

[REPORT ON WINTER SEASONAL WILDLIFE SURVEYS IN CENTRAL KARAKORAM NATIONAL PARK]



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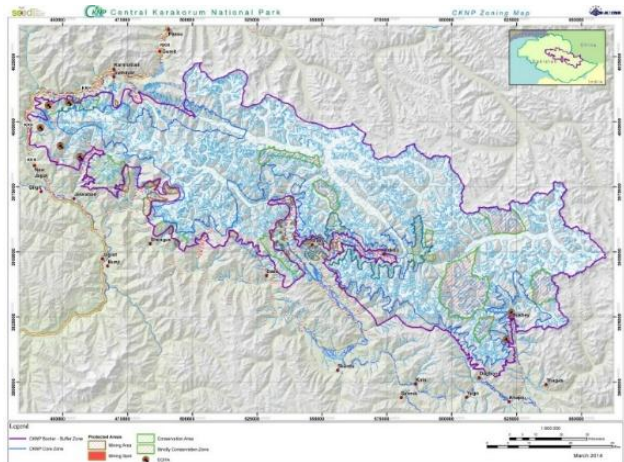
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1. ABOUT THE CENTRAL KARAKORAM NATIONAL PARK:

The Central Karakoram in the Northern Area of Pakistan is a mountain area endowed with rich biodiversity, natural beauty and important resources. The Park compasses the world's largest glaciers, outside the Polar Regions. It was declared as the National Park in 1993, today it is the largest protected area of Pakistan, covering over 10,557.73 Km² in the Central Karakoram mountain range and one of the highest parks all over the world, it is characterized by extremes of altitudes that range from 2,000 m a.s.l. to over 8,000 m a.s.l., including K2, the second highest peak in the world. It falls into four administrative districts of Gilgit-Baltistan (Ghanche, Skardu, Gilgit and Hunza/Nagar). In order to facilitate the maintenance of Central Karakoram National Park ecological integrity while, at the same time, providing sustainable management opportunities for local communities and visitors, a zoning system has been introduced.



This consists of two main zones, the Buffer Zone and the **Core Zone**, for a total of 10,557.73 Km². The Buffer Zone, which is part of the Park and the Core Zone, which includes areas with a higher degree of protection and corridors for tourists with basic facilities.

The **Buffer Zone (BZ)** is supporting a harmonic interaction between nature conservation and the use of the natural renewable resources through a sustainable way. This promotes the conservation of landscapes, traditional forms of land use, together with social and cultural features. It is considered a part of CKNP and is spreading for about 2,950.9 square kilometers. It is not continuous around the whole Park, but it is present mainly near the human settlements and near to the areas where there are unsustainable activities and therefore a transition zone is needed. The **Core Zone (CZ)**, with a surface of about 7,606.83 square kilometers aims at preserving a unique ecosystem, representative of the CKNP area. It is populated by important species, where long-term conservation and preservation have to be ensured. On the one hand, this area is impressive both for flora and fauna, on the other hand, the presence of a relevant number of high peaks, many of them over 7.000 m, and glaciers covering about the 38% of the whole Park surface, is attracting a relevant number of visitors. To preserve the nature integrity, the Park has designated specific corridors where tourists are allowed to enter, with basic facilities to reduce as much as possible their impact on this fragile, yet highly valuable, zone.

The purpose of establishment of this park is to protect and manage the flora and fauna of the area in its natural state with more than adequate emphasis on protection of rare

and endangered wildlife species and socio-economic wellbeing of the resident population by promoting eco-tourism in the area.

2. WILDLIFE OF CENTRAL KARAKORAM NATIONAL PARK:

The CKNP is a refuge area not only for threatened species, i.e. Markhor, Musk deer, Ladakh urial, and snow leopard, but also for not threatened but important “flag” species, i.e. Himalayan Ibex, Lynx and Wolf. The CKNP was proposed in the early 90’s of the XX Century to protect the major mountain massifs, watersheds and glaciers of the Central Karakoram region and to form a contiguous conservation area with the Kunjerab National Park and the Deosai National Park. In practice, the status of the threatened large mammal species inhabiting the Central Karakoram National Park was almost unknown at the beginning, but now assessments results indicate that numbers of the Snow leopard and especially of Markhor are very low and close to their biological threshold. Over-hunting, habitat loss and isolation of small populations have probably been the main reasons for this depletion. Himalayan Ibex has distribution all over the park area with good numbers in Hushey, Braldo, Basha, Hopper and Hisper.

MAMMALS

Himalayan Ibex:

The coat colouration varies widely across ibex’s range. The general colour of the pelage is a light tan, with the undersides lighter. In winter, mature males become much darker, with varying patches of white on the neck and back. Males have a beard. Both sexes have horns. Females show slender, shorter, backward curving horns, while males have massive horns, flattened on their front edge and roughly triangular in cross section. It has a great economic value for local inhabitants of the region as it is offered for Trophy hunting in the CCHAs where it has a viable population thus communities earn substantial amount of money by protecting this animal.



Range/Habitat and Distribution in Baltistan: Usually living at high elevations ranging from 3500m to 5200m a.s.l. widely distributed throughout the high pastures of Gilgit-Baltistan and the CKNP. In CKNP it has good population in Hushey, Thalley, Basha, Braldo, Hopper and Hisper valleys.

Markhor- (*The National animal of Pakistan*):

A large wild goat, formerly found throughout the mountains from Kashmir and Turkestan to Afghanistan, but now greatly reduced in numbers and range. Habitat loss overhunting (for meat and trophies), and competition with livestock are the main causes of its decline. The markhor stands about 95–102 cm at the



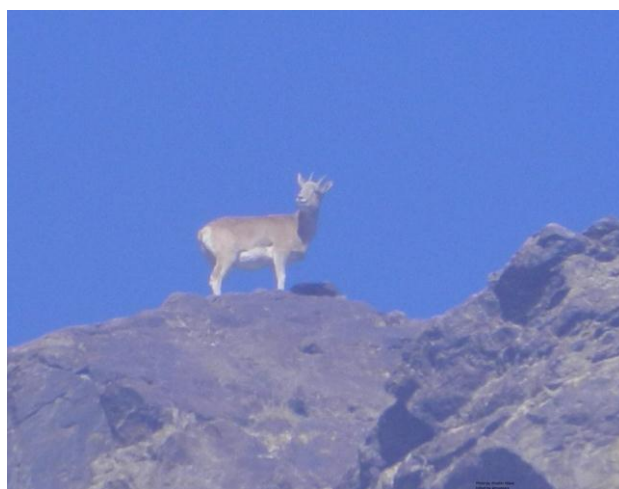
withers and has long corkscrew-shaped horns. Its coat is reddish brown in summer and long, grey, and silky in winter. The male has a long, heavy fringe on its throat and chest. This animal is also offered for Trophy hunting in the CCHAS lying in/around CKNP i.e Skanadarabad and Haramosh where trophy hunting of 1 individual each has been conducted in last 2 years. Communities are well persuaded to protect Markhor as they earn substantial amount through trophy hunting community share 80% out of 75000US Dollars.

Range/Habitat and Distribution in CKNP: Markhor is found in sparsely wooded mountainous regions in the western Himalayas at an elevation of 1500-3600m. The Markhor is not well adapted to higher mountain slopes where snowfalls are abundant, as the ibex. On the contrary, it is well adapted to live in very arid mountains with scanty food resources. Other sub species of Markhor occur in the major mountain ranges of central to northern Balochistan; farther north, there are thinly scattered populations of Kashmir and Astor Markhor in Chitral and Gilgit-Baltistan. In CKNP it is confined to the south western boundaries having population in pockets from Burumdai Haramosh to Chanas Skandarabad. It is found in Sassi Haramosh, Danyore, Jutal, Rahimabad, Juglot (in District Gilgit) and Skandarabad (in District Nagar). It is also reported to be found in Baghicha Khomera Roundu (in District Skardu). The population in Haramosh was considered extinct by Arshad (2011) but in winter 2011; 9 markhor were observed here (Yasir Abbas, Athar A. Khan, pers. inf. 2014), possibly due to natural re-colonization. Markhor population in Haramosh valley is basically confined to a specific habitat from Hurban area (Sassi village to Burumdai Nullah) but some individuals have been sighted also in Ashogah Khaltaro and Barchi areas. In winter (December) 2012 forty five (45), winter (December) 2013 thirty three (33) and in spring (May) 2014 twenty (20) Markhor were sighted during the surveys conducted by CKNP Directorate. After communicating these sighting reports to Markhor (IUCN Red list) assessment team, distribution of Markhor in Haramosh has been reported internationally by the IUCN Red list. During the current survey 44 Markhor have been sighted by CKNP team.

Ladakh urial:

The urial is a medium-size wild sheep. The face is generally greyish, the long slender legs and belly are creamy-white while the body fur is a reddish-grey colour. Adult rams show a chest ruff, predominantly white in the throat region and black as it extends down to the sternum. In summer coat the ruff is much shorter, but still conspicuous. Urial males have large horns, curling outwards from the top of the head, turning in to end somewhere behind the head. On the contrary, females have shorter, compressed horns.

Range/Habitat and Distribution in CKNP: Urial sheep inhabit steep to undulating grassy terrain, to an elevation



of 3500m a.s.l. Urial are generally found in arid countries, at relatively low altitudes. They usually live in open habitats, with few or no trees, but there are indications that this may be a recent adaptation to changing environmental conditions and that the urial was originally more of a woodland animal than at present. Urial graze mainly on grass, but they may also feed upon a variety of forbs and leaves from shrubs and trees. In CKNP is found in Golap Dumurdo Upper Braldo in District Shigar and also reported from Chamogarh to Juglot gooro area District Gilgit.

Musk deer:

Musk deer are primitive deer, not having antlers, but a pair of tusklike upper canines. Both sexes have well-developed upper canines, and in males these grow 7-14 cm (3-5 inches) long and protrude from the mouth in a fang-like manner. The canines are constantly growing, but, they are also easily broken, due to their mobility and fragility. It looks like a small deer with a stocky build, and hind legs longer than front legs. The general colour of the coat is a slightly grizzled dark brown. The ears are large and rounded, generally lined with whitish fur. The musk gland is found only in adult males. It lies in a sac located between the genitals and the umbilicus, and its secretions are most likely used to attract mates and mark the territory. Musk deer have been hunted for their scent glands which can fetch up to U.S. \$45,000/ kg on the black market. It is rumoured that scent of the musk deer is an aphrodisiac. In CKNP It is found in Haramosh District Gilgit and Baghicha Khomera, Tormik, Wazir pur/Ghulabpur, Arindu Basha valley Shigar District Skardu.



Snow leopard:

Snow leopards are large cats, most active at dawn and dusk. They have long thick fur, from smoky grey to yellowish tan, with whitish underparts, and dark grey to black open rosettes on their body (with small spots on their heads and larger spots on their legs and tail). Snow leopards show adaptations to live in cold mountainous environments: stocky bodies, thick fur, small and rounded ears to decrease heat loss from the body. Their feet are large, and the tail is long and flexible, which helps them to maintain their balance while chasing prey in precipitous terrain.



Range/Habitat and Distribution in CKNP: In summer above tree line, on mountainous meadows and rocky areas i.e; (2700 to 6000m above sea level) while in winter descends down to an altitude of around 2000 m above sea level (a.s.l). Snow leopard is found in 12 countries of Asia, especially in Himalayas, Altai mountains and Hindu Kush.

It has distribution in almost all areas in CKNP with maximum population in Hushey, Basha, Braldo, Baltoro & Biafo glacier areas, Haramosh, Hopper and Hisper valleys.

Lynx:

Lynxes have very short tails, with long powerful legs and large paws. The short tail has a thick black tip, but no black rings above. Their ears terminate in long, black hair tufts, and their cheeks are framed by longer white and black hair. Their overall body colour is silvery grey, with reddish under fur, showing more reddish tones in summer coat. Immature lynxes have black spots all over the body, which fade with age, although some adults still show faint spots on the outside of the upper limbs and forehead. In CKNP it is reported to be found in Basha shigar and Haramosh.

Brown bear:

Brown bears have furry coats in shades of blonde, brown, black, or a combination of these colours. The longer outer guard hairs of the brown bear are often tipped with white or silver, giving a "grizzled" appearance. Their heads are large and round with a concave facial profile, a characteristic used to distinguish them from other bears. Like all bears, brown bears are plantigrades and can stand up on their hind legs for extended periods of time. Males are 40-50% larger than females. In CKNP it is reportedly found in Hoo Nulah and Biafo Glacier areas (District Shigar) having few individuals.

Wolf:

The Indian wolf (present in Central-South Pakistan) is smaller in size than the Tibetan wolf (Northern Areas). The wolf is greyish brown (the Indian one) to creamy (the Tibetan) in colour, with paler legs and face and the upper back and dorsal surface of tail with black hair. The front feet have five toes, the inner one being vestigial (not visible in pugmarks), and the hind feet have four toes. Claws are irretractable. In CKNP it is found in Shigar, Basah and Braldo, Tormik, Astak, Haramosh, Nagar areas.

Red fox:

Red foxes have elongated bodies and relatively short limbs. They are the largest species of the genus *Vulpes*. In the typical red morph, their coats are generally bright reddish-rusty with yellowish tints. A stripe of weak, diffuse patterns of many brown-reddish-chestnut hairs occurs along the spine. Two additional stripes pass down the shoulder blades which, together with the spinal stripe, form a cross. The lower back is often a mottled silvery colour. The flanks are lighter coloured than the back, while the chin, lower lips, throat and front of the chest are white. The remaining lower surface of the body is dark, brown or reddish. The upper parts of the limbs are rusty-reddish, while the paws are black. The top of the tail is brownish-reddish, but lighter in colour than the back and flanks. The tip of the tail is white. It is widely distributed in all areas of Central Karakoram National Park.

Corsac fox:

The appearance of the Corsac fox is fairly typical among the *Vulpes* species. It is grey to greyish-red in colour with silver undertones. The underparts are white with yellow undertones. The back is intensively hoary-reddish. The tip of the tail is black.

