year**	**Entry into force**	**Issues covered**
Convention on Wetlands of International Importance	1971	21.12.1975	Conservation and wise use of wetlands primarily as habitat for the water-birds
Convention for the Protection of World Cultural and Natural Heritage	1972	17.12.1975	Protection and conservation of cultural and natural heritage
Convention on International Trade in Endangered Species	1973	01.07.1975	International trade in endangered species of wild fauna and flora
Bonn Convention on Migratory Species of Wild Animals	1979	01.11.1983	Conservation, management and wise use of migratory species of wild animals and their habitats
Vienna Convention for Protection of the Ozone Layer	1985	22.09.1988	Protection of atmospheric ozone layer above the planetary boundary layer
Montreal Protocol on Substances that Deplete the Ozone Layer	1987	01.01.1989	Protection of atmospheric ozone layer above the planetary boundary

			layer
Basel Convention on Trans boundary Movements of Hazardous Wastes and their Disposal	1989	05.05.1992	Regulation of trans boundary movements of hazardous wastes and their disposal
United Nations Framework Convention on Climate Change (UNFCCC)	1992	21.03.1994	Changes in the earth's climate system due to anthropogenic interference
Kyoto Protocol to the UNFCCC	1997	16.02.2005	Quantified emission limitation and reduction commitments for Annex I Parties
Convention on Biological Diversity (CBD	1992	29.12.1993	Biological diversity and biological resources
Cartagena Protocol on Biosafety to the CBD	2000	11.09.2003	Regulation of trans boundary movement, transit, handling and use of living modified organisms (LMOs)
United Nations Convention to Combat Desertification	1994	26.12.1996	Combating desertification and mitigate the effects of drought, particularly in Africa
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	1998	24.02.2004	Promote shared responsibility and cooperative efforts among the Parties in the international trade of certain hazardous

			chemicals, in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use
Stockholm Convention on Persistent Organic Pollutants	2001	17.05.2004	Protect human health and the environment from persistent organic pollutants

Section-1 Authorization

This Biodiversity Conservation Plan for key wildlife species of Qazi Nag Game Reserve is hereby accepted and approved as required for the conservation of the biodiversity of Qazi Nag Game Reserve in terms of relevant Section of the AJK Wildlife Act 2014.

(Naeem Iftikhar Dar) **Dated:**
Director Wildlife & Fisheries
Government of AJK

(Dr. Shehla Waqar) **Dated:**
Secretary
Forests, Wildlife & Fisheries
Government of AJK

(Mir Mohammad Akbar) **Dated:**
Minister Forests & Wildlife
Government of AJK

Section-2: Background & Past History

2.1 Background

After the independence of Azad Jammu & Kashmir State in 1948, the State had rich natural resources including water, Forest and Wildlife. The conservation and management of forests and wildlife was the responsibility of the Forest Department, which was very well established even at the early young stage of the State. The foundation of the department was laid in a very solid manner and well qualified forest officers handled the matters of the department efficiently. Wildlife conservation and management responsibility also lied with the Forest Department. The protection of wildlife was especially focused in the rich areas of the forests which were named as "Rakh" or "Alif Rakh" during the Maharja Regime.

Heavy penalties were used to be imposed on the illegal hunters, so the conservation process was done through legal enforcement only. There was no such participatory role of the local communities in the conservation of the protected areas or state forests. Only members of the royal family and State guests of Maharaja were allowed to hunt in these Rakhs.

These 'Rakhs' continued to be managed with the same nomenclature by the Forest Department and the related Forest Divisions and Ranges were responsible for protecting wildlife in these 'Rakhs'. With the passage of the time, conservation and management of the wildlife in the State had lost its priority. It was in 1975, when a separate wing of Wildlife was created within the Forest Department and the 'Wildlife Preservation, Protection and Management Act 1975' was approved by the AJK Government and imposed in the State. Afterwards through a Government notification on 28th July 1982, nine protected areas with the name of 'Game Reserves' were established: 1. Salkhala, Ghamote, Machiara, Moji, Qazi Nag, Morisaid Ali, Phalla, Hillan and Vatala.

Qazi Nag with an area of 4,288 hectares (10597 Acres) was declared as a Game Reserve due to its rich biodiversity and pristine value. Now it deserves to be elevated to a status of National Park or Biosphere Reserve as the precious wildlife resources are under intense pressure and their existence is threatened due to ecological losses, pressure of over population and increase in hunting number of the animals.

The formulation of this Biodiversity Conservation Plan is an effort to spell out the ways and means of developing a mechanism to protect the key wildlife species and their

habitat in the Qazi Nag Game Reserve in a more practical manner. It is intended that this plan could prove its worth to be such a document that could be replicated in other protected areas with the amendments suitable to that area.

2.2 Past History

Before 1857, there was no any regulatory body to manage the forests and wildlife resources in Kashmir. During 1883, the forest administration was setup in the history of the State of Jammu & Kashmir with the name of "Mahal-i-Nawara" under the control of Governor of Jammu & Kashmir. In continuation of this administration during 1883, "Ain-i-Janglat" was made and enforced which specified that the conservation of forests wealth to be the responsibility of every citizen. Very nominal fee was imposed by the State for the removal of any tree. Another wing was created along with "Mahal-i-Nawara", with a name of Mahal-i-Janglat to look after the matters of protection of forests and "Mahal-i-Nawara" was responsible for the exploitation of forests and collection of fee called "Rasum". There was no restriction on hunting of wildlife during that time.

The technical department was established in 1891, when a lent officer Mr. J.C. McDonell from Indian Forest Service joined the State's first Conservator of Forests. Regular forest conservation work was introduced after that and by 1912 most of the preliminary work had been completed. The forests were demarcated and divided into territorial charges, working plans were prepared for the valued forests, forest law was enacted, and concessions of the communities were defined. During 1923, more forests were brought under the regular working plans and department of Forests was extended and placed under the administrative control of Chief Conservator of Forests, Government of Jammu & Kashmir.

Muzaffarabad Forest Division was created in 1892 and consisted of Kishanganga (Neelum) Valley forests, Jhelum Valley forests from Kotli up to Baramula with five ranges:

(i) Sharda (ii) Kernaha (iii) Muzaffarabad (iv) Uri (v) Kathai

In 1913, the Karnah and Kathai ranges were taken out from Muzaffarabad Division and were placed under the Panjal Division.

Jhelum Valley Division was created in 1968 and it covered the Kohala Range, Dopatta Range, Karnah range and Uri Range. Recently the Jhelum Valley division was divided into two divisions i.e., Jhelum Valley and Hattian Division. Karnah Uri and Chikar Ranges come under the administrative control of the Hattian Division*[3]. *(Revised Management Plan for the Forests of JV Division)*

In light of the recommendations of the Wildlife Enquiry Committee of Pakistan in 1970, the Wildlife Wing was established in 1974 and AJK wildlife Act was enacted in the State. Under this Act, 9 Game Reserves were established in AJK:

(i) Ghamote, (ii) Salkhala, (iii) (Machiara), (iv) Moji,

(ii) (v) Qazi Nag, (vi) Mohri Sad Ali, (vii) Phalla, (viii) Hillan and (ix) Vatala

During 1992 the Wildlife & Fisheries wing was detached from the Forest department and merged into a new department of Tourism, Wildlife, Archaeology, and Fisheries (TWAF) under the administrative control of Director General. This arrangement continued till 2001 when the independent Department of Wildlife and Fisheries established under the administrative control of Director which is still working with the same arrangement.

The Machiara Game Reserve was upgraded to the National Park by the Government of AJK in 1996. New department took very drastic steps to bring in more protected areas under the categories of National Park, Game Sanctuary, and Game Reserve.

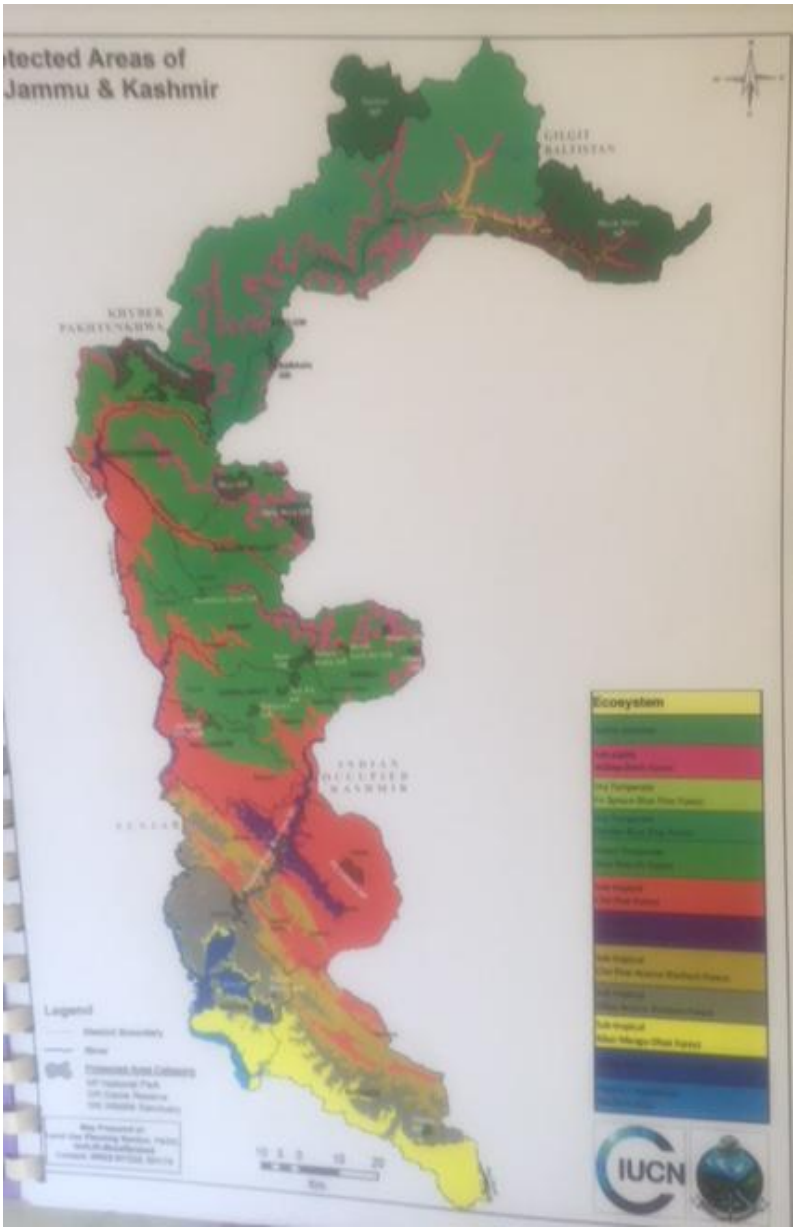
List of all the protected areas is given below in Table-I

Table-2: Protected Areas in AJK

S. #	Name of Protected Area	Classification	Area (Ha.)	Area in (Acres)	District
1	Ghamot	National Park	27271	67387	Neelum
2	Musk Deer NP Gurez	National Park	52815	130506	Neelum
3	Machiara	National Park	13532	33438	Muzaffarabad
4	Tauli Pir	National Park	1000	2471	Poonch
5	Pir Lasura	National Park	1580	3904	Kotli
6	Deva Vatala	National Park	2993	7396	Bhimber
7	Mahsher Poonch River	National Park	2250	5560	Titrinot Poonch,Kotli, Mirpur
Total area of National Parks			**99,191**	**250,661**	
1	Chukor Game Sanctuary	Game Sanctuary	155	383	Mirpur
1	Salkhala	Game Reserve	859	2123	Neelum
2	Moji	Game Reserve	3859	9536	Muzaffarabad
3	**Qazinag**	**Game Reserve**	**4830**	**11935**	**Muzaffarabad**
4	Mori Said Ali	Game Reserve	273	675	Bagh
5	Phala	Game Reserve	472	1166	Bagh
6	Hillan	Game Reserve	384	949	Bagh
7	Nar	Game Reserve	558	1379	Bagh
8	Sudhan Gali	Game Reserve	525	1297	Bagh
9	Doom Kalla	Game Reserve	715	1767	Bagh
10	Banjonsa	Game Reserve	558	1379	Poonch
11	Junjal Hill	Game Reserve	631	1559	Sudhnutti
12	Vatala	Game Reserve	500	1236	Bhimber
Total area of Game Reserves			**14,164**	**35382**	
Total area of Protected Areas			**113,355**	**286,043**	

[7] *(Source-AJK Wildlife Department)*

Fig1: Map of Protected Areas of AJK as of 2018[8]



Land Use Planning AJK

Section-3: Introduction & Legal Status

3.1 Name of the area:

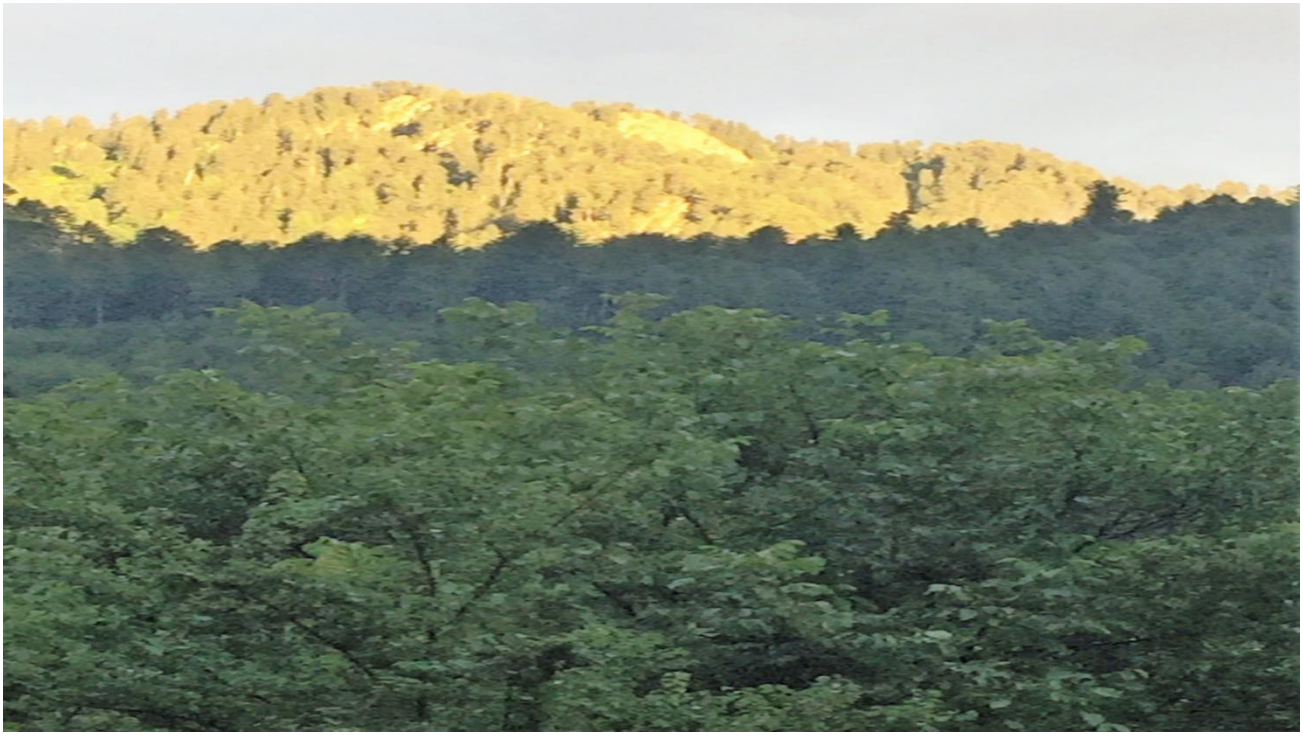
The Game Reserve is named as the Qazi Nag Game Reserve after the name of Stream

3.2 Location:

Qazi Nag Game Reserve is situated in the district Hattian, roughly 75 km southeast of Muzaffarabad between 34º 15' and 34 º 32' North longitudes and 74º 10' and 74º 40' East latitude. One side of the Reserve lies on the Line of Control (LOC) with Indian Occupied Kashmir and the other with Karnah Forest Block in the North. The Western part of the Game Reserve is lined with the six dependent revenue villages and farther with the town of Chinari.

3.3 History of establishment:

Qazi Nag Game Reserve was established in February 1982 and is a proposed eighth National Park of the state with an extended area of Moji Game Reserve joining through a corridor of Barthwar Gali and Panjal Gali.



A beautiful sunset view of the Qazi Nag forest

3.4 Purpose of establishing QNGR:

The Qazi Nag game Reserve was established for its unique pristine value and biodiversity importance. The Qazi Nag Game Reserve is especially important for the conservation of a diverse range of flora and fauna. It will protect the natural environment, flora, fauna and features of scenic, archaeological, ecological, geological, historical, religious, or other scientific interests. Protection of water resources, maintenance of water quality, protection of wilderness, cultural values, and appropriate research activities are the part of the Game Reserve management process. Moreover, provision of sustainable resources/alternatives to the dependent communities is the key purpose of the Game Reserve establishment.

3.5 The strategic priorities of the Plan:

The Game Reserve's outstanding values and serious threats to those values require active and adaptive management. The strategic priorities of the Plan are:

- Protect and enhance the environment of the Game Reserve by:
  - Protecting sensitive environment and other values recovering after earthquake, flood, fire and other impacts.
  - Responding quickly and effectively to deal with earthquake, flood, fire and other threats from climate change and other causes.
- Protect human life, property, and essential services and reduce the risk of landslides and fire spreading across the landscape.
- Conserve and maintain the cultural heritage of the Game Reserves by:
  - Undertaking conservation and interpretive works at key heritage places
  - Fostering the community's ongoing cultural and heritage connections
- Ensure the public can enjoy a wide range of recreational and tourism experiences across the Game Reserve by;
  - Maintaining access at a range of standards
  - Providing quality facilities, information and interpretive services
  - Enhancing the opportunities for challenging self-reliant activities in remote areas

- Pursuing key tourism initiative including Cham and Narrdajian waterfalls, Kathai nallah, other creeks, Shrine at Andheri Bela and Fateh Pur, Tourist Camping ground at Chitrian and adventure peak of Baara Hazari.

- Strengthening community participation in managing the reserve, respecting the rights and concessions of the communities and the role of the stakeholders.
- Improve our understanding of the reserve through innovative collection and sharing of community knowledge, scientific research and monitoring.
- Maximize the social and economic benefits of the reserve beyond its boundaries, including water supply, tourism, and education.

3.6 Conservation Management arrangements under agreements:

There is no such agreement/arrangement to conserve and manage the biodiversity resources of the Game Reserve in collaborative manner. Unfortunately, the authoritative conflict between the Forest and Wildlife department is prevailing here like in other protected areas of AJK. There are a number of arrangements required to manage the biodiversity resources of Qazi Nag Game Reserve. The most important of them will be the arrangement/agreement with the Forest Department and spell out the very clear role of Forest and Wildlife Departments as the dual authority will always put the management of the Game Reserve in unresolved conflicts. Other main custodians are the dependent communities and they must be the part of such agreement so that their participatory role in the management of the reserve could be ensured which contribute to achieving the vision and overall desired state of this reserve. In these Co-management agreements Forest Department, Wildlife Department and local communities should agree to work together on the management of the reserve through the contractually established Joint Management Committee (JMC). The intention of the agreement is that the natural resources of the Qazi Nag Game Reserve are conserved and managed very wisely so that a sustainable stage is achieved with restored natural resources in the near future.

3.7 Stakeholders:

There are three major stakeholders as per nature of the ownership concept:

- **AJK Fisheries & Wildlife department**
- **AJK Forest Department**

- **Custodian Communities of QNGR**

In addition to that, there is prominent role of the army and visiting nomads. Local Government, Public Works Department, Local Administration, Education, Health, Tourism, Agriculture, and Livestock Departments have also an important coordination role to play in the management of the game reserve resources through their contribution in the income generation, capacity building, and production enhancement activities in the relevant field.

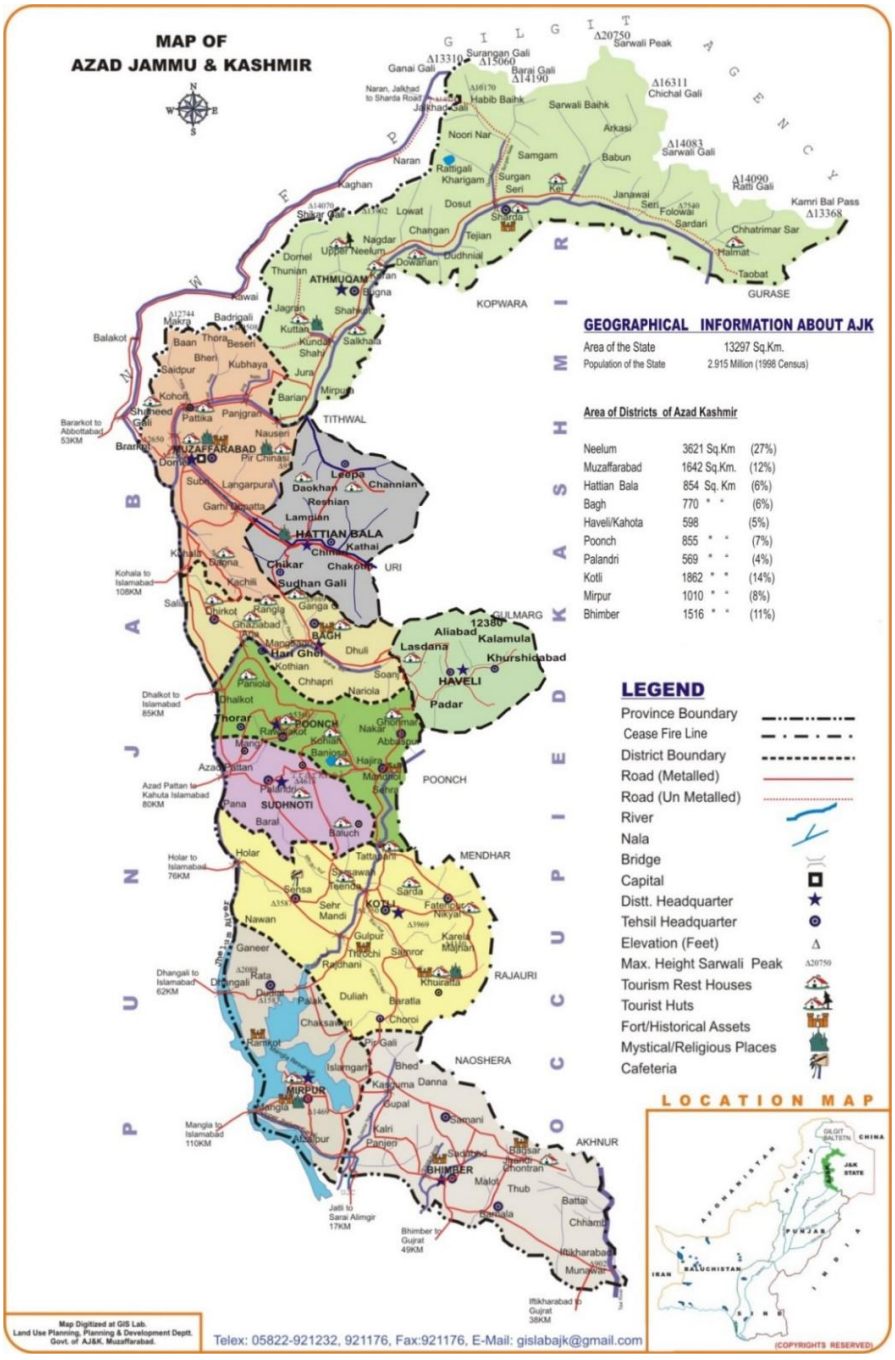
3.8 Responsibility regarding the conservation Planning

In an age where we are bound with global warming, climate change and nation with lot of natural hazards of disasters, how can we remain silent in this fragile environment and do not come out with most effective and innovative solutions of the problems. The management planning is one of the effective tools with an approach of identifying the roots of the issues and problems of the accelerated losses to the natural resources and suggests such measures, which can practically address and resolve these issues and problems remaining in the limited affordable resources.

3.9 Healthy protected areas – healthy people.

Game Reserves and other natural environments are fundamental health resources. Not only Game Reserves do protect the essential system of the life and biodiversity but they are also a fundamentals setting for health promotion and the creation of the wellbeing, that to date have not been fully recognized.

Fig. 2: Map of AJK

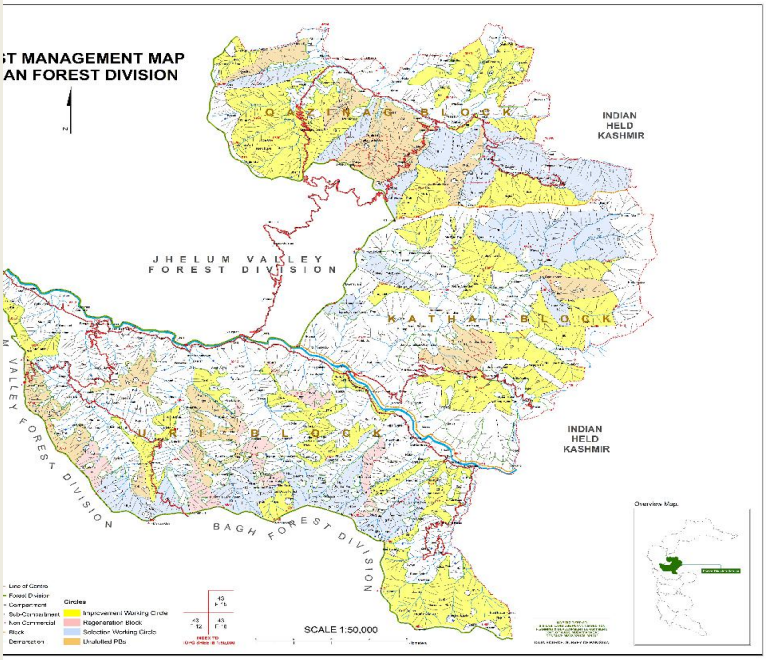


3.10 Introduction

3.10.1 The Game Reserve:

The Qazi Nag Game reserve is situated in Hattian (Jhelum Valley) Forest Division at 34°15/ N longitude and 74°10/ E latitude. Kathai Block has an area of 29271 Acres with 27 units of blocks, out of which nine compartments (9-17) with an area of 4,288 hectares (10597 acres) is the existing Qazi Nag Game Reserve while total with proposed extended area is 17438 Acres (7057 h). More than 35% of the area is above the tree line with Alpine pastures and snow covered peaks. The forested area is not having a dense vegetative cover. Mature trees are seldom seen in the area as the recent past harvest, either commercial or local have damaged the forest very badly.Compartment 23 has somewhat thick vegetative cover and dense undergrowth of *Pinus wallichiana* gives a good look. The Game Reserve has its boundaries with Karnah range on its North, Line of control on its South, Dopatta Range on its East and Chinari Town on its West.

Fig 3: Map of Hattian (Jhelum Valley) Forest Division) *4



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[9] ***(source AJK Land Use Planning Dept.)***

Table 3: Kathai Block with Compartment Area[10]

Compartment	Area	Area in hectare
1	1028	416
2	514	208
3	1070	433
4	1941	786
5	1424	576
6	**550**	**223**
7	**702**	**284**
8	**827**	**335**
9	**1604**	**649**
10	**1206**	**488**
11	**592**	**240**
12	**1281**	**518**
13	**955**	**386**
14	**984**	**398**
15	**1104**	**447**
16	**1052**	**426**
17	**1819**	**736**
18	**511**	**207**
19	**1125**	**455**
20	**635**	**257**
21	**1014**	**410**
22	**888**	**359**
23	**328**	**133**
24	**261**	**106**
25	3428	1387
26	1086	439
27	1342	543
Total:	29271	11846

The area of existing Qazi Nag Game Reserve (Co 9-17) = 10597 Acres (4288 h)

The area of proposed extended Qazi Nag Game reserve = 17438 Acres (7057 h)

[10] Forest Department

3.10.2 Highest point:

The highest point in the Game Reserve is about 3,756 m (12320 ft.) above mean sea level and is called Bara Hazari.

3.10.3 Land claims:

The land of the Game Reserve is the sole property of the Azad Government of the State of Jammu and Kashmir with the management responsibilities of Forest and Wildlife Departments; but this has to be ascertained as the Forest Department is claiming that the sole authority of the conservation and management lies with them but the actual management on ground has so many question marks. The local communities are also exercising the rights and concessions on this land without admitting any conservation and management responsibility of the natural resources of the area. Nomads also visit the pastures of the area during 3 to 4 months of the summer. They also claim the concessional rights on the area though there is no legal coverage for that.

3.10.4 Environmental authorizations:

There are no such legal authorizations on the area but No Objection Certificate from the Environmental Protection Agency (EPA) is the prerequisite of any project to be launched at any place

3.10.5 Nearest Town:

Nearest town is Chinari which is about 12 km northeast of Hattian district head quarter and 55 km of Muzaffarabad, the Capital city of AJK.

