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CURRENT STATUS AND MANAGEMENT OF MALAKAND WILDLIFE SAFARI PARK, DISTRICT MALAKAND

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ABSTRACT

Malakand Wildlife Safari Park is situated in District Malakand, approximately 110 km from Peshawar and 230 km from Islamabad. This research study was conducted on fauna of Malakand safari park. This park is enclosed area of 240 acres and was established by Khyber Pakhtunkhwa wildlife department. The goal of our study was to evaluate the fauna of the park. For the collection of data, we used the personal interviews method and acquiring it by visiting there by ourselves, watching and noticing their movements. There are four major mammal's species present in wildlife safari park including leopards, grey goral, rhesus monkeys, and in birds there is a peasantry site which accommodate 15 different type of species which total count of 91 birds, 35 of them are male while the rest 56 are female. The peasantry occupies 2340 square feet of land with 20 fenced cages. The total number of animals is 102. There is a kalij breeding center which facilitate the artificial breeding of kalij pheasants. The park is well fenced to protect these species. Issues of the park contains accessibility of roads to the park, eucalyptus plantation is also an issue which affected the indigenous plants and water problem.

1. INTRODUCTION

Globally, Asian countries have the highest diversity for a number of taxa with unique species (Hughes, 2017). A total of 195

mammal species are classified into 10 orders, including 13 sub-species (Roberts, 2005; Altaf et al., 2014). Three endemic species are identified: The Indus Dolphin, the Woolly

Flying Squirrel, and one species along with two subspecies. (*Eupetaurus cinereus*), Baluchistan Black Bear (*Ursus thibetanus gedrosianus*) and Punjab Urial (*Ovis vignei punjabensis*) found in Pakistan (Sheikh & Molur, 2004).

The global diversity of avian species is documented at 9993 (Jetz, Thomas, Joy, Hartmann, & Mooers, 2012), whereas the mammalian species across the world total 5490 (IUCN 2009). Three out of the six biogeographic regions—the Palearctic, the Oriental, and the Ethiopian—are located in Pakistan. Because of this, the nation is home to a diverse array of flora and fauna. There are more than 668 bird species in Pakistan, and there are 195 mammal species in Pakistan (Bibi & Ali, 2013). There are 480,000 exotic species (non-native or alien) that have been added to ecosystems throughout the world (Sage, 2020). Because of this, biological invasion has become one of the main causes of biodiversity loss (Ballari, Anderson, & Valenzuela, 2016). A lot of introduced species don't hurt ecosystems (Cucherousset & Olden, 2011), but there is a lot of evidence that introductions have very bad effects on species and genetic diversity at both the local and global levels (Sharp, Larson, & Green, 2011).

Khyber Pakhtunkhwa is the sole province in Pakistan that hosts four out of five sub-species of markhor, specifically the Kashmir, Kabul, and Suleiman varieties. The region includes all sub-species of urials present in Pakistan, specifically the Punjab, Ladakh, and Afghan urials. The province hosts two species of brown bears and two species of black bears. There are eight species of wild cats present, including two notable big cats: the snow leopard and the common leopard. The province hosts four distinct varieties of partridges: grey, black, see see, and chukar. The Palas Valley, located in the Kohistan district of Khyber Pakhtunkhwa, is globally acknowledged for its rich biodiversity, featuring a wide variety of flora

and fauna. The Indus Flyway represents a critically important area for migratory birds, including waterfowl, falcons, bustards, sand grouses, and others. Many species of migratory birds that inhabit higher elevations find this area ideal for nesting. There are a number of locations throughout the globe that are recognized as "Endemic Bird Areas" according to Birdlife International (Karanth, Naughton-Treves, DeFries, & Gopalaswamy, 2013).