Cape hare:

The Cape hare is a herbivore, typically eat grass and shrubs of various types. Like other hares, they are fast. The only predator which is capable of outrunning them is the cheetah. It is native species of Pakistan and widely distributed in whole Gilgit-Baltistan; ranging from villages to approx. 3500 m. a.s. l. In CKNP it is common in Shigar valley, Rondu, Kanday areas.

Stone marten:

Stone martens are long, slender, short-legged mustelid predators with long, bushy tails. Their brown coats have a forked white marking at the throat. Its nose is of a light peach or grey colour. Its feet are not so densely furred, thus making them look less broad, with the paw pads remaining visible even in winter.

Golden marmot:

Marmots are large rodents, with flat head and short neck. Their body shape and size reflect the partly subterranean life, being streamlined and flexible: marmots are capable of pushing their way through narrow holes. Hind legs are shorter than forelegs. The large eyes are close to the top of the head, allowing the animal to see the terrain above ground while remaining inside the burrow. Ears are small and barely extend beyond the fur. Long whiskers are located on checks, lower jaw, around the nose, and eyes.

BIRDS

The Gilgit and Baltistan Region of Pakistan has one of the most diverse avifauna of the mountain regions of the world, but unfortunately little information is available on the distribution, status and ecology of many of the bird species. Around 90 species of birds are known to occur in the CKNP in 13 families. Common snow cock, Chukar, rock pigeon, snow pigeon, oriental turtle dove, booted eagle, and common kestrel are among the common resident birds of the area. Common hoopoe, common cuckoo, common swift and Eurasian nightjar represent summer breeding birds of the



area. Hen harrier, Eurasian skylark, Spanish sparrow, Himalayan accentor, Eurasian goldfinch, and pine bunting are winter visitors to the area. Rare birds of the CKNP

include snow partridge, Himalayan Monal, golden eagle, alpine accentor, mountain finch, and Hume's Wheatear.

2.1. Threats and legal protection to Wildlife in CKNP:

Habitat Destruction, illegal poaching/hunting, competitions with livestock for food, climate change are considered as the major threats to the ungulates of CKNP. Some ungulates are listed in appendix I of CITES while some are in appendix II. Carnivores like Snow leopard and wolf face poaching, loss of habitat, loss of food sources and global warming are the major threats to this species. These are also protected under the CITES Appendix 1, endangered species Act and Provincial Wildlife Act of Gilgit-Baltistan. Strict watch and ward measures, awareness raising and community involvement in its conservation is needed as these carnivores face retaliatory killing by human and hunted when these attack on their livestock. Livestock insurance schemes are proposed to improve carnivores conservation in the long run. Within Pakistan different level of wildlife protection in different protected areas are adopted. In Gilgit-Baltistan wildlife is protected under the Northern Areas Wildlife Preservation Act-1975. Strict watch and ward is practiced jointly by the Government and respective communities particularly for the animals which are offered for Trophy hunting. Like Markhor is the most precious among the animals offered by the Government for Trophy hunting as its price goes up to 75000 US\$/animal. Such programs shall be extended to other potential habitat of Markhor and Ibex in/around park while notifying them as CCHAs for their further conservation and protection in whole range.



2.2. Issues and Challenges for Wildlife protection in CKNP:

Following are considered as the major challenges and issues for the wildlife protection in CKNP

- ✓ Vast area of park having fragile and fragmented mountain ecosystems
- ✓ Lack of conservation awareness among the communities and high dependency on natural resources.
- ✓ Lack of field staff for strict surveillance in order to control illegal hunting

- ✓ Lack of resources in public sector for wildlife conservation.
- ✓ Lack of effective enabling policies for collaborative management.
- ✓ Ownership issues/policies for wild resources in the state
- ✓ Predator species have adverse effects on livelihoods of local communities, i.e. loss of livestock-results retaliatory killing
- ✓ Lack of facilities and modern technologies and equipment to monitor wildlife
- ✓ Lack of incentives for communities
- ✓ Lack of sustainability of activities related to wildlife protection
- ✓ Inadequate funds for conservation of wildlife programs/activities
- ✓ Lack of communication facilities in the far flung areas
- ✓ Out dated wildlife act (1975) need to revise the punishments and penalties/ endorsement of draft Gilgit-Baltistan Wildlife Management Act -2011

3. ECOLOGICAL ZONES/SETTINGS IN CKNP:

The great altitudinal range and the climatic conditions, low precipitation and the effects of westerly humid winds, have carved out distinctive ecological zones, which have been identified on the basis of researches on vegetation and on the rich faunal component associated to each zone. The distribution of natural vegetation is closely linked to climatic and topographic conditions. The decreasing diversity in natural vegetation towards the north, it is due to increasing aridity; thus, the expansion of forests declines northwards. A major cause of this, it is the significant difference in precipitation, humidity, and the varying periods of snow coverage. The vegetation of lower sub alpine areas is influenced by arid to semi-arid conditions, whereas plants of the alpine and sub-nival level are influenced by humidity. Each valley in CKNP provides agricultural lands and pastures at several distinct altitudinal levels. Most of the cultivated area and major settlements are along the beds of the major rivers, crops include Wheat, Maize and Potato while Apricot and Pomegranate are the most common fruit trees of the orchards. Poplar plantation is very common within the cultivated areas and also as separated plantation for domestic timber use.



Alpine Dry Steppe (Artemisia-Steppe): The heterogenous moraine and gravel base of the valley floor and lower slopes are covered by sparse grass and bush lands and represent the lowest vegetation zone. According to the predominant scrub-species it is also referred to as Artemisia-Steppe.

Sub-alpine Scrub Zone: Riverbanks covered by scrubs and tree patches are located in the Sub-Alpine Scrub zone. They are distributed in narrow belts along streams, often bordering with small ravines on upper slopes. The Sub-Alpine Scrub zone is important for both livestock and mountain ungulate species like markhor, Himalayan ibex, and Ladakh urial, and it is also considered to be an important summer grazing ground for these species. The vegetation of this zone is represented by small deciduous species.



Alpine Meadows and Alpine Scrub Zone: The areas, accessible only during the peak summer season, host a semi-humid steppe with 'open' to 'semi-closed' forest in the lower-lying areas of this Eco region (Intermediate pastures).

Permanent Snowfields and Cold Deserts (Sub-Nival and Nival Zones): In the high alpine and sub-nival zone at altitudes of about 4,200 m-5,100 m, patchy and sparse alpine vegetation forms final grassy seats that are accessible only in July and August.

4. FLORA/VEGETATION IN CKNP:

The vegetation of Central Karakoram National Park covers only a small percentage of the park area (14.7%). High elevation, coldness, and the rough topography, indeed, restrict the area suitable for plants establishment. In particular, temperature is a limiting factor at higher elevations (above 4500 m) while insufficient water availability during the growing season is impeding plants growth at lower altitudes (below 2000 m, where natural vegetation is mainly found around water bodies as streams or lakes). Additionally, vegetation has been affected by the millennium-old human and livestock presence. Nevertheless, different vegetation types grow in the CKNP and they are of major importance both for ecological reasons (e.g. as habitat for wildlife, biodiversity conservation) and for the sustainment of local communities (e.g. for the provision of grazing ground, firewood, timber). Additionally environmental services like protection from soil erosion, regulation of water quantity and quantity, nutrient recycling are being provided.



The plant communities present in Central Karakoram National Park are of particularly interest since the park location in the transition zone between sub-tropical humid condition to the south and continental dry climate of northern areas. Indeed, inside the

CKNP borders, this transition is evident moving from southwest towards northeast. CKNP can therefore ideally be divided into two main ecological zones: a southwest part, around Gilgit district, which is relatively warmer and partially influenced by the summer monsoon and the northeast part, felling mostly in Skardu district which is characterized by a more continental climate (Treydte et al., 2006). This climate patterns have a major influence on vegetation characteristics and distribution: it is of particularly interest to deeply evaluate the effect of climate transition on the CKNP forest resources, especially for their importance in the livelihoods of local communities. Overall, the South-Western sector is characterized by a forest composition and structure which is richer both in area, biomass and species. Most of the largest forest of CKNP are located in the Southern lateral valleys of the main Gilgit river valley (with few exceptions on the southern border of CKNP along Indus river).

Good examples of those rich forest ecosystems can be found in Haramosh, Khaltaro, Bagrote, Jaglot Gor and Astak valleys among others. On the contrary, in the North-Eastern valleys, mainly plant adapted to cold and xeric environment can be found. Forest cover is more fragmented and sparse with lower densities, stand biomass and increments. Forests areas here are therefore more scattered. Vegetation types, which partially follow the classification proposed by Champion et al. (1965), have been formulated according to the species composition and, therefore, as a consequence of the most prominent ecological processes shaping their geographic distribution. Overall, inside the CKNP limits 4 forests and 3 shrub-lands types can be recognized.

Starting from the valley bottom and gradually increasing altitude the following vegetation belts can be found:

<u>Vegetation type</u>	<u>Altitude</u>	<u>Description</u>
<i>Riparian vegetation</i>	A-zonal distribution	Tree species as Willow (<i>Salix</i> spp.), Poplars (<i>Populus</i> spp.) and Sea-Buckthorns (<i>Hippophae</i> spp.) are common, often cultivated, along streams and river.
<i>Xeric vegetation</i>	< 2200 m	Plants adapted to very dry environment as <i>Capparis</i> , <i>Ephedra</i> and <i>Carduus</i> .
<i>Artemisia shrub land</i>	< 2600 m	This vegetation belt, common all-over the CKNP, is mainly composed by <i>Artemisia</i> shrubs.
<i>Juniperus shrubs/forest</i>	SW CKNP: < 3000 m NE CKNP: 2800 – 3800 m	<i>Juniperus</i> , the main source of firewood for local communities residing in CKNP, are distributed all over the park usually on dry – less fertile soils.
<i>Mountain dry temperate coniferous forest</i>	3000 – 3800 m	Stands of Pine (<i>Pinus wallichiana</i> , Kail) and spruce (<i>Picea smithiana</i> , Kutwal) are frequent in the south-western valleys of the CKNP. Those forests are located on moist and fertile sites, at an average altitude between 3000 and 3800 m
<i>Sub-alpine broadleaved forest</i>	3300 – 3800 m	Stand composed by birch (<i>Betula utilis</i>) and/or willow (<i>Salix</i> sp.) are scattered at high altitude mainly on northern exposed valley sides. Harvesting of firewood is uncommon but birch were traditionally used for “paper” production.
<i>Alpine meadows and shrubs</i>	> 3900	The alpine pasture zone lies above the timberline, above 3900 meters. Indeed, at this elevation, cold temperatures do not allow the growth of trees. <i>Poa</i> and <i>Carex</i> genus are the most common plant members. Pastures provide ideal habitats for many important mammalian species.

FORESTS:

The forests inside the CKNP have been classified into 3 broad categories 1). Sparse trees, 2). Open forest and 3). Closed forest.

5. DESCRIPTION OF THE MAJOR CKNP VALLEYS SURVEYED:

HUSHEY.....(*The gateway to Ghandogoro la*)

Hushey valley is situated in the extreme east of Central Karakoram National Park at an altitude of 3050m. It is some 51 km north of Khaplu, the north beyond K-2, Siachen to the east, and Khaplu town to south and Thalley valley to the west. The valley is home to 960 individuals living in 150 households. The present Hushey valley is believed to be populated by nomads from Yarkand territory of Central Asia. But the names of their historical buildings constructed by the people are in Balti language indicating the dominance of Tibetan influence in the area.



Hushey is a tourist hotspot being located in the lapse of peaks viz., K-2, K-7, Masherbrum, Laila Peak and Ghundogoro La. Thus the valley provides tremendous tourist attraction in the form of treks to different peaks, pastures and glaciers. Facilities in Hushey or not many but the presence of a tourist class hotel, a small Guesthouses and couple of small shops, public transport, a basic health unit and electricity in such a remote part of the globe is quite satisfactory. Saicho camp site is an excellent facility with no match in the world. To have a distant view of K2, Broad Peak, Masherbrum, Cigarette Peak, and few other peaks of above 7000m one has to just trek 3-4 hours to Humberq from the Hushey village. Majority of the local population is associated with tourism, livestock herding stand at the top of economic activities. Wheat, potato, barley and peas are the crops while fruits include mulberry, apricot and apple. Hushey community has been protecting the wildlife, mainly the Ibex species and its habitats for a long time through imposing ban on poaching and cutting of green trees. One can avail a Trophy hunt of and above 36 inches Ibex and contribute to the development of the valley. CKNP Directorate has been implementing its field interventions in the valley in close collaboration with the VCC like, community mobilization, watch and ward, wildlife surveys and research, deputing game watchers, afforestation, fixing signage, constructing foot bridges along the streams, trails repair and maintenance and establish visitor information and registration center.

THALLEY.....(*The valley of pastures*)

Thalley valley is situated about 110 km from Skardu city and 40 km from Khaplu, the head quarter of district Ghanche at an elevation of 2623m. It is divided into two parts, upper Thalley and lower Thalley. Its population is 1100 souls living in 1246 households. It has an unpaved link road to approach and daily transport service to Skardu and Khaplu. Livelihood of the local people mostly



depends on subsistence agriculture and livestock rearing, few people are involved in tourism related activities. The valley falls in single cropping zone having wheat, potato, barley and peas while fruits include walnut, apricot, cherry, plum and apple. Tourist attractions of Thalley valley are in the form of treks to lakes including Sohzzgang, Khema and Baqma Longma Lakes, peaks, Thalley La (leading to Shigar), pastures and glaciers. Facilities in Thalley or not many but the presence of camping areas, couple of small shops, public transport, basic health units and electricity in such a remote valley is however satisfactory. Thalley community has been protecting the wildlife, mainly the Ibex species and its habitats for the last couple of years through imposing ban on poaching by the Local Support Organization (LSO) Thalley <http://lson.org.pk/iso-profiles/baltistan-region/thalley-local-support-organization/>. LSO Thalley aims at social welfare and development under different themes including environment and Natural Resources Management. It is an epic institution comprising of 17 VOs, 22 WOs, 9 CSOs and working in close collaboration with the NGOs and the government line departments including CKNP Directorate. People of this valley are hospitable and friendly and observe many local festivals like May fang, Noorfap etc.