3.11 Biophysical and socio-economic description

3.11.1 Climate:

The climate of the area, in general is classified as pleasant warm to cool in summer and intense cold in the winter with snowfall from November to March. Mean annual rainfall varies from 1485 mm on the foothills, to 2519 mm in the highest parts of the mountain range with 74% of the annual rainfall occurring between April and October and rest between November and March. Mean daily maximum temperature ranges in summer are between 26ºC - 30ºC while mean daily minimum temperatures in winter range between -1ºC to 16ºC. In general, the climate of the area varies from sub-tropical to temperate types, the latter being dominant.

11

3.11.2 Topography:

Altitude ranges from 3,720 m at the top of Bara Hazari to 1830m on the lower limits of the Game Reserve and 1037 m at the town of Chinari. The scenery is spectacular and diverse, varying from conifer forests, rugged mountains, high cliffs, rolling hills to scrub-cover along two sides of the river Jhelum.

3.11.3 Geology and soils:

Geologically Azad Kashmir area can be divided into two parts, the Northern, and the Southern region. The Southern region is relatively less disturbed and exposes a sequence of rocks ranging from permo-carboniferous to recent age. The area of Qazi Nag falls in this Southern region. In Southern region, rocks are represented by Murree Series of Middle to upper Miocene age and consists of thick bedded to massive mainly brick red, ferruginous, and calcareous clays/shale (predominating) alternating with thick bedded dirty red weathered, grey to dark grey, medium-and-stones. Uniform iron contents of 6 to 8% can be observed while travelling through the QNGR. Northern Region is constituted by phyllites, schists, gneisses, and igneous rocks. The entire area is characterized by severe tectonic disturbances.[12]

3.11.4 Hydrology:

The most prominent stream draining the area is the Kathai Nallah (also known as Qazi Nag Nallah). There are three main catchment areas in this part; one draining to Leepa, the other to occupied Kajinag area and the third in AJK Qazi Nag area. All the nallahs are strangely, named Qazi Nag. There are various other small creeks draining into this Kathai nallha which joins River Jhelum at Chinari. Importantly the Qazi Nag mountain range is a significant catchment area for the Qazi Nag (Kathai Nallah) as well as many other smaller streams, which are vital headwater /water supply areas for the surrounding environment. There are few spectacle waterfalls, which are generated by these nallahs. Amongst them, the

[11] (*Met department Muzaffarabad*)

[12] *{Azad Kashmir Minieral and Industrial development Corporation}(AKMIDC)*

Cham waterfall is the biggest with about 85 feet in height on the main Kathai Nallha. Another Narrdajian waterfall is on the Narrdajian Nallah but it is hidden in the sub-valley.

3.11.5 Pastures:

There are many pastures above the tree line in the QNGR, locally called 'Bhaik'. Of all the concessions granted to local communities, grazing concession is most important as it has direct bearing on the regeneration of the forests. The incidence of grazing is very high in these forests and pastures. The forests and pastures are overgrazed every year beyond their capacity which is adversely affecting the regeneration of forests trees and nutritious grasses.

Following are the pastures (Baihks) which the local communities utilize for grazing of their cattle during three months (June, July & August) of the year:

Table-4: Pastures/Baihks and dependent villages of QNGR[13]

S #	Name of Pasture/Baihk	Dependent Village/sub village Communities
1	Sokarr, Tan Sooyan & Narrgachhi	Patan, Darah & Kheter
2	Nanga Tak, Kaw Chhan & Danna	Bala Bandi, Battangi, Behiran Bandi, Narrdajian
3	Seri & Barra Ban	Ghel Narran, Ghel Kali
4	Shingar, Ratti Bashin, Ranja & Chachanran	Ain Ban, Dogi, Ghel Trarran & Bat Sherri
5	Ain Ban, Neli Bashin, Rich Wali Dheri & Kahtoran	Ain Ban, Dogi, Batt Sherri
6	Thub, Ballian & Sagar Harri	Chapairr, Darutta, Gali Jabrri & Mohri
7	Nullah, Barrungian Wala, Ratti Gatti & Guchan Wala Bela	Rinjha Katha
8	Khansian, Jab, Nadi Gali, Kundian & Soka	Fateh Miran

[13] *Source: Locals and AJK Wildlife & Fisheries departmental Report)*

3.11.6 Rights and Concessions:

No rights are admitted in the demarcated forests but many concessions have been granted under the Kashmir Forest Notice as amended from time to time. Persons residing within three miles radius of forests are regarded as concessionists. Standing trees (kail and Fir) are granted to such people at 1/16th of standard rates in force. For people residing within 3-7 miles radius of the forests, Zamindari rates are applicable and outside these limits Standard rates are applied. Lopping of broad-leaved trees is allowed except Walnut, Ash, and Toon to the villagers with the restriction that one third of the top of the tree is left intact and no branch thicker than a man's wrist is lopped. Timber including Deodar is given free for the construction of Masjids in the concession area subject to its availability on silvicultural grounds. The visiting nomads also enjoy the grazing concessions on pastures of the Game Reserve.[14]

3.11.7 Dependent Villages on Qazi Nag Game reserve Resources:

There are 6 villages, which are dependent on the resources of the Qazi Nag Game Reserve. These villages are situated in the peripheral region outside the Game reserve boundary. Needs of timber, fuel wood, and fodder for animals, medicinal plants, pastures and others are met from the forests. Very few families are also using LPG cylinders or kerosene oil stoves for fuel. The households have mostly the toilet facility inside the house while 2% use the open area. The communities have twelve village organizations named as Village Conservation Committees (VCC, WVCC) six of men and six of women. The list of dependent villages are given in Table-5 below:

[14] (*AJK Forest Department's Working Plan)*

Table-5: Name of dependent villages, households, and population[15]

S #	Name of Village	No. of Households	Population				
			Male	Female	Girls	Boys	total
1	Khatir Narr	204	612	490	428	449	1979
2	Chamm	660	1188	1188	924	1386	4686
3	Doba Sayedan	80	180	180	160	240	760
4	Trarran	775	3178	2945	2325	2558	11005
5	Narrdajian	810	2025	2025	1458	1458	6966
6	Gaihl Jabrra	163	424	375	310	408	1516
Total:		2692	7606	7203	5605	6498	26912

[7] *Source: Survey of the villages April-July 2018 and Planning and Development departmental Data Report*

3.11.8 Ethnic groups found in Qazi Nag Game Reserve:

Major ethnic groups found in Qazi Nag Game Reserve are: Chaudhry, Mughal, Sadat, Raja, Awan, Raeisani, Abbasi, sheikh, and Lone *(Survey)*

3.11.9 Schools:

Although the area is very remote but they are well facilitated with the school structures by the Government. Middle School at Trarran village has been constructed by an NGO AKDN (Agha Khan Development Network) as support to earthquake hit areas. It is very well built and furnished with 10 class room facilities plus toilets and meeting hall. This needs to be upgraded to High School level. There is also a need to improve the quality of education. There is a dire need for the construction of primary school building at Khatir Nar Village. The list of the school in the villages around Game Reserve is given in Table-6 below:

Table-6: Detail of Government schools in the community area of QNGR[16]

S #	Name of School	*P (B)*	*P(G)*	*M (B)*	*M (G)*	*H (B)*	*H (G)*	*Total*
1	Tararran	1		1				2
2	Nardajian		1		1	1		3
3	Gailjabra	1		1			1	3
4	Doba	1	1			1		3
5	Cham	1	1	1		1		4
6	Khatir Nar	1						1
	Total	**5**	**3**	**3**	**1**	**3**	**1**	**16**

P (B): Boys Primary Schools
P (G): Girls primary Schools
M (B): Boys Middle Schools
M (G): Girls Middle Schools
H (G): Girls high schools
H (B): Boys High Schools

[16] *(Source: Survey Report and information collected from Narrdajian High School August 2018)*

Middle School Trarran built by KDN after earthquake of October 2005

There are Thirteen Nature clubs organized by the Taaleem Foundation in the Schools of the six villages. Purpose of these nature clubs is the disbursement of environmental knowledge amongst the children so that they can realize the importance of the natural resources and the basic management requirements of the protected areas.Several sessions have been conducted with the Nature Clubs of the schools and final competition was also conducted by Taaleem Foundation and distributed trophies and cash prizes amongst the competetors. School teachers have been given the responsibility of making this activity as part of their extra curricular activity and to ensure sustainabity once project is over.

Table-7: List of Nature Clubs organized by Taaleem Foundation

S.NO	NAME OF SCHOOL	NAME OF NATURE CLUB	FOCAL PERSON
1	Middle School Tararran	Middle School Tararran	Manzoor Hussain
2	GHS Gheljabrra	GHS Gheljabrra	Kousar Parveen
3	BPS Gheljabrra	BPS Gheljabrra	Nasir Kazmi
4	GPS Jabrra	Riyar	Mr Shoukit
5	BHS Nardajian	Chakor	Rafique Raeesani
6	BPS Nardajjian	BPS Nardajjian	rafaqat Amad
7	BHS Chamm	Markhor	Shabir Kazmi
8	Middle School Chappair	Middle School Chappair	CH Israel
9	Primary School Doba	Middle School Chappair	Skina Kazmi
10	Primary School Khatirnar	Rohnse	Raja Mehmod
11	BPS Nardajjian	BPS Nardajjian	Asad Kazmi
12	GPS Nardajjian	GPS Nardajjian	Amina
13	BPS Aen Baen	BPS Aen Baen	Khursheed

Table-8: Village Education Survey

Village Education Survey

	Name of Village	Primary School			M/H School			Total School going children		
S #		B	G	Total	B	G	Total	Primary	High/middle	Total
1	Traarran	620	465	1085	698	698	1395	1085	1395	2480
2	Ghel Jabbrra	114	114	228	130	98	228	228	228	456
3	Narrdajian	1296	891	2187	891	567	1458	2187	1458	3645
4	Doba	80	80	160	80	80	160	160	160	320
5	Cham	528	0	924	462	132	594	924	594	1518
6	Khatir Naarr	163	224	388	122	163	286	388	286	674
	Total:	**2801**	**1775**	**4972**	**2383**	**1738**	**4121**	**4972**	**4121**	**9093**

Table 9: Total village dependence values on Natural resources

S #		Fuelwood					Timber			Medicinal Plants		
	Name of Village with number of households	Distance/km	Winter Use kg	Summer Use kg	Annual Use kg	Average Cost Rs.	Trees Use	Average Cost Rs.	Replacing Year	Part Used	Purpose	How Often in a year
1	Gehl jabara 163	2	6113	3342	9291	5134500	636	37490000	3260	leaves,	medicines	once or twice
2	Tarraran 775	1.7	3022500	1689500	4712000	13252500	4418	244125000	15500	leaves,	medicines	once or twice
3	Khatarnar 204	2.5	318240	159120	477360	5610000	775	44880000	4080	leaves,	medicines	once or twice
4	Nardajjian 810	2	1440000	991800	2431800	30150000	1800	108000000		leaves,	medicines	once or twice
5	Cham 660	1	2569125	1436075	4005200	11264625	3755	207506250		leaves,	medicines	once or twice
6	Doba 80	1.2	208000	125333	333333	1093333	267	14666667		leaves,	medicines	once or twice
	Total:		**7563978**	**4405170**	**11968984**	**66504958**	**11650**	**656667917**		leaves,	medicines	once or twice

3.12 Flora:

The Qazi Nag Game reserve hosts a wide spectrum of vegetation diversity comprising of four major physiognomic vegetation units. Overall, this vegetation diversity can host a variety of animals. Floristically Qazi Nag is exceptionally rich with representative of ideal Himalayan ecosystem. A rich diversity of plant species as well as plant communities and habitats give the Game Reserve a high conservation value having very rich biodiversity hotspots. One plant species, *Taxus wallichiana*, is listed as rare and uncertain in the Game Reserve. The Qazi Nag Game Reserve has good patches of *Cedrus deodara* in the lower reaches while *Pinus wllichiana* (Kail), *Abies pindrow* (Fir) *and Picea smithiana* (Spruce) stands make an association at the higher altitudes. Fir and Spruce go to the upper tree line limit of 10,000 to 10,500 feet of elevation. Mix broadleaved trees also make a considerable association with conifers. Walnut (*Juglasn regia*), Horse Chest Nut (*Aesculus indica*), and some other important broadleaved make such mixture. Above that are the Salix and juniper species in bush forms. There is a rich diversity of medicinal plants as well but their unwise collection is leading towards the drastic reduction in their quantity and some of them are at the verge of extinction from the area like *Sausuria lappa* (Kuth). About 411 plant species, of all classes have been reported in the QNGR.

The floral check list of the Reserve is attached at Appendix 1.

3.13 Fauna:

Qazi Nag game Reserve represents an important transitional zone in the distribution of mammals and it is capable of maintaining a high diversity of species. The area used to be very rich in migratory mammal species but due to erection of fence along the line of control, this migration has restricted the population. Once Pir Panjal Markhor (*Capra falconeri*) population was very high in this area but no evidence of their presence at this time is reported in spite of efforts done by the survey teams of local staff and the University Scholars.

List of the wildlife and Bird species found in Qazi Nag Game Reserve is attached at Appendix 2.

3.14 Archaeology and cultural heritage:

The high peaks, forested and barren mountains of the area and local shrines are the main archaeological and cultural valuables of the area. The traditional drum beating, singing folk songs by the women and use of firecrackers in the marriage ceremonies and collective crop harvestings are the most attractive cultural heritage of the area. Intangible resources were also documented, including traditional and medicinal uses of plants. Evaluations of the significance, conservation status, and utilization options of all the heritage resources were accompanied by detailed recommendations for implementation.

3.15 Socio-economic context:

The regional economy is focused primarily on hydropower generation, agriculture, and growing ecotourism opportunities. The levels of unemployment within the rural and urbanized communities in the area are high. Since 2007 the population has increased by 10%. There seems to be an influx of work seekers to the area. This will undoubtedly put pressure on the government regarding employment provision. Particularly high unemployment and low income levels are found in the remote villages where access is difficult and land holding per family is very low, with many of the youths not attending school. There are also a number of farm-based workers with varying levels of employment and literacy residing within the area. The hydropower generation sector plays a major role in job creation and is a major economic engine of this region. The project of Taaleem Foundation has played a vital role in education and awareness in the community and enabled the department of Wildlife to reach more children through their structured programmers of Nature Clubs. The new Kathai power station has been built close to the custodian communities of Qazi Nag with providing good road structure and communication. There exist some more plans of establishing hydropower generation units of about 5-8 MW. These developments may have negative impacts on protected areas and various management authorities will have to work closely with WAPDA and other state entities to try and mitigate the potential impacts. The up gradation of Game Reserve to National Game Reserve upswings in nature-based tourism opportunities including ecotourism and hunting

in the peripheral zone, could be an alternative long-term socio-economic driver within the region.

Diversity of tourism infrastructure external to the reserve will cater for the upper and lower income eco-tourism market, although there is much less available for middle income tourists. The Expanded Game Reserve projects will provide much needed job opportunities to local inhabitants while addressing Game Reserve specific needs such as erosion control, rehabilitation, alien clearing etc.

Dependence on the natural resources is very high. Timber and fuel wood demands are met from the forests. Similarly, grass cutting, grazing and browsing of domestic animals is also carried out mostly in the forests. Fuel wood collection has become a tedious job due to loss of vegetation near to the villages. Fuel wood collection, medicinal plant harvesting and animal grazing is mostly carried out by the female group of the society. Women also have better local knowledge about the existence and use of medicinal plants. The average socio-economic data of dependent communities of Qazi Nag is shown in the tables 10, 11 and 12 below:

Table-10: Average domestic animal population, land holding and agricultural crop production[17]

A. Agricutural Crops: Tararan 775								
S #	Name of Village	Type of Land Holding (Kanals)			Type of Agriculture			
		Bandobasti	Shamlat	Charagah	Maize	Wheat	Rice	Orchard
1	Trarran	8447.5	5270	8370	465000	0	0	0
2	Ghel Jabrra	1295.85	1263.25	1173.6	34230	0	0	0
3	Narrdajian	4131	9963	9234	563760	0	0	0
4	Doba	213.3	293.3	293.3	36267	0.0	0.0	0.0
5	Chamm	4026.0	2244.0	5610	205920	0	0	0
6	Khatirnarr	1173	1203.6	1978.8	37536	0	0	0
	Total for hh	**19286.683**	**20237.2**	**26659.73**	**1E+06**	**0**	**0**	**0**

B. Vegetables												
S. #	Name of Village	Vegetable						Lintels				
		1	2	3	4	5	6	1	2	3	4	5
1	Trarran	Tomato	Potato	Garlic	Karam	Carrot	Kado	Red Bean				
2	Ghel Jabrra	Tomato	Potato	Garlic	Karam	Carrot	Kado	Red Bean				
3	Narrdajian	Karam	Potato	Garlic	Carrot	Tomato		Red Bean				
4	Doba	Karam	Tomato	Mustard				Red Bean				
5	Chamm	Karam	Radish	Onion	Tomato			Red Bean				
6	Khatirnarr	Karam	Radish	Onion	Tomato	Carrot		Red Bean				

C. Animals and dependence												
S. #	Name of Village	No. of Animal Heads					Poultry	Own land	Forest		Market	
		Goats	Sheep	Cow	Ox	Bufallow						
1	Trarran	**388**	0	1550	387.5	155	Yes	Yes	No		No	
2	Ghel Jabrra	98	130	375	65	147	Yes	Yes	No		No	
3	Narrdajian	1377	0	1620	405	1053	Yes	Yes	No		No	
4	Doba	80	0	160	80	80	Yes	Yes	No		No	
5	Chamm	264	0	792	330	660	Yes	Yes	No		No	
6	Khatirnarr	82	0	367	41	0	Yes	Yes	No		No	
	Total for hh	**2288**	**130**	**4864**	**1309**	**2095**	**0**	**0**	**0**	**0**	**0**	**0**

[17] *Source: Social survey of the area during July- August 2018.*

Table 11: Tourism Attractions in the area

Tourism Facilities			
S #	Facilty	Availability Place	No. of visitors annual
1	Sighting site	Kundar Kozi, Dug, Cham water fall, Narrdajian, Gala	50,000
2	Camping Site	Lehdra Gali, Neli Pash, Kharamaro, Fatahmeran ,ranjesa, khansan, sang, khonhian, bachari, Dogi, Batakian, Danna, Alif Rakh, Purzi, Chatrian, Barahazri	1200
3	Night Accomodation	Nill	
4	Food Place	Nill	
5	Mountainiring	nanga,burji,Ranja Nar,Rata Parh,rosi kota,shingar,Nela pash	220
6	Fishing	Nallah Qazinag Chamm to Chak Hama	200

Table-12 Monthly Average Income Share:

S #	Source of Income	percentage	Average Monthly Income (Rs.)
1	Agriculture	87.4	17672.28
2	Government Jobs	5.6	1132.32
3	Private Job	0.3	60.66
4	Local Labour	2.4	485.28
5	Labour in Pakistan or abroad	1.1	222.42
6	Business	1.8	363.96
7	Business from Forest produce	1.4	283.08
Total:		100	20220

Section-4: Policy Framework of the Biodiversity Conservation Plan

A Biodiversity Action Plan (BAP) is an internationally recognized programme addressing threatened species and habitats which is designed to protect and restore biological systems. The original impetus for these BAPs derives from the Convention on Biological Diversity (CBD), 1992[18].

As of 2006, 188 countries have ratified the CBD including Pakistan, but only few of these have developed substantial BAP documents. The principal elements of BAP typically include: (a) preparing inventories of biological information for selected species; (b) assessing the conservation status of the species within the specified ecosystem; (c) creation of targets for conservation and restoration; and (d) establishing budgets, timeline and institutional responsibilities for implementing the BAP.

This document will summarize the institutional, ecological, economic, and social environment for the GR management and includes: An introduction to the management plan requirements of the Qazi Nag Game Reserve, what it means for stakeholders, including its organizational structure, vision, mission, biodiversity values and performance management system and its approach to strategic adaptive management. ·

4.1 Policies and guiding principles:

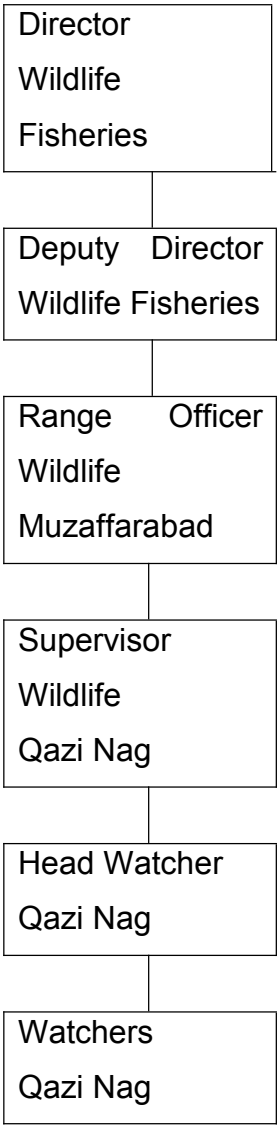
- Finances and commercialization
- Tourism Zoning system in the Reserve
- Stakeholder relationships
- Management to maintain biodiversity and ecosystem processes.
- Risk management
- Safety and security
- Cultural heritage resources
- Resource use
- Research

[18] http://www.statemaster.com/encyclopedia/Biodiversity-Action-Plans

4.2 Organizational set up of the Game Reserve:

Following is the Organogram for the effective management of the Qazi Nag Game Reserve.

Figure-4: Organogram of the Qazi Nag Game Reserve



4.3 Effectiveness of the Plan:

This Biodiversity Conservation Plan will come into effect following the approval by the Government of AJK under the relevant section either 42 (Site of Special Scientific Interest) or Section 45 (Biosphere Reserve) or section 47 (Biodiversity Reserve) or section 44 (National Park) of AJK Wildlife Act 2014, after taking appropriate action to declare the area under a specific category of protected Area on a date specified by the notification of the Government and is intended for a timeframe of 5 years after commencement unless it is replaced earlier by a newly approved plan. The Department of Wildlife and Fisheries, AJK will review this plan no later than 5 years after the commencement date.

A view of Qazi Nag Game Reserve behind village Trarran

Section-5: Methodology

The methodology of preparing this Biodiversity Conservation Plan for Key species of Qazi Nag Game Reserve is based on the following points:

5.1 Survey of the area: An MoU was signed with the Zoology Department of AJK University to involve the University Scholars of M Phil and Ph. D students in field research of the Qazi Nag Game Reserve.

Signage of MoU between PD Taaleem Foundation and head of Zoology Department university of AJK

These students were facilitated in boarding lodging and field trips for survey by the project of the Taaleem Foundation (TF). They were also supported by the assistance of local Wildlife staff and staff of the Taaleem Foundation. Services of a Biodiversity

Expert Mr. Ashiq Ahmed Khan were also available to guide the students in multiple research topics related to biodiversity of wildlife species of special concern in the Qazi Nag Game Reserve. The survey team of the project visited the area, involved the Wildlife department staff and the staff of the TF for the collection of the social and technical data reflected in the relevant sections of the Plan. They were provided few training sessions to get them acquainted with the topography of the area and different methods of survey for each species e.g., strip survey method. Selection of random sampling plots, strips in the compartment with a length of 500 meters and width of 20 meters. Flushing method, count of faeces, call, foot prints, and actual sighting etc. In this way the teams conducted survey of the core zone Reserve, buffer zone and peripheral zone of the Game Reserve for three months and as a result, following data was collected and reported for the key wildlife species of Qazi Nag:

Table 13: Reported survey data of general Wildlife species of Qazi Nag

Survey Spots with Forest Compartments																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
s #	Name of Species	Sang Paharr Nandi Narr Co-8	Kalla but Co-10	Sokarr Co-11	Khara Marru Co-13	Chatter/ nakka Kandarn co-12	Danna Btkiyan Co 15	Danna Said Ali/Garaja Gali Co-14	Kasturi Narr Co-13	Kundian Co-09	Katha Chitrian Co-20	Rupa De Daag Co-16	Puhrzi Mohri wali Co-17	Naanga Parr/Dann a Dogi Co-18	Chitrian Sar Co-19	Total
1	Monal	3	9	7	13	8	16	13	19	11	7	17	16	12	20	171
2	Koklas	11	15	23	5	9	21	15	18	17	11	33	30	27	33	268
3	kaliej	8	0	0	0						5				9	22
4	Red fox	1	2	0		1	1	3	3	2	1	1	3	1	1	20
5	Leopard	1	1	1	1	1	1	1	1	2	1	2	1	1	1	16
6	Black Bear	1	1	1	1	1	1	1		2	1	2	1	1	1	15
7	Ban Tarakla	5	3	2	5		6	3		1		7			5	37
8	Rodent	9	0	0												9
9	Grey langur	40	0	0							48		45			133
10	Monkey	0	0	0												0
11	Vulture	0	18	17		23					20		25		30	133
12	Jungle Cat	0	2	1	3					1				25		32
13	Eagle	0	0	0	4	2			2		2	3		2	2	17
14	Musk Deer				1	1	3					3	2	1		11
15	Dove	0	11	13	9	9	4	3	1	10			7			67
16	Ram Chakur						11	7	7			11		7		43
17	Parrot						12	9								21
18	Grey Goral										3			50	45	98
19	Tragopan											1	2			3
	Total:	79	62	65	42	55	76	55	51	46	99	80	132	127	147	1116

Cheer Pheasant											
Survey Spots with Forest Compartments											
1	2	3	4	5	6	7	8	9	10	11	12
Sokarr Co-1	Kawan Garrang Co-2	Shingar Trarra Co-4	Chhita Parr Co-6	Sangarr Bari	Giti Pathra Sagarr Co-12	Charakh Co-11	Doba Sayedan CO-19	Barr Wala Co-15	Kandar Koozi Co-23	Bandi Chakan Co-24	Total
35	73	1500	36	65	25	36	50	27	800	23	2670

The data for Cheer pheasant has been shown in the separate table as the species concentration is more on the private land.

Fig 5: Pie diagram showing comparative wildlife population

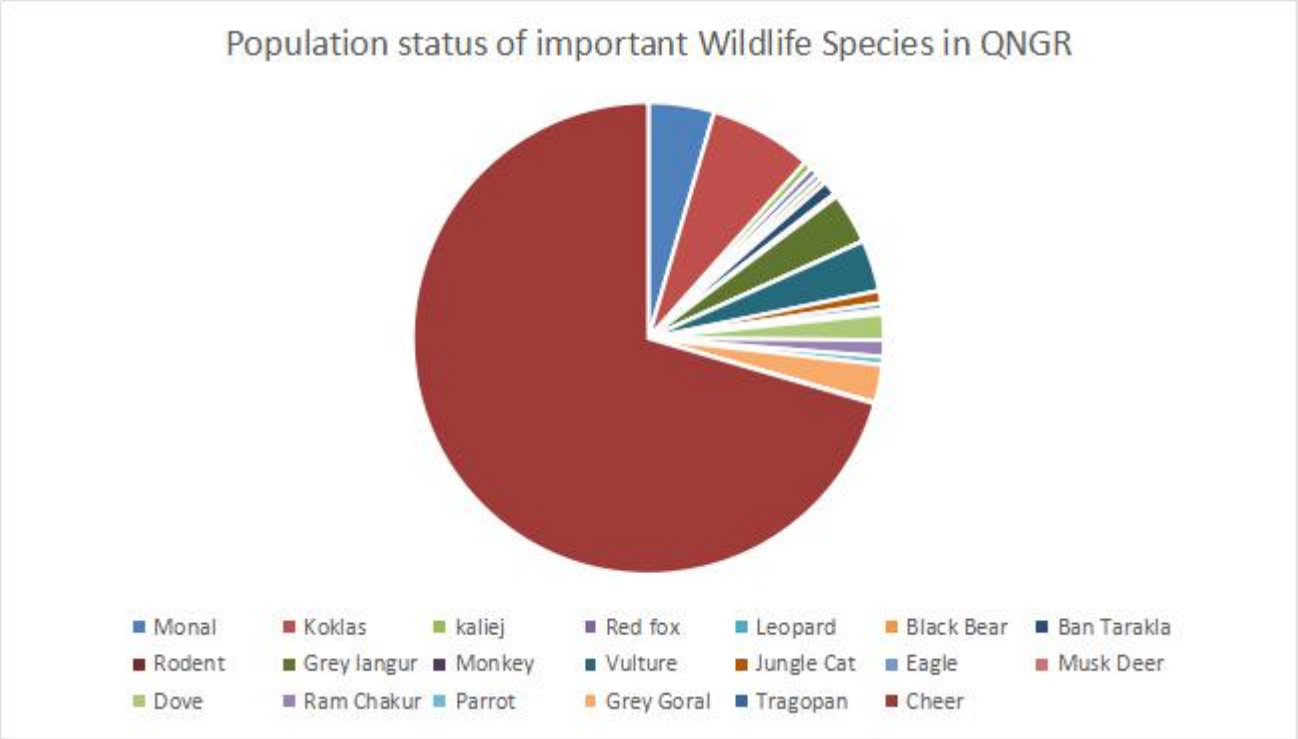
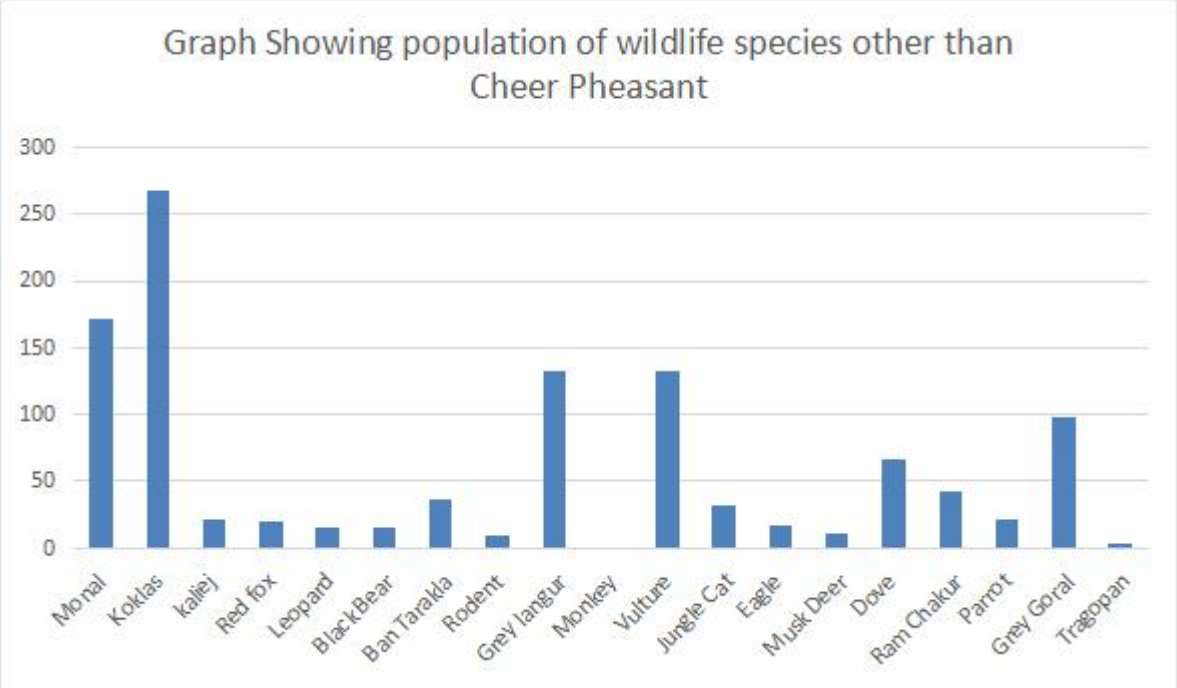


Fig 6: Graph showing number of animals at different sites of QNGR



5.2 Review of Literature: All relevant documents and literature have been reviewed in preparing this Plan. These have been quoted wherever it is required.