A healthy ecosystem has many different types of plants and animals. To entice people and visitors to visit natural areas, there must be a variety of birds. Bird distribution is important because it is frequently used to determine how healthy an environment is. In the world, one can find an astonishing variety of over 9,040 distinct species of birds. More than 2060 of these avian species inhabit the Indo-Pak Subcontinent, constituting approximately 13% of the global bird population. Pakistan is home to more than 660 distinct species of birds (Robert & Sommeria, 1991). This indicates that the country possesses a diverse array of habitats and occupies a significant position in zoogeographic terms. In Pakistan, a notable forty-three percent (43%) of avian species are classified as Palearctic. They arrive in Pakistan solely for the purpose of nesting. Approximately thirty percent of avian species migrate to Pakistan during the winter or summer seasons. Pakistan boasts a remarkable diversity of avian species, attributable to its varied habitats that provide ample opportunities for their habitation.

Mammals significantly influence communities and ecosystems, both directly and indirectly. Both carnivorous and herbivorous animals play crucial roles in maintaining environmental health. Because only a few number of species are powerful predators, which alters the structure and function of ecosystems, carnivorous animals are crucial to the environment (Manlick &

Pauli, 2020). Numerous animals serve as ecosystem engineers, altering the structure and function of ecosystems through the creation or destruction of habitats. These animals can alter both the biotic and abiotic components of their environment (Prugh & Sivy, 2020).

Pakistan hosts a diverse array of 195 mammal species. Among these, 12 are classified as Critically Endangered, another 12 as Endangered, 20 as Vulnerable, 32 as Near Threatened, 71 as Least Concern, 38 are deemed Data Deficient, and 8 are considered Regionally Extinct. Additionally, the variety of mammals is impacted by global warming. This is due to the fact that increasing temperatures produce extreme weather events, hinder hibernation, reduce the amount of water available in arid regions, and spread disease. Several large African animal species may have gone extinct due to the lack of precipitation, according to some reports. Ogutu and Owen-Smith (2003) and Musiega and Kazadi (2004) found that plants with less rainfall are more likely to be consumed by predators (Nnadi & Carter, 2021).

2. Review of Literature

(Kumar, Upadhyay, Gupta, Yadav, & Yadav, 2024), Stated that zoos and safari parks are ideally placed to foster compassion for animals and raise awareness and understanding of the welfare and conservation needs of individual animals and species. A zoo's purpose should be to promote the interests of wildlife conservation, biodiversity and animal welfare to the public. Zoos should be able to entertain, while educating and empowering visitors to take action for the benefit of species and habitat conservation.

(Clawson, 2010), Said that a country with a lot of kids should have a low number of visitors to national parks. The reason is that kids don't go to national parks very often, and having kids in the household makes it harder for their parents to find the time and money to go. National parks may lose potential visitors

if other entertaining locations, such as zoos and botanical gardens, replace them.

According to (Peterson & Nelson, 2017), the land management practices of the pastoralist Maasai significantly influence the landscapes and wildlife habitats in northern Tanzania. It is also crucial for preserving the habitat of one of the world's most remarkable assemblages of big animals. In order to preserve and manage vital resources like meadows and stream sources, pastoralists manage land in accordance with rules established by the community. Dry time grazing reserves are a crucial component of regular land management strategies in many pastoralist communities. During the lengthy dry season, when food and water are scarce, they serve as a "grass bank" for cattle to consume.

(Boone, Conant, Sircely, Thornton, & Herrero, 2018), Said that the North American Model of Wildlife Conservation is a set of rules that, when followed together, have changed how wildlife is handled and protected in the US and Canada, as well as what it has been able to do. The origins of these concepts are discussed in this technical study, as well as the ways in which they have evolved throughout the course of history. In addition to this, it examines the problems that they are currently facing as well as those that they may encounter in the future. What we mean when we refer to the Model as North American is not in an environmental sense but rather in a theoretical sense under Mexico, wildlife conservation and management grew up at a different period and under different conditions than in the U.S. and Canada. The last two went hand in hand. This overview goes over the history, growth, and current state of wildlife conservation and management in Mexico in several sections.