UPPER BRALDO.....(*The valley of Peaks and Glaciers*)

The valley of Braldo is situated in Shigar District of Baltistan, at a distance of 135km from the district Headquarter Skardu, and is accessible by a link road. Braldo touches Hisper via Hisper La to the valleys of Shigar and Basha, respectively. In this remote valley dwell around 4404 people in 410 houses, scattered in ten small villages. Around 12 schools are present in the valley but literacy rate is still very low seldom exceeding 10% among males and hardly 2% in females.



Main sources of income are livestock herding, small scale agriculture and involvement in tourism. At pastures of the valley offer a good herding opportunity to the livestock herders owning over 21000 livestock heads. Wheat, barley, buck wheat and potatoes are the main crops of this single cropping zone, and variety of fruits like apple, apricot, mulberry, cherry and plums are grown here. Potato is the cash crop whereas; fresh and dried fruit are also sold by the locals to earn additional money.

Main tourist attraction are the famous Biafo Glacier, Baltoro Glacier and K2 peak and the highest cliffs in the world the Great Trango Towers, with many treks including the three famous ones namely, Sosbun, Skroro La and the 42km long Panmah Glacier trek Dumurdo area. Unique wildlife species of the valley such as Snow leopard and Ladakh Urial are the Centre of focus for researchers, conservationists and photographers 43 Ladakh Urinals have been sighted by CKNP watchers at Golap Dumurdo area. Himalayan Ibex has also good numbers in the catchment division of this valley. Brown bear is also reported to be found in some of the particular catchment divisions like Biafo and Dumurdo. Scenic pastures with patches of Birch and Juniper forest abound in aromatic and medicinal herbs like Artemisia and Sea buckthorn at to the ecological and aesthetic value of the valley.

Available tourist facilities are CKNP Visitor information and Registration center at Askoli Maidan, Askoli Museum, historical religious buildings, camping sites, porters, guides and some climbing equipment for rent. Also meat lovers can buy a sheep or a goat to enjoy a hot barbeque in the cold nights of Braldo. Fresh vegetables are available from the formers in summer, and one's interpersonal communication skills can do better than coins to get some of them for lunch.

BASHA.....(*The valley of Walnuts*)

Basha is another beautiful valley in the northwest of Shigar Tehsil of Skardu district, at a distance of 128km from the district headquarter, Shimshal valley to the north and Braldo to the east. The valley is comprised of seven typical Balti villages with a total population of 4539 people living in 563 houses. Accessible by a jeep able road, the valley has very little to offer to its inhabitants in terms of modern necessities, but the natural resources are abundant. The electricity supply is limited to only two villages. Eight primary schools offer primary education and three basic health units promise health and hygiene. With a low literacy rate of about 13% and limited opportunities, the people of Basha mostly depend on farming and mining to make both ends meet. Like other high valleys of the region, Basha too is a single cropping area where farmers grow potato, barley, wheat and buckwheat for subsistence. Potato also serves as cash crop. Livestock is the main source of cash income as the herders sell goats, sheep, cows, zomo (a cross breed of yak and cow) and yaks in market whereas the hides, hair and wool are used to make traditional rugs and costume called "Chara" and Nating in the local language. Gemstone mines in the mountains employ many of the Basha locals as miners and labors.



Basha is less famous for tourism than Braldu valley but is a good alternative to these. The foot bridges made of birch and settlements constructed with woven willow fronds and mud add to the aesthetic beauty of the valley. For the adventurers, Basha offers a five days trek on Chogo Lungma Glacier to Spantik Base Camp along with a chance to attempt the Mango Brak peak. Other easy treks to the scenic pastures can be enjoyed too. Of course, the five hours jeep drive from Shigar to Basha, itself is not less than an adventure. Porters and guides are available and basic necessities can also be purchased from the local shops.

ASTAK-TORMIK

Astak valley is along the Indus River on the Gilgit-Skardu road at an altitude of 2500m above sea level and is surrounded by the valleys of Nagar (N), Shigar (E), Skardu(S) and Heramosh (W). It is a cluster of six different villages, four of them accessible via paved road (Skardu-Gilgit road) while three are accessible by unpaved jeep able roads. Some 10791 Balti and Sheena speaking folks inhabit the valley living in 1205

households. Easy access to the valley has brought communication facilities to it. This valley seems quite developed compared to other remote valleys of Baltistan, with a hospital in the main village of Thowar. Almost every village has a primary school and electricity. Tormik is another union council of six villages situated in north western Baltistan and is home to 10456 individuals living in 1534 households. Majority of the people are Balti speakers with a small number of Sheena speakers. Major part of the valley falls under the double cropping zone accruing significant benefits to the local economy. Subsistence farming and livestock herding are the major livelihood sources followed by small scale shop keeping along the Gilgit-Skardu road. Gemstone mining on the rocky mountain walls makes up a significant portion of their local incomes. The valley folks have access to natural resources like pastures, glaciers agricultural inputs, ration and to sell their farm produce.



Astak and Tormik in the northwestern Baltistan are infrequently visited by tourists but attractions such as treks, passes, wildlife sighting and gemstone mines are there. Major treks re Ganto La (4 days), Astak La (5days) and Haramosh La (9 days) but these are extreme treks, suitable only for experienced and equipped adventurers. On the Ganto La trek one can enjoy a bath in hot water spring (39C) at Churtron. Tourist facilities include small hotels and restaurants including a PTDC Motel, a Public Call Office (PCO) and public transport for major towns of Gilgit-Baltistan.

HARAMOSH.....(*The valley of Gems*)

Haramosh is situated 40km northeast of Gilgit city, the first valley along Skardu road but the higher villages are accessible only by jeep able link roads. The valley has five main villages with a population of 8024 Sheena speaking people dwelling in 923 houses.



Although farming on the terraced fields and livestock rearing is the major income source but Haramosh has much more to offer its dwellers. The resources of natural forests in the valley are a cash crop besides providing the fuel wood to locals. Moreover, the centuries old geological activities have left this part of the region with deposits or crystalline gems these mines can get good price from the sale of gems in local markets and to third parties. Some individuals also serve in public and private sector organizations while a few work as daily wage labors. Majority of the local population is still associated with livestock rearing and subsistence farming.

The natural beauty and resource richness of Haramosh is enormous making it very popular among nature lovers and adventurers. Haramosh peak (7400m) and Malubiting (7450m) are the famous peaks; Baska and birch and blue pine forests with extended lush green pastures near Mani glacier. Some famous treks of the valley include Kutwal Lake (6-days) Haramosh Base Camp; Haramosh La(9-days) and Phuparash Glacier(2-days). Another historic place is a weathered stone in Bulodas village on which 14 men of Raja Gohar Aman (ruler of Gilgit) were assassinated half a century ago. The people still believe that the cracks in the stone are due to the bloodshed of those victims.



Sasi the nearest village is right on the bank of Indus River along Skardu-Gilgit road. Public transport and private jeeps can easily be accessed or hired from Sasi. Shops and small Pakistani food cafes are available here along the main road but not in the upper remote villages. Porters and a few local guides offer services to trekkers, climbers and visitors.

BAGROT.....(*The ancient valley of Gilgit-Baltistan*)

Bagrot valley is situated in the northeast of Gilgit and is a cluster of half a dozen villages. The distance from Gilgit to the start of this valley is 15km but the main village is a two hours jeep drive from Gilgit town. Around 5962 Sheena speaking Shia Muslims live in 807 households scattered in the valley at altitude ranging from 1700m to 2400m. The valley is surrounded by pine forests and sub alpine pastures ascending up to 4000m with the herders' summer settlements at higher altitudes.



The main economic activity is mountain agriculture and livestock herding, supported by cash income from government and military services. Wheat maize and potato are the main crops. Pastures provide fodder for livestock and medicinal herbs for locals. Opportunities of non-farm income are rare and families are migrating to lower elevations in search of jobs. Some people from the valley earn living by selling the fern from Hinarchi Glacier in Gilgit but use refrigerators in their own homes just next to the glacier! The physical features of Bagrot valley are outstanding. Peaks in the vicinity include Rakaposhi (7788m) in the northwest, Diraan peak (7269m) in the northeast and Dubani peak (6143m) in the east. Some easy treks in Bagrot are Sinakar-Danyore (3-days) and a day trek from Hopay to Bilchar to have a thrilling view of the 6143 meters Bilchar Dubani peak. The Hopay-Bilchar trek can be extended up to Haramosh valley across the 4600m Bilchar Glacier pass.

Local guides and porters are available in the valley while a small hotel called *SARAI/INN* with a scenic view of the Hinarchi Glacier and Rakaposhi peak awaits tourists. The two-room NAPWd guesthouse is the only tourist facility established by the local government. Toyota jeeps (Bagrot Express) serve as public transport from Gilgit to Bagrot on a daily basis but mostly overloaded!

RAKAPOSHI....(*The Rakaposhi peak view point*)

Basically this valley comprises of Ghulmat Union Council having 3 major villages Ghulmat, Pisan and Minapin along the main Karakoram Highway. It is situated in Nagar -II at a distance of approximately 100 km towards north of Gilgit city. It is home to 6250 Brusho people living in 890 houses, speaking shina and brushiski languages. This valley may be easily accessed via public transport from Gilgit (1 hour drive, after completion of new KKH) and Aliabad or jeeps can be hired from Gilgit. Residence facilities in Rakaposhi valley include Diran Guest House, Diran Guest House-II (Oosho thaang), Rakaposhi view point hotel, Rakaposhi paradise hotel. Small cafe, small shops of handicrafts, antiques, gems and jewelry also exist in the valley.



Ghulmat is a popular tourist attraction and hot spot in Nagar because of its scenic beauty of surrounding mountains like Rakaposhi peak (7788m) and Diran peak and some other peaks. Rakaposhi view point Ghulmat attracts almost the entire local, domestic as well as the foreign tourist to stop here to enjoy the spectacular view with a cup of tea at Rakaposhi view point hotel and the others. It is also a good point to capture and save the view from your camera eyes. Rakaposhi means “shining wall” in local language is also known as Dumani (“Mother of Mist”). It is ranked 27th highest in the world and 12th highest in Pakistan, but it is more popular for its beauty than its rank. Rakaposhi was first climbed in 1958 by Mike Banks and Tom Patey, members of a British Pakistan expedition, via the southwest spur/ridge route. Ghulmat is also known for of Astana (holy shrine) of Syed Shah Wali- a spiritual preacher of Islam in Gilgit-Baltistan. Mostly the local people visits Ghulmat for Ziarat of the holy shrine.

Minapin is known for its tourist attractions like Diran peak and Glacier, Rakaposhi Base camp and other hot spots like “Kachaili” and “Taga Fari” where a considerable number of trekkers visit annually for trekking and recreational activities, particularly students from different universities of Pakistan during summers. Taga Fari; a well-known tourist hot spot in the valley at a distance of 10 km from Minapin Guest House provides an awesome camping site and offers annual donkey polo festival from 25th July to 5th August every year. Professional tourist guides cooks, high porters and guides are available in the valley. Aaga Syed Yahya Shah Hussaini- a renowned pioneer nature conservation activist was born in Minapin village. He is the first person to introduce Trophy Hunting Program (THP) in Bar valley Nagar, which was supported by IUCN, WWF-Pakistan and Government of Pakistan and replicated by other communities and villages of Gilgit-Baltistan.

Agriculture is practiced by almost all the inhabitants of the valley while livestock rearing by few and some people are engaged in tourism related activities and small businesses while a few are working in the government and private sectors. The valley falls in the double cropping zone having wheat and maize as major crops. Ghulmat-Minapin community has been protecting the wildlife species and its habitats for the last couple of years through imposing ban on poaching by the Rakaposhi Local Support Organization (LSO). Rakaposhi LSO has objectives for social welfare and development of the valley by covering different sectors including environment and Natural Resources Management. It is working in close collaboration with the NGOs and the government line departments including CKNP Directorate particularly in watch and ward of wildlife, plantations, signage fixing, community awareness raising, surveys and research, Livestock vaccination campaigns etc. This valley has already been notified as Community Controlled Hunting Area (CCHA) by Gilgit-Baltistan Forest, Wildlife and Environment Department.

HOPER-HISPER

The valley of Hoper and Hisper is situated some 10km south east of Nagar-Khas (Tehsil Headquarters) in the south east of Karimabad, Hunza. Hoper village (3000m ASL) is a cluster of six small hamlets on the bend of Bualtar Glacier, sheltering around 2400 Bursho folks. According to the locals, Hoper was the first village of Hunza-Nagar inhabited by a person named "Hoye" in 700AD and later the population expanded to other parts of the present district but this tale is not supported by the historians.



Hisper; a sub valley of Hoper is at a distance of 40km east of Karimabad. At an altitude of 3653m ASL the valley is home to some 3300 individuals living in 300 households mostly believed to be immigrants from India during the Buddhist era. Tourist flow in the valley is high so the young people are mostly associated with tourism industry as high altitude porters, cooks and tourist guides. Hill farming and livestock rearing are practiced by almost all the inhabitants. Some people are related to small businesses while a few earn their bread from working in the government and private sectors. The valley falls in the single cropping zone and remains snow bound throughout the winter so the people stock food and fodder to survive during the harsh winters.