5.3 Consultation: Consultation during the development of this plan recognizes that Reserve must serve societal values and that they need to be part of and interrelate with the broader landscape and socio-economic context within which they are situated. The goal of the Game Reserve within the public participation process is to work directly with stakeholders to ensure that the stakeholder concerns and aspirations are consistently understood and considered. Therefore, stakeholders, both interested and affected, are included in the development of this plan by notifying them of participation processes through mechanisms suitable for the different stakeholder groups. These processes provide the opportunity for input from all stakeholders within reasonable timeframes, with the emphasis on sharing of information and joint learning. Processes also aimed to recognize all knowledge, indigenous, ordinary, and expert, as well as the diversity of values and opinions that exist between stakeholders. The commitment to the incorporation of public opinion into this plan is rooted in the Game Reserve's conservation activities and is therefore geared towards promoting conservation values and promoting this goal in part, by engaging the broader context in which the reserve is situated. The adaptive planning is designed to (i) help stakeholders express opinions and values in a structured way, (ii) to use the opinions and expressed values to formulate a vision for QNGR, and (iii) to translate the vision into management objectives that reflect the values as expressed by stakeholders.

The objectives of the stakeholder participation process are to:

- Create a channel for the accurate and timely dissemination of information to interested and affected stakeholders;
- Create the opportunity for communication between QNGR and the public;
- Promote opportunities for the building of understanding between different parties;
- Provide the opportunity for stakeholders to give meaningful input into the decision-making processes that drive the development of the Biodiversity Conservation Action Plan. The approach to the stakeholder participation process is based on the principles embodied in the legal framework of the Constitution of Azad Jammu & Kashmir, AJK **Wildlife Conservation and Protection Act 2014**, and **AJK Forest Law 1930.**

In addition to above legal framework, the stakeholder process has been developed with the guiding principles for QNGR stakeholder participation in mind. This BCP for Qazi Nag Game Reserve thus undertakes to:

- Seek to notify stakeholders of participation processes through appropriate mechanisms.
- Ensure that the process provides the opportunity for input from all stakeholders within reasonable timeframes, emphasizing the sharing of information, joint learning, and capacity building.
- Promote participation by stakeholders through timeous and full disclosure of all relevant and appropriate information.
- Provide feedback on the outcome of the process to stakeholders and demonstrate how their inputs have been considered in the decision making process.
- Ensure that methodologies accommodate the context of the issue at hand and the availability of resources (people, time, money) and do not conflict with these guiding principles.
- Give particular attention to ensuring participation by marginalized communities, communities with specific concerns, or communities that have legal and customary rights in the Game Reserve.

Section-6: Purpose, vision and High Level Objectives

6.1 Purpose of the Biodiversity Conservation Plan of the Game Reserve for the key wildlife species:

The Conservation Plan requires that the GR be managed in accordance with the purpose for which it was declared. Hence, the department of Wildlife and Fisheries will manage the area firstly in accordance with its organizational vision and secondly in accordance with the mission and objectives hierarchy that are derived through the detailed working according to the requirements of the area.

6.2 Vision:

Conservation and management of Qazi Nag Game Reserve resources as such is done in a manner that its natural resources are protected through a participatory approach on sustainable basis

6.3 Mission:

The QNGR strives to promote the adaptive and integrated management of biodiversity and the Reserve's wilderness qualities and cultural character, through becoming a preferred innovative nature-based tourism destination, promoting community participation and empowerment, and including public/private partnerships, which also benefits state economic, social and educational development supported by sound research.

6.4 Goal:

The goal is to generate revenue through increased diversity of tourism products including the establishment of the rest camps. Environmental education and heritage values have been targeted for improvement. Infrastructure development requirements include the road network and walking trails. The biodiversity value is predicted to remain stable over the next 20 years, and the Game Reserve faces no outstanding biodiversity risks.

6.5 Operating principles or values:

The stakeholders recognize and endorse the QNGR corporate and conservation values. The participants agree that the values as listed in the plan are valid.

These values are:

- We have mutual respect for cultural, economic, and environmental differences within and across the regional spectrum of cooperation and agreements.
- Recognizing that ecosystems and biodiversity are complex, and that we will seldom have all the information we want to make decisions, we adopt a 'learning by doing' approach to their management.
- We have a culture of honesty, transparency, cooperative sharing of expertise, and of empowerment and advancement of all parties.
- We keep our expectations and the distribution of costs and benefits within the cooperative governance relationships explicit, transparent and within biodiversity constraints.

6.6 Vital attributes

The vital attributes of the QNGR are the important characteristics and / or properties of the Game Reserve that concisely describe the key features of the Game Reserve. The Game Reserve identified seven attributes that are vital to the approach by which it is managed.

The key attributes are:

i. There is a diversity of stakeholders, each of which brings knowledge and expertise to the cooperation and QNGR is recognized as being able to provide particular skills in conservation and tourism.

ii. Nature based responsible tourism provides a long term economic option in the region. There is currently a good diversity of adventure tourism activities and infrastructure in the region based on both cultural and resource (wildlife and outdoor) markets.

iii. The mountain Baara Hazari provides a large altitudinal range, a wide-open-space visual aesthetic, and associated biodiversity within a short distance.

iv. Vital biodiversity attributes include the Griffon vulture (*Gyps himalayansis*), Bearded Vulture (*Gyps babatus*) breeding colonies, Cheer Pheasant (*Catreus wallichii)* home, Musk deer (*Moschus chrysogaster)*, Grey Langoor, Black bear, and a very wide range of vegetation types including medicinal herbs.

v. Many headwater streams arise within the Game Reserve and contribute to important aquatic ecosystem services related to flow of good quality water to surrounding landscapes, for various livelihood benefits.

vi. Waterfalls and springs of intense scenic nature have vital potential of tourist's attraction.

vii. Key important Musk Deer, Griffon Vulture, and Cheer Pheasant populations.

6.7 Determinants and risks to the vital attributes

A major component of Game Reserve's management responsibility is to ensure the maintenance of the determinants or strengths of the vital attributes and to limit the influence of threats to the system where possible. The boxes below reflect the vital attributes, determinants, and threats:

Figure-3: Determinants and Threats to the vital Attributes

<table>
<tr><td colspan="2">

- **Expanded area of Qazi Nag with inclusion of new compartments of biodiversity importance**

</td></tr>
<tr><td colspan="2">Determinants: Notification of expansion of Qazi Nag Game Reserve with compartments number 6-24 (9-17 older)</td></tr>
<tr><td colspan="2">Threats:</td></tr>
<tr><td>i) Lack of interest of the department of Wildlife
ii) Lack of institutional arrangements
iii) Lack of coordination between the stakeholders
iv) Non-cooperation from the Forest Department</td><td>v) Lack of communication
vi) Lack of integrated planning
vii) Non interest of Communities and Government</td></tr>
</table>

<table>
<tr><td>

- **Diversity of stakeholders bring different knowledge and expertise (conservation, tourism and skills)**

</td></tr>
<tr><td>Determinants: Good institutional arrangements with trust and communication,</td></tr>
</table>

transparency	
Threats	
i) Under resourcing ii) Lack of institutional arrangements and governance	iii) Lack of communication and feedback iv) Lack of continuity and knowledge base v) Conflict of Authority on the Game Reserve resources

• **Nature based responsible tourism provide long term economic options**
Determinants: Potentially good tourist flow (international, national and regional), attractiveness of area, innovative tourism model
Threats

i) Poor access and poor quality of internal roads ii) Loss of constituency / ineffective marketing (Lack of good sightings of wildlife) iii) Over/inappropriate development	iv) Inappropriate change in land use v) Poor relationships amongst tourism stakeholders vi) Higher internal expectations vii) Restricted income generation model

• **Mountain massif**
Determinants: Local topography, spectacular, undeveloped massif
Threats

i) Inappropriate development ii) Inappropriate management (aliens, fire etc.)	iii) Private ownership/use iv) Army security risk

• **Head water**
Determinants: Rainfall, good land cover, healthy wetlands, relationship with groundwater, topography
Threats

i) Inappropriate water utilization ii) Uncontrolled fire iii) Lack of institutional arrangements and co-operative governance	iv) Range of threats to water quality v) Climate change vi) Inappropriate development, vii) Uncontrolled fishing viii)Unplanned Hydro Power generating structures
• **Range of biodiversity (special species), many vegetation types**	
Determinants: Cheer Pheasant priority area, Game Reserve presence and expansion, high ecological integrity of many of the diverse landscapes, compatible land use, altitudinal gradient	
Threats	
i) Hunting (organized crime, subsistence) ii) Damage of eggs by the locals while collecting black mushroom iii) Inappropriate forest cutting & thinning, bush clearance iv) Disturbance (aircraft, helicopters, Arm fires, drum beating, fire crackers etc.) v) Past land use – land encroachment	vi) Lack of institutional arrangements vii) Inappropriate development viii) Change in land use (inside and outside) ix) Climate change x) Local and regional air pollution and deposition xi) Lack of monitoring and feedback xii) Impact of herbivores

• **Important Musk deer population and Cheer pheasant population**	
Determinants: Institutional arrangements, topography give security opportunities, high tourism value	
Threats	
i) Poaching ii) Disturbance by the locals iii) Ease of access (proximity of rural roads)	vii) Inappropriate allocation of resources viii)Lack of alternative options ix) Lack of monitoring and feed back x) Inability to influence local and exotic

iv) Lack of resources and training v) Lack of institutional arrangements and cooperative governance vi) weak management of Musk Deer due to presence of Army troops on LOC	drivers of musk demand xi) Emerging diseases xii) Lack of awareness about the importance of wildlife heritage of the State.

• **Exploitation of timber and fuel wood**	
Determinants: Arrangements for alternative options, education and awareness	
Threats	
i) Lack of alternate options ii) Inappropriate institutional arrangements iii) Lack of staff commitment iv) Lack of proper training	v) Lack of communication vi) Lack of environmental education support for the education institution vii) Lack of religious, political & armed forces' commitment and support.

6.8 High-level objectives

While the mission sets out the "Where do we want to go", high-level objectives act as the roadmap to achieve the Mission. These high level objectives tend to flow naturally from the vital attributes. The desired state is achieved by means of a hierarchy of objectives, starting with an overall objective aligned with Game Reserves' organizational structure and the Game Reserve's Vision and Mission statements, then broad, high level objectives (this Section) and then to finer and finer levels of detail, ending with specific operational or management actions (Section 11).

Discussions and consultation at formulation of this conservation and management plan for QNGR gave rise to an initial set of high level objectives. These were refined to reflect the following:

Mission: As an integral component of the Qazi Nag Game Reserve, it strives to promote the adaptive and integrated management of biodiversity and the Game Reserve's wilderness qualities and cultural character, through becoming a preferred innovative nature-based tourism destination, promoting community participation and empowerment, and including

public/private partnerships, which also benefits regional economic, social and educational development supported by sound research.

Figure-4 High level objectives

1. Biodiversity Objective: To adaptively manage QNGR for the long-term sustainable conservation of biodiversity and its processes and function, providing ecosystem goods and services, building constituency for the conservation ethic and supporting nature based tourism in the region.

1.1 Biodiversity conservation: To restore and maintain natural ecosystem patterns, processes and function which supports the biodiversity of QNGR.

1. 2 Ecosystem services: To recognize QNGR as a provider of a range of ecosystem services.

1.3 Species of special concern: To identify and manage species of special concern (e.g. Markhor, Himalayan Musk deer, Cheer pheasant, griffon vulture) and to ensure their persistence and value within integrated regional strategies by securing their habitats, minimizing human induced threats and ensuring their genetic integrity.

1.4 Co-operative bioregional landscape: To enhance co-operative management through a bioregional approach by using a range of more land inclusion options to expand QNGR across a patchwork of conservation-friendly land-uses to primarily enhance ecosystem patterns and processes, mitigate for conflicts and provide opportunities that improve local livelihoods.

1.5 Rehabilitation: To identify and rehabilitate the area in a structured prioritized manner to support biodiversity and wilderness goals.

1.6 Community Organizations: To establish men and women village organizations (VCCs, WVCCs) on village basis to play sustainable participatory role in conservation process of the natural resource of the Game Reserve

1.7 Human-Wildlife conflict: To overcome the human-wildlife conflict by establishing Predation Compensation Fund (PCF).

1.8 Research: To provide a research base to grow the understanding and inform the management of QNGR biodiversity estate and provide appropriate feedback through science-management interactions.

2. Co-operative governance objective: To promote and enhance institutional and other relationships and co-learning for effective co-operative governance of QNGR (Especially the local knowledge sharing)

2.1 Local and district government: To create appropriate synergy between QNGR plans and local and district government plans.

2.2 Stakeholder engagement for co-operative governance: To enter into and maintain relationships with relevant stakeholders in order to comply with QNGR mandatory requirements.

3. Cultural Heritage Objective: To adaptively manage, conserve and provide appropriate/relevant access to cultural heritage resources in QNGR.

3.1 Inventorization: To review and continuously update the inventory of cultural resources in QNGR

3.2 Management: To develop a basic adaptive management plan for the cultural heritage of QNGR.

3.3 Site development: To identify sites of significance and develop site specific management plans for tourism, conservation, or research purposes, maintaining a sense of place.

3.4 Interpretation and awareness: To develop baseline awareness and interpretation tool relating to cultural heritage in QNGR.

4. Responsible tourism objective: To develop and implement a tourism plan that promotes QNGR and surrounds as a preferred destination by providing a range of appropriate and innovative nature based products and offer a variety of recreational and learning experiences in accordance with responsible tourism principles.

4.1 Responsible tourism: To develop a responsible tourism baseline for QNGR.

4.2 Planning: To establish appropriate and innovative responsible tourism product framework for implementation in QNGR.

5 Constituency building and benefit sharing objective: To build a strong constituency at multiple stakeholder level in support of QNGR and to enable human benefits in the context of local, regional ecological, economic and social sustainability.

5.1 Environmental education and interpretation: To build constituencies for QNGR in support of the broader conservation awareness and ethic through enhancing visitor experiences and providing access and opportunities for visitor groups.

5.2 Stakeholder relationships: To establish and maintain meaningful and beneficial relationships with a wide range of stakeholders in support of core Game Reserves values and aims of QNGR.

5.3 Stakeholder beneficiation: To enable QNGR to contribute positively towards local livelihoods and wellbeing and the regional economy.

6. Effective Game Reserve management objective: To provide adequate resources and support services to enable QNGR to achieve its' objectives

6.1 Infrastructure: To upgrade and maintain existing infrastructure and develop new infrastructure in support of conservation and tourism in QNGR in compliance with the zonation

6.2 Financial and administration: To ensure sound financial management and administration in QNGR

6.3 Human resources: To ensure sufficient and effective staff capacity to achieve QNGR management objectives by adhering to HR policies and guidelines

6.4 Environmental management: To ensure compliance with environmental

legislation and best practice principles for all management activities in QNGR

6.5 Safety and security: To provide a safe and secure environment of both our visitors and Game Reserve employees and to ensure that the integrity of the natural and cultural resources of QNGR is secured

6.6 Risk management: To establish and maintain effective, efficient and transparent systems of risk management

Section 7: Zoning

The primary objective of a Game Reserve-zoning plan is to establish a coherent spatial framework in and around a Game Reserve to guide and co-ordinate conservation, tourism and visitor experience initiatives and activities. A zoning plan plays an important role in minimizing conflicts between different users of a Game Reserve by separating potentially conflicting activities such as meeting community timber and fuel wood demand from the peripheral zone, viewing and day-visitor picnic areas whilst ensuring that activities which do not conflict with the Game Reserve's values and objectives (especially the conservation of the protected area's natural systems and its biodiversity) can continue in appropriate areas. The zoning of QNGR was based on an analysis and mapping of the sensitivity and value of the Game Reserve's biophysical, heritage and scenic resources; an assessment of the regional context; and an assessment of the Game Reserve's current and planned infrastructure and tourist routes / products; all interpreted in the context of Game Reserve objectives.

7.1 Overview of the use zones:

Full details of the use zones, the activities and facilities allowed in each zone, the conservation objectives of each zone, the zoning process, the Game Reserve buffer zone (detailing Game Reserve interaction with adjacent areas) and the underlying landscape analyses are given here.

7.2 Remote zone:

This is an area retaining an intrinsically wild appearance and character, or capable of being restored to such and which is undeveloped and road less. The area includes upper part of Compartment 6,7, 8, 9, 10 and 11 and total area of Compartment 12,13,14, 15 and 16, 18, 19, 20, 21, 22, 23 24 and some part of Compartment 17 making Line of Control on the eastern border with Indian Occupied Kashmir. There are no permanent improvements or any form of human habitation except some army troops on LOC. It provides outstanding opportunities of wonderful inspiring natural characteristics, with sight and sound of human habitation and activities barely discernible and at a far distance. The conservation objectives for this zone require that deviation from a natural / pristine state should be minimized, and existing impacts should be reduced. The aesthetic / recreational objectives for the zone specify that activities which impact on the intrinsically wild appearance and character of the area,

or which impact on the wilderness characteristics of the area (solitude, remoteness, wildness, serenity, peace etc.) will not be tolerated. In QNGR, remote areas are designated in the rugged mountain areas in the upper reaches of the Game Reserve. The zone was designated to include most landscapes with high environmental sensitivity and value.

7.3 Primitive zone:

The prime characteristic of this zone is the experience of wilderness qualities with access controlled in terms of numbers, frequency, and size of groups. The zone shares the wilderness qualities of the remote zone, but with limited access roads and the potential for basic small-scale self-catering accommodation facilities such as a bush camp or small local hut. Views of human activities and development outside of the Game Reserve may be visible from this zone. Compartment 8, 9, 10, 11, 12, 13, 14, and Baara Hazari Peak are the true representatives of this Zone in QNGR. The conservation objectives for this zone require that deviation from a natural / pristine state should be small and limited to restricted impact footprints, and that existing impacts should be reduced. The aesthetic / recreational objectives for the zone specify that activities which impact on the intrinsically wild appearance and character of the area, or which impact on the wilderness characteristics of the area (solitude, remoteness, wildness, serenity, peace etc.) should be restricted and impacts limited to the site of the facility. Ideally visitors should only be aware of the facility or infrastructure that they are using, and this infrastructure / facility should be designed to fit in with the environment within which it is located in order to avoid aesthetic impacts. In QNGR, primitive areas were designated to buffer remote areas from higher use areas.

Primitive areas are also designated in valleys with relatively low environmental sensitivity to allow access to activities outside the Game Reserve, as well as to protect most of the remaining sensitive areas (such as lower mountains) from high levels of community and tourist activity.

7.4 Buffer Zone

The Game Reserve buffer zone shows the areas within which land use changes could affect the Game Reserve. The zones, in combination with guidelines, serve as a basis for (i) identifying the focus areas in which Game Reserve management and scientists should respond to basic assessments, (ii) helping to identify the sort of impacts that would be important at a particular site, and most importantly (iii) serving as the basis for integrating long term protection of a Game Reserve. In particular, they do not address activities with broad regional aesthetic or biodiversity impacts. Community access should be minimized by any means. A careful plan should be developed to make the projects for the dependent communities which provide the options of alternates of nature use resources. These include Hydro-power generation, energy efficient structures, fuel efficient stoves, controlled pasture grazing, plantation on community areas etc.

7.5 Peripheral zone:

The area with local inhabitation: The underlying characteristic of this zone is motorized drive access with the possibility of small basic camps but without commercial facilities such as shops and restaurants. Facilities along roads are limited to basic self-catering picnic sites with toilet facilities. The conservation objectives for this zone specify some deviation from a natural/ pristine state is allowed, but care should be taken to restrict the development footprint. The aesthetic/ recreational objectives for the zone specify that activities which impact on the relatively natural appearance and character of the area should be restricted, though the presence of larger numbers of visitors and the facilities they require, may impact on the feeling of “wildness” found in this zone.

7.6 High intensity leisure zone:

The main characteristic is that of a high density tourist development node with commercial amenities such as shops, restaurants, and interpretive centers. This is the zone where more concentrated human activities are allowed, and is accessible by motorized transport on high volume transport routes. The main focus is to ensure a high quality visitor experience, however the conservation objectives still require that the high levels of tourism activity and infrastructure that are accommodated within this zone are planned and managed to minimize the effect on the surrounding natural

environment, and that the zone must still retain a level of ecological integrity consistent with a protected area. The aesthetic / recreational objectives for the zone specify although the high visitor numbers, activities, and facilities will impact on the wild appearance and reduction of the wilderness characteristics of the area (solitude, remoteness, wildness etc.) is inevitable, these should be managed and limited to ensure that the area generally still provides a relatively natural outdoor experience. In QNGR, a High Intensity Leisure (HIL) zone can be designated on the periphery of the Game Reserve, in the villages of Chamm, Khatirnarr, and Narrdajian. This will allow the Game Reserve to accommodate higher visitor numbers in these areas, and offer modern commercial facilities such as a restaurant, guest house, and shops within this zone. Other feasibility of developing commercial tourist points should be conducted so that economic corridor could be opened for the local communities of QNGR.

7.7 Priority natural areas:

These are key areas for both pattern and process that are required for the long term persistence of biodiversity in and around the Game Reserve. The zone also includes areas identified for future Game Reserve expansion. Inappropriate development and negative land-use changes should be opposed in this area. Development activities should be restricted to sites that are already transformed. Only developments that contribute to ensuring conservation friendly land-use should be viewed favourably.

7.8 Catchment protection areas:

These are areas important for maintaining key hydrological processes within the Game Reserve. Inappropriate development (dam construction, loss of riparian vegetation etc.) should be opposed. Control of alien vegetation and soil erosion as well as appropriate land care should be promoted.

7.9 View shed protection areas:

These are areas where development is likely to impact on the aesthetic quality of the visitor's experience in a Game Reserve. Within these areas any development proposals should be carefully screened to ensure that they do not impact excessively on the aesthetics of the Game Reserve. The areas identified are only broadly indicative of sensitive areas, as at a fine scale many areas within this zone would be perfectly suited for development. In addition, major projects with large-scale regional

impacts may have to be considered even if they are outside the view shed protection zone.

7.10 Current status and future improvements:

The current Game Reserve use zonation is based on the same biodiversity and landscape analyses undertaken for a Conservation Development Framework (CDF); however certain elements underlying the CDF such as a tourism market analysis are not fully incorporated into the Game Reserve use zonation.

Awareness session of expert Mr. Ashiq Ahmad Khan with WVCC of Khatirnarr Village

Section 8: Access and Facilities

8.1 Public access and control:

Visitors to the sections of the Game Reserve will be managed by Game Reserve staff and access to the Game Reserve may start from Chinari to Gurr Munda and then to Narrdajian, Gehl jabrra Khatirnarr and Chamm villages. Another route is from Barthawarr Gali to Chitriyan and still another towards Pandu, Hotrerri village to Baara Hazari Peak and famous Shrine.

8.2 Administrative and other facilities:

The administrative and other facilities include facilities utilized for administrative and operational purposes, enabling the Game Reserve in fulfilling the legal mandate. Administrative offices are proposed to be located at Khatirnarr or Narrdajian, servicing the respective Game Reserve sections. There is one existing incomplete Government building at Doba village which is not an appropriate place for it because of an odd location.

8.3 Visitor facilities:

Visitor facilities include all non-commercial facilities and points of interest available to visitors, to the exclusion of any management and administrative facilities, and are set out in Table 13 below. There are a number of activities available to visitors that are not commercially operated, which include: · 4x4 trails (self-drive), Birding, Game viewing, Eco walks etc.

Table-14: Visitor facilities and points of interest

Infrastructure/Visitor Sites/Points of Interest	Current Status	Zone	Proposed Role by 2021
4x4 Trail	Existing Partially asphalted towards Pandu, partially gaveled towards Narrdajian & Cham	Remote/Core and Buffer and peripheral	All asphalted roads
Mahmdoo Bela	Road leads but no	Buffer Zone	Accommodation

Shrine	accommodation, poor toilet facility		and proper toilet facilities in 2021
Griffon vulture and Cheer pheasant sighting place	Village Narrdajian, Ghel Jabrra and Trarran. No proper accommodation	Peripheral zone	Accommodation and sighting points developed with all facilities
Chamm leisure point	4x4 road with a poor access path to the base and no other facility	Peripheral zone	Good road, restaurant, riverside benches and guest house by 2021
Baara Hazari View point	4x4 road	Remote/Core	Better road and developed tented view point by 2020
Chitriyan Landscape	No road	Remote/Core	Developed trail for eco walk and developed camping site

8.4 Commercial activities:

For the purposes of this plan, commercial activities include all income generating facilities, products and services offered, and are broken down into those operated by the Game Reserve authorities and those operated by third parties for example restaurants, guest houses, lodges camping sites.

Table-15: Possible commercial facilities

Facilities	Current Status	Zone	Proposed Role by 2021
Chamm accommodation and restaurant	A fair weather road	peripheral	A fully developed accommodation by contractual services or addition with

			existing houses of Chamm and Khatirnarr villagers, play land for kids by 2020. Riverside benches and play lands in 2019.
Mahmdoo Bela Ziarat for focused group	A fair weather road	Buffer Zone	Accommodation and proper toilet facilities in 2021
Narrdajian and Ghel Jabrra Griffon Vulture and Cheer pheasant sighting place	A fair weather road	Peripheral zone	Accommodation of additional room with existing houses of villagers, spotting scopes and binoculars by 2021
Baara Hazari View point	4x4 road	Remote/Core	Canvas tented facility for sightseeing visitors at 8 points by 2020
Convenient shops at different points	No	Peripheral	Small convenient shops by local community members at all tourist places

8.4.1 Accommodation:

Accommodation for visitor-use includes accommodation units and formal camping sites that are dispersed through the Game Reserve, as summarized in Table 13. Accommodation operated by Game Reserve includes the following:

- **Baara Hazari Camp Site**. Comprises of 8 camp-sites with 10 tented units (canvas structures) that include both 2 and 4 bed units with necessary tents for toilet and bath facility.
- **Chamm guesthouse and play land**. The guesthouse provides accommodation for a maximum of eight guests, including two bathrooms and a central open kitchen, dining room and lounge area.
- **Khatirnarr and Chamm riverside sitting facilities**: Wooden or recycled Benches and chairs with appropriate sheds at different appropriate places.
- **Mahmdoo Bela ziarat**: The facility includes six bedrooms accommodation with two male and two female toilets. It includes open kitchen with it.
- **Narrdajian Guest rooms.** This is an addition of one room to the existing local houses having double bed facility and attached bath room of acceptable standards**.** Minimum six rooms will be constructed initially and then increase in number by the community as per demand**.**

8.4.2 Contractual Game Reserve facilities:

There are currently limited activities offered within the Game Reserve, and the objective is for the Game Reserve to provide visitors with a large variety of activities that both expand on the products and services available, that also serve to remove visitors from the limited road network. The Chamm Waterfall section is situated out of the Game Reserve boundary, on which the guesthouse and restaurant has to be managed by the contractual arrangement. Local community of Chamm and Khatir Narr villages may develop additional accommodation rooms beside their residential houses with good standards. Contractual facilities of play land for children are required to be developed at appropriate places. Publicity boards should also be fixed along the Jhelum Valley road and especially at the turning point at Chinari. A project of the Game Reserve can support these poor villagers in construction of additional rooms to their existing houses on terms and conditions decided under the project with a very clear concept and transparent manner. Tourism department can play a

vital role in developing such facilities with coordination of the Wildlife and Fisheries department of AJK. A monitoring mechanism has to be laid down for such activities to get support of the community in the conservation and management of the Game Reserve resources in return. This type of facility should also be developed in Narrdajian and Ghel Jabrra bird watching campsites and waterfall. Selected people from the VCCs should be trained as tourist guides to conduct package tours.