Materials and Method

3.1 Malakand Safari Park

Malakand safari park is a park which is constructed to conserve and manage those

species, which are endangered, and are facing various threats therefore if they are not protected they may be extinct in the near future. This park was established in 2010 and is situated in the Piranu village of Malakand. It is located 3 km away from the main GT road of Malakand towards west and the elevation of the area is 2000-2500ft from sea level and comes under subtropical broad-leaved forest. This park was established by and work under the Wildlife Department, KP. The area of the park is 240 acres (97 ha) and the whole area is protected which means that hunting, shooting, trapping and capturing is not allowed. The entrance of tourist in the park is allowed and due to its aesthetic look the visitors like to visit the park and enjoy the beauty of the park and the wildlife that are present there. Some special spots are also prepared for the tourist.

3.2 Study Area

Malakand district is located in northern part of Khyber Pakhtunkhwa. It lies between 34° 33' 56" North, 71° 55' 52" East. The elevation gradually rises from 2000ft to 2500ft from sea level. In 1970, the District was designated as a Provincially Administered Tribal Area. Formerly a part of the Malakand Agency, it was a Tribal Area known as the Malakand Protected Area. The District was a part of Malakand Division Malakand from 1970 to 2000 (Ur Rahman, Ullah, Jamil, Hashmi, & Safi, 2023).

3.3 Flora and Fauna

Various indigenous and exotic species of flora are grown in the area. Because of too much grazing and collecting firewood, the plants in the region are few and small. The flat regions, mainly near farms, have big trees and hedges of bushes. Most of the hills are empty. But there are also places with scant vegetation.

3.3.1. Fauna

This Division holds significant potential for animal conservation due to its diverse range of habitats. All four varieties of partridges can

be found here. This habitat hosts a diverse array of animals beyond partridges, such as pigeons, doves, quails, falcons, hawks, hares, jackals, foxes, porcupines, and many others. This site hosts a variety of falcon species. The River Swat and other perennial streams serve as important resting points for various species of ducks during their winter migration. This provides hunters with an opportunity to take aim.

Methods

For the process of data collection, various methods were used as we can collect data through, interview, and proper record, from previous literacy and by field visiting. The method which we used for the collection of data was taken through field visit and interview schedule and different questions will be asked from the managerial experts and the staff who serving in the Malakand Safari Park. We discussed different species present in the safari park and studied their behavior. Furthermore, the different limits and problems were studied which are faced by the safari park and its management and benefits which could be gained by local community. We also collected data about the safari park from previous literacy such as, various research papers, journals about the safari park as well as through internet. The interview schedule method is mostly used in this method, the data collection is so accurate and there is less chance of error that is why we collected data by this way.

Results & Discussion

The present research study was conducted in May 2023 July 2023 in Malakand at wildlife safari park Khyber Pakhtunkhwa Pakistan. Malakand safari park was established in 2010 to protect the endangered wild species. Park occupies 240 acres of land through an agreement signed between wildlife department and the landlord. The park is well fenced to ensure the efficient protection of the animals. There are separate cages for pheasants, common leopard and

rhesus monkey while grey goral roaming free in the area. Malakand is suitable habitat for the animals the park possesses some of the animals the park has can be found in the wild also for example common leopard the local's claims that they have seen them in the wild. Grey gorals and rhesus monkey also can be found in the wild. So because of this advantage the park progress always been good and providing supply to other safari parks and zoos through the province. The park comprised of different species of plants, mammals and birds, the animals are common leopard, grey goral, rhesus monkey and peasantry. The annual budget of park is about 3 million. These animals are always lookout and managed by the park staff. CCTV cameras are installed in the cages and displayed at the range office, to monitor them all the time and feed them when the display the hunger and treat them whenever they feel unhealthy.