The longest glacial system Biafo-Hisper is the crown jewel of the valley and main attraction for the adventurers. Hisper Glacier (49 km) is the fifth longest glacier of the mighty Karakoram range that is connected to the second longest glacier Biafo (65km) by Hisper La (5151m). This extreme technical trek through the longest glacial system is 140km long and is usually trekked in 12 solid days by guided trekkers. The trek starts from Biafo in the Shigar valley of Baltistan but ends at Hisper in Nagar valley or vice versa. Other amazing treks of Hoper are Barpo Glacier (6-days) leading to Spantik Base Camp and Rush Phari Lake trek (5-days), with spectacular distant view of K-2, Hisper La and Hisper mustagh Peak. Rush peak (5048m) stands in the east of Barpo Glacier

while the high altitude Rush Lake nestles at 4700 meters height in this valley. The opportunity for trophy hunting and wildlife watching can also be availed here, thanks to the community based wildlife conservation programme facilitated by CKNP partners. Hoper and Hisper can be accessed via public transport from Gilgit and Aliabad or jeeps can be hired from Gilgit, Karimabad and Aliabad for a jeep safari. Residence facilities in Hoper include a small guest house of GBPWD, Hoper Inn and Hoper Hilton Hotel. Hoper Hilton provides an awesome camping site with tents but one may prefer to use his own tent as well. Professional cooks, high porters and guides are available in the valley. There is no hotel or café in Hisper so tourists are advised to carry all necessities, if they intend to stay at Hisper, from the nearby village Proper Nagar. CKNP has its visitor information and registration center established mainly to record the flow of trekkers during summers and skiers during winters as they came for snow-ski.

6. OBJECTIVES OF THE WINTER SURVEYS:

Directorate of Central Karakoram National Park has been implementing the CKNP standard wildlife research and monitoring protocol, jointly developed by CKNP, University of Siena Italy, WWF-P and Wildlife Department Gilgit-Baltistan in order to assess the wildlife species in the park catchment divisions and estimate the population of ungulates and carnivores frequently. As per protocol monthly wildlife assessment and bi-annual wildlife surveys have been proposed to conduct by prescribed methodologies agreed with the consensus. Keeping in view the facts bi annual wildlife surveys have been planned In CKNP PC-I (Phase-II) as well in order to continue the monitoring and watch and ward of the wildlife without any gap. The current surveys are part of Wildlife management sector under the PC-I Phase II so it has been conducted accordingly.

The preliminary objectives of the survey were:

- To count and estimate the population of Ungulates (Ibex and Markhor) in Central Karakoram National Park.
- Count Carnivores (Snow leopard and wildlife) and their pugmarks and other sign of presence in the valleys of CKNP.
- Asses the predations in the valleys.
- To record any other wildlife species observed during the survey period.
- To document the identified avi- fauna and flora of the surveyed areas



- To assess the habitat condition of the areas
- Enhance and strengthen collaboration with the wildlife department staff, WWF-P and the communities by conducting joint surveys.
- Awareness rising among the communities about the watch and ward of wildlife and to cope with the offences together if any in any area.

Apart from the above another important objective of these surveys is to conduct planned patrolling/surveillance in the park catchment divisions which helps control poaching of wildlife species, particularly during the winters when Ibex and Markhor come to lower elevations. Hunters take the opportunity to kill them when they are at low elevated areas.

7. SURVEY TEAMS:

Following were the survey teams for respective Districts and valleys of CKNP:

1. District Ghanche:



Hushey	<ol style="list-style-type: none"> 1. Mr. Najeebullah GI CKNP 2. Mr. Sakhawat Ali GW CKNP 3. Mr. Akhtar Hussain GW CKNP 4. Mr. Khadim Ali GW CKNP 5. Mr. Zamin Ali GW WL department GHE
Kanday	<ol style="list-style-type: none"> 1. Mr. Akhtar Hussain GW CKNP 2. Mr. Khadim Ali GW CKNP 3. Mr. Sakhawat Ali GW CKNP 4. VCC Kanday rep 2 5. Mr. Zamin Ali GI WL department GHE
Thalley	<ol style="list-style-type: none"> 1. Mr. Najeebullah GI CKNP 2. Mr. Gulzar Hussain GW CKNP 3. Mr. Mr. Abid Hussain GW 4. Mr. Abdul Ghafoor GW department GHE
Kharkooh	<ol style="list-style-type: none"> 1. Mr. Abid Hussain GW CKNP 2. Mr. Gulzar Hussain GW CKNP 3. Mr. Abdul Ghafoor GW department GHE

2. District Shigar:

Upper Braldo (1)	<ol style="list-style-type: none">1. Mr. Muhammad Ishaq GW CKNP2. Mr. Zaman Ali GW CKNP3. Mr. Muhammad Sharif GW CKNP4. Mr. Muhammad Ismail GW CKNP
Upper Braldo (2)	<ol style="list-style-type: none">1. Mr. Zaman Ali GW CKNP2. Mr. Muhammad Sharif GW CKNP3. Mr. Muhammad Ismail GW CKNP
Arindu & Basha	<ol style="list-style-type: none">1. Mr. Muhammad Jawad GW CKNP2. Mr. Sanaullah GW CKNP3. Mr. Sakhawat GW WL department Shigar
Shigar	<ol style="list-style-type: none">1. Mr. Sanaullah GW CKNP2. Mr. Muhammad Jawad GW CKNP3. Mr. Sakhawat GW WL department Shigar

3. District Skardu:

Tormik & Baghicha Khomera	<ol style="list-style-type: none">1. Mr. Roohullah GW CKNP2. Mr. Arif Hussain GW CKNP
Astak and Shengus	<ol style="list-style-type: none">1. Mr. Arif Hussain GW CKNP2. Mr. Roohullah GW CKNP

District Gilgit:

Lower Haramosh	<ol style="list-style-type: none">1. Mr. Muhammad Nisar GW CKNP2. Mr. Arif Hussain GW CKNP3. Mr. Zeeshan Haider GW CKNP4. Mr. Jibran Haider (PhD student)5. GW/GI WL department (2)6. WCSDO Haramosh rep. (1)
Upper Haramosh	<ol style="list-style-type: none">1. Mr. Muhammad Nisar GW CKNP2. Mr. Arif Hussain GW CKNP3. Mr. Zeeshan Haider GW CKNP
Bagrot	<ol style="list-style-type: none">1. Mr. Member Ali, GW CKNP2. Mr. Ansar Hussain GW CKNP3. Mr. Maqbool Hussain Forest department Gilgit4. Mr. Mubarak Ali GW WL department Gilgit
Batkor	<ol style="list-style-type: none">1. Mr. Ansar Hussain GW CKNP2. Ali, GW CKNP3. Mr. Member Irfan Haider KIU student4. Mr. Manzoom Ali, Community representative
Danyore	<ol style="list-style-type: none">1. Mr. Kifayat Hussain GW CKNP2. Mr. Tahir Hussain GW CKNP
Jutal-Rahimabad	<ol style="list-style-type: none">1. Mr. Kifayat Hussain GW CKNP2. Mr. Tahir Hussain GW CKNP
Juglot Gooro	<ol style="list-style-type: none">1. Mr. Kifayat Hussain GW CKNP

2. Mr. Tahir Hussain GW CKNP
3. Mr. Member Ali GI CKNP

District Nagar:



Skandarabad	<ol style="list-style-type: none"> 1. Mr. Muhammad Essa, SDFO Wildlife Department GB 2. Mr. Yasir Abbas Ecologist CKNP 3. Mr. Sabir Hassan GW CKNP 4. Mr. Alamgir Hussain GW CKNP 5. Mr. Ansar Hussain GW CKNP 6. Mr. Jibrán Haider (PhD student AAU) 7. Mr. Irfan Haider (Masters student KIU) 8. Mr. Riaz Ali Rajuwa (M. Phil student QAU) 9. Mr. Muzahir Hussain GW ADO
Rakaposhi Ghulmat	<ol style="list-style-type: none"> 1. Mr. Alamgir Hussain GW CKNP 2. Mr. Ali Madad GW CKNP 3. Mr. Sammar Abbas GW CKNP
Pisan & Minapin	<ol style="list-style-type: none"> 1. Mr. Sammar Abbas GW CKNP 2. Mr. Ali Madad GW CKNP
Hopper	<ol style="list-style-type: none"> 1. Mr. Saeed Abbas WWF-P GB 2. Mr. Mufeed Hussain GW CKNP-Hoper 3. Mr. Sher Azam GW CKNP 4. Mr. Irfan Haider (Masters student KIU) 5. GW/GI WL department (1-2) 6. Rep of WWF (1-2)
Hisper	<ol style="list-style-type: none"> 1. Mr. Sher Azam GW CKNP 2. Mr. Mufeed GW-CKNP 3. Mr. Hussain Ali (Assistant CKNP)

7. METHODOLOGIES USED:

Direct counts are fundamental to know basic information on wildlife. Standard census data must be collected in all areas of CKNP, although the techniques to gather the information might be slightly modified according to topography and other logistic constraints.

Participants were organized in groups of 1 to 3, over different vantage points. For each



valley, the all the people involved were responsible for the areas surveyed. Wildlife surveys require reliable replications, to be effective. A reliable replication means: (i) the same people involved (only if the same people are involved it will be easy to find out the same vantage points used in the past) – it is important that at least *1 person for each group* (team=all the people involved in the wildlife survey; group=part of the team attending specific areas of the selected valley) *is the same than in the previous survey*; (ii) same number of people (if reliable surveys were carried out in the past, the number of people involved should not be changed, least of all decreased), (iii) same areas (the same areas have to be surveyed each time, in order to obtain comparable data; the number of surveyed areas may increase, never decrease). A good planning is unavoidable to obtain reliable wildlife surveys, and then reliable data. Therefore, an effective organization of wildlife surveys (where to go, how many people and how many teams) was planned well in advance, following the organization of previous surveys. The following items were used during the wildlife survey: camera, binoculars, Spotting scope, altimeter, compass, data sheets, GPS, tents, sleeping bags, food items, map of the areas.

1. Surveys in CKNP are generally carried out twice a year, on May and December (approximately). When access is difficult in spring, surveys may be carried out only in autumn.
2. Surveys were carried out early in the morning and/or late in the afternoon because most ungulates, *i.e.* ibex and markhor, are active and graze during these parts of the day and could be easily sighted.
3. Vantage points were established taking GPS references (WGS84-UTM system; dd mm ss). Binoculars and spotting scope were used to scan wildlife in the area.
4. Direct counts were used to determine wildlife numbers. The herds seen were further classified into different age and sex classes (males, females, yearling, kids and undetermined individuals, total; among males, a separate count on trophy size individuals was made). In autumn counts, the number of kids is considered as a very useful population parameter to assess reproductive rate.
5. For all wildlife monitoring surveys, mostly the same vantage points, established during the last field survey were used except some additional in some valleys. It is strongly taken into account to involve the same people. However some necessary changes were made in the team members as per situation in the respective valleys.
6. While using the same vantage points each year, if a certain pasture in one year has an ibex population/herd and, in the next survey season, no ibex herd is seen in the same pasture, from the same vantage points (VP), we note down that VP and pasture. We do not do not ignore that but we write real zero in that place. This show that the same pasture has been visited in consecutive years. This information helps to analyze data, e.g. the impact of different variables on the ibex population etc.
7. For each observation, also the distance (roughly estimated) and the angle to the North (using the compass) was noted down which is useful to locate the herd.
8. Investigation through a questionnaire and general discussions with the local people, shepherds and former hunters living in the village/valley (10% of the population of the Valley – randomly selected) is also carried out during the surveys in order to verify and cross check the data collected.
9. Before conducting survey, all the staffs were advised to conduct the surveys as per prescribed CKNP standard protocol and they were told about the survey methodology and teams.

10. A detailed plan was developed and communicated to all field staff with directions for its implementation and conduct surveys in collaboration with Wildlife department staff, Community representatives as well as the research personnel from different universities and institutions in some of the valleys. The survey teams were sub divided into sub teams for different locations to cover more areas and to scan the wildlife thoroughly.



11. Wind direction consideration, scanned mainly with the help of binocular, spotting scope was used to observe the activity the animals better. It was difficult to watch animal if they are sleeping in this case coloration and moments were considered to identify and classify animals.

12. Still cameras as well as mobile phone cameras were used for taking photographs of wildlife species and different pastures searched.

13. Video cameras were also used during the surveys of some of the valleys and made footage clips wherever possible.

14. The pasture conditions were determined by personal observations and discussions with the local team members.

15. GPS was used to take the elevation and coordinates.

16. Compass recommended for surveys was used to determine the bearing.

17. Distance from the vantage point to animal was also considered.

18. Pug marks of the Snow leopard were identified and recorded as indirect observation and presence

19. 1 snow leopard in Hopper and 1 in Hushey were seen directly.



20. Data was noted in the prescribed formats already developed by the Directorate of Central Karakoram National Park in consultation with the all relevant stakeholders.

21. Double counting was avoided considering the herd composition and the dates and timings.

22. Telephotographs of ibex, Markhor and other species were also taken using the camera with telescope lens.

9. FIELD OBSERVATIONS/SIGHTINGS:

During the current winter seasonal surveys carried out in the valleys of Central Karakoram National Park in winter (December 2015); total 2252 Himalayan Ibex, 163 Markhor, 2 Snow leopard, 4 wolves, 19 Red fox were sighted in the valleys surveyed. Among birds total 1064 Chukar, 408 Himalayan Snow cock, 320 Alpine chough, 18 falcons, 1 Hoopoe, 60 crow, 10 vultures, and 100 blue whistling thrushes were seen in different locations of the valleys.

Among total 2252 Ibex; 656 were male, 815 were females, 429 were yearling, 324 were kids while 59 were considered as Not Determined (N.D) by the teams they were unable to differentiate as male, female (particularly for yearlings/kids) due to watching from long



distance. 194 Ibex were of Trophy size. Details are given in Observation Table No.1.

Among total 163 Markhor; 40 were male, 95 were females, 23 were yearling, 5 were kids while 59 were considered as Not Determined (N.D) by the teams they were unable

to differentiate as male, female (particularly for yearlings/kids) due to watching from long distance. 13 Markhor were of Trophy size. Details are given in Observation Table No.2.