8.4.3 Cultural and heritage sites:

Though there may be some cultural and heritage sites of value, research is required in order to identify specific sites that may provide product and interpretation opportunities.

8.4.4 Community use:

There are no communities living inside the Game Reserve. Six villages are situated at the periphery of the Game Reserve. Stakeholder communities on the immediate periphery of the Game Reserve include 6 revenue villages for which detail has already been provided in the socio-economic section above. These communities and communities adjacent to them are the main employment source for the Game Reserve. The community projects have to be developed as packages which can provide support of income generation to these communities.

8.4.5 Mining:

No mining, legal or otherwise, is currently known to occur in the Game Reserve or on the Game Reserve periphery.

Section 9: Consolidation and expansion:

The expansion and consolidation of the Game Reserve is in line with the national strategic objective of expanding AJK's protected area system. The overall vision for QNGR is to be an integral part of the greater protected areas network system in terms of its biological, socio-economic, and cultural management. Qazi Nag Game Reserve sits within the priority biodiversity area, one of several such areas in need of such conservation in the State.

The expansion/consolidation of the QNGR falls in line with the following national strategic objectives:

- Expanding the protected area system towards 12% of the total area of the State.
- A coordinated approach to the management of important Himalayan ecosystem.

In order to achieve its national mandate of conserving representative samples of AJK's different ecological landscapes, the establishment of an ecologically sustainable Game Reserve in the Qazi Nag is a priority of the department of Wildlife and Fisheries. The expansion vision for the Game Reserve has varied over time from an initial 9 compartments (9 to17comartments) to 19 compartments (6 to 24) that focuses primarily on maximizing biodiversity with a sustainable natural resources use. Outputs from this systematic conservation planning assessment have been used to identify areas that fit in initial optimum solution in terms of including the more into the Game Reserve. This inclusion would importantly see the inclusion of the poorly protected and vulnerable wildlife and vegetation type as well. This plan also recommends to upgrade the level of the Protected Area from a Game Reseve to National Park, Biosphere Reserve or any category under the Wildlife Act of 2014.

Section 10: Concept Development Plan

10.1 Long term development plan:

The Game Reserve area is considered with substantial development potential due to its location and proximity, thereby making it an ideal weekend or short break-away location. A limitation on visitor access would be the better road access to the Game Reserve, and the road network within the Game Reserve, which is currently limited. Activity development would be a key element to the development strategy of the Game Reserve, with the aim of limited accommodation infrastructure development. In order to enhance the visitor experience of these tourism features, appropriate and sustainable infrastructure and facilities need to be provided, in accordance with the conservation and responsible tourism mandate. Development should not be considered lightly and is only done to fulfill a real operational need or tourism opportunity. All sites considered for development, are located on previously disturbed sites, especially due to cross boarder fires, where existing facilities and infrastructure are limited and no services are provided to the visitors. The type and nature of facilities provided for at these sites should not only meet visitor expectations, but also be compatible with the ethos of the area. New activity or product development may create disturbance, e.g. hiking trails, accommodation etc., however these will be considered based on the zonation and will comply with all legal requirements governing development. It is important to note that the implementation of any proposed project is dependent on the solid will, commitment, and availability of funds. All these recommendations of self-sustainable Game Reserve are based on a concept of a long term Plan.

10.2 Development Nodes:

The desire to make the Game Reserve's natural resource management as sustainable activity, more attention has been paid on the tourism development in the area in this document. The main tourism hub will be located at places leading to the Game Reserve in the peripheral zone. There is a possibility to develop such points in the villages that have dependence on the Game Reserve resources. The tourism development aims at providing visitors-providing facilities including but not limited to:

- Activity departure points
- Accommodation

- Sighting points
- Visitor information centers
- Restaurants
- Information sign boards
- Riverside proper seating facility
- Children play areas

Consideration prior to investment in such a facility would be traffic load, and potential visitor's volume, opportunities provided by the locals, and an information center to be placed at Chinari for Qazi Nag access.

10.3 Communication Routes:

There is a need to develop/upgrade the routes to be meant for the tourism within and outside leading towards the Game Reserve as these routes are inaccessible to the cars. There is a requirement to remove visitors from the routes rather than simply adding additional routes. The road from Chinari onwards has been asphalted but the quality is poor and often there is a breakage of continuity at many places that does not allow the cars to drive on them.

10.4 Infrastructure development Proposals:

All Infrastructure development proposals are listed in the tables below.

10.4.1 Administrative and other facilities

Table 16: Proposed administrative and other facilities development

Product type	Infrastructure / Visitor sites	Current status/use	Use zone	Proposed role by 2021	Probability
Staff Office accommodation	Staff accommodation at Narrdajian or Khatirnarr	Office Accommodation non existing	Peripheral/outside	Rs 5.15 million budget allocated for new staff accommodation development	High

				in 2019/2020	
Road	Cham Nallah to Doba	Existing	Periphery	Rs. 10 million for improved road	High
Road	Pandu Cross to Chamm village	Existing	Periphery	Improved asphalted road Rs. 10 million	High
Road	Pandu Cross to Baara Hazari Top	Existing	Periphery	Improved Asphalted top Rs. 12 million	High
Fence	Cheer Pheasant hot spots around Narrdajian	Nil	Buffer / periphery	Enclosure development to control disturbance	low
Camping benches and tables	Khatirnarr, Chamm and Narrdajian	Nil	Periphery	Leisure sites for tourists & community economic activity	High

10.4.2 Visitor facilities:

Table 17: Proposed visitor facilities development

Product type	Infrastructure / Visitor sites	Current status/Use	Use zone	Proposed role by 2021	Probability
Interpretation/di	With office	None	Periphe	A museum	Medium

Product type	Infrastructure / Visitor sites	Current status/Use	Use zone	Proposed role by 2021	Probability
splay center	accommodation		ral	or wildlife display center established	
Visitor Facility	Develop new picnic site at Chamm, Khatirnarr and Narrdajian	None	Peripheral	Picnic sites are developed	High
Visitor Facility	Accommodation for visitors of the Shrine at Mahmdoo Bela	Inappropriate	Peripheral	A good accommodation with toilet facilities	High
Visitor Facility	Main Gates at entry points	None	Outside	outside	High
Visitor Facility	Sign board	Few	Outside	Along the leading roads with information and messages	High
Visitor Facility	Day visitors/community area	None	Periphery	Day visitor facility for enjoying the Game Reserve	Medium

10.4.3 Commercial activities:

There are possibilities of a wide variety of commercial activities to be developed within the Game Reserve, to expand the tourism product and sustainability. These are listed in Table 14-17 below. All activities will be individually investigated and their priority determined based on feasibility and income potential. Following these studies, some potential activities may be excluded. In addition, there are a large number of activities for potential development that are excluded as they are considered unlikely to be developed within the term of this plan. However, should the market change or a third party supplier present a real opportunity, any and all products may be considered based on the agreed terms and locations, as per the policy under QNGR Development Frame Work. It is important to note that the execution of the programme is dependent on the availability of the funds.

10.4.4 Activities:

Leisure activities are a mechanism for income generation, with the potential for community development without the high capital investment required for accommodation. Key challenges regarding provision of leisure activities in future will be diversity of offering, customer demand and increasing the 'adventure' element of activities in order to engage travelers, including the younger markets and markets with a high disposable income. Activity development will need to take the visual impact of each activity into account, in order to ensure the visitor experience for other activities and visitors is not impacted. Certain activities will also need to cater for different product grades and visitor experience levels.

Table 18: Proposed activity development

Activity	Product type	Infrastructure / visitor sites	Current status	Use zone	Proposed role by 2021	Probability
Leisure / recreational activity	Eco trail	Chamm, Fateh Pur	Rough	Buffer and core	Possible development of new trail for	High

Activity	Product type	Infrastructure / visitor sites	Current status	Use zone	Proposed role by 2021	Probability
					different grade or facility level	
Leisure / recreational activity	Rock climbing	Permitted unguided rock climbing	None	Buffer and primitive / core	New activity to offer, with different grades	High
Leisure / recreational activity	Hiking	Guided hike	New development	Buffer and primitive / core	New activity to offer, with different grades	High
Leisure / recreational activity	Fishing	Catch and release angling	New development	Buffer	New activity potential	Low
Leisure / recreational activity	Games facilities (e.g. table tennis / badminton, etc.)	Games facilities offered to entertain youth.	New development	Periphery	New activity potential	Medium
Leisure / recreational activity	Horse - riding trails	Guided horse riding trails	New activity	Buffer and primitive	New activity potential	High

Activity	Product type	Infrastructure / visitor sites	Current status	Use zone	Proposed role by 2021	Probability
				/ core		
Interpretive	Botanical tours	Market and offer regular botanical tours	None	Buffer and primitive / core	Development potential	Medium
Developmental	Photography courses	Wildlife / nature photography courses	None	Buffer and primitive / core	Development potential	High
Developmental	Skill courses	Various course offerings. Survival skills off-road driving skills, orienteering skills, First aid training, rope skills, rock climbing skills,	None	Peripheral & buffer	Development potential	High
Developmen	Wildlife	Possible	None	Peripher	Developm	High

Activity	Product type	Infrastructure / visitor sites	Current status	Use zone	Proposed role by 2021	Probability
tal	courses	short course offerings: Birding, botany, bush skills tracking Skills. Possible long-term course offerings: Ranger training, field guide training, nature-based hospitality		al	ent potential	
Child Related	Children activity centers	Nature club orientation, competition, courses	Existing at local schools level	Peripheral	Development expansion	High
Business tourism and events	Various events	Mountain climbing competition	None	Peripheral & buffer	Development potential	High

Activity	Product type	Infrastructure / visitor sites	Current status	Use zone	Proposed role by 2021	Probability
Adventure		, marathon, Bird watching				

10.4.5 Cultural/Religious heritage sites:

There is no clear indication of current cultural heritage sites of value, and a study would be required in order to clearly define these prior to potential development. Mahmdoo Bela Shrine in area has a value where interested groups come during the annual functions.

Section 11: Strategic plan

11. Introduction:

Sections 4, 5, and 6 of this plan outlined the policy framework, the consultation process, development of a mission and high-level objectives for the Game Reserve. In this section the goals and higher-level objectives of the Game Reserve are developed into lower level objectives and sub-objectives and finally into operational actions. In this way, decision-making even at the operational level, can be traced all the way back to the core values and inputs from stakeholders on which they have been based. This approach conforms to the requirements of the national policy, and ratified international conventions.

Programs of implementation, developed as outlined above, form the strategic plan for this planning cycle, are arranged under the following headings:

- Bioregional
- Biodiversity
- Responsible tourism
- Constituency and benefit sharing
- Effective Game Reserve management

Each programme is presented as follows:

- **Programme name:** A name describing the programme.
- **High level objective:** Stating the overall goal of the programme.
- **Background:** Overview of intent, guiding principles, description, outcome, research and monitoring and risk (all where applicable).
- **Tables:** Outline of objectives, initiatives, and management actions within the scope of the objective with an indication if the programme is once off, continuing or conditional on the availability of resources. These tables have the following headings:
    - **Initiatives or objectives:** The various initiatives or objectives, derived the hierarchy of higher level objectives, which make up each programme.
    - **Actions:** The actions necessary to achieve the objective.

- **Responsibility:** The person, section, department, division, or unit responsible for implementing the action.
- **Indicator:** A measure whereby the achievement of the objective can be evaluated.
- **Timeframe:** An indication of when the action is likely to be completed (indicated by year over the planning cycle).

The commitments outlined in the various programs under section 11 are aligned with the performance management system of the operational staff. This is revised annually to ensure all the actions will be implemented.

11.1 Bioregional:

The purpose of the Bioregional objective is to conserve systems and processes within and around the Game Reserve so that it makes a meaningful contribution to the conservation of natural resources of Game Reserve. It aims to collaborate with relevant international, national, provincial, and local government structures; non-governmental organizations and custodial communities.

11.1.1 Cooperative Bioregional Landscape Programme:

The purpose of this programme is to engage and interact with neighbors and surrounding communities bordering the Game Reserve to establish and maintain meaningful and beneficial relationships with a wide range of stakeholders supporting Game Reserve's core business, and QNGR's desired state specifically. Qazi Nag has on its surrounding borders traditional land uses and livestock farming. Some of these activities can negatively affect the natural systems in the Game Reserve and its future to conserve biodiversity, if left unchecked and uninformed. The Game Reserve aims to minimize the negative impacts of poor conservation strategies and development along its borders, through the proactive engagement with surrounding communities and regional planners. The achievement of the Game Reserve's aspirations depends on understanding the relationships and interdependencies between various strategic planning processes and partnerships in the area. The Game Reserve will co-operate with the relevant international, national, provincial, and local government structures where these affect the Game Reserve and keep track of issues affecting the Game

Reserve and region to ensure functional ecosystem are protected. Through education about the importance of biodiversity, the Game Reserve intends to raise the awareness of people and communities, in the interface zone, to the plight of conservation in the region. By building positive relationships with local communities and providing a central point for conservation ideas and examples, QNGR can achieve the objective of this programme. This programme links with objective 1 and sub-objective 1.4 Section 6

Figure-4: High level objectives

COOPERATIVE BIOREGIONAL LANDSCAPE PROGRAMME				
High level objective: To enhance co-operative management through a bioregional approach by using a range of additional land of Kathai Block in the Game Reserve land inclusion options to expand QNGR across a patchwork of conservation-friendly land-uses to primarily enhance ecosystem patterns and processes, mitigate for conflicts and provide opportunities that improve local livelihoods.				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To minimize potential conflicts that arise from the differing objectives of non-aligned land uses through responsible engagement with the communities in the Game Reserve	Identify land use in surrounding Game Reserve buffer zone	Director Deputy Director	Report	Year 1
	Undertake risk-benefit analysis of identified properties	Director Deputy Director	Report	Year 2
	Engage with identified and prioritized land owners to achieve common conservation	Director Deputy Director	MoU	Year 2

interface zone, and development of conservation options.	goals			
	Identify possible conservation options for land use (alternate options)	Director Deputy Director	Report	Year 2
	Formalize engagements / agreements	Director Deputy Director	Agreement	Ongoing
	Participate in IDP processes to influence decisions	Director Deputy Director	Minutes of meetings	Ongoing
	Engage with relevant forums and participate in EIAs, scoping etc.	Director Deputy Director	EIA reports	Ongoing
	Establish communication protocols with land owners and partners to improve communications.	Director Deputy Director	Plans, MoU	Ongoing

11.1.2 Game Reserve expansion / consolidation programme:

The purpose of this programme is to achieve the Game Reserves goal of conserving ecological systems and patterns typical of the region by including conservation worthy area of Kathai forest block instead of 9-17 compartments, 6-24 compartments to cover the biodiversity conservation aspect in broader perspective. The Game Reserve has been identified as a key contributor regarding ecosystem services i.e. water production and providing secure habitat to local species of special concern. This programme links with objective 1 and sub-objective 1.4 Section 6.

GAME RESERVE EXPANSION / CONSOLIDATION PROGRAMME				
High level objective: To enhance co-operative management through a bioregional approach by using a range of land inclusion options to expand QNGR across a patchwork of conservation-friendly land-uses to primarily enhance ecosystem patterns and processes, mitigate for conflicts and provide opportunities that improve local livelihoods.				
Sub-objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To include strategically identified area to ensure that ecological deficiencies and the logistical and development	Review / update conservation expansion plan	Director, DD	Annual report	Year 2

requirements of Game Reserve management are addressed.	Motivate and prioritize the extension of Moji Game Reserve area from Compartment 6 Co 24 instead of Co 9-17	Director DD	Notification of expanded Qazi Nag Game Reserve area inclusion of Co 6-8 and 18 to 24 of kathai Forest Block	Year 2

11.2 Biodiversity:

Biodiversity management is the core mandate of QNGR. The Game Reserve's approach to biodiversity is in line with Game Reserves policies and the principles of adaptive management. The key management strategies listed below cover the planning cycle so that the Game Reserve can advance towards its desired state in terms of biodiversity:

- Ensure the sound management of wildlife through the development and implementation of specific programs, guidelines, and protocols.
- Undertake research to understand threats to the fresh water systems in the Game Reserve and take actions to mitigate these;
- Undertake appropriate fire management through the preparation of management guidelines and implementation of a fire management programme;
- Improve knowledge and management of red data species through the species of special concern (SSC) programme;
- Rehabilitate the landscapes in the Game Reserve through appropriate actions to manage alien and invasive plants and animals, as well as erosion control through the development and implementation of programs;
- Continue with standard conservation management such as the maintenance of conservation infrastructure and continuing with operational activities.

- Resolve the community-protected area conflict by developing a regular and sustainable programme of incentives for the communities to engage them in other activities and reduce their dependence on the resources of the Game Reserve.

11.2.1 Ecosystem processes

The purpose of this programme is to ensure that conservation of biodiversity within QNGR, remains functional and provides for continued operation of the ecosystems in the region. The main processes that affect the functioning of the ecological systems in the Game Reserve have been identified as herbivore impact on the vegetation, the associated impact of predation on the herbivores, as well as the aquatic systems and the effects of climate and change thereof on the ecosystems as a whole. This programme aims to identify the interactions of key concern to the Game Reserve, develop management activities, whether it is to take action or monitor, and to implement these for the continued management of diversity. Due to the complexity of these relationships four sub-objectives were developed within this objective.

11.2.1.1 Ecosystem services programme:

Qazi Nag Game Reserve is in a unique position to provide society with essential goods and services in the form of ecosystem services. Ecosystem services are defined as “the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life” (Daily 1997), in other words the benefits people obtain from ecosystems” (Millennium Ecosystem Assessment, 2004). Most of the regulating services such as the supply of good clean water and the protection of biodiversity are supplied within a regional context, while services such as aesthetic, spiritual and recreational are supplied within the Game Reserve. The reliable supply of high quality water from the Game Reserve is acknowledged as a very important ecosystem service as it forms the source of the Jhelum River, one of the main permanent rivers of very important role playing in the economy of Pakistan. A detailed lower level plan will be developed to address this programme as guided by the research programs.

This programme links with objective 1 and sub-objective 1.2 in Section 6 above.

ECOSYSTEM SERVICES PROGRAMME				
High-level objective: To adaptively manage QNGR in the bioregional context for the long-term sustainable conservation of biodiversity and its processes and function, providing ecosystem goods and services, building constituency for the conservation ethic and supporting nature-based tourism in the region. .				
Objectives: To recognize QNGR as a provider of a range of ecosystem services				
Sub-objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To identify the range of ecosystem services and understand the scope and importance of these from QNGR, Identify the ecosystem services provided by the Game Reserve.	Identify the ecosystem services provided by the Game Reserve.	Director Deputy Director	Report	Year 1
	To develop an ecosystems lower level plan	Director Deputy Director	Plan	Year 1
	Consider valuing these appropriately, recognizing multiple tangible, and non-tangible valuation methods.	Director Deputy Director	Report	Year 3

	Communicate and highlight these broadly	Director Deputy Director	Information sessions	Year 2
	Monitor the effects of climate change related to the variability in elevation of the different habitats in QNGR	Director Deputy Director	Report	Ongoing

11.2.1.2 Fresh water ecosystems programme

The purpose of this programme is to understand the role of surface and groundwater as a potential major driver of important ecological functions and ecosystem health. Consistent with global trends, high levels of threat have been reported for freshwater ecosystems. Qazi Nag Game Reserve includes the higher lying areas in the Himalayan Mountain range and thus acts as a headwater catchment area for a number of smaller streams that feed into the Jhelum River system. Thus the aim of the biodiversity and ecosystems services programme is to maintain and / or restore headwater catchment function to deliver freshwater ecosystem services to surrounding environments. The construction of hydropower projects on the nallahs of Qazi Nag can affect the survival of the native fish *Schizothorax* spp. and *Glyptothorax* spp. The Qazi Nag nallah has a potential of raising commercial Trout fish. This fish can get established in the stream system and farms beside them and it can create an opportunity of income generation for the community and tourism development as well. There are a few smaller high altitudinal lakes scattered throughout the Game Reserve. The risks associated largely relate to QNGR being unable to deliver ecosystem goods and services to downstream users through an inability to maintain or improve either the flow of

water from the catchment into the rivers or the quality of water supplied. Ongoing monitoring of water flow and quality downstream and appropriate reaction to the TPC's determined should allow for a learning by-doing approach. The sewage system in place, either by locals or by army troops, have to be rectified by the provision of appropriate septic tanks and soakage pits. Total Disolved Solid (TDS) water test of Qazi Nag Nallah at Chamm, Khatirnar and Domel points is 275 which reflets the ideal clean drinking water value of this stream.

This programme links with objective 1 and sub-objective 1.1 in Section 6 above.

FRESH WATER ECOSYSTEMS PROGRAMME
High level objective: To adaptively manage QNGR in the bioregional context for the long-term sustainable conservation of biodiversity and its processes and function, providing ecosystem goods and services, building constituency for the

conservation ethic and supporting nature-based tourism in the region				
Objectives: To maintain mountain catchment function to deliver strong high quality flow of water to surrounding environments and develop trout farming along the streams flowing through Qazi Nag				
Sub-objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To monitor the quantity and quality of water provided by Qazi Nag and make a plan of trout fish farms establishment at suitable places outside the Game Reserve boundaries.	Download hydrological flow data from the AJK Private Electricity Cell	Director DD RO	Report	Ongoing
	Collect regular water quality samples	Director DD RO	Lab Report	Year 1
	Ensure ongoing monitoring, evaluation and learning	Director DD RO	Records	Ongoing
	Make project of trout fish farming support to communities in peripheral zone in nallah Chamm, Khatir Narr, Chak Hama, Narrdajian and others	Director, DD	Copy of Plan and project document	Ongoing
To understand the important	Undertake a full nallah water	Director, DD,	Eco-status Report	Year 1

elements of the river ecology and identify and monitor threats which may lead to unacceptable changes	health assessment (including a fish, macro invertebrates, and vegetation).	University Research students		
	Identify and prioritize threats and take corrective action, where appropriate, especially the open sewage in the nallah	Director, DD	Monthly Report	Ongoing

11.2.1.3 Herbivore program

The purpose of the herbivory management programme is to restore and conserve biodiversity and ecosystem patterns and processes. The mission of QNGR includes the promotion of the adaptive and integrated management of biodiversity and the Game Reserve's wilderness qualities as well as a variety of social aspects. The herbivore management plan addresses these requirements. Thus a wildlife management strategy will have to be adopted to achieve the objective of an ecologically healthy and sustainable animal community with balanced predator-prey relations. To effectively manage herbivores in balance with other Game Reserve objectives, the areas that could be threatened by excessive domestic and wild herbivore impact or utilization have to be identified. Monitoring programs to determine unacceptable change in these areas and levels of concern must be agreed on. The evaluation of change in these areas has to link with detection and levels of concern in accordance with the degradation and restoration plan. This

also applies to areas of bush encroachment that may limit forage availability, animal movement, and visibility.

Management of wildlife and their ecological impacts are embedded in the overall Game Reserves objectives of:

- Maintaining, or restoring, ecosystem integrity,
- providing benefits to people, and
- Maintaining aesthetic and wilderness qualities.

The link between tourism and herbivore distribution is important, but has to be addressed as specific research projects that will inform future infrastructure development to take herbivore distribution and tourist requirements into account. Lastly, the management of very important pasture system has to be taken into account after a research and identifying the carrying capacity of all the pastures, number of animal herd, adapting rotational grazing system etc. The existing pastures (listed in the first section of this plan) are heavily degraded and need a scientific approach to manage them on sustainable basis so that they can support the domestic and wild herbivores.

This programme link with objective 1 and sub-objective 1.1 in Section 6 above

HERBIVORY PROGRAMME				
High level objective: To restore and maintain natural ecosystem processes and function which supports the biodiversity of QNGR				
Objective: To monitor and manage the impacts of herbivore and predation within QNGR and to balance this effectively with other Game Reserve objectives				
Sub-objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
Ensure natural ecosystem function and processes by allowing herbivores to	Identify vegetation types that may lose biodiversity components due to herbivore and	Director Deputy Director.	Report, Map	Year 2

fulfill their role as ecosystem drivers and contributors to biodiversity	implement corrective measures			
	Identify all the natural pastures and evaluate the carrying capacity of each one through research and introduce rotational grazing system	Director Deputy Director University Research Scholars	Research Report, map	Year 2
Ensure natural ecosystem function and processes by allowing herbivores to fulfill their role as ecosystem drivers and contributors to biodiversity.	Identify areas sensitive to over utilization and implement corrective measures	University Research Scholars	Report, Map	Year 2
Explore models for the generation of income through	Determine the need and objectives for sustainable harvesting of	Director DD RO	Survey Report Approval of ministry of climate	Year 2

wildlife harvesting	wildlife (trophy hunting)		Change	
	Develop a specific management plan indicating suitable sections and species for harvesting	Director DD RO	Species Management Plan	As required

11.2.1.4 Carnivore programme

The purpose of this programme is to restore / maintain the ecological role of carnivores as apex predators in the Himalayan ecosystem. It is a general policy to, as far as possible, restore the diversity of species that were present in historical times, provided that habitat conditions have either remained adequate or can be rendered adequate through rehabilitation measures. Management of carnivores in QNGR is guided by Game Reserve-specific objectives primarily aiming at the conservation and promotion of values of the unique landscapes. For the purpose of this plan, carnivores refer primarily to Snow Leopard (*Uncia uncia*), leopard (*Panthera pardus),* and Black Bear (*Ursus thibetanus)*. A key constraint, however, is the size of the Game Reserve. This carries several consequences. It reduces habitat diversity and suitability, and hence species diversity of prey and predators. Fence along the LOC limits dispersal and movement opportunities that often lead to inflated abundances of predators that pose risks to local persistence of prey species and increased predation life stock in the villages.

The community-predator conflict is rising due to increase in predation of livestock in the villages and this will lead to the killing of predator species, especially the Common Leopard. Taaleem Foundation, after realizing the threat of killing the common Leopard had decided to establish a fund naming 'Predation Compensation Fund' to pay to the community losses of the livestock through this fund.

The Predation Compensation Fund (PCF) will reduce the number of predator killing (especially Common Leopard) in the area as their population is quite high in the Game Reserve and predation incidents have increased several times during the last 5 years. Their first prey was the jackals (*Canis aureus*) who were preying the pheasnts of the area, mostly Cheer Pheasant. Due to prey of jackals by common leopard, the number of Cheer Pheasant (*Catreus wallichii*), has increased form vulnerable status to very common now in the area. The only pheasant predator left is the Red Fox (*Vulpes vulpes*) which are not very common in the area. With the population decrease of jackals, the leopard is facing the shortage of food therefore, it is coming down to the community areas and preying the domestic animlas; goats and dogs. Poor people are complaining for the loss of their animals and community-predator conflict is rising rapidly. This is very important to address this issue and for that Taaleem Foundation has established a Predator Compensation Fund (PCF) with a very meagre amount that needs to increase in several ways. Terms of Refrences (TORs) should be developed and signed in shape of agreement with community to make this fund operational. Procedure for operating PCF is proposed here for that.

i) Registration of households having goats/dogs/ sheep who take interest in participatory compensation of their animals.
ii) Sharing of each household in shape of monthly nominal fee per animal head.
iii) Investing the PCP funds in the bank with good profit return by opening an account or getting benefit of Apex Body's bank account to invest this money
iv) Maintain Record of this account in a sepearte ledger
v) Determine the extent of loss through a Committee represtented by the community members and an officer of the Wildlife Department of the rank of Deputy Director.
vi) Establish the amount of compensation on the basis of the available funds from the profit of the invested money.

vii) Impose restriction on killing predators wether in shape of agreement or through the enforcement of the relevant section of the Wildlife Act 2014.

viii) Immediate payment of the predation to the concerned member household of the community.

