



Short Communication: Review Article

## ROLE OF INDIGENOUS COMMUNITY: A REVIEW COMMUNITY BASED WILDLIFE CONSERVATION IN GILGIT BALTISTAN

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### ABSTRACT

In Pakistan, Gilgit Baltistan is a beautiful part of the country and famous for its different green valleys, mighty rivers, rich biodiversity, beautiful wetlands and snowy mountains. There are about 54 species of mammals, 230 species of birds and 17 species of fishes, while 62 protected areas for conservation of flora and fauna. In recent years community-based conservation has developed on a large scale with the help of indigenous people. The native community has also been provided with assistance to the conservation of biodiversity and cultural assets in a sustainable manner. Local community has made exceptional efforts to established conservation and management policies with local administration. This paper has reviewed the establishment of community conservation activities and the role of native people in conservation of natural resources, wildlife habitat and trophy hunting program in Gilgit Baltistan.

**Keywords:** Local community, natural resources, trophy hunting, ecotourism, threatened species.

### INTRODUCTION

Roughly two-third of Pakistan's land is mountainous and physiographically can be divided into four divisions i.e. the northern highlands, the Indus River plain, the mountain ranges along the western borders with Afghanistan and the desert; south of the Sutluj River along eastern borders with India (GoP, 1992; 2000a; 2009).

Gilgit Baltistan (GB), formerly known as the Federally Administered Northern Areas, is located between 35°-37° N and 72°-75° E and covers an area of 72,971 km<sup>2</sup>. The GB has some of the world's highest mountains including three highest mountain ranges the Karakoram, the Himalaya, and the Hindu Kush, with five peaks over 8,000 meters and many peaks over 7,000 meters (Forest, Wildlife & Environment Department, Government of Gilgit-Baltistan, 2023; Gilgit Baltistan, 2023).

### DISCUSSION

Gilgit Baltistan has a rich vertebrate biodiversity. There are 54 species of mammals including International threatened species Brown bear, Marco polo sheep, Snow leopard, and Wolf Fox; 230 species of birds (Roberts, 1991, 1992), 23 species of reptiles, 6 species of amphibians and 20 species of cold-water fish (Roberts,

1997; Khan, 2012a,b; Haider *et al.*, 2021). The western and northern mountains of Pakistan contain nearly 80% of endemic flowering plants which are restricted to these areas only (Ali and Qaiser, 1986). Over 500 species of medicinal valued plants are also recorded in this region (Shinwari, 1996).

### Wildlife of Gilgit Baltistan

Gilgit Baltistan has six Endangered key mammalian species viz. Asiatic Black Bear (*Ursus thibetanus*), Brown Bear (*Ursus arctos*), Blue Sheep (*Pseudois nayaur*), Ladakh Urial (*Ovis vignei vignei*), Marco Polo Sheep (*Ovis ammon polii*) and Musk Deer (*Moschus chrysogaster*). In addition Snow Leopard (*Panthera uncia* or *Uncia uncia*) as Vulnerable, Astore Markhor (*Capra falconeri falconeri*) as Near to Threatened and Himalayan Ibex (*Capra ibex sibirica*) as Common species (Table 1). Gilgit and Baltistan area has one of the most diverse avifauna of the mountainous regions of the world. There have been 230 species of birds reported but unfortunately few published literature is available on the ecology, distribution and population status of those reported species.

### Protected Areas

Protected areas serve as an environmental benchmarks for the monitoring of ecosystems' health and understanding of the effects of climate change, pollution, invasive species and other stressors (Anne, 2017; Khan *et al.*, 2023). There are over 414 protected areas in Pakistan including 30 National Parks, 92 Wildlife Sanctuaries, 97 Game Reserves, 145 Community Conservation Areas/

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Community Game Reserves, 21 Private Game Reserves, 03 Marine Conservation Areas, 02 Wildlife Refuges and 24 Wildlife Parks (Ghalib *et al.*, 2013; Maqsood, 2019; Khan *et al.*, 2023). Currently, Gilgit Baltistan has 62 protected areas including seven National Parks (Table 2) two Wildlife Sanctuaries, five Game Reserves, and 48 Community Conservation Area / Community Game Reserve (Khan *et al.*, 2023).

### Community-Based Conservation Activities

For many years role of indigenous people in wildlife conservation is known however, the socio-economic activities relating to indigenous/local community participation remain questionable (Tarimo and Olotu, 2020). Community-based conservation is encouraged as a policy to aggrandize and develop the governance of resources through involvement of local communities (Khan *et al.*, 2021).

In GB, local communities have played significant role in the conservation and management of wildlife. In consideration, they get permission for arranging and managing Trophy Hunting (Zaman *et al.*, 2019). Religious bonding with many institutes of Aga Khan Development Network (AKDN) have impact on area development and provide support to the community for conservation of habitat and wild species (Sökefeld, 2012). For local community awareness, Wildlife Conservation Society has introduced the idea of communal conservation organizations with their corresponding duties and advantages in Gilgit Baltistan.

Members of different NGO's such as WWF, Snow Leopard Foundation, and Gilgit Baltistan Wildlife and Tourism Department play an important role for organizing wildlife conservation activities through seminars, workshops, field surveys etc. Well-educated and trained specialists conduct and participate in training and interactive sessions with local people including practical activities and inquiries regarding field work. The community leaders and managers hold public discussions and talks, as well as utilize Facebook and Twitter to spread awareness and importance of conservation and protection of natural resources and wildlife.