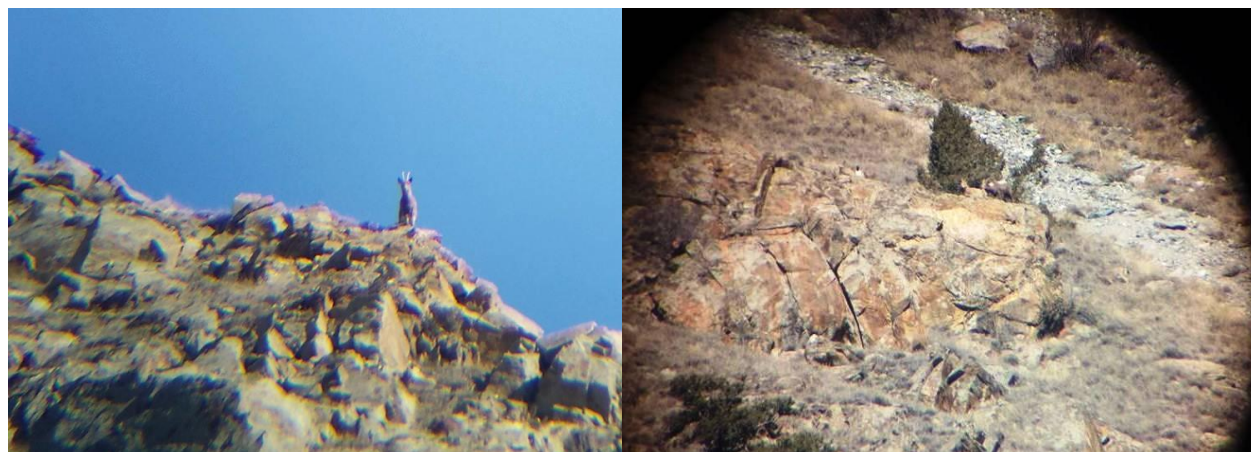


9. FIELD OBSERVATION TABLES:

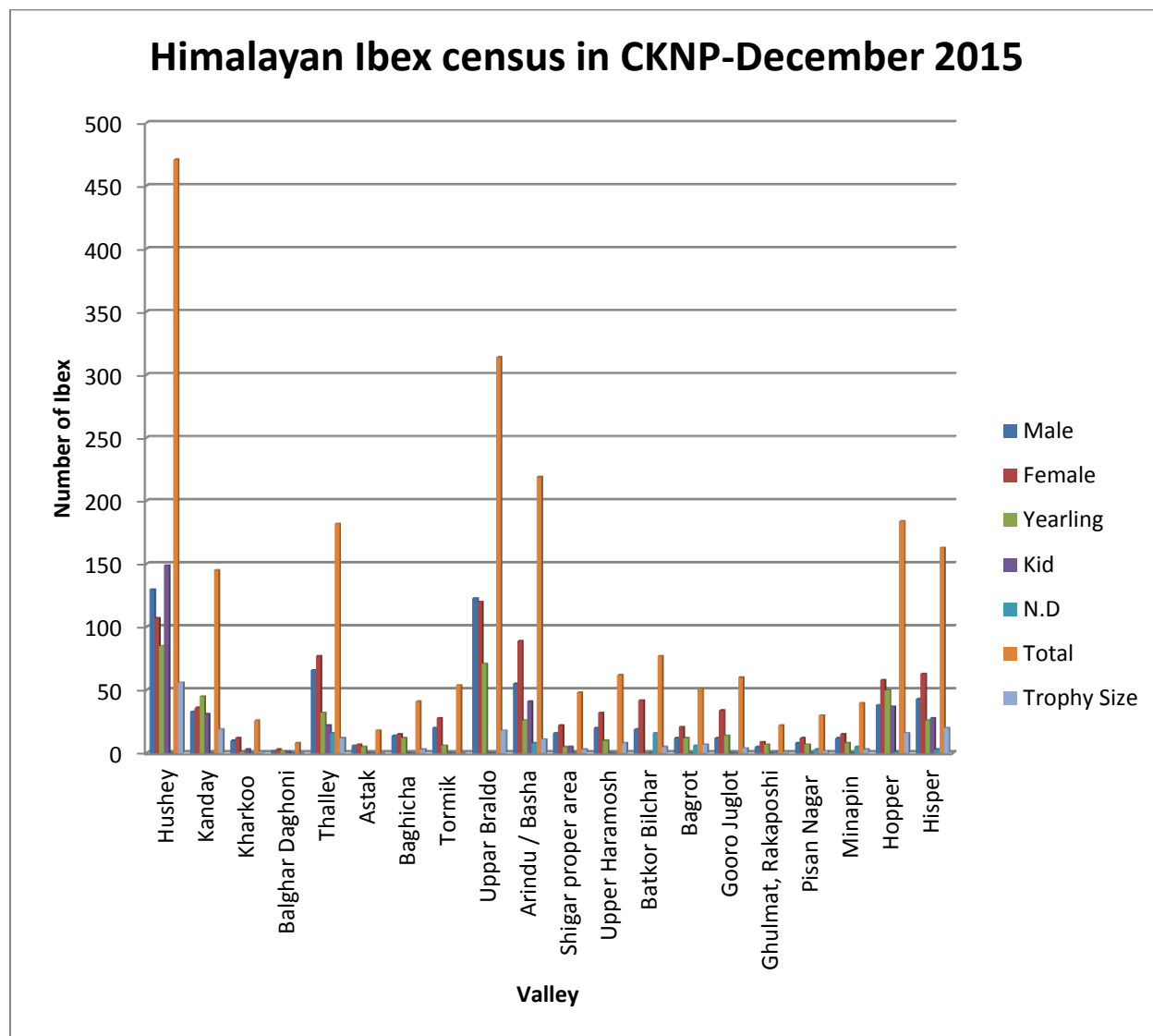
1. Himalayan Ibex

S. No	District and Valley	Group Composition						
		Male	Female	Yearling	Kid	N.D	Total	Trophy Size
1	Hushey	130	107	85	149	0	471	56
2	Kanday	33	36	45	31	0	145	19
3	Kharkoo	10	12	1	3	0	26	1
4	Balghar Daghoni	2	3	2	1	0	8	0
5	Thalley	66	77	32	22	16	182	12
	Subtotal Ghanche	241	235	165	206	16	832	88

B	SKARDU							
1	Astak	6	7	5	0	0	18	0
2	Baghicha	14	15	12	0	0	41	3
3	Tormik	20	28	6	0	0	54	0
	Subtotal Skardu	40	50	23	0	0	113	3
C	SHIGAR							
1	Uppar Braldo	123	120	71	0	0	314	18
2	Arindu / Basha	55	89	26	41	8	219	11
3	Shigar proper area	16	22	5	5	0	48	3
	Subtotal Shigar	194	231	102	46	8	581	32
D	GILGIT							
1	Upper Haramosh	20	32	10	0	0	62	8
2	Batkor Bilchar	19	42	0	0	16	77	5
3	Bagrot	12	21	12	0	6	51	7
4	Gooro Juglot	12	34	14	0	0	60	4
	Subtotal Gilgit	63	129	36	0	22	250	24
E	NAGAR							
1	Skandarabad	12	13	5	7	0	37	5
2	Ghulmat, Rakaposhi	5	9	7	0	1	22	1
3	Pisan Nagar	8	12	7	0	3	30	2
4	Minapin	12	15	8	0	5	40	3
5	Hopper	38	58	50	37	1	184	16
6	Hisper	43	63	26	28	3	163	20
	Subtotal Nagar	118	170	103	72	13	476	47
	Grand Total Ibex	656	815	429	324	59	2252	194



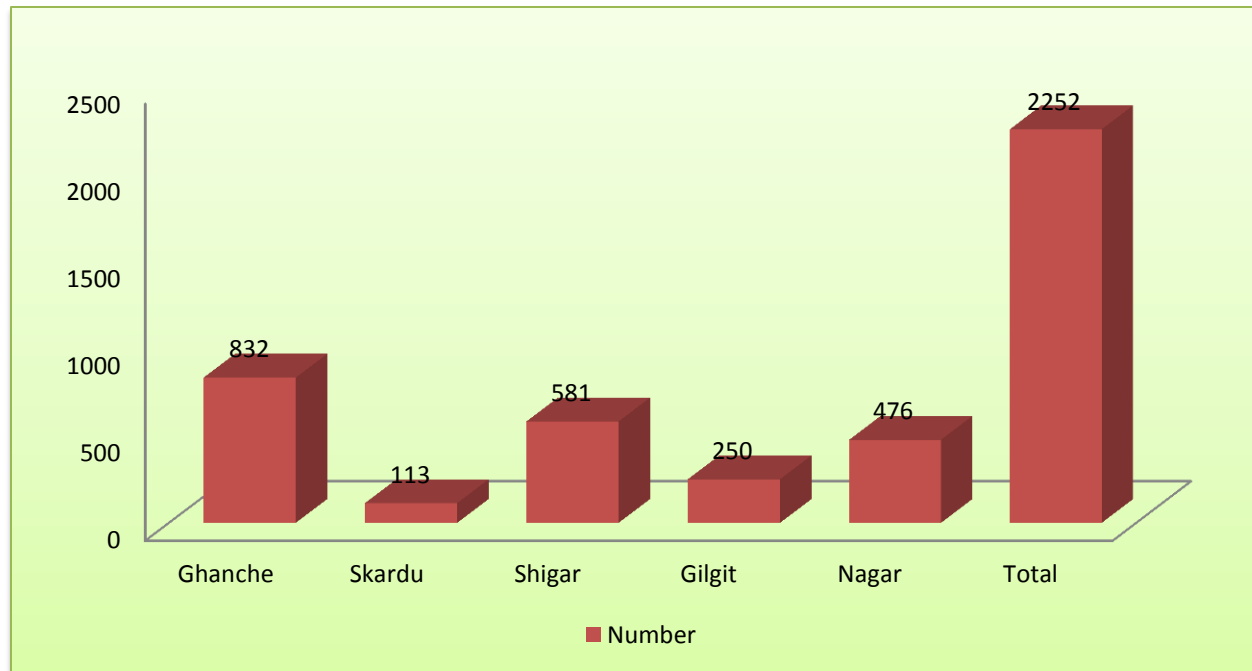
GRAPH



DISTRICT WISE POPULATION OF IBEX IN CKNP:

S. No	District	Number
1	Ghanche	832
2	Skardu	113
3	Shigar	581
4	Gilgit	250
5	Nagar	476
Total Ibex sighted in CKNP		2252

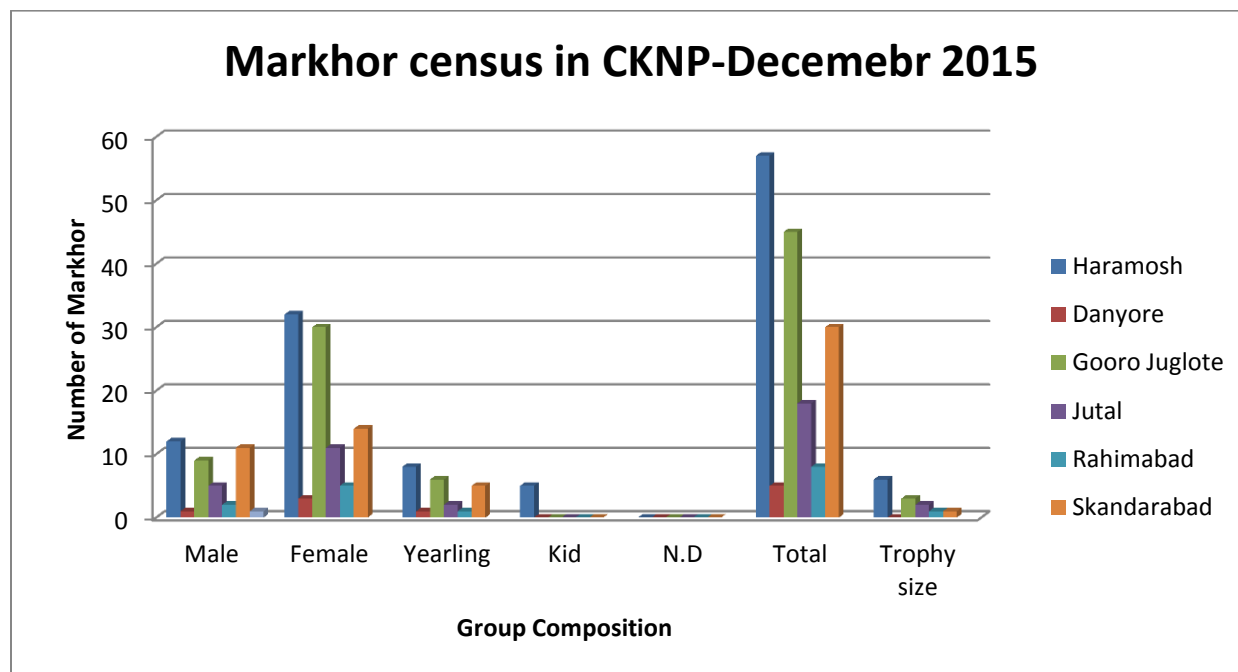
GRAPH:



2. Markhor

S. District and Valley No		Group Composition						
A	GILGIT	Male	Female	Yearling	Kid	N. D	Total	Trophy size
1	Haramosh	12	32	8	5	0	57	6
2	Danyore	1	3	1	0	0	5	0
3	Gooro Juglote	9	30	6	0	0	45	3
4	Jutal	5	11	2	0	0	18	2
5	Rahimabad	2	5	1	0	0	8	1
	Subtotal Gilgit	29	81	18	5	0	133	12
B	NAGAR							
1	Skandarabad	11	14	5	0	0	30	1
	Subtotal Nagar	11	14	5	0	0	30	1
	Grand Total Markhor	40	95	23	5	0	163	13

GRAPH:



3. Snow leopard:

S. No	Valley	No. of Snow leopard sighted	Pugmarks
1	Hopper	1	--
2	Hushey	1	--
3	Baghicha Khomera	--	Pugmarks seen
Total		2	