Format of a registration Form:

S #	Name of the person having domestic animals	NIC No.	Kind and no. of domestic animals	Village/area covered under this fund	Signature/ Thumb or Thumb impression

There is another alternate to pay cash from the PCF and that is the probability of Livestock insurance. In that case the profit of the fund could be used for the payment of insurance installment. This has to be explored by the department and the local communities in mutual consideration.

Picture showing predation of goats at Khatir Narr Village by Common Leopard

The management actions to achieve each objective of the carnivore management programme are set out below.

This programme links with objective 1 and sub-objective 1.1 in Section 6

CARNIVORE PROGRAMME
High level objective: To restore and maintain natural ecosystem processes and function which supports the biodiversity of QNGR
Objective: To monitor and manage the impacts of predation within QNGR and to balance this effectively with other Game Reserve objectives.

Sub-objectives	Action	Responsibility	Indicators	Timeframe
To manage carnivore impact on local stakeholders	Identify the profile of potential human-carnivore conflict.	Director DD RO	Reports	Ongoing
	Engage the local stakeholders on the development of problem with animal management strategies and plans	Director DD RO	Meeting minutes/MoU	Ongoing

	Ensure that existing co-management agreements are aligned with the carnivore management programme and implement these. (Predation Compensation Fund or insurance policy of domestic animals etc.)	Director DD RO	Agreement Report of PCF/ approved insurance policy is in place	Ongoing
	Update carnivore Low Level Plan according to knowledge gained through feedback	Director DD RO	Plan	Year 5
To conduct collaborative research and monitoring to inform carnivore management.	Develop an integrated research and monitoring programme, which addresses carnivore	Director DD RO Research Scholars	Science report	Ongoing

	demography, impact on prey species, conflict, and consequences for local stakeholders.			
	Implement an integrated research and monitoring programme	Director DD RO	Science report	Ongoing
	Update Game Reserve management plan and Low Level Plan according to knowledge gained through feedback	Director DD RO	Management Plan	Year 5

11.2.1.5 Species of special concern programme

The purpose of this programme is to establish an understanding of the threats to species of special concern in QNGR and develop management actions to prevent extinction, within the Game Reserve. These are the species which are enlisted as critically endangered by the International Union for Consevation of Nature (IUCN), and will work with other conservation initiatives to secure and strengthen the future of such species over their historic distribution ranges. The species of schedule 1 of the AJK Wildlife Act 2015 provides for the protection of species that are threatened or in need of protection to ensure their survival in the wild. However, except in crucial instances for the survival of globally critically endangered species,

management for system integrity and biodiversity must take precedence over species management. QNGR has Musk deer (*Moschus chrysogaster)*, Pir Panjal Markhor (*Capra falconeri),* Cheer Pheasant (*Catreus wallichii*), and Himalayan Griffon vulture (*Gyps himalayensis).* Markhor is currently globally listed as "Critically Endangered", while other species mentioned above are listed under the international IUCN Red List as Near Threatened (IUCN 2013). These species are under threat from the onslaught of poaching in recent years and erection of fence along the LOC, which stops the migration of some species. Qazi Nag Game Reserve is particularly important in the conservation of the vulnerable Griffon vulture (*Gyps himalayansis*) and supports most probably, the largest breeding colony existence in Pakistan.

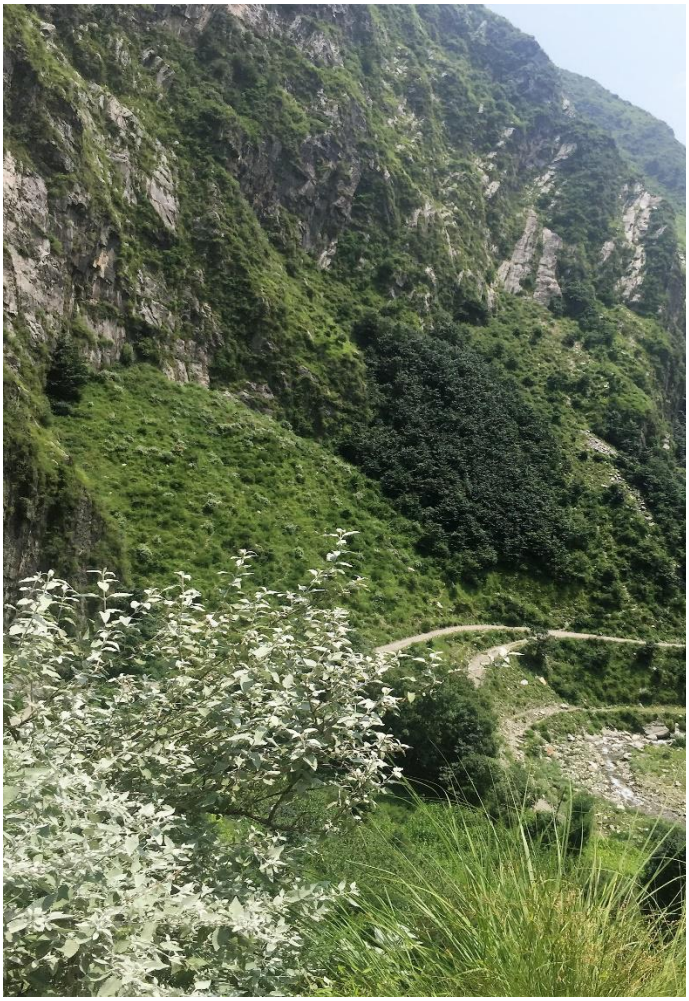
The detail of species of special concern existing in QNGR is given hereunder:

- **Cheer Pheasant (*Catreus wallichii*)**

  Male 90-118 cm, female 61-76 cm. Grey, brown and buff bar-tailed pheasant with long crest and red facial skin. Male has largely plain pale-greyish upper neck and clear, dark barring on upper parts. Female is smaller, somewhat duller and more heavily marked. Similar spp. possibly confusable with female Kaliej Pheasant (*Lophura leucomelanos*), but rather pale neck and underparts with dark scaling/mottling rufous-buff to buffish-washed rump, belly and vent, and long, straight barred tail distinctive. Voice Loud chir-a-pir chir chir-chirwa chirwa and high, piercing chewewoo notes, interspersed with short chutand harsh staccato notes. It has always been reported as uncommon with a patchy distribution owing to its specialized habitat requirements, which often bring it into close proximity to human populations (K. Ramesh in litt. 2004). Many subpopulations are thought to number fewer than ten individuals, living in small pockets of suitable habitat. It digs for roots and tubers and also eats seeds, berries, insects, and grubs (Ali and Ripley 1987). It has been recording breeding in AJK in May & June with a clutch size of 6-12 eggs.

In Pakistan, the species is currently surviving in two main valleys, Jhelum and Kahuta. Jhelum valley, which holds the largest known population of the species in Pakistan. It has three main locations in AJK, (Pir-Chinasi, Gharri Doppatta, and Chinari) where mean density was estimated at 11.8±6.47 pairs per km2 (Awan et al. 2014).

QNGR hosts this species at various pockets mostly at the lower reaches and outside the limits of the Game Reserve. Astonishingly, the survey results shows its common abundance in the area and most populated species of special concern. Its quantitative survey report is;



A rich site of Cheer Pheasant 'Chitah' above the village of Narrdajian

Cheer Pheasant Spotted in and around Qazinag Game Reserve

1	2	3	4	5	6	7	8	9	10	11	12
Sokarr Co-1	Kawan Garrang Co-2	Shingar Trarra Co-4	Chhita Parr Co-6	Sangarr Bari	Giti Pathra Sagarr Co-12	Charakh Co-11	Doba Sayedan CO-19	Barr Wala Co-15	Kandar Koozi Co-23	Bandi Chakan Co-24	Total
35	73	1500	36	65	25	36	50	27	800	23	2670

- **Griffin Vulture (*Gyps Himalaynsis*)**


This bird is between 37 and 48 inches (93-122 cm) in length and has a weight of around 14-23 lb (6.2-10.5 kg) while females weigh 14-25 lb (6.5-11.3 kg). The wings measure around 7.5-9.2 ft (2.3-2.8 m).

Color: They have a creamy-white head, neck, and ruff. The upper wing and the body is a pale brown, while the tail and remainder of the wing is a striking dark color.

Distribution

This raptor can be found over most of Europe, North Africa, Middle East, through Afghanistan, Pakistan, India, and into Nepal. Its existence in the QNGR is shown below.

Survey results show its existence at various patches in the Qazi Nag Game Reserve shown in the table down

Survey Spots with Forest Compartments																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
	Name of Species	Sang Paharr Nandi Narr Co-8	Kalla but Co-10	Sokarr Co-11	Khara Marru Co-13	Chatter/ nakka Kandarn co-12	Danna Btkiyan Co 15	Danna Said Ali/Garaja Gali Co-14	Kasturi Narr Co-13	Kundian Co-09	Katha Chitrian Co-20	Rupa De Daag Co-16	Puhrzi Mohri wali Co-17	Naanga Parr/Dann a Dogi Co-18	Chitrian Sar Co-19	**Total**
	Vulture	0	18	17		23					20		25		30	133

Habitat

They appear in a variety of habitats including plateaus, mountains, semi-deserts, shrub lands, and grasslands. Warmer climates are preferred, but they can withstand rain, mist, cold, and even snow.

The IUCN lists the griffon vulture under their ‘Least Concern’ category

Lifespan

They live for around 25 years in the wild. In captivity, one individual lived for more than 41 years.

Predators

These large birds do not have any natural predators.

Interesting Facts

The Himalayan vulture was considered to be a subspecies of the griffon vulture but has since been assigned species status of its own.

These birds are one of the most gregarious among raptors. The proportion of vultures are killed by feeding on the carcass of a contaminated meat of animals and birds.

- **Musk Deer:**

The Himalayan Musk deer (*Moschus chrysogaster),* is a shy solitary Himalayan mammal listed as endangered under the IUCN category of its Red Data Book and CITES appendix-I. Musk deer are commonly known as Rhons or Kasturi Wala Hiran.

Musk Deer are distributed within the altitude range of 3100 to 4100 m spanning 35.43 $km^{2,}$ with the most potential habitat in QNGR. Within this area, the Musk deers highly preffer altitude between 328-4309 m of elevation with a 21-30^{o} slope, 26-50% cron cover and 26-50% ground cover. There are significant differences in the use of different habitat types in terms of altitude, slope, crown cover, ground cover and topography. The preffered vegetation species of the animal are *Abies pindrow, Betula utilis, Pinus wallichiana, Picea smithiana, Vibernum species, Cupressus species, Geranaium species, moss, fern* and *Rhododendron species*.

Poaching of the deer for their musk is the major conservation threat.

The Himalayan Musk deer belongs to order Artiodactyal, Family Moschidae.the species is enlisted in Appendix I of AJK Wildlife Conservation and protection Act 2014.

Its existence in Qazi Nag Game Reserve is as under;

Musk Deer Survey Spots with Forest Compartments in Qazinag Game Reserve																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
	Name of Species	Sang Paharr Nandi Narr Co-8	Kalla but Co-10	Sokarr Co-11	Khara Marru Co-13	Chatter/ nakka Kandarn co-12	Danna Btkiyan Co 15	Danna Said Ali/Garaja Gali Co-14	Kasturi Narr Co-13	Kundian Co-09	Katha Chitrian Co-20	Rupa De Daag Co-16	Puhrzi Mohri wali Co-17	Naanga Parr/Dann a Dogi Co-18	Chitrian Sar Co-19	**Total**
	Musk Deer				1	1	3					3	2	1		11

- **Western Horned Tragopan Pheasant (*Tragopan melanocephalus)***

This bird belongs to class Aves, order Galiformes and family phasianidae. Locally it is called Dangeer.

Size of the bird is 68-73 cm and female 68 cm in length with orange to red collar. Red facial skin and white spotted. Voice territorial call, wailing khuwaah repeated 7-15 times during the breeding season.

This species is classified as vulnerable because of its small and sparsely distributed population and becoming increasingly fragmented in the face of habitat loss and degradation throughout its restricted range. Its population is getting established due to efforts of the Wildlife Department and NGOs and presence of army troops in the area. Another main threat to the species is destruction or collection of eggs by the visitors of their habitat during the collection of Black Mushroom especially by the children.

During the breeding season (April-June), it inhabits little-disturbed temperate coniferous and deciduous forests, from 2,400-3,600 m. In winter, it makes very local altitudinal or lateral movements, to grassy or shrubby gullies with less snow cover, between 1,750 m and 3,000 m.

The population status of Tragopan is very limited and birds are found in few number only. It is very important to address the threats to the existence of this bird in Qazi Nag Game Reserve as it may vanish in the near future. Strict watch and ward during the

collection of black mushroom and education and awareness campaign are the two major protecting tools of this bird in the area.

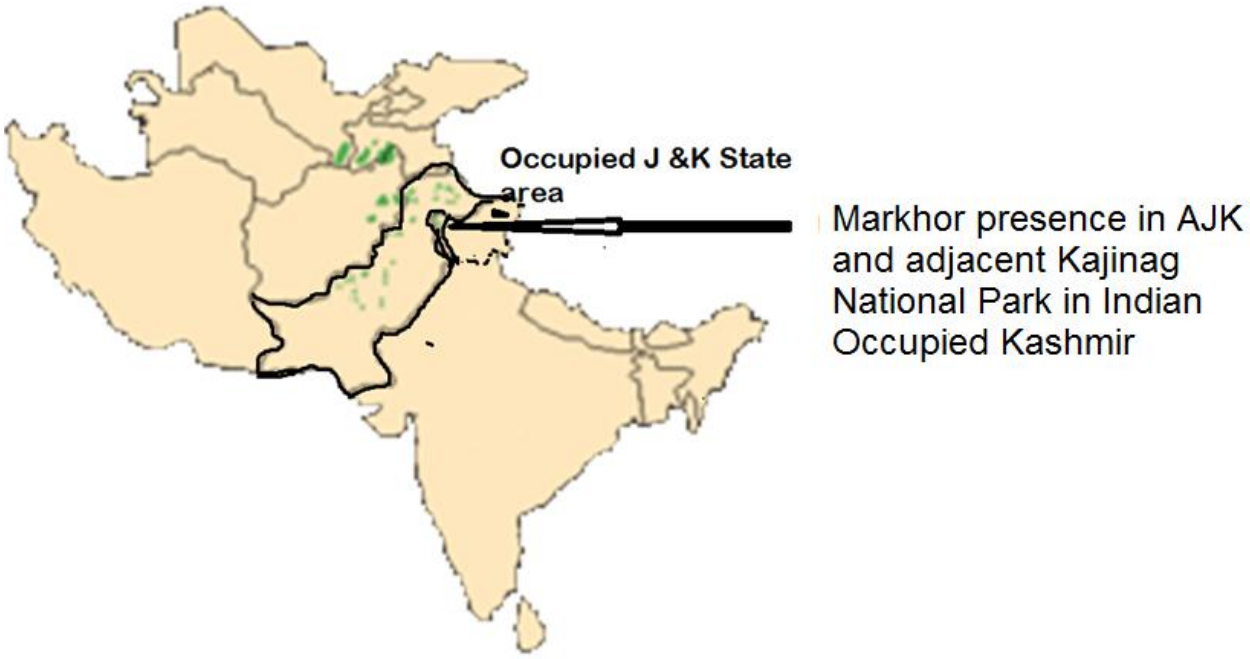
Tragopan Survey Spots with Forest Compartments in Qazinag Game Reserve																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
	Name of Species	Sang Paharr Nandi Narr Co-8	Kalla but Co-10	Sokarr Co-11	Khara Marru Co-13	Chatter/ nakka Kandarn co-12	Danna Btkiyan Co 15	Danna Said Ali/Garaja Gali Co-14	Kasturi Narr Co-13	Kundian Co-09	Katha Chitrian Co-20	Rupa De Daag Co-16	Puhrzi Mohri wali Co-17	Naanga Parr/Dann a Dogi Co-18	Chitrian Sar Co-19	**Total**
	Tragopan											1	2			3

- **Pir Panjal Mrkhor (*Capra falconeri cahmiriensis*)**

It is an endangered species (IUCN Red List 2000) and is included in Schedule 1 of the AJK Wildlife Conservation and Protection Act (2014). The distribution of Markhor is limited and is mainly confined to moist to semi-arid mountain tracts of Pakistan, India, Afghanistan, Uzbekistan, Turkmenistan and Tajikistan. IN AJK, it was only found in Qazi Nag and adjacent areas as of its migratory habit. The state of Kashmir was one of the globally important areas for Markhor and the primary area for the Pir Panjal Markhor (*Capra falconeri cashmiriensis)*. Historically, Markhor was distributed more or less continuously from Banihal pass in the Pir Panjal range to Shamshabari range across the river Jhelum. In a recent survey not even a single animal could be found in the Game Reserve and unfortunately this is under continued threat. The major threats to the species were identified, foremost among which were competition with livestock and insurgency related disturbances to the area. The other threats being faced by Markhor in AJ&K were identified as - continued poaching for trophy and meat, increasing fragmentation of the population due to the new fencing that has come up at the Line of Control (LoC) with Indian occupied Kashmir and lack of awareness among locals and officials. Looking at the global status of Markhor, the conservation of Markhor in Azad Jammu and Kashmir becomes crucial and every single population has a key role. Recognizing the immediate threat to the survival of the Markhor, we propose to start a conservation program in AJ&K to ensure its survival. The First among these steps is to document the basic ecology of the species and undertake targeted awareness programs. We believe that the Qazi Nag range is the last hope for the species and a thorough understanding of the areas that may be critically important for them, so that these are afforded the highest legal protection and kept out of the burgeoning exploitation of the area. The important aspects that we investigated included seasonal Markhor distribution, especially the seasonal 'core' or critical areas, habitat and the levels of use by pastoralists and villagers and the level of extant threats. It is also important to have a clearer understanding of the potential range of the species based on its present habitat and identify other potential areas and corridors that can support Markhor. An understanding of all these factors would be essential in preparing a conservation program designed to allow continued existence of Markhor. Dialogue has to be initiated across the Line of Control as its population status in Kajinag National park of Occupied Jammu & Kashmir is also in danger.

Markhor shows a shift in habitat use in presence of livestock. It uses areas closer to cliffs and moves to middle elevations. The use of areas closer to cliffs is for security. This implies that Markhor tries to use safer areas in presence of livestock but such areas are also having less forage. Once the livestock moves to upper elevations, Markhor moves up to some extent but still remains in the middle elevations. In heavily grazed areas Markhor does not migrate to upper elevations in the peak summer as they should naturally do, mainly because these areas are occupied by the livestock at that time. But in areas of light livestock grazing, where alpine areas are free from livestock, Markhor does move to the alpine areas in peak summer, as is expected from their natural behavior. The above situations indicate an interference competition between Markhor and livestock with livestock emerging as a superior competitor

Fig 7: Illustration showing possible Markhor existence area



Major Objectives, Low-level Objectives and sub-objectives with conservation actions

This programme links with objective 1 and sub-objective 1.3 in section 6 above.

SPECIES OF SPECIAL CONCERN PROGRAMME				
High level objective: To identify and manage species of special concern (e.g. Musk Deer, Markhor, Himalayan vultures, Cheer pheasant, Tragopan) to ensure their persistence and value within integrated regional strategies by securing their habitats and minimizing human induced threats.				
Objective: To secure viable populations of Musk Deer and Pir Panjal Markhor, as an integral part of the larger integrated national initiatives.				
Sub-objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To secure additional ideal habitat to increase potential capacity for Musk Deer & Markhor	Identify suitable Musk deer and Markhor habitat for potential inclusion	Director DD RO	Report	Ongoing
	Formalize land inclusion process	Director DD RO	Government Notification	Ongoing
To understand the status and performance of Musk deer and Markhor population to allow for appropriate management decisions	Identify appropriate monitoring and research programs for both the species	Director DD RO	Reports	Year 1
	Implement monitoring programs and adapt accordingly	Director DD RO	Reports	Ongoing

To develop and implement a Musk deer and Markhor security plan, to reduce as for as possible, the man induced threats to the population of these species	Conduct risk assessment	Director DD RO	Protection plan	Year 1
	Develop Musk deer exclusive safety and security plan	Director DD RO	Protection plan	Year 1
	Provide training as required	Director DD RO	Training Register	Ongoing
	Implement plan, monitor, assess and adapt implementation	Director DD RO	Report	Ongoing
	Strict Watch and ward of the Markhor and Musk deer habitat	Director DD RO HW W	Monthly Progress Reports of the staff	Ongoing
Objective: To secure viable populations of other identified species of special concern, Tragopan, vulture, Cheer Pheasant				
To understand the distribution, population status and current threats of species of special	Develop and implement appropriate monitoring programme for identified species	Director DD RO	Plan	Year 2, ongoing

concern				
	Assess risk profile of identified species of special concern	Director DD RO	Scientific reports	Year 2, ongoing
	Identify and prioritize actions to mitigate threats	Director DD RO	Social action plan, Trainings and alternate initiative	As required

11.2.1.6 Fire management programme

The purpose of this programme is to maintain the natural, cultural and biodiversity components of the ecosystem within the protected area, as specified in the particular desired state, whilst protecting life and property. Fire is a natural phenomenon mostly in the dry spell of the year. Deliberate fire is usually done to burn the area post grass harvest. Qazi Nag is on the LOC and cross border firing is also one of the causes of forest fire. This programme summarizes a detailed fire management protocol.

The broad fire management goals of QNGR are:

i. The maintenance of habitat, key landscape features, and healthy, viable populations of all species within the Game Reserve.
ii. Maintain key hydrological process within the ecosystem.
iii. Fire safety, including the prevention of uncontrolled wildfires, protection of assets (infrastructure, cultural sites, and key landscape features) within the Game Reserve as well as along its borders.
iv. Fire monitoring and research projects to improve our understanding of the effects of fires on the landscape.

For the purpose of fire management, the Game Reserve is divided into four burning compartments, each with agreed ecological objectives. The delineation of the compartments is informed by vegetation characteristics, prominent landscape features, the existing road, and firebreak network.

It is required that all VCCs should establish a Fire Protection Committee (FPC) and Game Reserve staff and representatives of the VCCs should become member of this committee. This FPC will ensure that all members take part in preventing, predicting, managing, and extinguishing wild fires. Game Reserve staff should get a proper training for that and they should have necessary equipment, tools and supplies which are required in controlling the fire. This committee should develop a fire management plan keeping in view the drought period, cross border firing and especially post grass harvest period.

FIRE MANAGEMENT PROGRAMME				
High level objective: To restore and maintain natural ecosystem processes and function which supports the biodiversity of QN- MNP				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To promote fire as an ecosystem process in QNGR and to evaluate and respond appropriately to fire threats to	Participate meaningfully in the FPC, and exert sufficient influence on policies within the FPC to allow biodiversity aims to succeed	Director DD RO Community Representatives	FPC Meeting Report	Annual

infrastructure and human lives.	Identify and manage fire risks	Director DD RO	Fire management Plan	Ongoing
	Ensure that the staff has adequate fire training and equipment to control fires in the Game Reserve	Director DD RO	Fire audits	Annual
	Adapt fire regimes, as appropriate, in fire-sensitive communities in QNGR and to evaluate and learn from any such fires taking place	Director DD RO	Fire maps	Annual
	Monitor the effect of fire on vegetation and revise the plan where necessary	Director DD RO	Fire Protection plan	Annual

11.2.1.7 Invasive alien species programme

The purpose of this programme is to prevent entry and control invasive alien species in order to reduce their distribution, abundance, and impacts, thereby

maintaining the integrity of the indigenous biodiversity of the Game Reserve. Invasive alien species are accepted to be one of the largest, and fastest growing, threats to biodiversity and the ecosystem services they support. Invasive alien species can transform the structure and species composition of ecosystems by replacing indigenous species, either directly by out-competing them for resources or by changing the way nutrients are cycled through the ecosystem. Other negative impacts include, for example, changes to fire regimes, potential loss of rare or threatened species and replacement of preferred feeding areas by no palatable species. Many international conventions call for the management of invasive alien species (e.g. the Convention on Biodiversity, Article 8H).

List of invasive species occurring in QNGR

The most commonly used plant species in whole of the state are:

Table 19: List of alien species in QNGR

Taxonomic group	Scientific name	Common name	Current perceived level of threat
Plants	*Eucalyptus spp.*	Gond	Low
	Rubinia pseudoacacia	Kikar, Rubinia	Low
	Ailanthas anus	Drawa	High
	Broussonetia papyrifera	Paper Mulberry	High
	Populus spp.		High
	Partiniuium	Gajar Booti	High
Fish	*Salmo truta*	Brown trout	High

The remaining species need to be identified urgently and the species listed assessed for any name changes or misidentifications. As for invasive animals, rapid response is required to remove species before it becomes too numerous.

INVASIVE ALIEN SPECIES PROGRAMME				
High level objective: To detect and eradicate new invasions of alien species and control current populations to reduce negative impacts on biodiversity and ecosystem services				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To survey systematically and enlist alien species in and around QNGR	Systematically survey QNGR, to determine alien species abundance and distribution, and maintain updated species lists.	Director DD RO	Alien species list, map	5-years
	Detect new incursions of invasive species to allow for rapid response and eradication where feasible, through adhoc monitoring and other means	Director DD RO	Alien species list, map	Ongoing
	Monitor the spread of high priority species and inform management accordingly	Director DD RO	Reports	Annual

To prevent the introduction of alien species	Prohibit the use of alien species in staff quarters and tourism accommodation	Director DD RO	Directive	Annual

11.2.1.8 Degradation and rehabilitation programme

The purpose of this programme is to rehabilitate and conserve biodiversity and ecosystem patterns and processes. The land use policy has not been adopted in AJK. The land use pattern for agriculture, road construction, and encroachment of sate land in the mountain areas is very destructive. The most important areas that need to be restored in the QNGR are the mountain slides, unwise terrestrial field layer (vegetation and soil). Rehabilitation is recognized as an integral part of biodiversity conservation management. The degradation component aims to minimize habitat degradation that will lead to a loss of structure and function and of the key processes that support the long term persistence of biodiversity and ecosystem services. The rehabilitation component aims to identify and rehabilitate areas in a structured and prioritized manner to support biodiversity and wilderness goals. Land encroachment constitutes an important form of degradation in the QNGR.

Different types of soil erosion in QNGR include sheet, rill, and gully erosion. Sheet erosion is pronounced in old cultivated areas where the soil is capped and vegetation is denuded. Gullies and rill are also associated with these bare patches but mainly in areas associated with road infrastructure, dams, and a result of water runoff from the hill slopes. Satellite imagery and Google Earth should be used for mapping all soil degraded areas. Land Use Department of AJK should be involved in developing such maps with reasonably good resolution. An inventory and description has to be made of soil degradation types and severity. These are prioritized for (i) prevention-based management action (i.e., immediate or, future, no action), (ii) monitoring to prevent a deterioration in the state or level of degradation and (iii) rehabilitation-based management action (to be rehabilitated in

the same year, or considered for future rehabilitation action). The smaller rills and gullies can be rehabilitated using silt traps, rock packing, or eco-logs. Severe gullies are rehabilitated using structured interventions such as gabions and bio-engineering technologies. For severely eroded areas and where gullies need re-sloping, textile materials are used to cover sloped areas before covering with top soil and re-vegetating. Soil stability, infiltration / runoff and nutrient cycling are used as indicators to measure soil degradation and rehabilitation. Monitoring of vegetation and invertebrate diversity helps to determine directional changes in rehabilitated areas. Some of the roads along the steep mountain slopes, especially due to reconstruction of new main road heading towards Qazi Nag, have eroded badly down to bedrock, with little or no channeling of runoff water having been provided. Consideration should be given to the 'hard surfacing' with either concrete or tar of at least those sections which are particularly steep and most prone to erosion. Mitigation for this erosion should involve reducing the steepness of the embankments, stabilization of soil and re-vegetation. Grading them to an angle can reduce the steepness of the embankments.

DEGRADATION AND REHABILITATION PROGRAMME				
High level objective: To identify and rehabilitate areas in a structured, prioritized manner to support biodiversity and wilderness goals.				
Objectives	**Action**	**Responsibility**	**Indicators**	**Time frame**
To restore the composition, structure and function of degraded vegetation	Map all degraded vegetation areas	Director DD RO	Map	Ongoing
	Priorities degraded area for rehabilitation	Director DD RO	Plan	Ongoing
	Implement the degradation and restoration plan.	Director DD RO	Plan	Ongoing

To restore natural soil processes and the aesthetic appeal of the landscape by combating erosion	Monitor and evaluate progress	Director DD RO	Report	As required
	Map all erosion types (sheet, gully, rill)	Director DD RO	Map	Year 5
	Undertake assessment of site-specific drivers	Director DD RO	Report	Year 5
	Priorities sites for rehabilitation	Director DD RO	Plan	Year 5

11.2.1.9 Disease management programme

The purpose of this programme is to understand the ecology of indigenous diseases as a component of biodiversity within QNGR, while limiting the introduction or impact of alien diseases and minimizing the spread of disease from the Game Reserve to neighboring communities and commercial agriculture. It is important to maintain the natural fluxes of indigenous diseases as a component of biodiversity, to where possible avoid the introduction and / or limit the impact of alien diseases, and to minimize the spread of disease from Game Reserves to neighboring communities and commercial agriculture. Whilst disease management options are limited in free-ranging wildlife, emphasis is on prevention of disease introduction (in particular alien diseases like bovine tuberculosis, brucellosis and canine distemper) and to reduce the risk and impact of indigenous wildlife diseases

to neighboring communities and their livestock. Qazi Nag Game Reserve, specifically, has a mosaic of different land users surrounding the Game Reserve, including commercial livestock farmers, nomads and subsistence agriculture making the transfer of pathogens more likely and the need for a comprehensive wildlife disease management plan essential. Wildlife animals are often seen as reservoirs of diseases to humans and their domestic stock.