Animals of Wildlife Safari Park Malakand Common Leopard (*Panthera Pardus*)

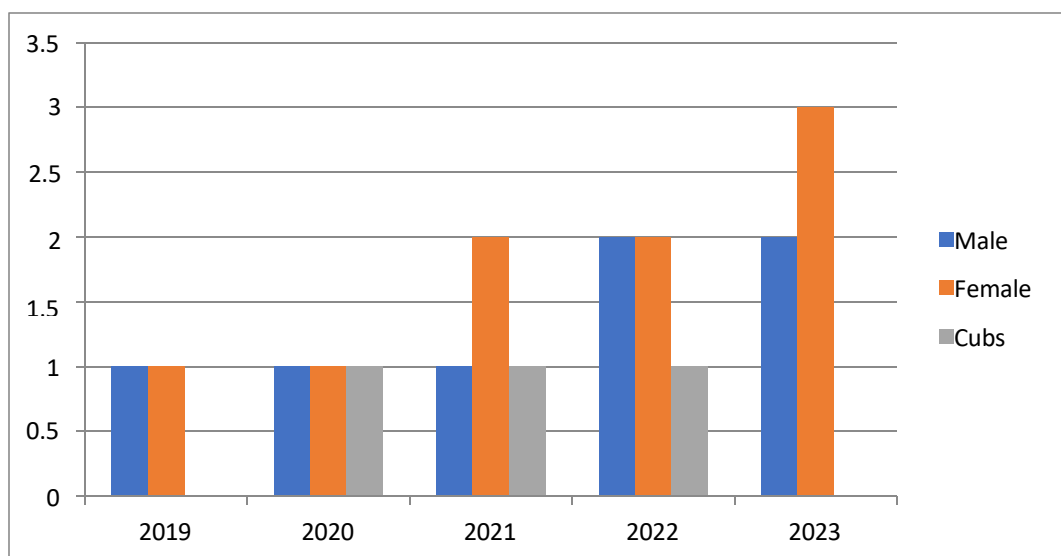
One of the five living species in the *Panthera* genus is the common leopard (*Panthera pardus*). Its fur is pale yellowish to dark golden and bears dark dots that are organized in rosettes. It has a long, thin body that may be anywhere from 92 to 183 cm (36 to 72 in) long and a tail that is 66 to 102 cm (26 to 40 in) long. Its shoulders are 60 to 70 cm (24 to 28 in) high. Men usually weigh between 30.9 and 72 kg (68 and 159 lb), and women between 20.5 and 43 kg (45 and 95 lb). In Pakistan, these cats usually live in the Moist Temperate jungles of Margalla Hills National Park, Murree Reserve Forest, Ayubia National Park Khyber Pakhtunkhwa, and the nearby forests of Jammu, Kashmir, and Neelum Valley. There are 5 common leopards in the park, 3 females and 2 males.

Table 1. Current Data of Common Leopard

Common Leopard (<i>Panthera pardus</i>)	Males	Females
	2	3
	Total=5	

Table 2. Leopard population through varies years

Year	Males	Females	Cubs
2019	1	1	0
2020	1	1	1
2021	1	2	1
2022	2	2	1
2023	2	3	0



According to the statements and figures there were 5 common leopard species in the park in 2018, 3 of them were shifted to Peshawar zoo, the remaining were 1 male and female. They

Figure 1. Common leopard (*Panthera pardus*)



GREY GORAL (*Naemorhedus goral*)

The Himalayan goral measures between 95 to 130 cm (37 to 51 in) in length and has a weight range of 35–42 kg (77–93 lb). The coat is grey or gray-brown, featuring tan legs,

reproduced through years and the number get rise to 5 in 2022, currently the number is 5 in which 2 are males and 5 females.

lighter patches on the throat, and a distinct dark stripe running along the spine. Male lions possess short manes around their necks. The backward-curving horns of both males and females can reach a maximum length of 18 cm (7.1 in). Gorals differ from closely related species primarily in that they lack periorbital glands behind their eyes and matching depressions in their skulls, in addition to several other anomalies in their skull shape. The Himalayan goral is found in the mountainous regions of the Himalayas, spanning from Pakistan and Nepal to Bhutan, southern Tibet, and the Indian states of Sikkim and Arunachal Pradesh, with potential sightings extending into western Myanmar.