4. Wolf:

S. No	Valley	No. of Wolf sighted	Pugmarks
1	Tormik	4	--
Total		4	--

5. Red fox:

S. No	Valley	No. of Red fox sighted
1	Upper Braldo	7
2	Baghicha Khomera	6
3	Astak	2
4	Tormik	4
5	Danyore	1
Total		19

6. Birds:

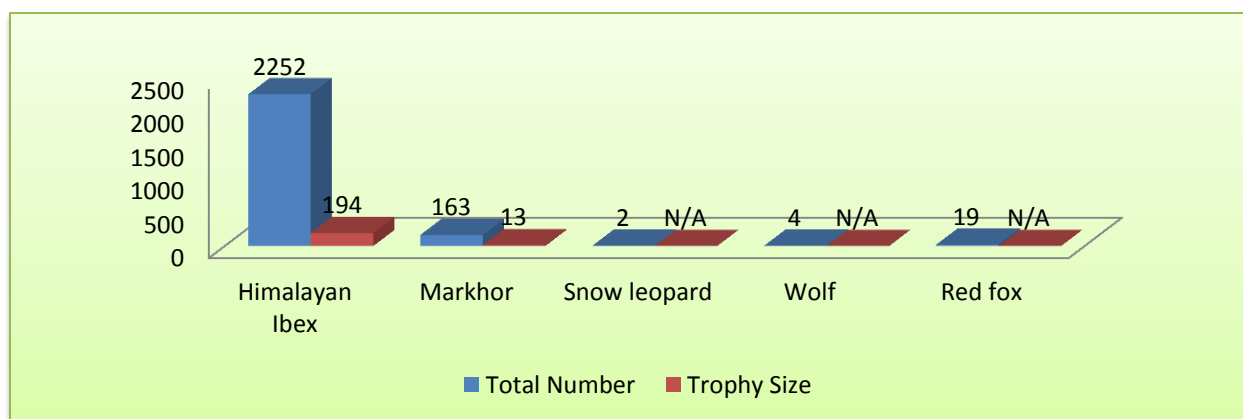
Valley/ village	Number of bird species seen							
	Chukar	Snowcock	Alpine chough	Falcon	Hoopoe	Crow	vulture	Blue whistling thrush
Kharkoo	35	25	--	--	--	--	--	--
Balghar	42	6	--	--	--	--	--	--
Thalley	0	35	20	18	--	--	--	--
Shigar	40	12	--	--	--	--	--	--
Upper Braldo	25	20	--	--	--	--	--	--
Arindu Basha	35	25	--	--	--	--	--	--
Tormik	34	5	--	--	--	--	--	--
Astak	24	6	--	--	--	--	--	--
Haramosh	6	8	--	--	1	--	--	--
Batkor	10	3	--	--	--	--	10	--
Bagrot	50	10	--	--	--	--	--	100
Danyore	200	4	--	--	--	60	--	--
Jutal	200	8	300	--	--	--	--	--
Skandarabad	150	4	--	--	--	--	--	--
Ghulmat	45	2	--	--	--	--	--	--
Pisan	28	9	--	--	--	--	--	--
SAS	10	6	--	--	--	--	--	--
Hopper	130	220	--	--	--	--	--	--
Total	1064	408	320	18	1	60	10	100

11. SUMMARY OF RESULTS:

Large Mammals observations:

Species	Total Number	Trophy Size
Himalayan Ibex	2252	194
Markhor	163	13
Subtotal Ungulates	2415	207
Snow leopard	2	N/A
Wolf	4	N/A
Red fox	19	N/A
Subtotal carnivores	25	N/A

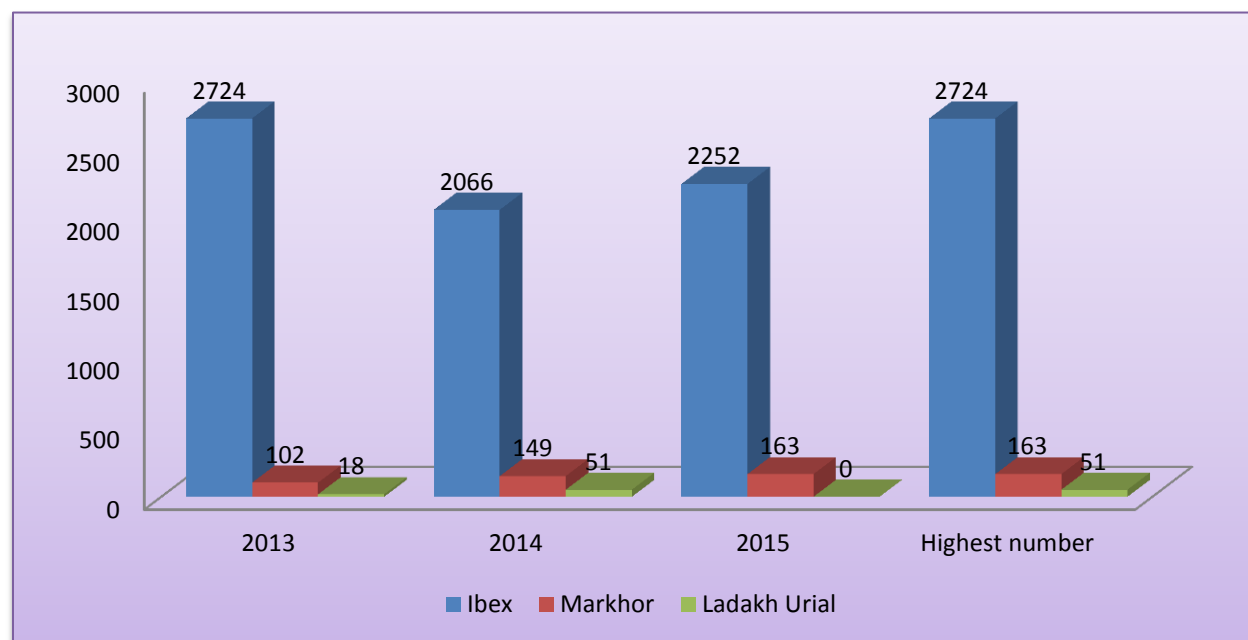
GRAPH:



12. YEAR WISE OBSERVATIONS OF UNGULATES IN CKNP DURING WINTER SURVEYS (ESTIMATED POPULATION):

Year/Species	2013	2014	2015	Average	Highest number recorded in 3 years (estimated population)
Ibex	2724	2066	2252	2348	2724
Markhor	102	149	163	138	163
Ladakh Urial	18	51	--	35	51

GRAPH:

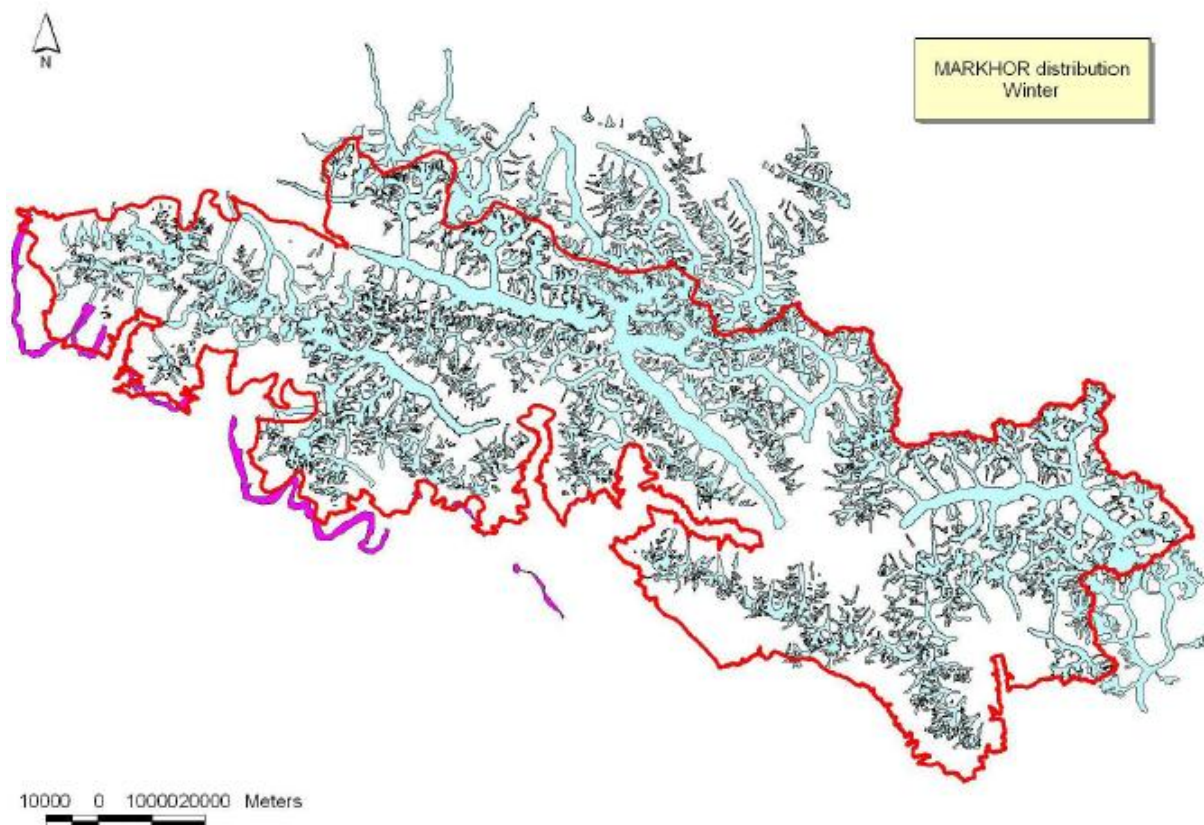


13. DISCUSSIONS:

The Central Karakoram National Park (CKNP; ca. 10557.75 Km², with the annexed buffer zone) is a refuge area and provides an ideal habitat not only for threatened species (e.g. Schaller 1977), i.e. Markhor, Musk deer, Ladakh urial, and snow leopard, but also for not threatened but important “flag” species, i.e. Himalayan ibex, Himalayan lynx and grey wolf. The CKNP was proposed in the early 90’s of the XX Century to protect the major mountain massifs, watersheds and glaciers of the Central Karakoram region and to form a contiguous conservation area with the Kunjerab National Park and the Deosai National Park.

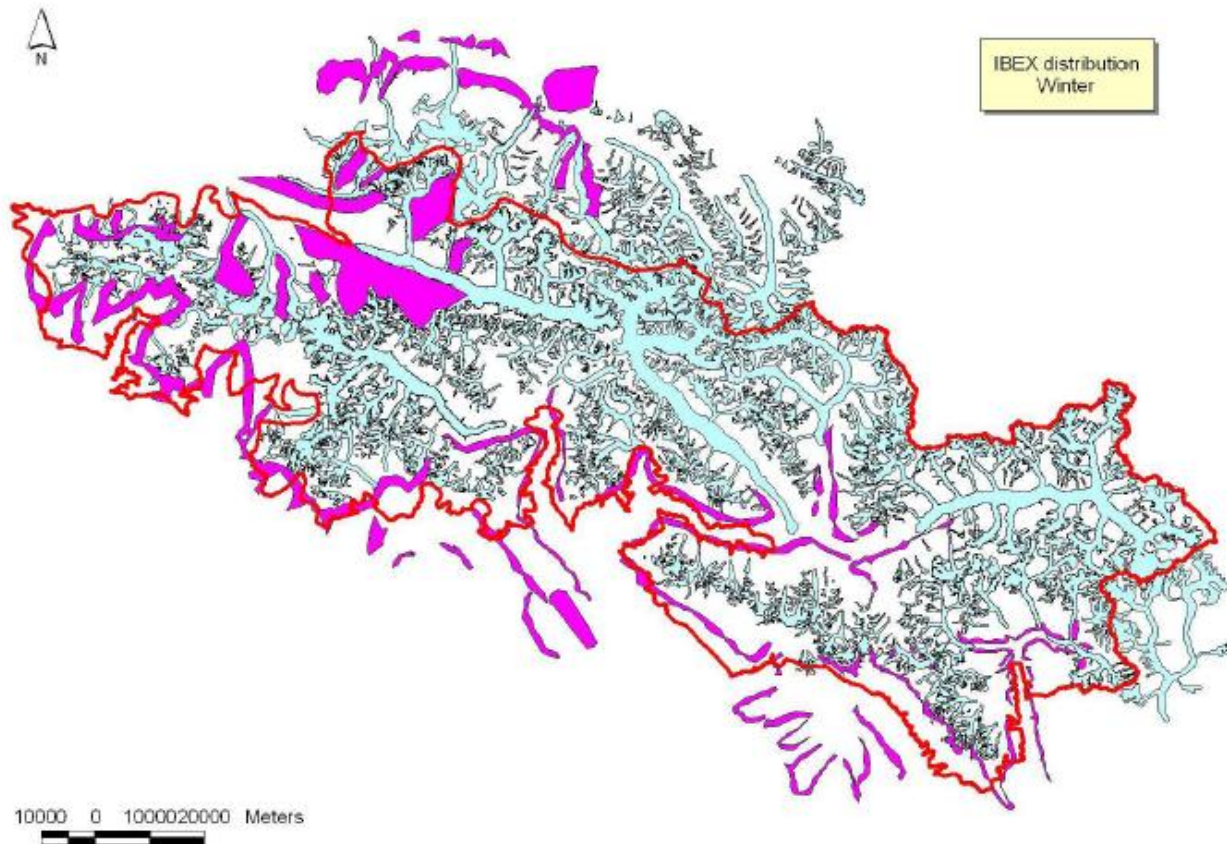
In practice, the *status* of the threatened species inhabiting the Central Karakoram National Park was almost unknown before the establishment of Directorate of CKNP, but now as per wildlife assessment, the information indicates that numbers of the snow leopard and especially of markhor are low and close to their biological threshold. Over-

hunting, habitat loss and isolation of small populations have probably been the main