Through successful conservation activities and programs local people ended exploitation of natural resources including destruction and fragmentation of ecosystems which was a major threat to wildlife and their habitats. Schools and Colleges celebrate special days such as Snow leopard day, wetland day, earth day, environment day where students present their work and hold exhibitions for public awareness about conservation of ecosystem, wildlife and natural resources (Fig.1).

In Gilgit Baltistan, the native people cooperate with wildlife managers and wildlife staff in the conservation

efforts. During the first week of March every year local communities especially boy scouts, girl guides, and volunteers collect garbage and other waste material from wetlands and surrounding areas (Fig. 2). School-going children prepare slogans and banners to stop pollution and habitat destruction. Local students conduct field surveys for wild animal inventory and this activity helps wildlife department in future conservation and management plan.



Fig. 1. Public awareness on conservation of ecosystem, wildlife and natural resources.



Fig. 2. Volunteers collect garbage and waste material from wetlands and other surrounding areas.

Ecotourism provides alternate source of earning for local community. Ecotourism defined as "an activity where the authorities, the tourism industry, tourists and local people make it possible for tourists to travel to genuine areas in order to admire, study and enjoy nature and culture in a way that does not exploit the resource, but contributes to sustainable development" (Bjork, 2000). For domestic and international ecotourism, GB has superior implicit. It has a variety of activities for tourism such as breathtaking trophy hunting, sports tourism, and mountaineering (Rahman *et al.*, 2013).

Table 1. Estimated population and status of key mammalian species of Gilgit Baltistan. (Source: Forest, Wildlife & Environment Department, Government of Gilgit-Baltistan, 2023).

S. No.	Species name	Estimated population	Status
1	Asiatic Black Bear	80 - 110	Endangered
2	Brown Bear	90 - 120	Endangered
3	Blue Sheep	700 - 1000	Endangered
4	Ladakh Urial	170 - 250	Endangered
5	Marco Polo Sheep	110 - 150	Endangered
6	Musk Deer	150 - 200	Endangered
7	Snow Leopard	150 - 200	Vulnerable
8	Astore Markhor	1500 - 2000	Near to threatened
9	Himalayan Ibex	6000 - 8000	Common

Table 2. National Parks of Gilgit Baltistan. (Source: Forest, Wildlife & Environment Department, Government of Gilgit-Baltistan, 2023).

S. No.	Name	Area (Sq km)
1	Khunjerab National Park	2271.4
2	Deosai National Park	3626
3	Central Karakoram National Park	10000
4	Handrap- shandoor National Park	518
5	Qurumber National Park	738
6	Himalaya National Park	1989
7	Nanga Parbat National Park	1196
	Total area	20338.4

### Trophy Hunting

Trophy hunting has a potential and serves as an important source of good income for local community especially in areas where the eco-tourism cannot be developed (Leader-Williams and Hutton 2005). Local community of Gilgit Baltistan has established about 50 community managed hunting areas (Haider *et al.*, 2021; Hale, 2022). The Gilgit Baltistan trophy hunting program from 1995 – 2020 has generated US \$ 4.86 million from the sale of permits for Markhor. Government has invested US \$ 4.3 million in the environmental development of local communities and social economical activities (Khan *et al.*, 2021). The trophy hunting money also has been used to fund an English-language school, construction of a prayer hall, an IT center and clean drinking water project.

In Jan 2022 two American national hunted top-rated two Markhors (Fig. 3) and paid hunter permit fee US\$ 131,000 and \$136,000 at the Jutial Conservancy area in district Gilgit. The amount received from Trophy Hunting was distributed among local community and the government where 80% was given to the community for conservation of wildlife, whilst remaining 20% for government funds (DAWN, 2022). According to Gilgit-Baltistan's Department of Forests, Parks and Wildlife, Gilgit-Baltistan receives four of Pakistan's allotted 12 Markhor permits each year and today Markhor is one of the most expensive wild species on earth—a single permit fetches upwards of US \$135,000 (Hale, 2022).



Fig. 3. Hunted, with hunter permit, Astore Markhor of 43 inches by an American national James Kevin in Jutial conservancy (Source: Forest, Wildlife & Environment Department, Government of Gilgit-Baltistan).



Fig. 4. Beautiful view of Attabad Lake.

In GB, there are shops and restaurants that provide and represent local culture, souvenirs, traditional dresses and food (Fig. 5) to attract visitors.



Fig. 5. Cultural foods: chap shuroo and giyalin.

Few years back, after the Attabad landslide, the local community of Gojal and other afflicted villages started restoration that helped in socio-economic benefits from Attabad Lake (Fig. 4). Due to its widespread nature, different types of activities and best practices are organized in this area for improving the quality of outcomes (for example: improved the quality of food,

upgrading housing facilities, improved school education facilities) and increasing sustainability. In the summer season, locals arrange boating while in winter skating activities are held at Hunza Attabad Lake. In these areas, local people have built restaurants, hotels, motels and shops through which they generate profitable income.

## CONCLUSION

Fast-growing and expanding human populations have destroyed natural wildlife habitats due to settlements of human housing arrangements, agriculture forming and other anthropogenic activities. In Gilgit Baltistan, after establishment of community protected areas and active participation of local communities, some carnivores species such as the Snow leopard, Wolf and Lynx have increased in numbers due to the good efforts of conservation of habitat and prey. Some other species viz. Markhor, Ibex and Urial populations also have increased and local community reported that seeing more of each species each year. The local community and administration are used trophy hunting money for several developmental projects for improvement of School education system, housing, supply of drinking water, computer education and conservation of habitats. Gilgit Baltistan local community activities and conservation programs has a good example for other parts of Pakistan.

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