Table 3. Numbers of Grey Gorals in the Park

Grey Goral (<i>Naemorhedus goral</i>)	Male	Female
	1	3
Total	4	

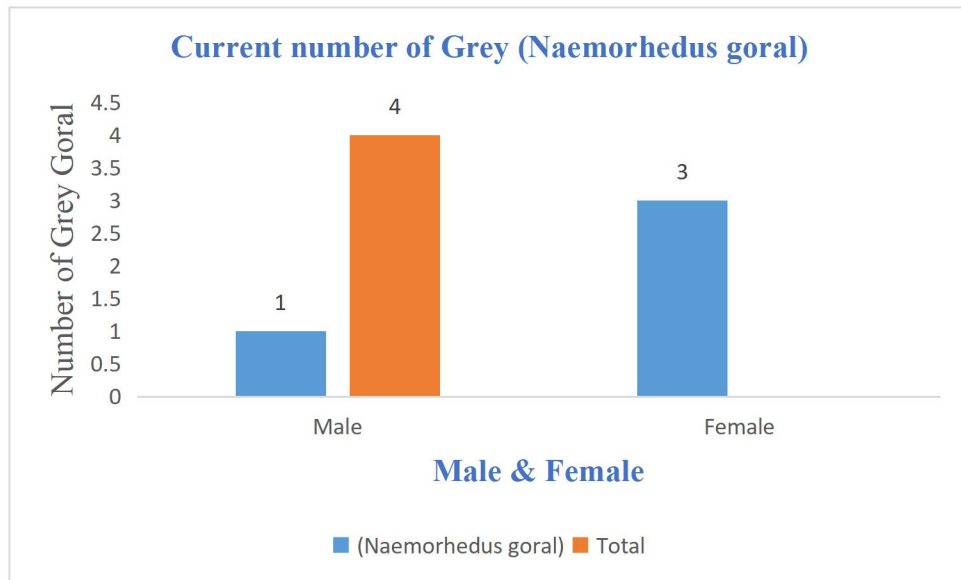


Figure 3. Current number of Grey (Naemorhedus goral)

The number of grey gorals were 6 in year 2019 in which 2 were males and 4 females and as well as in 2020. In 2021 single pair of gorals were shifted to Kanju Safari Park the number fell down to 4 in 2021 the remaining were 1 male and 3 females and in 2022 the number were still 4 as now in 2023.

Management of Grey Goral

The Goral is kept in a cage, although it doesn't look like it is in a cage. The cage's estimated size is 400 by 400 feet. Green grasses are the primary source of nutrition provided to gorals. Warbasha (malt) and foliage (green takes off). Generally speaking, the daily recommendations of 10 kg of green food and 300 g of warbashi in evening. Vaccinations are carried out every month or every season.

Rhesus monkey (*Macaca mulatta*)

The *rhesus macaque*, often known as the rhesus monkey, is a kind of primate that lives in the Old World. There are between six and