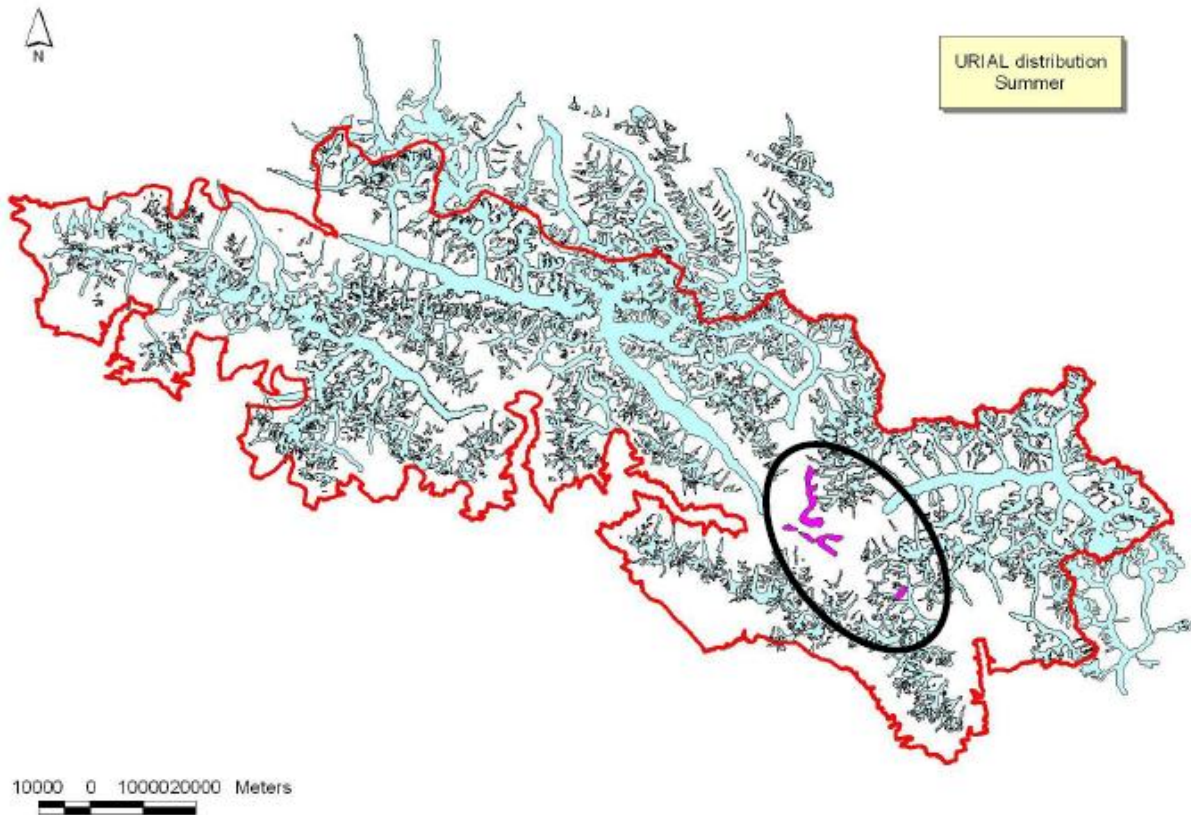
reasons for this depletion (Shackleton 1997). Although a “focal approach” and systematic surveys were proposed as a key action in the IUCN Action Plan for Caprinae (Shackleton 1997) and in the 1999 draft Management Plan (McDonough 1999), very limited sound information was available on the distribution and numbers of local wildlife (e.g. Virk *et al.* 2003, Roberts 2005). Furthermore, all the information was limited to the border areas of the Park, where human activities are greater and access is easier. During the last 5 years years (particularly under the CKNP PC-I and SEED project) project, ctivities have been carried out, as well as data collected, within the CKNP, while detailed information has been collected in most of the valleys except some. Hushey vallaey was focused by University of SIENA under SEED project. This valley has a South-North orientation; Hushey represents the highest village, at an elevation of ca. 3200 m a.s.l. In the Hushey valley, the inner part of the Park is composed by 4 main sub-valleys (Aling, Musherbrum, Gandogoro and K6-K7). Prey predator relationship was studied in Hushey valley by focusing snow leopard and Ibex. Distribution and population of snow leopard was confirmed through DNA analysis by collecting scats and analyzing at University of Texas. As per results there are 3 individuals of snow leopard in Hushey having 1 male and 2 female. Keeping in view the same methodology minimum numbers of snow leopards in other valleys of CKNP were also assessed. A standard wildlife research and monitoring protocol for the CKNP has been developed with the mutual consensus of CKNP Directorate and other partner organizations i.e. Wildlife department, WWF-P and University of SINEA Italy where

monthly assessments as well as bi-annual seasonal wildlife assessments were



prescribed with certain modalities. Separate data sheets for monthly wildlife counts, carcass assessment, carnivore assessment and predation assessment have been developed and CKNP staff was trained in the Standard protocols and use of equipment like GPS, compass, spotting scope and binoculars. CKNP staff has been implementing the standard wildlife monitoring protocol led by the Ecologist CKNP, where a comprehensive database from 2009 to December 2015. As per consecutive biannual seasonal surveys conducted by CKNP for the last 4-5 years the estimated number of mountain ungulates it has come to know. The highest number of Ibex sighted in CKNP so far is 2724, Markhor 163 and Ladakh urial 51. During these surveys most of the catchment divisions of CKNP were scanned except some valleys where it was not possible to carry out surveys due to some reservation and fears of the respective communities. For this reason more social mobilization among the communities is required not only to eradicate their reservations and fears but also to make them aware about the importance of wildlife particularly the mountain goats, by conserving these goats like Markhor and Ibex they can get economic benefits and earn money by conducting trophy hunting. Offence cases are occurred mainly in Upper Braldo, Hopper and Hisper valleys where people give less importance to the wildlife protection rather they consider the wild animals as their own property. Local conflicts among the communities and political influences are also one of the major reasons of the poaching in these areas. Before inception of CKNP Directorate there was a big threat to Ibex in

Upper Braldo as people were hunting them freely but after the establishment of CKNP



Directorate this practice has been reduced and 95 % illegal hunting has been controlled. It was possible due to frequent dialogues and meetings with the communities, engaging 4 Game watchers for Braldo, implementing activities by CKNP as well as other partners in their area. Communities always demand for short term benefits and incentives if some organization is implementing the interventions through Participatory management approach; these issues could be talked if the communities are provided with substantial incentives for protecting wildlife and other natural resources. Upper Braldo, Basha and Hopper valleys have good Ibex population so some potential pockets in these areas (in/around CKNP Buffer zone) could be declared as CCHA in order to take these communities also on board in order to control the poaching by using the Trophy hunting as a conservation tool. Similarly sustainable continuation of the CKNP standard wildlife monitoring protocol with sufficient and efficient staff, funds, required modern equipment/ technologies (like camera traps, Radio collar tracking system, drown camera technology, GIS technology, Scats analysis) is vital in order to clearly evaluate and verify the population status and trend of all mammal species distributed in the park to fill in the gaps of CKNP wildlife database. Apart environmental education and awareness raising programs are also important for the communities to persuade them about wildlife.

A sustainable and conservation-oriented trophy hunting system may be a valid management tool, to increase the economic revenue of local communities, provided that

a reliable monitoring of ungulate populations is carried out to assess their conservation status, to plan hunting activities and to promote it as a long-term source of income. A good review of trophy hunting programs in Pakistan has been done in 2001 by D.M. Shackleton, who gives some key recommendations to make this activity a sustainable conservation tool. Here are some main recommendations to be followed in order to make trophy hunting a useful conservational tool:

- Before a new hunting program begins, and especially in the case of a threatened *taxon*, the surveys on which the program and quota are based should be (1) made in conjunction with, or by, an independent party, (2) using a standardized approach. Furthermore, each new trophy hunting program has to be set up with a critical look at defining parameters and methods, considering distribution, numbers and possibly population structure of hunted species.
- The success of Trophy hunting programs can only be determined if suitable data is systematically collected and accurately recorded, if results are analyzed, and if reports are produced and made available. In this respect, it is also very important to know movements that species make seasonally, to avoid to hunt the same population in two different areas (therefore doubling the hunting pressure on it).
- Population data and trophy hunting plans should be peer-reviewed by professional wildlife biologists within and outside Pakistan.
- Counts should focus in assessing the structure of the population, not only the number of trophy males.
- For endangered species (e.g. Markhor) it is important an accurate check of their status, setting up groups of technicians (not necessarily local) for an unbiased evaluation at regular intervals (e.g. each 3-4 years). Communities are often not completely independent from local NGOs even after 10 years.

It is important to emphasize that ungulate conservation efforts through trophy hunting programs may pose a threat to carnivore conservation. Local communities in fact may consider these responsible not only for depredation attacks to domestic animals, but also for those to wildlife, reducing individuals from the trophy hunted population. It is therefore important for local communities to develop a global approach to conservation, beyond the single hunted species. Local communities need to be better informed and educated about the important role of large carnivores. That's why each Trophy hunting program should have a formal written Conservation Management Plan, which should be periodically revised and updated. Obviously, the objectives must be detectable and assessable, in relation to objectives and goals for both, wildlife conservation and community development.

Furthermore, it is suggested that (A) revenues from trophy hunting should be used also and mostly as compensation for depredation loss and/or to improve preventive measures; (B) in all areas where a Trophy Hunting Programme takes place, a vaccination for livestock should be mandatory. To compensate for depredations, a sustainable mechanism to provide communities with an insurance scheme should be adopted that does not make any difference among predators (wolf or snow leopard). It is recommended that this kind of approach (i.e. protecting all carnivores and making no difference between wolf and snow leopard) should be adopted by all the stakeholders active in the area, as most of the people are unable to distinguish between depredations carried out by different predators; thus, if not compensated for wolf kills, communities

will kill this predator. It is also emphasized how important is the use of local revenue from trophy hunting by the community to compensate livestock depredations, in areas where trophy hunting is allowed.

Some Conservation areas in CKNP have been identified because range of endangered large mammals (eg. Musk deer, Markhor, brown bear, snow leopard), and/or forest are present there. As to large mammal management and conservation, some strict regulation is required:

- regular counts have to be carried out in order to assess population size and distribution, as well as to collect data in order to be able to assess its trend in future;
- controlling illegal hunting, killing of prey and predator species;
- reduction of human activity impact at the minimum level: reducing livestock density in the same areas used by the endangered species should elicit a numerical response from wildlife. Sanitary control of livestock is strictly needed, enhancing the use of treatments and vaccination. Vaccination for livestock needs to become mandatory in these areas, where endangered large mammals live.
- trophy hunting programme for endangered populations cannot be started (unless their status is well assessed through at least 3 years of seasonal data collected in conjunction with, or by, an independent party, and using a standardized approach). The implementation of such restrictions on the human population and livestock must be accompanied by some form of compensation, but also include responsible involvement of the local community in conservation programs. The participation of local communities in the wildlife conservation process has to be emphasized.

Similarly some Strictly Conservation Areas (in Core Area) areas have been identified to integrally protect part of the Park where important and endangered wild species live. These areas have to be strictly regulated in order to completely protect wildlife. They have to be restricted for all the following forbidden activities like - livestock grazing, stay, roaming, camping and fishing; any other human activity than assessing wildlife numbers through regular seasonal counts (twice a year) or carrying out research activities (in this case, an official permission has to be released by the CKNP Directorate).

14. CKNP WILDLIFE MANAGEMENT INDICATIONS:

An understanding of ecological and conservational principles, as well as reliable ecological data, is fundamental requirements for successful conservation and management actions. Information on population size and distribution of a species is important to assess its status, *i.e.* declining, or stable, or increasing. If numbers of a population are known, its management could be properly addressed. This action is particularly important for protected areas, *e.g.* the Central Karakoram National Park, where several “threatened” species are present and subjected to moderate trophy hunting. Furthermore, an understanding of ecological and conservational principles, as well as reliable ecological data, is necessary requirements for a successful zoning. Large mammals are used as umbrella species better than any other *taxon*. This approach was chosen due to the scarce previous available information on wildlife distribution. An *umbrella species* is defined as a species with large area requirements

for which its protection offers protection to other species which share the same habitat (Groom *et al.* 2006). Therefore these species are often selected to make conservation related decisions, helping to select the locations of potential reserves, to find the minimum size of these conservation areas and to determine the composition, structure and processes of ecosystems. The term was first used by Wilcox (1984) who defined an umbrella species as one whose minimum area requirements are comprehensive of those of the rest of the community for which protection is sought, through the establishment and management of a protected area. The umbrella species concept has been demonstrated as an effective tool in the conservation of habitat (Launer & Murphy 1993) and it is considered valuable to decision makers. De Vrie (1995) proposed the use of habitat requirements of large herbivores as umbrella species to design large-scale nature reserves and to preserve both, plants and other animals. In particular, the large ranges of mountain-dwelling ungulates are often a consequence of seasonal migrations as a response to seasonally fluctuating food resources. In areas where winters are severe, food availability is decreasing and energetic costs for locomotion and thermoregulation are the highest. Therefore, in mountains, as well as in all populations living in a strongly seasonal climate, seasonal movements (to and from summer/winter areas) may develop as a function of changes in the environment. At the same time, a significant biodiversity related consideration associated to mountain ungulate conservation is the importance of maintaining sufficient numbers of prey species to support viable populations of large predators, such as the snow leopard, the wolf and the lynx. Each of these predator species has endangered or threatened populations within the Indo-Himalayan region. Large protected areas like CKNP are important for the conservation of these predators and the ability to co-ordinate conservation efforts in creating large reserves across mountainous borders is highly desirable.

Viable populations of large mammals require vast areas of land (herbivores: 10000 ha as a minimum threshold, De Vrie 1995; carnivores: at least 100000 ha as a minimum threshold, Belovsky 1987) and all of them can be considered as an umbrella species group for the preservation of plants and others animals. In particular, the requirements of large carnivores should be considered in the final step of a management plan. Data provided by UniSi have been used since November 2012 to outline *Strictly Conservation Areas* and *Conservation Areas* (see Mari *et al.* 2012), on the basis of “hot spots” areas for large mammal conservation.