DISEASE MANAGEMENT PROGRAMME				
High level objective: To restore and maintain natural ecosystem processes and function which supports the biodiversity.				
Objectives: To acknowledge indigenous disease as a component of biodiversity within QNGR, while limiting the introduction or impact of alien diseases and minimizing the spread of disease from the Game Reserve to neighboring communities and commercial agriculture.				
Sub-Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
Set up an adequate passive surveillance system for dead and dying animals using cyber tracker and train staff to conduct post mortem	Develop Game Reserve specific Cyber tracker sequence for disease syndromes likely to be encountered	Director DD RO	Report	Year 2
	Develop a reporting structure for disease incidence that allows for	Director DD RO, Local state vet	Protocol	Ongoing

	interaction between local state vet, Game Reserve staff and scientific services			
	Ensure blood, tissues and associated materials are banked whenever an animal is handled or captured for veterinary or research purposes	Director DD RO, Local state vet	Samples	Ongoing

11.3 Responsible tourism programme

The purpose of the responsible tourism programme is to act as and enabler for conservation through enhancement of the financial sustainability of the Game Reserve with optimal benefit to the local communities. Qazi Nag Game Reserve is not currently financially sustainable on its own, however is one of the Game Reserves with substantial potential, for short break stays and its extensive activity and development potential. QNGR has the legal authority to engage in nature-based tourism in Game Reserves for the purpose of conveying conservation, public enjoyment, constituency building and income generation. The primary attraction of the Game Reserve is its diverse landscapes, topography and scenery with the impressive mountains massifs. It hosts a wide variety of plant and animal species, as

well as over 400 bird species, most notable of which would be the breeding colony of Himalayan Vulture and Cheer pheasant.

QNGR has adopted and aligned itself to the national Responsible Tourism Strategy. Responsible Tourism aims to:

- Maximize benefits to local communities,
- Minimize negative social or environmental impacts, and
- Help local people conserve fragile cultures, habitats and species.

Responsible Tourism thus encompasses all tenants of sustainable development, where sustainability is defined by the balance between the environment, the interests of local communities and financially sound business practice. In addition to this the legality and ethics relating to these three must all work together in order to ensure long-term viability of tourism in the Game Reserve. The diversity of landscapes and natural features in the Game Reserve, as well as the various contractual arrangements that apply in certain sections, offer scope for a diverse array of tourism products. Current products range from tented accommodation, camping sites, Children play lands, and guesthouses operated by local communities to luxury accommodation packages operated on behalf of QNGR.

Activity development is anticipated to become a major source of income generation for the Game Reserve, whilst at the same time removing the visitors off the roads, which is seen to be a limitation to Game Reserve development due to the limited road network and infrastructure. Currently there is a limited offering available in one or more of the sections of the Game Reserve, which would include interpretive game drives and day walks and bird watching. Potential opportunities have been identified in the product development framework and a number of these may be developed, based on the outcome of the relevant feasibility studies. The cultural / heritage potential of the Game Reserve, yet to be established, would result in additional points of interest or interpretation potential. The focus for responsible tourism planning and development for 2018– 2023 is to promote Game Reserve sustainability by increasing income generation through increase of visitor numbers due to expansion of the tourism products and services sold. This can only be achieved with extensive and effective tourism planning, and reviewing and adapting the nature of engagement with

contractual partners in order to ensure effective branding and marketing of a clear and concise product offering, and enhancing the sales potential through joint initiatives.

RESPONSIBLE TOURISM PROGRAMME				
High level objective: To develop and implement a tourism plan that promotes QNGR and surrounds as a preferred destination by providing a range of appropriate and innovative nature-based products and offer a variety of recreational and learning experiences in accordance with responsible tourism principles				
Objectives: To develop a responsible tourism baseline.				
Sub-Objectives	**Action**	**Responsibility**	**Indicators**	**Time frame**
Set responsible tourism baseline to ensure implementation of minimum standards of responsible tourism	Measure current minimum standards of responsible tourism baseline.	Strategic tourism services, Director DD RO	Responsible Tourism Baseline	Year 1
	Implement a template for annual review of performance against the baseline	Strategic tourism services, PM	Report	Year 1
	Annual measurement and review in line with the responsible tourism baseline	Director DD	Report	Ongoing

To measure and manage key tourism performance indicators	Measure performance against tourism performance indicators	Director DD RO	Statistics	Annually
	Monitor to ensure improvement in tourism performance.	Director DD RO	Statistics	Ongoing
To promote effective visitor communication whilst creating conservation learning opportunities	Conduct an interpretation survey	Director DD RO	Survey results	Year 1
	Develop an interpretation plan	Director DD	Interpretation Plan	Year 1
	Implement the findings of the interpretation plan priorities, including signage to and from the Game Reserve and all interpretation within the Game Reserve.	Director DD RO	Signage and site interpretation	Year 3, ongoing
	Align Cultural Heritage Plan with development and interpretation priorities	Director DD, Strategic tourism services	Cultural Heritage Plan	Ongoing or as required

To promote effective visitor management and flow	Conduct a visitor management survey in accordance to the visitor management policy	Director DD RO,	Survey results	Year 1
	Develop and implement visitor management plan	Director DD RO	Visitor management plan	Year 1
	Develop and communicate the code of conduct for activities	Director DD RO Civil Engineer	Code of conduct	Year 1
	Classify and number all roads in the Game Reserve according to revised road grading.	Director DD RO Civil Engineer	Document	Year 1
Objective: To establish an appropriate and innovative Responsible Tourism (RT) product framework for implementation				
To create the product development framework and plan	Develop a comprehensive tourism product, development framework and plan	Strategic tourism services, Director DD RO	Product development framework	Year 1

	Develop, prioritize and implement potential tourism products	Strategic tourism services, Director DD RO	Product development plan	Year 2
	Review and maintain the tourism product development framework	Strategic tourism services, Director DD RO	Product development framework	As required
To develop and implement the sales and marketing plan	Develop Sales and Marketing plan (including branding)	Strategic tourism services, Director DD RO	Plan	Year 1
	Conduct market research	Strategic tourism services, Director DD RO	Report	Year 1, review annually as required
	Review and update marketing and sale plan	Strategic tourism services, Director DD RO	Marketing and sale plan	Ongoing

11.4 Constituency building and benefit sharing

It is required to build constituencies among people in support of the conservation of the natural and cultural heritage assets within the Game Reserve. This is achieved through strengthening relationships with neighboring communities, management of cultural resource and indigenous knowledge management, environmental education, awareness and interpretation, social science research, and youth outreach.

11.4.1 Stakeholder relations programme

The purpose of this programme is to establish and maintain meaningful and beneficial relationships between the Game Reserve and a wide range of stakeholders. The stakeholder programme is a key strategy to achieve the overall desired state of a Game Reserve. The current key liaison structures and focus groups of the Game Reserve include the Game Reserve forum, Forest authority, district and local administration, relevant government departments, NGO's, Honorary Rangers, tourism authorities, local businesses, academic institutions, conservancies, neighboring communities, as well as tourists, and tour operators. The Game Reserve also links to the integrated development plans and strategic development frameworks of the relevant District Council forum.

There is a need to establish a Joint Management Committee (JMC) to resolve the issues of authority of the management of the Game Reserve. The committee should comprise of Director Wildlife and Fisheries, DFO Jhelum Valley, president of the Cluster Organization of Qazi Nag Game Reserve and other members from local administration and other relevant Government departments.

This programme links with objective 2 and sub-objectives 2.1 – 2.4 as well as objective 5 and sub-objective 5.2 in Section 6

STAKEHOLDER RELATIONSHIP PROGRAMME				
High level objective: To build a strong constituency at multiple stakeholder levels in support of QNGR and to enable human benefits in the context of local and regional ecological, economic and social sustainability				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**

To establish and maintain meaningful and beneficial relationships with Game Reserve liaison structures and focus groups (e.g. administration, district council, FPC, relevant government departments, NGO's and tourism authorities	Review the current Game Reserve liaison structures and its' terms of reference	Director DD RO President of Apex Villages Committee	TORs	Year 1
	Coordinate and or attend the relevant meetings	Director DD RO President of Apex Villages Committee	Minutes of the meetings	Ongoing
To maintain meaningful and beneficial relationships with partners	Establish a Joint Management Committee (JMC) with Forest department and custodian communities	Director DD RO President of Apex Villages Committee DFO Jhelum Valley	Government Notification	Year-1
	Review agreement/mou	Director, DD, DFO	Agreement	As per requirement
	Participate in joint management	Director DD	Minutes	As required

	meeting	RO President of Apex Villages Committee DFO JV		
	Honor legal obligations by implementing decisions / recommendations taken at joint management meetings and implement.	Director DD RO President of Apex Villages Committee DFO JV	Minutes	Ongoing

11.4.2 Cultural heritage resources programme

The purpose of the Cultural Heritage Resources Programme is to manage and sustain the significance, authenticity and integrity of the tangible and intangible cultural heritage resources in the Qazi Nag Game Reserve. As part of the plan, evaluations have to be made on the significance, conservation status and utilization options of all the heritage resources identified during the study. Detailed recommendations are also made on ways for the plan to be implemented.

This programme links with objective 3 and sub-objectives 3.1 – 3.4 in Section 6.

CULTURAL HERITAGE PROGRAMME				
High level objective: To adaptively manage, conserve and provide appropriate/relevant access to cultural heritage resources in Qazi Nag Game Reserve				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**

To review the cultural heritage management plan.	Identify new areas for survey of cultural resources.	Director DD RO	List of identified cultural heritage sites	Year 2-5
	Update inventory of cultural resources	Director DD RO	Updated inventory	Year 2-5
	Implement prioritized management recommendations	Director DD RO	Report	As required
To identify sites of significance and develop site specific management plans	Identify sites of significance	Director DD RO	Updated inventory	Year 3
	Develop site management plans	Director DD RO	management plans	Year 3 Ongoing
	Implement prioritized management recommendations	Director DD RO	Report s	As required
To develop baseline awareness and interpretation tools relating to cultural heritage	Incorporate cultural heritage component into environmental education and interpretation programs	Director DD RO	EEI programs	Ongoing
	Provide visitor access to selected sites	Director DD RO	Accessible sites	Ongoing

11.4.3 Environmental education and interpretation programme

The purpose of this programme is to build constituencies amongst people in support of Game Reserve's conservation endeavors by playing a significant, targeted and effective role in promoting a variety of educational opportunities and initiatives. This will continue to focus attention on youth development and environmental education in order to build a conservation constituency for the future. An integrated approach to environmental education and interpretation has been adopted by TF under their project in the area with organizing men and women VCCs and Children Nature clubs in the local schools targeting all age groups. This programme needs a follow up by the department of Wildlife and Fisheries in the area to achieve the objective of environmental education and awareness. The current beneficiaries of this program are school and youth groups. This approach is taking the form of organized, high quality and interactive activities which are categorized into:

- Formal programs:

  These programs will target the formal education sector and will be directed at school groups visiting the Game Reserve, and through outreach programs at communities adjacent to the Game Reserve. This will form part of the beneficiation programs.

- Non-formal programs:

  The non-formal programs are aimed at community oriented initiatives targeting specific stakeholders such as farmers, women, and youth and the content will be conservation issue-specific.

  These programs will be conducted from the proposed office buildings or temporary camp offices in the local villages or in the local schools.

This programme links with objective 5 and sub-objective 5.1 in section 6

ENVIRONMENTAL EDUCATION AND INTERPRETATION PROGRAMME
High level objective: To build a strong constituency at multiple stakeholder levels in support of QNGR and to enable human benefits in the context of local and

regional ecological, economic and social sustainability.				
Objectives: To build constituencies for QNGR in support of the broader conservation awareness and ethic through enhancing visitor experiences and providing access and opportunities for visitor groups.				
Sub-Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To plan, develop and present formal education programs for organized school and other youth groups	Develop an environmental education plan	Director DD RO	EEI Plan	Year 1&2
	Organize and conduct applicable environmental education programs including the special funded programs	Director DD RO	Applicable EEI programs	Year 2 & ongoing
	Organize Nature Clubs in the local schools and conduct outreach programs in the area	Director DD RO	Programme reports	Ongoing
To plan, develop and present non formal education programs for the broader	Facilitate community outreach programme initiatives targeting VCCs on conservation issue-specific matters	Director DD RO	Year Planner Programme / event Reports	Ongoing

stakeholder group of the Game Reserve.	Coordinate scheduled environmental calendar day events with relevant stakeholder groups	Director DD RO	Year Planner Programme / event Reports	Ongoing
	Print publicity display material,(calendars, Posters, wall hangings, signage etc.)	Director DD RO	Audit report of publicity material (documents)	Ongoing

11.4.4 Local socio-economic development programme

The purpose of this programme is twofold. Firstly, the programme aims to provide and promote a range of benefits (of varying types, scales and tangibility) in accordance to Game Reserves being viewed as national assets for all of society, not just a selected few. Secondly, through creating, facilitating and promoting benefits from the Game Reserve for multiple stakeholders. The programme aims to develop a stronger societal support constituency at multiple stakeholder levels, both for the Game Reserve itself and for the conservation cause in general. The stakeholder beneficiation programme of QNGR aims to provide and promote a range of benefits for multiple stakeholders in line with the Game Reserve's vision of connecting to society. In doing so, the programme aims to grow societal support for QNGR and for the conservation cause in general. This will be done through supporting local economic development, economic empowerment and social development in communities neighboring QNGR and by contributing to the regional economy through the provision of a range of ecosystem services, permanent and temporary employment, business and capacity development opportunities. Benefits are viewed as outcomes that impact positively on human well-being, and the tradeoffs between costs and benefits are highlighted as a critical factor in achieving

a positive constituency. Other important benefits locally and in the broader region include those associated with direct and indirect employment, local social and economic development initiatives, providing access and environmental education programs. Benefits associated with basic ecosystem services are also included in this programme. In addition to the Game Reserve-based employment and small business opportunities, many people are employed, and additional business created privately through the various contractual agreements and Public Private Partnerships (PPP) between QNGR and partners. The biodiversity Social projects (BSP) programme remains a major contributor to employment and capacity development in the region, through the creation of temporary jobs in the short term, and through investigating and encouraging longer-term exit strategies and entrepreneurial opportunities for local communities. The Biodiversity Social Programme (BSP) also contributes to local skills development by supporting learner ships, implementing needs related training programs and by forming the foundation for longer-term business opportunities. Taaleem Foundation has provided skill enhancement training to two Goldsmiths (Lohars) at the UN training facility at Hyderabad for developing skill of making fuel efficient stoves, 26 youths were provided the facility of 6 months training in electrician skill with AJK TEVTA. This is just an introductory trial for other vast level interventions which can enhance the skill in broader fields and this can contribute in poverty alleviation of the marginalized community area. Beside that two women master trainers were engaged to develop garment sewing skill in the communities of the 6 custodian village on sustainable basis with establishing two centers at Ghel and Khatrinarr.

There is further need of training of female related interventions beside the male related interventions as kitchen gardening, backyard farming (poultry, dairy, vegetables etc.). Coordination mechanism is needed to be developed with Government and non-Governmental organizations who provide such trainings for sustaining the activities and providing benefits to the dependent communities for wining their will and interest in conservation of the biodiversity and other natural resources of the Qazi Nag Game reserve.

This programme links with objective 5 and sub-objective 5.3, Section 6

LOCAL SOCIO-ECONOMIC DEVELOPMENT PROGRAMME				
High level objective: To build a strong constituency at multiple stakeholder levels in support of QNGR and to enable human benefits in the context of local and regional ecological, economic and social sustainability.				
Objectives: To enable QNGR to contribute positively towards human livelihoods and wellbeing, focusing on both local and regional actors within the social ecological system				
Sub-Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To contribute positively towards human health and wellbeing through the long-term provision of ecosystem services at various levels.	Provide opportunities for sustainable extractive resource use (e.g. woody biomass from road verge clearing, pruning of fruit and forestry trees)	Director DD RO	Identified resources	Ongoing
	Contribute to fresh water supply for downstream users	Director DD RO	Scientific report	Ongoing
	Communicate the value of QNGR in supplying ecosystem	Director DD RO	Interpretation material, environmental education material	Ongoing

	goods and services			
	Ensure the proper sewage system of the local and army houses is in place	Director DD RO Chairman Apex Committee	Septic tanks and soakage pits are constructed and no open sewage in the Qazi Nag nallah	Ongoing
To provide social and economic benefits to local communities	Provide preferential employment and business opportunities	Director DD RO	Number of employees	Ongoing
	Provide appropriate capacity development through training and mentoring.	Director DD RO	Training register	Ongoing
	Promote preferential procurement from local business	Director DD RO	SMME ratings	Ongoing
	Provide microfinance facilities for sustainable livelihood	Director DD RO	Reports, agreements	Ongoing

11.5 Effective Game Reserve management

Effective Game Reserve management programs (including daily, weekly, monthly, quarterly, and annual actions, reports, and reviews) are geared to ensuring that the values and objectives of the Game Reserve are maintained. These programs put in place the systems and processes that enable proactive management of the Game Reserve's objectives. This section outlines the management programs, objectives and actions that assist in effective Game Reserve management such as environmental management, financial management (e.g. procurement, reporting), budgeting, maintenance planning, and monitoring compliance.

11.5.1 Environmental management programme

The purpose of this programme is to minimize negative operational impacts on the Game Reserve. The Game Reserve will develop a system to manage their operational impacts. Such a system will provide the framework for the formulation and implementation of proper impact management that are required for all activities within the Game Reserve. The purpose is to set clear guidelines for the management of environmental impacts and resource use. Proper management of development and operational activities can be achieved through appropriate planning tools and effective controls. A number of management tools are used to develop and manage the Game Reserve in a manner consistent with relevant legislation and the conservation policy framework.

Guiding principles:

- Minimize or eliminate negative environmental impacts and use of natural resources.
- Incorporate best practice environmental management into management practices.
- Comply with all relevant legislation.

Regarding new developments or upgrades, the AJK regulations provide guidance regarding a number of activities that are either prohibited or require permits. Environmental impact assessments (EIAs) are viewed as an important management tool in identifying and managing impacts associated with a particular activity. For certain activities, the EPA requires that environmental authorization be

obtained from the competent authority, with the process and activities contained in the EIA of the Environmental Regulations. Where authorization is not legally required, the minimum requirement will be the preparation of an Environmental Management Plan (EMP). Additional staff of one Wildlife Supervisor B-11 and 3 more watchers B-2, is needed for the proposed extended area and every staff should have clear boundary with area of responsibility. They should also maintain the Compartment History File.

This programme links with objective 6 and sub-objective 6.4 in Section 6

ENVIRONMENTAL MANAGEMENT PROGRAMME				
High level objective: To develop and implement a comprehensive environmental management plan for QNGR				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To ensure compliance with environmental legislation and best practice principles for all management activities in the Game Reserve.	Make latest legislation and regulations available to Game Reserve staff and stakeholders	Director DD	Information available	Ongoing
	Review and develop best practice principles for environmental management	Director DD RO	Document available	Ongoing
	Develop a comprehensive environmental management	Director DD	Plan available	Year 2

	plan for the Game Reserve			
To implement an environmental management plan for the Game Reserve	Implement the EMP	Director DD RO	Report	Year 2
	Ensure EMP is kept up to date	Director DD RO	Report	Year 2
To implement best practice in terms of Game Reserve activities	Ensure that EIA's and HIA's are conducted where required	Director DD RO	Document available	Ongoing
	Ensure that SOP's or EMP's are developed to guide activities.	Director DD RO	Document	Ongoing

11.5.2 Risk management

The purpose of the programme is to update and maintain the Game Reserve's risk profile and to manage risks accordingly. The management of business risk is regarded as an integral part of management across all business operations. There is an enterprise-wide risk identification and assessment process, based on thorough understanding of the environment in which the organization operates and the strategic corporate objectives it intends to deliver on. This will provide a comprehensive understanding of all identified risks and their potential impact on the achievement of objectives - thereby creating a good basis for the effective

management of risks that are assessed as exceeding the risk appetite of the organization. Acknowledging that all activities occurring at different levels within the organization are exposed to various types of risks, the focus is to shift the attention of the organization towards a philosophy of optimizing the balance between potential risks and the potential rewards that may emanate from both pro-active and conscious risk oriented actions. The risk profile reflects among others the risks identified, how each is addressed and or monitored, at the Game Reserve level. The Game Reserve Manager (RO) is responsible for risk management. Being the link between the operational activities and its environment on the one hand, and the corporate support and management structure on the other, the Game Reserve manager in many instances responsible for implementation of corporate initiatives, programs, management plans and others that form part of the Game Reserve's strategy to address or mitigate issues of risk. Examples are the implementation and roll-out of a safety and security plan, implementing and maintaining ecological monitoring systems to identify and assess the impact of environmental change, and complying with financial and cash-flow directives especially in economically depressed times.

RISK MANAGEMENT PROGRAMME				
High level objective: To ensure that emerging issues of risk, that can jeopardize the achievement of QNGR objectives, are timely identified and assessed in terms of possible severity				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To establish and maintain effective, efficient and transparent systems of risk management.	Identify and assess risks for all business operations in the Game Reserve	Director DD RO	Information available	Year 1
	Develop a risk management plan including	Director DD RO	Document available	Year 1

	responses to address and prevent or mitigate issues of risk			
	Motivate for funding related to risk management where possible	Director DD RO	Budget provision	Ongoing

11.5.3 Finance and administration programme

The purpose of the programme is to ensure sound financial management and administration. Government of AJK budget policy follows the zero-based approach, which implies that every category must be critically assessed, evaluated and supported by an approved business plan. Once the budget has been determined per category, it needs to be compared to the budget of similar nature in other Game Reserves like, Machiara NP and any variance in excess of budget guidelines must be motivated and explained. Annual budgets should be compiled in accordance to budget guidelines and instructions issued annually by P & D department, donor or Auditor General, AJK. Without incisive financial management of the Game Reserve, there can be no realistic conservation effort. For the next planning cycle the Game Reserve will ensure that all Game Reserve operations and Game Reserve projects are cost effective and financially sound. In addition particular attention will be given to developing a diverse income base and proactive financial networking to enable to the Game Reserve to move towards being financially sustainable.

This programme links with objective 6 and sub-objective 6.2 in Section 6

FINANCE AND ADMINISTRATION PROGRAMME
High level objective: To ensure sound financial management and administration in the Game Reserve

Objectives	Action	Responsibility	Indicators	Timeframe
To attain effective financial management of the Game Reserve	Ensure less than 1% variance on cost of operations.	Director DD Finance Officer	Monthly financial statements	Ongoing
	Ensure sound financial management of special projects; i.e. Working for Water; Working on Land; and others	Director DD RO, Finance officer	Budget targets achieved	Ongoing
	Motivate for funding related to risk management where possible	Director DD RO	Budget provision	Ongoing
To grow revenue (Including alternative sources of revenue)	Identify new and align existing business opportunities within the QNGR with the commercialization programme	Director DD RO	New income streams generated	Ongoing
To ensure financial accountability and align financial management	Implement recommendations from annual audit report	Director DD RO Finance Officer	Audit report	Ongoing

systems.				
	Ensure sound financial management according to procurement policy	Director DD RO Finance Officer	Audit report	Ongoing
	Prepare accurate and realistic annual budgets	PM Director DD RO Finance Officer	Annual budgets	Ongoing
	Provide monthly financial reports by cost center	Director DD RO Finance Officer	Reports	Ongoing

11.5.4 Human capital development

The purpose of the human capital development programme is to ensure that the Game Reserve is supported by an adequate human resources function in order to provide effective conservation, visitor and supporting services. The Department of Wildlife and Fisheries has to follow the Government's human resources policies, guidelines and procedures to guide the Game Reserve and its workforce in an effectively organized structure focusing its operations. By adhering to these policies, guidelines and procedures the Game Reserve will ensure that competent staff are appointed, and that current staff will be managed in an effective manner to keep them positive, proactive and committed to their tasks and responsibilities. This will also ensure that human resource management will comply with the relevant national legislation. Game Reserve human resource capacity is not only defined by development of current staff, but requires the holistic management of the

appropriate human capital. This includes the creation of a learning environment, developing leadership skills, sharing of knowledge and experiences, as well as developing socially important lifestyle management programs to help employees and their families deal with the negative effects of lifestyle diseases. Game Reserve administration must in a prescribed way, report on deaths, new appointments, attendance registers, leave etc. A salary instruction is prepared from this and then sent to Head Office for processing and preparation of monthly salaries of contingent or contractual staff or University Research scholars. The Game Reserve reviews training needs on an annual basis and submits this to Head Office for authorization. Compilation of training needs starts off with the Individual development plans for each staff member and then finalized with performance appraisals. Management also encourages and analyses all staff to improve their levels of skills and qualifications in their relevant field of expertise on an ongoing basis. Each employee has set goals in terms of defined individual development plans. These development plans are based on the individual's training needs as agreed upon by the employee and his / her supervisor. A work place skills development plan has to be produced for the Game Reserve every year as required. Wildlife staff may get the forestry training from Kashmir Forest School AJK or Pakistan Forest Institute Peshawar as per their level. This is coordinated at head office level, with input from the Game Reserve and the employment equity forum. Most of the staff is involved and encouraged to make inputs into the plan.

The Wildlife staff should maintain a file of the area under their jurisdiction/ responsibility and submit the monthly report of events that are observed or actions taken or actions/support required form higher authorities. Staff must be given the clear responsibility of the defined area as compartment 6-9 A, Compartment 10-14 B, compartment 15- 19 C, compartment 20-24 D and so on. Similarly, one person for Qazi Nag Nallah.

This programme links with objective 6 and sub-objective 6.3 on Section 6.

HUMAN CAPITAL DEVELOPMENT PROGRAMME
High level objective: To ensure a harmonious and productive work environment

with a developed and capacitated workforce in QNGR				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To ensure the Game Reserve attracts and retains the most suitable human capital.	Recruit staff according to corporate selection and recruitment policy.	Director DD RO	plan	Ongoing
To implement plans and skills development strategies to meet the strategic goals of the department.	Conduct skills audit.	Director DD	Plan available	Year 1, ongoing
	Develop skills plan.	Director DD	Skills plan available	Year 1, ongoing
	Arrange training interventions	Director DD	% of budget for training	Year 1, ongoing
	Develop human capital in the fields of conservation and ecotourism through the internship programme	Director DD	PM Implementation of internship programme	Year 1, ongoing
	Develop human capital in the field of ecotourism by introducing tourism experiences to	Director DD	Learner and FET groups addressed	Year 1, ongoing

	FET and learners.			
To implement plans and skills development strategies to meet the strategic goals of the organization.	Enable staff to keep abreast of trends to positively influence the practices within the Game Reserve.	Director DD RO	Reports	Year 1, ongoing
	Compile and Share History Files for events in the area incharge	Watcher, HW, RO, DD' Director	Monthly Reports	Year 1, ongoing
Implement workplace health care programs which focus on preventative physical and mental health care	Conduct common and complicated disease awareness workshops	Director DD	Workshops, attendance	Year 1, ongoing
	Ensure staff have access to Health Centers	Director DD	Facilities,	Year 1, ongoing
	Invite professionals to	Director DD	Attendance registers	Year 1, ongoing

	the Game Reserve to promote awareness on OHS and mental health issues			
	Commemorate all events related to Wellness (e.g. Aids day, World blood donor day, days of activism on nonviolence against Women).	Director DD RO	Attendance registers, invitations Calendar days	Ongoing

11.5.5 Information Management

The purpose of the programme is to establish and then maintain a database of QNGR information.

Management of the Game Reserve requires that the appropriate data and information are collected, maintained and made readily accessible to staff responsible for all aspects of management. Such data are not only essential for formulating effective long-term management objectives, plans, programs and systems, but also for educating and informing residents associations, user groups, local authorities, provincial and national decision and policy makers, international organizations and donor agencies. The priorities for research will be developed through a priority needs analysis which will be articulated through the development of an overarching science plan. This plan will determine the suitable Game Reserve indicators including Thresh Hold Potential Concern (TPC's) to monitor, as well the

varying mechanisms to collect the data (e.g. internal research, universities, commissioned studies, etc.).