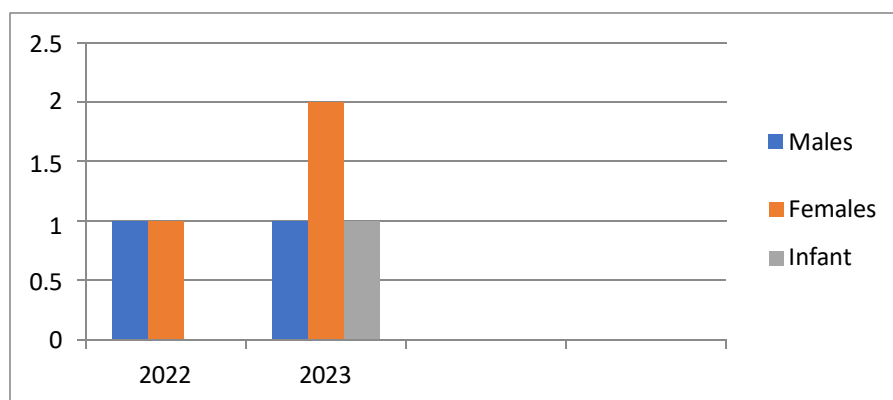
nine recognized subspecies, and they are divided into two groups: those that come from China and those that come from India. It is usually brown or grey and is 47–53 cm (19–21 in) long, with a 20.7–22.9 cm (8.1–9.0 in) tail, and weighs 5.3–7.7 kg (12–17 lb). It originates from South, Central, and Southeast Asia and has the largest range of any non-human primate. It lives at a broad range of elevations and in a wide range of habitats, from grasslands to dry and wooded regions, and even near human towns. People think that feral colonies in the United States were either let go by people or escaped after hurricanes destroyed zoo and wildlife park buildings. The Malakand Safari Park just got some new rhesus monkeys. There are four of them now, two females, one male, and one baby. This effort makes the visitors extremely pleased since monkeys are quite nice to people.

Here are their new states:

Table 3. Numbers of Rhesus Monkey

Rhesus monkey	Male	Female	Infant	Total
	1	2	1	4

Figure 3. Number of Rhesus Monkey Through Various Years



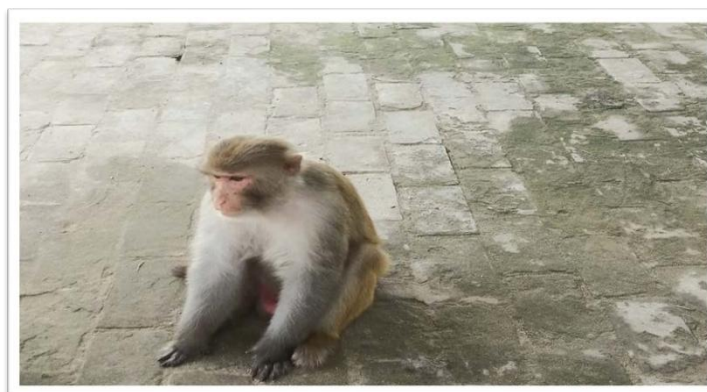
Management of Rhesus Monkey

Rhesus monkey are new introduced specie in the park. They are protected in cage area of 25mW*50mL. They eat fresh fruits and

vegetables which provided by management staff.

Every week a veterinarian comes to check their health status.

Figure 4. Rhesus monkey (*Macaca mulatta*)



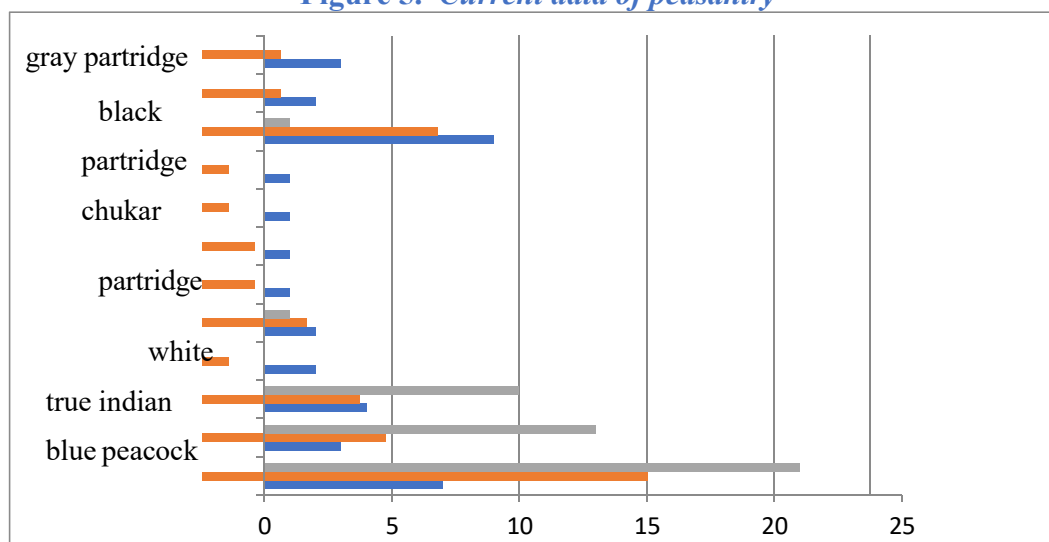
Pheasantry

In the park a will established peasantry is present. The check list of pheasants present in the park is below.