15. CONCLUSIONS:

- The number of Ibex is high among the ungulates sighted; Number Ibex sighted is lesser as compare to winter survey of 2013 and higher than last year's survey. One of the reasons of variation in numbers could be the number of valleys and catchment divisions scanned during the surveys.
- Number of Markhor sighted is higher than last 2 year surveys.

- Less number of kids in the herds with males has been seen during the current survey as females have no kids following them in winters OR on a sexual segregation in winter months; kids move to other areas with females.
- Dual counting of ungulates has been avoided by the teams and verified by the ecologist as per plan provided and monitoring of teams during the survey periods.
- During the current surveys some researcher students from different universities and officers from wildlife department were also included to survey the ungulates particularly Markhor in its particular habitats of CKNP
- The population survey conducted in the December was considered as an ideal time as this time as December is rut season and animals come to lower elevations results easy counting.
- 1 Snow leopard at Hopper and 1 at Hushey while 4 Wolves at Tormik were also sighted during the current surveys.
- Pugmarks of Snow leopard and wolf also observed during the survey, identified photographed and recorded as per prescribed methodology.
- Other wildlife species and vegetation was also assessed and records have been provided in their respective tables and paragraphs of the said report.
- No Ladakh urial were sighted during survey in Upper Braldo; one of the reasons could be the minimizing survey duration in the particular valley due to facing an offence case during surveys.
- Less attention is paid by the communities, if no substantial funds are available for the wildlife surveys in their respective valleys, Very few LSOs/VVCs are taking keen interest and ready for surveys with their own resources as well.

16. RECOMMENDATIONS:

- The Directorate of CKNP along with other stakeholders i.e Wildlife department and respective communities; should monitor wildlife population by focusing the flag species in the valleys frequently, conducting consecutive bi-annual seasonal surveys with close coordination.
- Trophy hunting program for Ibex should be initiated in the Basha, Braldo, Hopper and Hisper valley (in/around Buffer zone, after declaring the areas as CCHA) as these valleys have an appropriate population of Ibex available. It is important in order to protect the wildlife in close collaboration with the communities by giving revenue to them as Trophy hunting community share. Because Trophy hunting in is considered as one of the most effective conservation tools.

- While conducting future surveys the same observation points (vantage points) should be used by the survey team. Number of team members should be appropriate.
- Take effective measures to eliminate the spread of livestock diseases into wildlife by close coordination with the Animal husbandry department. Livestock insurance and vaccination schemes should be initiated by the park directorate in close collaboration with the other partner organization already working on it.
- Victim shepherds by predation of livestock should be compensated through a sustainable program, otherwise predators face retaliatory killing by the locals through poisoning or gun shot or any other mean. Predator proof corals may also be encouraged in the communities.
- Adequate funds should be allocated for the wildlife surveys, assessment as well as watch and ward practices in order to implement the CKNP wildlife monitoring protocol with its full sprit in collaboration with the field staff and other stakeholders like Wildlife department, WWF-P and the respective community representatives.
- Camera traps, radio collar tracking system, drown cameras, GIS and other modern wildlife surveys techniques should be adopted by allocating funds for these activities, and specific funds should be allocated for such interventions in order to monitor and protect the wildlife species efficiently.
- Some field staffs do not have the field equipment like GPS and compass and other equipment, so all the staff must be fully equipped.

ANNEXES:



WINTER SEASONAL WILDLIFE SURVEY PLAN



(November 26, 2015 to January 02, 2016)

Developed By: Yasir Abbas, Ecologist CKNP

Directorate of Central Karakoram National Park
Gilgit-Baltistan Skardu

Valley/ Sub valley	From	To	Day (s)	Team members	Equipment
DISTRICT GHANCHE					
Hushey Dalsangpa K7 Nullah Saicho areas Mashabrum Nullah Aling Nullah Humbroq Charri	25/12/15	30/12/15	6	Mr. Najeebullah GI CKNP Mr. Sakhawat Ali GW CKNP Mr. Akhtar Hussain GW CKNP Mr. Khadim Ali GW CKNP VCC Hushey reps. (1-2) GW/GI WL department	Equipment available with all Game Watchers and GI + 1 spotting scope with Sakhawat (at VRC Hushey)
Kanday All areas including Iqbal Top, Nang Broq Apo Broq	17/12/15	23/12/15	7	Mr. Akhtar Hussain GW CKNP Mr. Khadim Ali GW CKNP Mr. Sakhawat Ali GW CKNP VCC Kanday rep. (1-2) GW/GI WL department	Equipment available with all Game Watchers + 1 spotting scope with Sakhawat
Thalley	17/12/15	23/12/15	7	Mr. Najeebullah GI CKNP Mr. Gulzar Hussain GW CKNP Mr. Mr. Abid Hussain GW GW/GI WL department LSO Thalley (2 reps)	Equipment available with all Game Watchers. 1 Spotting Scope can be collected from office
Kharkooh	25/12/15	30/12/15	6	Mr. Abid Hussain GW CKNP Mr. Gulzar Hussain GW CKNP GW/GI WL department LSO/VCC Kharkooh rep. (1)	Equipment available with all Game Watchers
DISTRICT SHIGAR					
Upper Braldo (1) Dumurdo Nullah and Jula Paju, Khoburtse Urdukas and Adjoining areas (collect pellets/feces of Ladakh urial also)	17/12/15	23/12/15	7	Mr. Fida Hussain GI CKNP Mr. Muhammad Ishaq GW CKNP Mr. Zaman Ali GW CKNP Mr. Muhammad Sharif GW CKNP Mr. Muhammad Ismail GW CKNP Mr. Sikandar GW (Vol) WL department GW/GI WL department LSO Upper Braldo rep (1-2. Mr. Muhammad Hasnain rep. Testay community)	Equipment available with all Game Watchers and GI + Spotting Scope with Ishaq (VRC Askoli)
Upper Braldo (2) Biafo Glacier areas (check the brown bear signs of presence also)	25/12/15	30/12/15	6	Mr. Fida Hussain GI CKNP Mr. Muhammad Ishaq GW CKNP Mr. Zaman Ali GW CKNP Mr. Muhammad Sharif GW CKNP Mr. Muhammad Ismail GW CKNP Mr. Sikandar GW (Vol.) WL department GW/GI WL department LSO Upper Braldo rep (1-2, Mr. Muhammad Hasnain)	Equipment available with all Game Watchers and GI + Spotting Scope with Ishaq (VRC Askoli)
Arindu & Basha Besil, Saisko/Zil/Bein, Doko, Dogro, Sibidi	17/12/15	23/12/15	7	Mr. Muhammad Jawad GW CKNP Mr. Sanaullah GW CKNP GW/GI WL department LSO/VCC Basha rep. (1) Rep of BWCDO (1) if any on request Rep of MAFSO (1) if any on request	Equipment available with all Game Watchers

Shigar Alchori, Skhora la, Hashupi, Tisar/Ghulabpur	25/12/15	30/12/15	6	Mr. Sanaullah GW CKNP Mr. Muhammad Jawad GW CKNP GW/GI WL department LSO/VCC reps (1-2)	Equipment available with all Game Watchers
DISTRICT SKARDU					
Tormik & Baghicha Khomera (focus Markhor also)	17/12/15	23/12/15	7	Mr. Roohullah GW CKNP Mr. Arif Hussain GW CKNP VWGs of WWF-P (if any) GW/GI WL department VCC Tormik/Baghicha rep (1)	Equipment available with all Game Watchers
Astak and Shengus (check distribution of Markhor also)	25/12/15	30/12/15	6	Mr. Arif Hussain GW CKNP Mr. Roohullah GW CKNP GW/GI WL department VCC Astak rep (1)	Equipment available with all Game Watchers
DISTRICT GILGIT					
Haramosh Darban Burumday-Sassi (by focusing Markhor habitat areas)	25/12/15	31/12/15	7	Mr. Muhammad Nisar GW CKNP Mr. Arif Hussain GW CKNP Mr. Zeeshan Haider GW CKNP Mr. Jibrin Haider (PhD student) Mr. Irfan Haider (Masters student- optional) GW/GI WL department (2) VWG WCS (1) WCSDO Haramosh rep. (1)	Equipment available with all Game Watchers +spotting scope with Nisar
Upper Haramosh Khaltaro, Jutial Datche/Barchi and Hanuchal (focus Markhor also)	15/12/15	20/12/15	6	Mr. Muhammad Nisar GW CKNP Mr. Arif Hussain GW CKNP Mr. Zeeshan Haider GW CKNP GW/GI WL department (2) HDO rep. (1) on request	Equipment available with all Game Watchers +spotting scope with Nisar
Bagrot Diran/Hinarchi Surigen Sinakir Boi Far/Darija	8/12/15	11/12/15	4	Mr. Member Ali, GW CKNP Mr. Ansar Hussain GW CKNP Mr. Muhammad Essa, SDFO Wildlife Department GB GW/GI WL department Rep. of DDO (1)	Equipment available with all Game Watchers
Batkor	23/12/15	27/12/15	5	Mr. Ansar Hussain GW CKNP Mr. Member Ali, GW CKNP GW/GI WL department Rep. of DDO (1)	Equipment available with all Game Watchers
Danyore (Focus Markhor also)	27/12/15	31/12/15	5	Mr. Kifayat Hussain GW CKNP Mr. Tahir Hussain GW CKNP GW/GI WL department Rep. of WCS (1) Rep. of WCSDO Danyore (1)	Equipment available with all Game Watchers
Jutal-Rahimabad	23/12/15	25/12/15	3	Mr. Hazaqat Muneem GI CKNP Mr. Kifayat Hussain GW CKNP Mr. Tahir Hussain GW CKNP GW/GI WL department Rep. of WCS (1-2) Community rep (1-2, if any on request)	Equipment available with all Game Watchers and GI
Juglot Gooro	19/12/15	22/12/15	4	Mr. Hazaqat Muneem GI CKNP Mr. Kifayat Hussain GW CKNP Mr. Tahir Hussain GW CKNP	Equipment available with all Game Watchers and GI

				Mr. Member Ali GI CKNP Mr. Jibran Haider (PhD student) Mr. Irfan Haider (Masters student KIU) GW/GI WL department Rep. of WCS (1 on request) WCSDO (1-2 on request)	
DISTRICT NAGAR					
Skandarabad 1 st survey Scan Shanas Nullah- shoo hara,	01/12/15	04/12/15	4	Mr. Muhammad Essa, SDFO Wildlife Department GB Mr. Sabir Hassan GW CKNP Mr. Riaz Ali Rajuwa (M. Phil student QAU) Mr. Mazhar Hussain GW ADO GW/GI WL department	Equipment available with all Game Watchers + 1 spotting scope with Sabir/collect from sammar
Skandarabad 2 nd survey Scan Shanas Nullah- shoo hara, Tanki and all other Markhor habitat areas	15/12/15	21/12/15	7	Mr. Muhammad Essa, SDFO Wildlife Department GB Mr. Hazaqat Muneem GI CKNP (15 to18 Dec) Mr. Sabir Hassan GW CKNP Mr. Alamgir Hussain GW CKNP Mr. Ansar Hussain GW CKNP (15 to18 Dec) Mr. Jibran Haider (PhD student AAU 15 to18 Dec) Mr. Irfan Haider (Masters student KIU-15 to 18 Dec) Mr. Riaz Ali Rajuwa (M. Phil student QAU, not confirmed) Mr. Mazhar Hussain GW ADO GW/GI WL department	Equipment available with all Game Watchers + 1 spotting scope with Sabir
Rakaposhi (Ghulmat & Thole)	21/12/15	25/12/15	4	Mr. Sabir Hassan GW CKNP Mr. Alamgir Hussain GW CKNP GW/GI WL department RLSO rep (1)	Equipment with all Game Watchers+ 1 spotting scope with Sabir
Pisan & Minapin	23/12/15	29/12/15	7	Mr. Sammar Abbas GW CKNP Mr. Ali Madad GW CKNP GW/GI WL department LSO Rakaposhi rep (1-2 on request)	Equipment available with all Game Watchers + 1 spotting scope with Sammar
Hopper 1 st joint survey with WWF-P GB	26/11/15	02/12/15	8	Mr. Saeed Abbas WWF-P GB Mr. Mufeed Hussain GW CKNP- Hoper Mr. Sher Azam GW CKNP Mr. Irfan Haider (Masters student KIU) GW/GI WL department (1-2) Rep of WWF (1-2) Hopper VCC (if any, on request)	Equipment available with all Game Watchers + collect 1 Spotting Scope from Mr. Sabir GW CKNP Skandarabad
Hopper 2 nd joint survey with WWF-P GB	13/12/15	21/12/15	9	Mr. Saeed Abbas WWF-P GB Mr. Ali Madad GW CKNP-SAS valley Mr. Samar Abbas GW CKNP- Minapin GW/GI WL department (1-2) Rep of WWF (1-2)	Equipment available with all Game Watchers + 1 spotting scope with Sammar

				Hopper VCC (if any, on request)	
Hopper 3 rd joint survey with WWF-P GB	25/12/15	02/01/16	9	Mr. Saeed Abbas WWF-P GB Mr. Mufeed Hussain GW CKNP Mr. Alamgir GW CKNP-Ghulmat GW/GI WL department (1-2) Rep of WWF (1-2) Hopper VCC (if any, on request)	Equipment available with all Game Watchers + collect spotting scope from Samar GW CKNP- Minapin
Hisper	13/12/15	19/12/15	7	Mr. Sher Azam GW CKNP Mr. Mufeed GW-CKNP Mr. Hussain Ali (Assistant CKNP) GW/GI WL department (1-2) Rep of VCC Hisper (1-2 on request)	Equipment with all Game Watchers + 1 Spotting scope available at VRC Hisper

Skardu, the November 18, 2015