Beside the departmental staff, AJK University students of M. Sc, M. Phil, and Ph. D level must be involved for adaptive research in biodiversity, pastures and social sector. It has been experienced by the Taaleem Foundation under its Project of 'Biodiversity Conservation project in Qazi Nag' 2017-18. An MoU was signed between the project Director of Taaleem Foundation and Head of the Zoology Department of AJK University. 11 male and female students of M. Phil and Ph. D were taken on board and provided with the facility of boarding and lodging to conduct field level research in forest and aquatic fauna. They were technically trained by the experts of the Taaleem Foundation (TF) in selecting their research topics, formulating synopsis, conducting surveys and collecting data under the technical guidance of their University Supervisors. This proved to be wonderful institutional collaboration of efforts and resources between the two organizations and produced valued workforce for the future

This programme links with objective 6 and sub-objective 6.7 Section 6.

INFORMATION MANAGEMENT PROGRAMME				
High level objective: To implement best practices in the field of records and information management for QNGR				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To develop and implement a records management and file plan for the Game Reserve in accordance with policies	Review the existing records management and file plans within the various areas of the QNGR, and implement a single file plan (e.g.,	Director DD RO	Draft records management and file plan for Game Reserve (compartment History Files covering all monthly Incidents in	Year 1 & ongoing

and procedures	Compartment /Area History files)		the compartment	
	Implement the QNGR records management and file plan	Director DD RO	Records and documents filed into plan	Year 1
	Ensure appropriate access to Game Reserve files and records in accordance to records management policy and guidelines	Director DD RO	Access procedures recorded and implemented	Year 1
	Monitor the Compartment History Files	Director DD RO, Head watcher and Watcher	100 % check and record by Watcher, head watcher, 50 % Range Officer, 20 % DD and 5% director	Year 1 & ongoing

11.5.6 Infrastructure

The purpose of the programme is to provide for new and upgrading and maintenance (day to day and scheduled) of existing infrastructure. Infrastructure in the Game Reserve consists of facilities in support of conservation (such as management roads and tracks, office facilities, staff housing, fences, bulk services,

workshops and stores) and tourism (such as tourist roads and tracks, walking trails, office facilities, staff housing, bulk services, public viewing points bird hides, picnic sites and tourist accommodation). These facilities enable staff to execute the respective duties towards achieving the Game Reserves objectives and providing a tourism product at the best possible standard.

The product development strategy, applicable legislation and limitations of the zoning shall guide new infrastructure development such that:

- Infrastructure must be developed and maintained in accordance with all applicable legislation, policies, standards and codes
- Maintenance must be undertaken in a cost effective manner
- New developments and infrastructure maintenance must:
    - As far as practicable incorporate good, cost effective environmental design;
    - As far as practicable use low maintenance designs and material;
    - As far as possible utilize existing roads and tracks and disturbed sites and to limit green field developments.

This programme links with objective 6 and sub-objective 6.1 Section 6

INFRASTRUCTURE PROGRAMME				
High level objective To maintain and upgrade existing infrastructure and develop new infrastructure in support of conservation and tourism in QNGR				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
To ensure that infrastructure in the Game Reserve is maintained to a desired state	Compile an inventory of all infrastructure in the Game Reserve if they are, assess construction types and determine extent of maintenance	Director DD RO	Inventory	Year 1

	needed			
	Document the scope of maintenance needs in accordance with relevant specifications	Director DD RO	Reports	Year 1
	Building and Electrical regulations Priorities maintenance needs and develop a 10-year maintenance plan for the Game Reserve	Director DD RO	Maintenance plan and schedules	Year 1
To ensure that all mechanical and electrical equipment is maintained to a desirable state	Compile an inventory of all mechanical and electrical equipment in the Game Reserve, determine maintenance schedules of each and list	Director DD RO	Inventory	Year 1

	service providers			
	Develop an annual maintenance schedule for all lab and field equipment	Director DD RO	Schedule	Ongoing
To regulate or remove relevant structures.	Identify and enlist all such structures etc.	Director DD RO	List	Year 1
	To regulate or remove relevant structures	Director DD RO	Reports, notices	Year 2

11.5.7 Safety and security programme

The purpose of this programme is to provide a safe and secure environment for our visitors, research scholars and Game Reserve employees, and to ensure that the area integrity of the natural and cultural resources of the QNGR is maintained in a sustainable manner. Most potential threats are linked to illegal activities in and around the Game Reserve, including trespassing, poaching, theft and illegal resource use. Daily Game Reserve activities, implemented to mitigate many of these illegal activities form an important part of this plan. Issues around visitor and staff safety and security, environmental crime, cash in storage and transit, access control and infrastructure security still pose challenges. Dangers are prioritized in terms of real threat to individual visitors and staff. Perceptions are managed in order to protect the brand and reputation of AJK Game Reserves and Tourism Industry at large. Directly related to this, the plan aims to secure the Game Reserve's tourism income stream for Qazi Nag Game Reserve. The safety and security strategy and operational plan will be continuously evaluated and updated from monitoring and

evaluation feedback. Indicators would include measures such as number of poaching incidents, incident records and tourism perception indicators such as positive and negative media measures.

SAFETY AND SECURITY PROGRAMME				
High level objective To provide a safe and secure environment for both our visitors and Game Reserve employees, and to ensure that the area integrity of the natural and cultural resources is maintained in a sustainable manner in QNGR				
Objectives	**Action**	**Responsibility**	**Indicators**	**Timeframe**
Achieve and maintain high standards amongst all staff in the Game Reserve, focusing on training equipment, motivation and discipline.	Review safety and security plans.	Director DD RO	Reviewed plans (immediate action drills; Standard operating procedures; Evacuation plans; Incident management guidelines)	Ongoing
	Train staff in area integrity management, conservation guardianship, and readiness to react to emergency situations.	Director DD RO	Training records	Ongoing
	Strategic safety and security plan assess readiness of staff.	Director DD RO	Audits, drill procedures	Ongoing

	Assess readiness of staff	Director DD RO	Audit, drill procedures	Ongoing
To improve overall Game Reserve safety through interactions with external role players	Align the safety and security activities to accommodate collaborative operations with internal and external partners, e.g. Nongovernment Organization Safety and Security working group, Criminal Investigation Services, AJK red Crescent	Director DD RO	Safety and Security plans	Year 2
	Conduct regular patrols to ensure that area integrity is maintained	Director DD RO	Safety and security plan, incident reports.	Ongoing
To regulate or remove relevant structures.	Actively participate in various external safety and security related forums	Director DD RO	Reports	Ongoing

Section-12: Costing

Costing has been done in line with the desired requirements, the programs of implementation to achieve the desired state.

Guiding principles

- Responsibly manage the allocation of budget, revenue raising activities and expenditure;
- Ensured solid financial management supports the achievement of the objectives of this plan;

Using the zero based budgeting approach a funding estimate was derived based upon the activities in this management plan.

When estimating the costing the following items were considered:

- Those costs and associated resources which could be allocated to specific activities and which were of a recurring nature;
- Those costs and associated resources which could be allocated to specific activities but which were of a once-off nature;
- Unallocated fixed costs (water, electricity, phones, bank fees etc.);
- Maintenance of infrastructure;
- Provision for replacement of minor assets, (furniture, electronic equipment, vehicles, etc.).
- Provision of tangible benefits to the community to reduce the pressure on natural resources of the game reserve
- Research and planning
- Celebrating the annual events

12.1 Recurring costs:

The annual directly allocated cost (includes staff, travel, celebrating annual events, community meetings, repair and maintenance of infrastructure and vehicles, research, evaluation and supplies and tools) is estimated at

Rs. 11,442,000 for 2019 / 2020. These ongoing costs are split according to the programs listed in Table 16 below.

Table 20: The estimated annual operational costs for QNGR for 2019-2020

Programme	Amount	Percentage of Total
Protection and Social Staff	2,352,000	20.56
Tourism operations	200,000	1.75
Rehabilitation	500,000	4.37
Fire control	20,000	0.17
Environmental protection cost	200,000	1.75
Environmental education and awareness	1,200,000	10.49
Human resource development	1,200,000	10.49
Ecosystem services	50,000	0.44
Local Socio-economic development	5,000,000	43.70
Office running Cost	600,000	5.24
Research, monitoring and evaluation	120,000	1.05
Total:	11,442,000	100

Table 21: Staff requirements and estimated annual cost on that

#	Name of Position	Existing No.	Required No.	total	Additional Funds Required (Pak Rupees)
1	Game Reserve Ranger		1	1	360,000
2	Social Organizer		1	1	300,000
3	Game Reserve Supervisor		1	1	300,000
4	Game Reserve Head Watcher	1	1	2	240,000
5	Game Reserve Watchers	3	6	9	1152000
Total:		**4**	**10**	**14**	**2,352,000**

12.2 Once off costs

In addition to the above there is a further once-off cost estimated at Rs. 92,000,000 over the next five years (see Table 21).

Table 22: The estimated once off cost of the various programs in QNGR

Programme	**Estimated Budget Pak Rupees**
Tourism structures and services	60,000,000
Office structures and display center	30,000,000
Furniture, computer and other office equipment	2,000,000
Total:	**92,000,000**

12.3 Summary

It is estimated that the Game Reserve will require an annual operating budget of Rs 11,442,000 for 2019/ 2020, increasing to Rs. 15504820 in 2020 / 2021 (10% escalation cost every year). In addition to this amount, the Game Reserve will also require Rs 92,000,000 over the next five years for once off costs. A summary is presented in Table 23 below.

Table 23: A summary of the annual and once off costs that is required to fully implement the activities in the QNGR management plan over the next five years.

Type	**2019-2020 (Pak Rupees)**	**2020-2021 (Pak Rupees)**	**2021-2022 (Pak Rupees)**	**2022-2023 (Pak Rupees)**	**2023-2024 (Pak Rupees)**	**Total for 5 years (Pak Rupees)**
Annual operational Cost	11,442,000	12,586,200	13,844,820	15,229,302	16552232	**69,654,554**
Once off costs Over 5 years		42,000,000	30,000,000	20,000,000		**92,000,000**
Total:	**11,442,000**	**54,586,200**	**43,844,820**	**35,229,302**	**16,552,232**	**161,654,554**

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Management Plan for Machiara National Game Reserve

Masood Ahmed Qureshi- state of major wildlife species and their management in Game Reserve. Thesis research by Masood Ahmed Qureshi

Ornithological baseline study in Machiara National Game Reserve by Dr. Azhar Hassan, 2004

Zoological and wildlife Baseline studies in Machiara National Game Reserve by Dr. Khalid Baig, 2004

Appendix-1

Check List of Lower and upper canopy Plants in QNGR

S #	Name of Species	S#	Name of Species	S#	Name of Species
1	*Abelia triflora* RBr.	51	*Astragalus candolleanus* Royle ex Benth	96	*Coriaria nepalensis Wall.*
2	*Abies pindrow* Royle	52	*Astragalus falconeri* Bunge,	97	*Cornus macrophylla* Wall.
3	*Acalypha brachystachya*	53	*Astragalus grahamianus* Royle ex Benth.	98	*Cortusa,brotheri Pax. Ex Lipsky.,*
4	*Acer caesium*	54	*Astragalus leucocephalus* Grah. Ex Bth.,	99	*Corydalis cyrtocentra*
5	*Achillea millefolium*	55	*Atropa acuminata Royle.*	100	*Corydalis diphylla Wall.*
6	*Achyranthus aspera*	56	*Berberis kunawurensis* Royle.	101	*Corydalis govaniana Wall.*
7	*Aconitum chashmanthum*	57	*Berberis lycium* Royle,	102	*Corylus colurna Linn.*
8	*Aconitum ferox* Wall.	58	*Berberis orthobotrys* Bien.	103	*Cotoneaster accuminata* Lindl.,
9	*Aconitum heterophyllum* wall.	59	*Bergenia ciliata*	104	*Cotoneaster affins var. bacillaris* (Lindl) Schneider.
10	*Aconitum Laeve* Royle,	60	*Betula utilis*	105	*Cotoneaster microphylla* Wall.,
11	*Aconitum rotundifolium*	61	*Bistorta affinis (Polygonum affine)*	106	*Cotoneaster rosea* Edgew.,
12	*Aconitum soongricum (Stapf)*	62	*Bistorta amplexicaulis*	107	*Cotoneaster nummularia* Fisch. & Mey.,
13	*Aconitum violaceum* Stapf.	63	*Boehmeria platyphylla* D.Don,	108	*Crepisflexuosa(DC.)* Benth.,
14	*Adonis chrysocyathus*	64	*Buddleja crispa* Bth.	109	*Cynoglossum glochidiatum* Wall. ex Berth.,
15	*Aesculus indica*	65	*Buplerum falcatum* L.,	110	*Cynoglossum*
16	*Agropyron dentatum*	66	*Buplerum longicaule*		
17	*Ailanthus altissima* (Mill.)	67	*Buplerum*		
18	*Ajuga bracteosa* Wall.ex Bth.,				
19	*Allium humile* Kunth				

20	*Allium victoria lis Linn.*		*rotundifolium* L.,		*lanceolatum* Forssk.,
21	*Anagallis arvensis*	68	*Butea monosperma* (Lam.) Taubert.	111	*Cynoglossum microglochin* Benth.,
22	*Anaphalis arvensis*	69	*Caltha alba Jacq.* Ex Camb.,	112	*Cypripedium spp*
23	*Anaphalis margaritacea*	70	*Caltha palustris*	113	*Dactylorhiza hatagirea* (D.Don)
24	*Andrachne cordifolia (Dcne)*	71	*Campanula aristata Wall.*	114	*Dalbergia sisso* Roxb.
25	*Androsacefoliosa* Dene.	72	*Campanula benthamii Wall.*	115	*Daphne oleo ides* Schreb.
26	*Androsace himalaica* (Kunth)	73	*Cannabis sativa* L.,	116	*Delphinium cashmerianum* Royle
27	*Androsace rotundifolia*	74	*Cardamine impatiens* L.	117	*Delphinium dentatum* Wallich ex
28	*Anemone falconeri*	75	*Carum carvi* L.,	118	*Delphinium uncinatum* H. & T.,
29	*Anemone obtusifolia* D.Don.	76	*Cataranthus roseus* (L) G.Don.	119	*Delphinium vestitum* Wallich. Ex Royle,
30	*Anemone polyanthes*	77	*Cedrus deodara* (Roxb. Ex Lamb) G.	120	*Desmodium elegans*
31	*Anemone tetrasepala* Royle,		Don.,	121	*Desmodium gangeticum* (L.) DC.,
32	*Anisomeles indica (L)* 0. *Ktze.*	78	*Celtis australis* L.	122	*Deutzia staminea Wall.*
33	*Anthemis nobilis* L.,	79	*Centaurea iberica* Trey. Ex Spemg.		*Dictamnus albus* L.,
34	*Aquilegia pubiflora* (Wallieh).	80	*Cerastium*	123	*Dioscorea deltoidea*
35	*Aralia cachmirica Dcne.*	81	*cerastioides* Gilib.,	124	*Diospyros lotus* L.
36	*Arceuthobium minutissimum Hook.*	82	*Cerastiumfontanum* Baung.,	125	*Duchesnea indica*
37	*Arenaria festucoides* Bth.,	83	*Chondrilla graminea MBieb.,*	126	*Dumasia vil/osa* DC.,
		84	*Cichorium intybus* L.,	127	*Elaegnus orientalis L.*
		85	*Circaea alpina* Clarke	128	*Elsholtzia densa* Bth.,
		86	*Circaea cordata*	129	*Epilobium laxum*
				130	*Epilobium parviflorum* Schreb.

38	*Argyrolobium flaccidum* Royle,		Royle,	131	*Eremuruspersicus*
39	*Arisaema flavum*	87	*Clematis barbellata*	132	*Erigeron multiradiatus*
40	*Arisaema jacquemontii.*		Edgew.,		Bth.,
41	*Artemisia dubia* Wall.	88	*Clematis cannata* DC.	133	*Erodium cicutarium*
	Artemisia laciniata	89	*Clematis gouriana*	134	*Eritrichium canum*
42	*Artemisia maritime*		Roxb.,	135	(Benth.) Kitam.,
	L.,	90	*Clematis grata* Wall.,	136	*Erythrina glaberescens*
43	*Artemisia parviflora*		*Clematis Montana*		(prain.) Game
	Roxb.		Buch. Home ex Royle		Reserveer.
44	*Asparagus*	91	*Codonopsis obtusa*	137	*Euonymus echinatus*
	adscendens	92	*Codonopsis*		*Wall.*
45	*Asparagus filicinus*		*rotundifolia*		
	Ham.	93	*Colutea armata*		
46	*Asparagus*	94	*Companula benthanii*		
	racemosus Willd.	95	*Conyza bonariensis*		
47	*Aster albescens Dc.*		(L.)		
	Aster falconeri				
	(Clarke) Hutch.,				
48	*Aster himalaicus* C.B				
	Clarke,				
49					
50					

S #	Name of Species	S#	Name of Species	S#	Name of Species
138	*Euonymus fimbriatus*	186	*Ipomoea eriocarpa*	233	*Oxa/is acetosella*
	Wall.	187	*Iris ensata Thunb.*	234	*Oxa/is corniculata*
139	*Euonymus*	188	*Iris hookeriana*	235	*Oxyria digyna* L.,
	hamiltonianus Wall	189	*Isodon regosus*	236	*Paeonia emodi* Wall.

140	*Euphorbia helioscopia*	190	*Ixiolirion karateginum*		ex Hk.f.
141	*Euphorbia wallichii*	191	*Jaeschkea oligosperma*	237	*Papaver nudicaule*
142	*Ferulajaeschkeana* Vatke,	192	*Jasminum humile Linn.*	238	*Papaver rhoeas* L.,
143	*Ficus carica* L.,	193	*Juglans regia Linn.*	239	*Paris polyphylla*
144	*Ficusfoveolata* Wall. ex Miq.	194	*Juniperus communis*	240	*Parnassia nubicola Wall.*
145	*Ficus semicordata*	195	*Kobresia nitens Clarke,*	241	*Parrotiopsis jacquemontiana*
146	*Ficus virgata (F. palmata)* Forssk.	196	*Lagotis cashmeriana (Royle) Rupr.,*	242	*Passiflora coerulea Linn.*
147	*Fragaria nubicola*	197	*Lamium album L,*	243	*Pedicularis pectinata*
148	*Fritillaria roylei*	198	*Lathyrus sativus L,*	244	*Pedicularis pyramidata*
149	*Fumaria indica Hausskn.*	199	*Lecanthus peduncularis (Royle)*	245	*Pedicularis roylei* Maxim.
150	*Gagea elegans*	200	*Leontopodium himalayanum DC.*	246	*Persicaria hydropiper*
151	*Galium aprine*			247	*Persicaria nepalensis*
152	*Galium asperifolium* Wall.,	201	*Leonurus cardiaca L,*	248	*Persicaria posumba*
153	*Galium boreale* L.,	202	*Lespedezajuncea (Lf.) Persoon.Var.juncea*	249	*Persicaria sinuate*
154	*Gallium elagens*	203	*Leucas cephalotes Spreng.,*	250	*Phleum alpinum*
155	*Gaultheria trichophylla*	204	*Ligusticum clatum*	251	*Phlomis bracteosa*
156	*Gentiana kurroo* Royle,	205	*Lilium polyphyllum*	252	*Phlomis spectabilis* Falc. Ex Bth.,
157	*Geranium himalayense*	206	*Lindelofia anchusoides (Lindl.) Lehm.,*	253	*Phyllanthus niruri* L.,
158	*Geranium nepalense*	207	*Lindelofia longiflora (Benth.) Baill.,*	254	*Phytolacca latbenia*
159	*Geranium rotundifolium*	208	*Linum corymbulosum Reichenb*	255	*Picea smithiana* (Wall.) Boiss.,
160	*Gerbera gossypina*			256	*Pilea umbrosa*
				257	*Pinus wal/ichiana* A.B. Jackson,
				258	*Pistacia chinensis* (Sb. Sp. *Integerrima*

	(Royle) Beauv.,	209	*Lithospermum*	259	*Plantago lanceolata*
161	*Grewia optiva* Drum		*tenuiflorum*		*Linn.*
	ex Burret.	210	*Lonicera*	260	*Plantago major Linn.*
162	*Grewia tenax*		*quinquelocularis*	261	*Platanus orienta/is* L.
	(Forssk)		*Hardw.*	262	*Plectranthus rugosus*
163	*Gypsophila*	211	*Lonicera vaccinioides*		Wall. ex Bth.,
	cerastioides	212	*Lychnis coronaria (L,)*	263	*Pleurospermum*
164	*Habenaria aitchisoni*		*Desr.,*		*candollei* (DC.)
	Reichb.f.J	213	*Lycopus europaeus L,*	264	*Plumbago zeylanica*
165	*Habenaria marginata*	214	*Malva parviflora L,*		*Linn.*
166	*Ham;iltonia*	215	*Medicago denticulata*	265	*Podophyllum emodi*
	suaveolens Roxb.	216	*Medicago minima (L)*		*Wall.*
167	*Hedera nepalensis*		*Grotb.,*	266	*Polemonium*
	KKoch.	217	*Melilotus officinalis (L)*		*coeruleum* L.,
168	*Hedysarum*		*Desr.,*	267	*Polygala abyssinica*
	minjanese	218	*Mentha arvensis L,*	268	*Polygala crotalarioides*
169	*Heracleum thomsonii*	219	*Mimulus strictus Bth.,*		*DG., Prod.*
	Clarke,	220	*Morina coulteriana*	269	*Polygonatum*
170	*Hypericum dyeri*		*Royl.*		*verticellatum*
171	*Hyoscymus niger*	221	*Morus alba* L,	270	*Polygonum affinis*
172	*Hypecoum*	222	*Morus nigra*		D.Don.
	leptocarpum	223	*Morus serrata* Roxb.	271	*Polygonum*
173	*Hypericum*	224	*Myeriactis nepalensis*		*amplexicau/is* D.Don.
	oblongiflorum Choisy	225	*Myosotis plaustris* (L)	272	*Polygonum aviculare*
174	*Hypericum*		Nath.		L.,
	perforatum L.,	226	*Nepeta erecta*	273	*Polygonum nepalense*
175	*Impatiens bieolor*	227	*Nepeta laevigata*		*Meissner*
	Royle		(D.Don) Hamd-Mazz.,	274	*Polygonum pandulum*
176	*Impatiens*	228	*Nerium oleander* Mill		(M.B.) Laberstani,
	brachycentra	229	*Oenothera rosea*	275	*Polygonum viviparum*
177	*Impatiens jlemingii*	230	*Onosma hispidum*	276	*Populus ciliata* Wall.ex

	Hook.		Wall. ex G.Don.,		Royle,
178	*Impatiens*	231	*Origonum vulgare*	277	*Potentilla sericophylla*
	glandulifera Royle.	232	*Ougeinia oogeinsis*		Game Reserveer
179	*Impatiens scabrida*			278	*Potentilla gerardiana*
180	*Impatiens thomsonii*				*Lindley*
181	*Indigofera heterantha*			279	*Potentilla nepalensis*
	Wall. Ex Brand,				*Hook.*
182	*Indigofera linifolia*			280	*Primula denticulate* Sm
	(L£)Retz.,			281	*Primula duthieana*
183	*Inula cuspidate(DC.)*				Ba1f. & W.W.Sm.,
	Clarke			282	*Primula glomerata* Pax
184	*Inula royleana*				
185	*Inula royleana*				

S #	Species	S#	Species	S #	Species
282	*Primula rosea* Royle,	323	*Rumex nepalensis*	367	*Spiranthes lancea*
283	*Prunella vulgaris* L.,		Spemgel,		(Thunb.) Backer, Bakh.
284	*Prunus amygdalus*	324	*Rynchosia minima*		F & V. Steenis,
	Baill.,	325	*Strobilanthes urticifolia*	368	*Spiranthes sinensis*
285	*Prunus avium* L.	326	*Salix alba* L.,		(Pres.) Ames.,
286	*Prunus bokhariensis*	327	*Salix denticulate* N. J.	369	*Stachys floccose* Bth.,
	Royle ex. Ck. Sehn.		Anderss.,	370	*Staphylea emodi* Wall.
287	*Prunus cornuta*	328	*Salix flabellaris*		Ex Brandis.
	Wallieh ex Steud,		N.J .Andress.	371	*Stellaria monosperma*
288	*Pseudomertensia*	329	*Salix tetrasperma*	372	*Strobilanthes*
	parvifolia (Dene.)		Raxb.,		*aurticifolia*
	Reid1,	330	*Salmalia malabarica*	373	*Strobilanthes*
289	*Punica granatum* L.		(Dc.) Schott &		*glutinosus* Nees,
290	*Pyrus communis* L.		Endlicher	374	*Swertia petiolata*
291	*Pyrus cornuta*	331	*Salvia parviflora*		D.Don.,
292	*Pyrus lindleyi*	332	*Salvia virgata* Jacq.,	375	*Taxus wal/ichiana*

	Rehder.	333	*Salvia viridis*		Zucc,
293	*Quercus baloot* Griffith.	334	*Sambucus wightiana* Wall.ex Wight and Am.	376	*Teraxacum officinale*
				377	*Thalapsi arvenis*
294	*Quercus floribunda* (Q. *dilatata)* Lindi. Ex Royle.	335	*Sapindus mukorossi* Gaertn. *Sarcocca saligna D.Don.*	378	*Thalictrum alpinum*
				379	*Thalictrum cultratum* Wall.,
295	*Randia tetrasperma* (Roxb) Bth & Hkf.	336		380	*Thalictrum minus* L.,
		337	*Saussurea* jacea *(Klotzsch) CB Clarke,*	381	*Thalictrum virgatum* Hookf &Thoms
296	*Rannunculus adoxifolius* Hand Mazz.,	338	*Saxifrage lilacina*	382	*Thymus serphylum*
		339	*Scaligeria indica W ex* Clarke,	383	*Trifolium repens* L.,
297	*Rannunculus arvensis* L.,	340	*Scrophularia decomposita* Royle ex Bth.,	384	*Tril/idium govanianum*
				385	*Tylophora tenerrima*
298	*Rannunculus hirtellus* Royle ex D.Don.,	341	*Scutellaria linearis* Bth.,	386	*Ulmus wal/ichiana* Planch.
				387	*Ulmus vil/osa* Brandis ex Gamble,
299	*Rannunculus laetus* Wallieh ex D.Don.,	342	*Scutellaria vagtata*	388	*Urtica dioica* L.,
		343	*Sedum adenotrichumWall* ex Edgew.,	389	*Vaccnium vacciniaceum*
300	*Rannunculus muricatus* L.,			390	*Valeriana pyrofolia Decne.*
301	*Rhamnus virgata* Roxb	344	*Sedum awersii*		
302	*Rheum webbianum*	345	*Selinum tenuifolium* Wall. ex Clarke,	391	*Valeriana jatamansii*
303	*Rheum emodi* Wall.,			392	*Verbascum erianthum* Bth.,
304	*Rhodendron hypenanthum* Balf	346	*Sibbaldia cuneata* Kunze.,	393	*Veronica cachemirica* Gandoger,
305	*Rhus cotinus* L.,	347	*Silene cashmeriana* (Royle ex Bth) Majumdar	394	*Veronica laxa (v. melissifolia)*
306	*Rhus javanica*				
307	*Rhus punjabensis* Stewart ex Bran.,	348	*Silene conoidea* L.,	395	*Viburnum foetens (v. erubescens)* Dene.
308	*Rhynchosia minima*	349	*Silene edgeworthii*		

309	*Ribes alpestre* Dene ex Jaeq.		*Bocquet*	396	*Viburnum grandiflorum Wall.*
310	*Riccinus communis L,*	*350*	*Silene laxantha* Majumdar	397	*Vida cornifolium*
311	*Rosa brunonii* Lindi.	*351*	*Silene setisperma* Majumder,	398	*Vida hirsute* (L.) S.F. Grey,
312	*Rosa indica*	*352*	*Silene tenuis* Willd.,	399	*Vida tenifolia* Roth,
313	*Rosa macrophylla*	*353*	*Silene vulgaris* (Moench)	400	*Vinca grandiflora Salish.*
314	*Rosa nanothamnus* Boulenger.	*354*	*Skimmia laureola*	401	*Viola biflora* L.,
315	*Rosa webbiana* Wall ex Royle.	*355*	*Smilax vaginata Decne.*	402	*Viola canescens* Wall. Ex Roxb.,
316	*Rubus biflorus*	*356*	*Solanum nigrum*	403	*Viola odorata* L.,
317	*Rubus ellipticus* Smith	*357*	*Solidago virga aurea L.,*	404	*Viscum album*
318	*Rubus fruticosus L,*	*358*	*Sophora mollis* (Royle) Baker *Mollis.*	405	*Vilis himalayana*
319	*Rubus macilentus* Carob.	*359*	*Sorbaria tomentosa* (Lind!) Rehder,	406	*Wulfenia amherstiana*
320	*Rubus niveus* Thunb non Wall.	*360*	*Sorb us cashmiriana* Hedlund,	407	*Withania somnifera* (L) Dunal.
321	*Rubus sanctus (Rubus ulmifolius)* Schott.,	*361*	*Sorbus cuspidata* (Spach)	408	*Xylosma longifolium*
322	*Rumex dentatus* L.,	*362*	*Sorb us lanata* (D.Don) S. Schaner	409	*Zanthoxylum armatum* D.c.
		363	*Spergula arvense*	410	*Ziziphus mauritiana* Lam.
		364	*Spiraea affins* Game Reserveer.	411	*Ziziphus nummularia* (Hunn.f) WightAm.
		365	*Spiraea canescens* D.Don.,		
		366	*Spiraea vaccinifolia* D.Don		