Name	Scientific name	Male	Female	Chicks	Total
Silver pheasant	<i>Lophura nycthemera</i>	4	6	10	10
Kalij pheasant	<i>Lophura leucomelanos</i>	2	1	0	3
Ring-necked pheasant	<i>Phasianus colchicus</i>	7	17	21	23
Wood green pheasant	<i>Rollulus rouloul</i>	3	7	13	10
Pied peacock	<i>Pavo cristatus</i>	1	2	0	4
Chukar partridge	<i>Alectoris chukar</i>	9	9	1	18
Indian blue peacock	<i>Pavo cristatus</i>	1	1	0	2
Black shouldered kite	<i>Elanus axillaris</i>	2	4	1	6

Gray partridge	<i>Perdix perdix</i>	3	3	0	6
White peacock	<i>Pavo cristatus</i>	1	2	0	3
White trout	<i>Erythronium albidum</i>	1	1	0	2
Black partridge	<i>Melanoperdix niger</i>	2	3	0	5
TOTAL		36	56	46	92

Figure 5. Current data of peasantry



Management of pheasants

These birds are kept in a big cage. The cage size is 25×110 ft. The feed which is given to them are 14 and 9. These are for large birds. The floor of the cage is made up of mud because the cement floor can cause many feet disease and also, they can take mud bath, its importance is that it prevents the birds from many skin diseases. Before breeding season, the pheasant are given spinach, potatoes and soya bean, which stimulate its heating. Generally, the eggs laying seasons start from the ends of the February and continue until the first week of June.

Issues of The Park

- Accessibility of road to the park.
- Eucalyptus is also an issue which has badly affected the indigenous plant species.
- Water availability for plants and animals.

- Government negligence toward park by way of less funding and related issues.
- Lack of engagement of locals toward the protection and preservation of species.

Conclusion

Malakand Safari Park plays an essential role in the conservation of various species of partridges in Malakand, as the number of these birds is decreasing due to illegal hunting practices and habitat loss. As we are familiar with, safari parks introduce endangered species, thus allowing for the conservation of species that are facing various threats. These animals are kept in intensive care to protect and expand their populations, and the park also provides a natural habitat for them due to its location. The management of the safari park necessitates the employment of laborers, who are paid a daily wage, making the local people the primary focus of the park. This provides local people with the opportunity to

earn a living. Furthermore, when tourists visit the park, they purchase various items of daily consumption and sustenance, thus improving the local businesses. One of the primary reasons why visitors are not taking advantage of the park is due to its lack of publicity and lack of awareness. The other is due to the park's lack of infrastructure and lack of facilities for tourists.

Recommendations

1. Since Malakand Safari Park is still unknown to the general public, the wildlife department should publish brochures and brochures about the park to inform the general public.
2. The number of staff for management in the park is not sufficient; the number should be increased for better management in the park.
3. Since Malakand Safari Park is newly established, the KPK Wild Life department should focus more on the park and allocate extra allowances for better management and other developmental works.
4. They should introduce other animals in the park that are facing various threats so that we can protect these species and provide better recreation to the people. We can attract more people to the park by introducing more animals.
5. They need to coordinate with other developmental organizations with the wildlife department so that their developmental activities do not destroy the wildlife habitat. At least the wildlife habitat should not be subjected to roads electrical lines, telephone line and colonization. There should be an independent management of the wildlife department but coordination with the forest department is essential for development activities.

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