Appendix-2

Check list of Mammals and birds in Qazi Nag Game Reserve

B. Mammals

S #	Scientific Name	Common Name	Local Name
1.	*Capra ibex Siberia*	Himalayan Ibex	Kil Bakra
2.	*Naemorhedus goral*	Grey Goral	Raain or Jungli Bukri
3.	*Moschus chrysogaster*	Himalayan Musk Deer	Roans
4.	*Canis aureus*	Asiatic Jackal	Gidar
5.	*Canis lupus*	Indian Wolf	Bughiar
6.	*Vulpes vulpes*	Common Red Fox	Langarhi or Loomri
7.	*Felis lynx*	Himalayan Lynx	Bagar Billa
8.	*Panthera pardus*	Panther or Leopard	Seehn, Guldar
9.	*Uncia uncia*	Snow Leopard or Ounce	Burfani Seehn or Cheeta
10.	*Prionailurus bengalensis*	Leopard cat	Seehn Trhinga
11.	*Herpestes edwardsi*	Mangoose	Neola
12.	*Lutra lutra*	Common Otter	Ludhar
13.	*Martes flavigula*	*Yellow throated* Marten	Ban Trukla
14.	*Mustela erminea*	Stoat or Ermine	
15.	*Mustela altaica*	Alpine Weasel	
16.	*Ursus thibetanus*	Himalayan Black Bear	Kala Richh
17.	*Paguma larvata*	Himalayan Masked Palm Civit	Mushki Billi
18.	*Pteropus giganteus*	Indian Flying Fox	Bari Chumgadar
19.	*Myotis muricola*	Dark Whiskered Bat	Chumgadar
20.	*Pipistrellus pipistrellus*	Common Pipistrelle	Chumgadar
21.	*Eptesicus serotinus*	Common Serotine	Chumgadar
22.	*Hemiechinus collaris*	Long-eared hedgehog	Kundyara Chooha
23.	*Crocidura pullata*	Asiatic White-toothed Shrew	Throoee
24.	*Suncus murinus*	Indian Musk Shrew	Chchundar

S #	Scientific Name	Common Name	Local Name
25.	*Lepus capensis*	Cape Hare	Khargoash
26.	*Ochotona roylei*	Royle's Pika or Indian Pika	Lunda Chooha
27.	*Macaca mulatta*	Rhesus Macaque	Booja, Bundar
28.	*Semnopithecus entellus*	Grey Langur or Hanuman Langur	Banter, Langur
29.	*Hystrix indica*	Indian Crested porcupine	Seh
30.	*Alticola roylei*	Royle's High Mountain Vole	Unna Chooha
31.	*Apodemus rusiges*	Himalayan Wood Mouse	Jungli Chooha
32.	*Bandicota bengalensis*	Indian Mole Rat or Rice Rat	Fusli Chooha
33.	*Hyperacrius wynnei*	Murree Vole	Unna Choha
34.	*Mus musculus*	Common House mouse	Choohi
35.	*Rattus rattus*	Common Rat	Chooha
36.	*Rattus turkistanicus*	Turkistan's Rat	Chooha
37.	*Hylopetes fimbriatus*	Small Kash. Flying Squirrel	Choti Uran Gulehri
38.	*Funambulus pennantii*	Palm Squirrel	Gulehri
39.	*Marmota caudata*	Long-tailed Kashmir Marmot	Khunn Chooha
40.	*Petaurista petaurista*	Giant Flying Squirrel	Uran Gulehri

Zoological study by Dr. Khalid baig in Machiara 2004 & Thesis on Game Reserve by Masood Ahmed Qureshi 1998

B-Birds

S No	Scientific name	Common name	Local name
1	*Accipiter nisus*	Eurasian Sparrow Hawk	
2	*Acridotheres tristis*	Common Myna	Sharik
3	*Aegithalos concinnus*	Red- headed Longtailed Tit	
4	*Alectoris chukar*	Chukar	Konk
5	*Anthus sylvanus*	Upland Pipit	
6	*Apus affinis*	House Swift / Little Swift	Terni
7	*Apus apus*	Common Swift	
8	*Apus pacificus*	Fork-tailed Swift	Tairni
9	*Aquila chrysaetos*	Golden Eagle	
10	*Cacomantis passerinus*	Plaintive Cuckoo	
11	*Callacanthis burtoni*	Red-browed Finch	
12	*Carduelis spinoides*	Himalayan Greenfinch	Phita
13	*Carpodacus erythrinus*	Common Rosefinch	Pitha
14	*Carpodacus nipalensis*	Dark-breasted Rosefinch	Chidi
15	*Carpodacus rhodochrous*	Pink-browed Rosefinch	
16	*Cephalopyrus flammiceps*	Fire-capped Tit	Pitha
17	*Certhia familiaris*	Common Tree-creeper	
18	*Certhia himalayana*	Himalayan Tree Creeper	Tuktuka
19	*Chaimarrornis leucocephalus*	White-capped Redstart	Chano chidi
20	*Cinclus palasii*	Brown Dipper	
21	*Circus macrourus*	Pallid Harrier	Hell

S No	Scientific name	Common name	Local name
22	*Cisticola juncidis*	Streaked Fantail Warbler	
23	*Clamator jacobinus*	Pied Crested Cuckoo	
24	*Columba livia*	Blue Rock Pigeon	Jungli kabootar
25	*Copsychus saularis*	Indian Magpie Robin	
26	*Coracias benghalensis*	Indian Roller	
27	*Coracias garrulous*	Kashmir Roller	
28	*Corvus macrorhynchos*	Jungle crow	Kag
29	*Delichon dasypus*	Kashmir House Martin	
30	*Dendrocopos himalayensis*	Himalayan Pied Woodpecker	
31	*Dicrurus leucophaeus*	Ashy Drongo	
32	*Dicrurus macrocercus*	Black Drongo	Kal cheet
33	*Emberiza cia*	Rock Bunting	Chidi
34	*Emberiza fucata*	Chestnut-eared Bunting	
35	*Emberiza leucocephalos*	Pine Bunting	
36	*Emberiza stewarti*	White-capped Bunting	Chidi
37	*Enicurus maculatus*	Spotted Forktail	Janti chidi
38	*Enicurus scouleri*	Little Forktail	-
39	*Eudynamys scolopacea*	Koel	Kali Koel
40	*Falco subbuteo*	Northern Hobby	
41	*Falco tinnunculus*	Common Kestrel	Basha
42	*Ficedula subrubra*	Kashmir Red-breasted Flycatcher	
43	*Ficedula tricolor*	Slaty-blue Flycatcher	
44	*Ficedula westermanni*	Little Pied Flycatcher	

S No	Scientific name	Common name	Local name
45	*Garrulax albogularis*	White-throated Laughing Thrush	
46	*Garrulax lineatus*	Himalayan Laughing-thrush	Shoar
47	*Garrulax variegates*	Variegated Laughing-thrush	
48	*Glaucidium cuculoides*	Himalayan Barred Owlet	Uloo
49	*Gypaetus barbatus*	Bearded Vulture or Lammergeier	
50	*Gyps himalayensis*	Himalayan Griffon Vulture	Hil ganja
51	*Hirundo rustica*	Barn Swallow	
52	*Hypsipetes madagascariensis*	Black Bulbul	Khusroon
53	*Lanius excubitor*	Great Grey Shrike	
54	*Lanius schach*	Rufous-backed Shrike	Lindi
55	*Lonchura punctulata*	Scaly-breasted Munia	
56	*Lophophorus impejanus*	Himalayan Monal	Lanth or Murgh Zarren
57	*Lophura leucomelana hamiltonii*	Kaleej Pheasant	Pan Kukar
58	*Luscinia pectoralis*	Black-breasted Rubythroat or West Himalayan Rubythroat	
59	*Megalaima asiatica*	Blue-throated Brbet	
60	*Megalaima virens*	Great Barbet	-

S No	Scientific name	Common name	Local name
61	*Melophus lathami*	Crested Bunting	Kundkoo
62	*Monticola cinclorhyncha*	Blue-capped Rock Thrush	-
63	*Monticola rufiventris*	Chestnut-bellied Rock Thrush	
64	*Monticola solitaries*	Blue Rock Thrush	Dora
65	*Motacilla alba*	White Wagtail	Chidi
66	*Motacilla cinerea*	Grey Wagtail	Chidi mabola
67	*Motacilla citreola*	Yellow-headed Wagtail	Chidi
68	*Motacilla flava*	Yellow Wagtail	Chiddi mabola
69	*Muscicapa sibirica*	Sooty or dark-sided Flycatcher	
70	*Muscicapa striata*	Spotted Flycatcher	
71	*Muscicapa thalassina*	Verditer Flycatcher	
72	*Mycerobas carnipes*	White-winged Grosbeak	
73	*Mycerobas icterioides*	Black and Yellow Grosbeak	-
74	*Myiophoneus caeruleus*	Blue Whistling Thrush	Koel
75	*Nucifraga caryocatactes*	Nutcracker	
76	*Oriolus oriolus*	Golden Oriole	Peelhan
77	*Orthotomus sutorius*	Common Tailorbird	Pitha
78	*Parus major*	Great Tit	Pitha
79	*Parus melanolophus*	Crested Black Tit	Pitha
80	*Parus monticolus*	Green-backed Tit	
81	*Parus rufonuchalis*	Black Crested Tit	Pitha
82	*Parus xanthogeny*	Yellow-cheeked Tit	

S No	Scientific name	Common name	Local name
83	*Passer domesticus*	House Sparrow	Chidi
84	*Passer rutilans*	Russet Sparrow	Chidi
85	*Pericrocotus ethologus*	Long-tailed Minivet	
86	*Pericrocotus flammeus*	Scarlet Minivet	Guddi
87	*Pericrocotus roseus*	Rosy Minivet	
88	*Phoenicurus phoenicurus*	Common Redstart	-
89	*Phylloscopus affinis*	Tickell's Leaf Warbler	
90	*Phylloscopus collybita*	Common Chiffchaff	Pitha
91	*Phylloscopus inornatus*	Yellow-browed or Hume's Leaf Warbler	
92	*Phylloscopus magnirostris*	Large-billed Leaf Warbler	-
93	*Phylloscopus proregulus*	Lemon-rumped leaf warbler	
94	*Phylloscopus trochiloides*	Greenish Warbler	
95	*Phylloscopus tytleri*	Tytler's or Slender billed Leaf Warbler	
96	*Picus squamatus*	Scally-bellied Woodpecker	Mahi
97	*Prinia criniger*	Brown Hill Warbler	
98	*Prinia inornata*	Plain Prinia	Pitha
99	*Prunella collaris*	Alpine Accentor	
100	*Prunella strophiata*	Rufous-breasted Accentor	
101	*Psittacula krameri*	Rose-ringed Parakeet	Tota
102	*Pucrasia macrolopha*	Koklas Pheasant	Pehagar

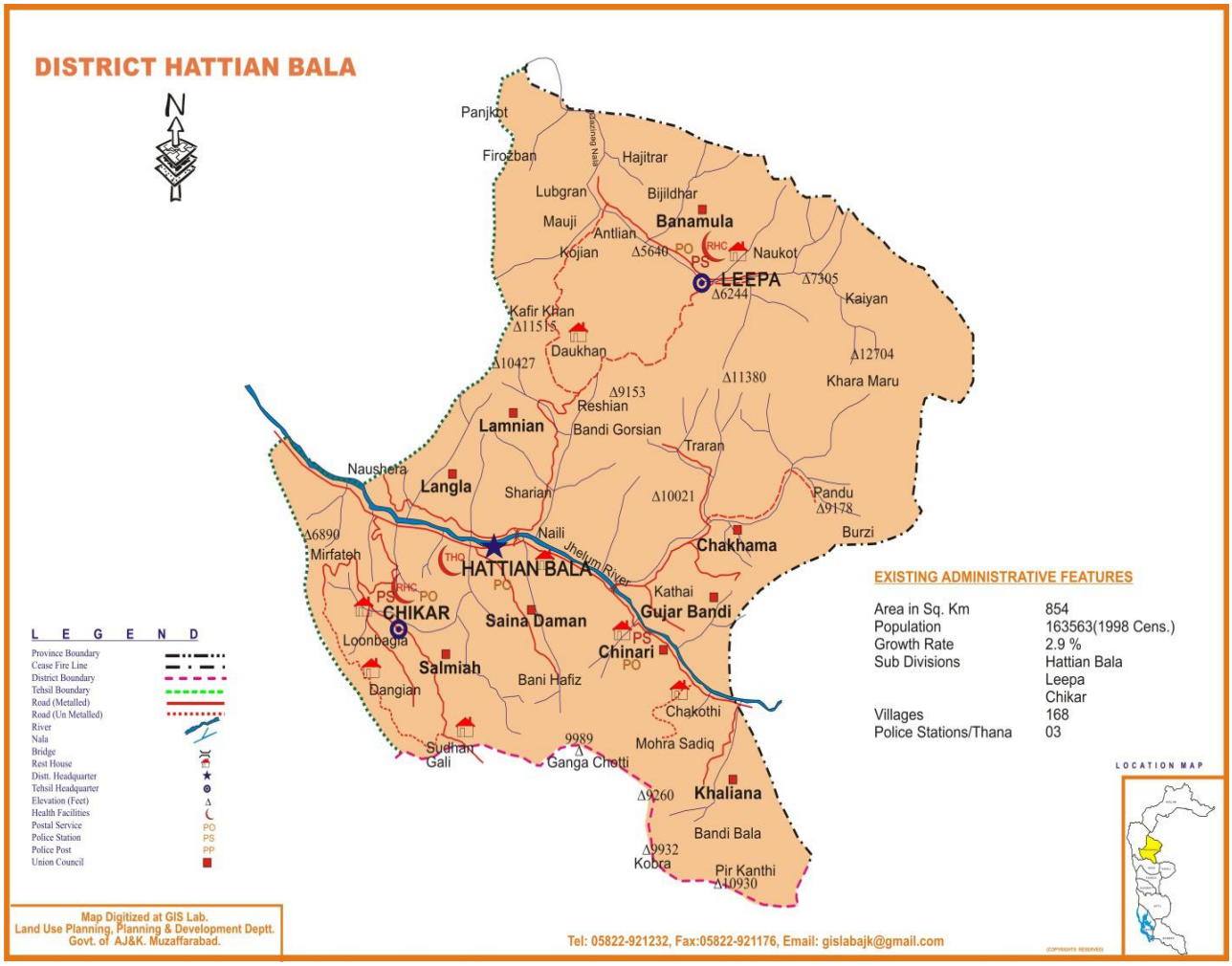
S No	Scientific name	Common name	Local name
103	*Pycnonotus cafer*	Red-vented Bulbul	Khursoon
104	*Pycnonotus leucogenys*	White-cheeked Bulbul	Khursoon
105	*Pyrrhocorax graculus*	Yellow-billed Chough	-
106	*Pyrrhocorax pyrrhocorax*	Red-billed Chough	
107	*Regulus regulus*	Goldcrest	-
108	*Rhipidura albicollis*	White-throated Fantail Flycatcher	-
109	*Rhyacornis fuliginosus*	Plumbeous Redstart	-
110	*Riparia riparia*	Collard Sand Martin	
111	*Saxicola caprata*	Pied Bush-Chat	-
112	*Saxicola ferrea*	Grey Bush-Chat	
113	*Saxicola torquata*	Stonechat	Phtha Chidi
114	*Seicercus xanthoschistos*	Grey headed flycatcher warbler	-
115	*Sitta cashmirensis*	Kashmir Nuthatch	Tuktuka
116	*Sitta leucopsis*	White-cheeked Nuthatch	
117	*Streptopelia chinensis*	Spotted Dove	Kogi
118	*Streptopelia decaocto*	Collard Dove	Kogi
119	*Streptopelia orientalis*	Oriental Turtle Dove	Kogi
120	*Streptopelia tranquebarica*	Red Turtle Dove	Kogi
121	*Strix leptogrammica*	Brown Wood Owl	Ulloo
122	*Sturnus pagodarum*	Brahminy Starling	Turk Sharik
123	*Sturnus vulgaris*	Common Starling	Tiliar
124	*Tarsiger cyanurus*	Orange-flanked Bush Robin	-
125	*Terpsiphone paradise*	Asian Paradise	Dood malai

S No	Scientific name	Common name	Local name
		Flycatcher	
126	*Tetragallus himalayensis*	Himalayan Snowcock	Ram Chukar or Pharal
127	*Tragopan melanocephalus*	Western Tragopan	Dangir
128	*Turdus philomelos*	Song Thrush	
129	*Turdus ruficollis*	Dark-throated Thrush	
130	*Turdus unicolor*	Tickell's Thrush	
131	*Turdus viscivorus*	Mistle Thrush	
132	*Upupa epops*	Common Hoopoe	Hudhud Chiryoo ka Badshah
133	*Urocissa flavirostris*	Yellow-billed Blue Magpie	Chinchara
134	*Zosterops palpebrosa*	Oriental White-eye	

(Source: Ornathological baseline study in Machiara National Game Reserve by Dr. Azhar Hassan, 2004, & Thesis on Game Reserve by Masood Ahmed Qureshi 1996-98)

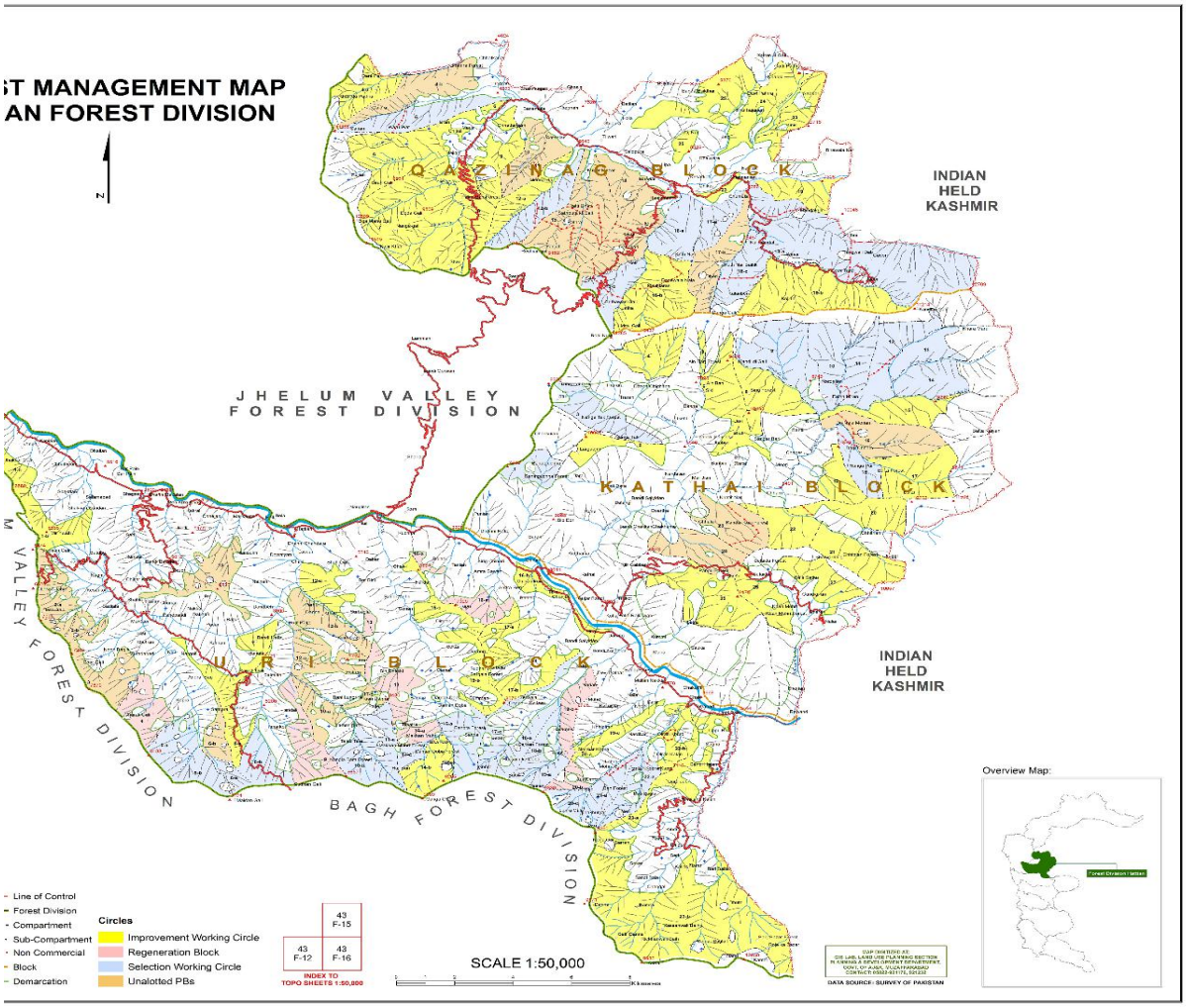
Appendix-3

Map of Hattian district



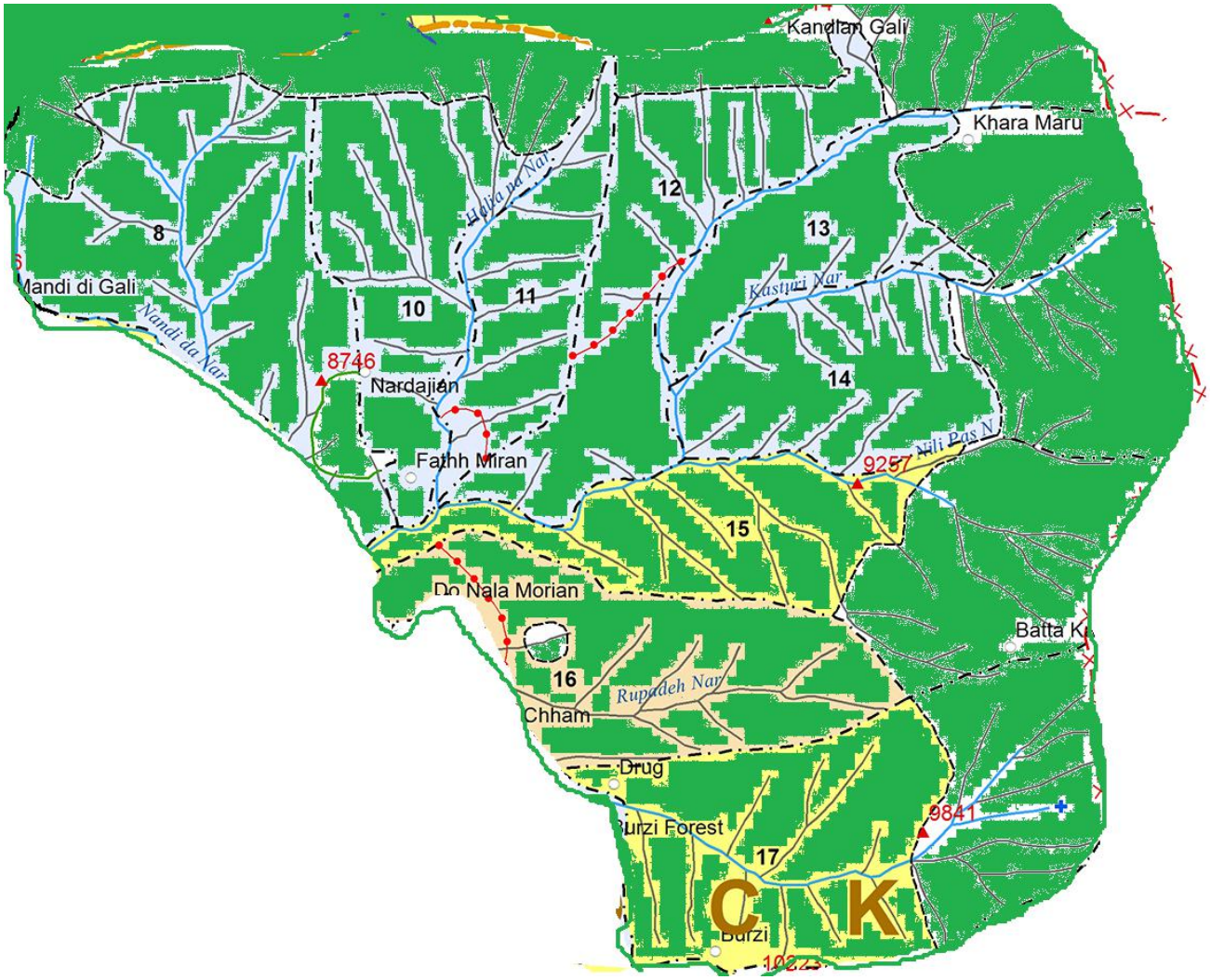
Appendix-4

Map of Jhelum Forest Division



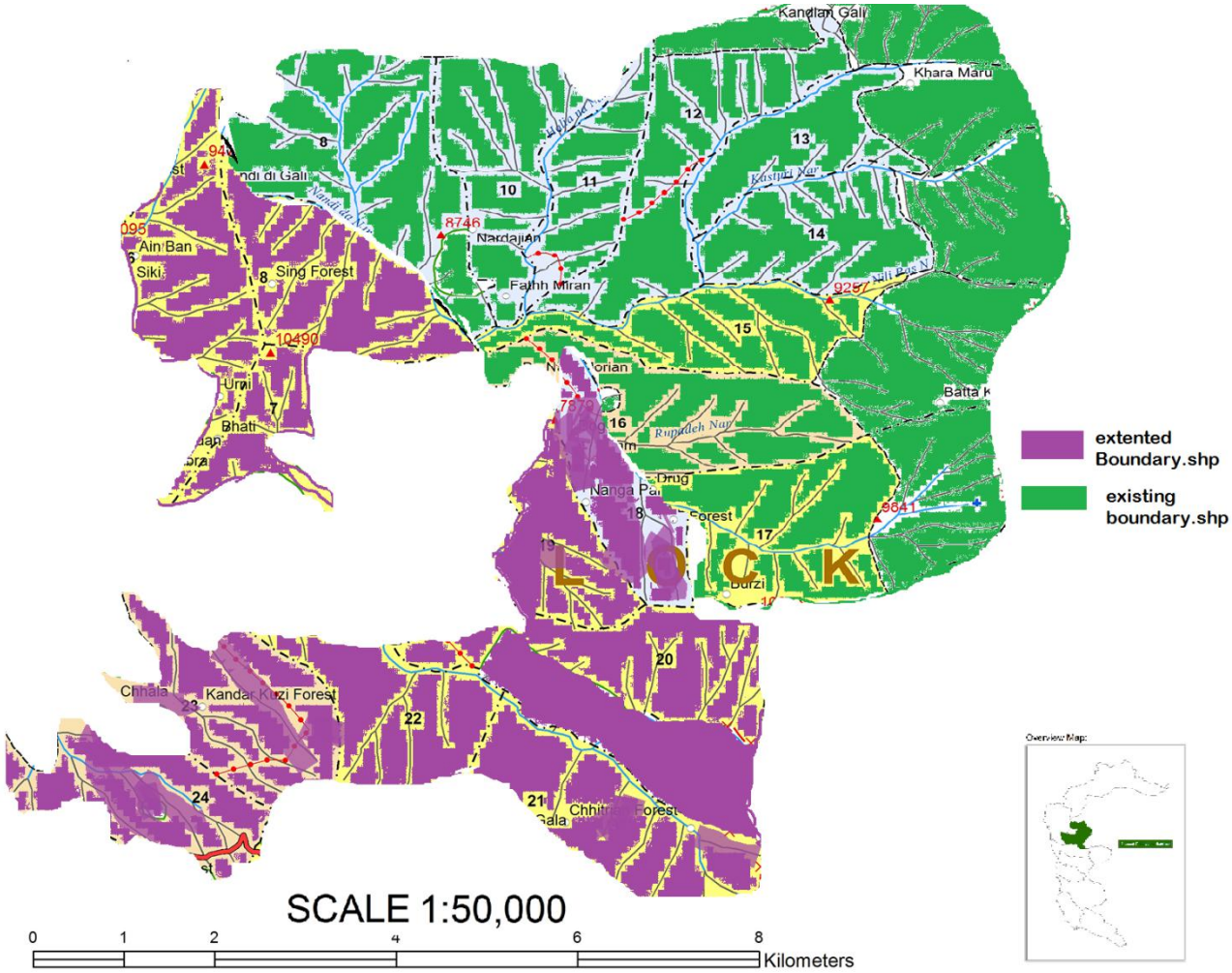
Appendix-5

Map of Existing Qazi Nag Game Reserve



Appendix-6

Map of Existing and Proposed extended Game Reserve of Qazi Nag



Appendix-7

Road to Qazinag Game Reserve