

RE-INTRODUCTION OF BLACKBUCK IN PAKISTAN

by

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Summary. Blackbuck (*Antelope cervicapra*) was once a native of Cholistan desert and was so plentiful that 50 animals were presented in 1930 by the then Nawab of Bahawalpur to some ranchers in Texas where they had increased to 5000 by 1970. By 1967, the blackbuck had been exterminated from its natural habitat—Cholistan—and the need was felt to re-introduce it. In April 1970, 10 blackbuck (3 males, 7 females) were presented by World Wildlife Fund through San Antonio Zoo to the Forest Department, West Pakistan. The animals were kept in an enclosure for multiplication and ultimate release in the wild. 31,200 hectares of Cholistan desert (including Lal Suhanra irrigated plantation and Lal Suhanra lake) were declared as National Park in July 1972. On February 11, 1978, the number in the enclosure had increased to 22. Pneumonia, and snake bites appeared to be responsible for the slow increase.

Introduction. Cholistan desert is a unique habitat which supports a rich variety of wildlife. Amongst the ungulates, blackbuck (*Antelope cervicapra*), chinkara gazelle (*Gazella gazella*) and nilgai (*Boselaphus tragocamelus*) were most abundant only 30 years ago. In Pakistan the blackbuck existed only here. Biotic pressure increased with the increase in population and resulted in the deterioration of the habitat and ultimate reduction in the number of these animals. The blackbuck had to bear the brunt and became extinct.

Realising the situation, World Wildlife Fund arranged a donation of 10 blackbuck, 3 males and 7 females, from Texas ranches (through San Antonio Zoo) where it was once introduced from Cholistan about 40 years ago. Lal Suhanra irrigated plantation was selected as the venue for reintroduction. The animals were initially kept in a small enclosure covering about one hectare. In 1973, they were transferred to a bigger enclosure erected utilizing chainlink netting of 10 cm mesh made of 8 guage galvanised wire, donated by World Wildlife Fund. The blackbuck breed all the year round but the main rut takes place between February and March and each female bears one or two young (Prater, 1971). In the absence of any predators in the enclosure, the population should have greatly increased over the past seven years. But at present there are only 22 blackbuck in the enclosure. The study was started to determine the causes of slow increase in the blackbuck population.

Study area. The area enclosed was a part of Lal Suhanra irrigated plantation. Shisham (*Dalbergia sissoo*) was raised at 3 × 2 metre spacing in the form of a standard plantation. The uncommanded areas bear the natural vegetation. A portion of the enclosure was a part of the Lal Suhanra water reservoir maintained after the installation of

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canal irrigation system in parts of Cholistan—now drained in favour of another large reservoir made on the right bank of Lal Suhanra canal. After the reservoir was drained off, natural vegetation of tropical thorn forest type covered the area.

3 metre high wire net fence was erected in a perimeter of about 10 km covering 288 hectares. Wire net fencing was also extended in the ground upto a depth of 0.6 metres to keep the burrowing animals away from the enclosure.

Vegetation. The natural vegetation of the area consisted of 'Tropical Plains Thorn forests' (Champion, Seth and Khattak, 1965). The vegetation comprised the following species:

- I/II *Prosopis spicigera*, *Salvadora oleoides*, *Capparis decidua*, *Tamarix aphylla*,
 Acacia leucophloea, *Acacia nilotica*, *A. jacquemontii*.
- III *Calotropis procera*, *Suaeda fruticosa*
- IV *Fagonia* sp., *Chenopodium album*, *Astragalus* sp.
- IVa *Saccharum spontaneum*, *Aristida depressa*, *Cymbopogon jwarancusa*, *C.*
 shoenanthus, *Elionurus hirsutus*, *Eleusine flagellifera*.

Vegetation on the dunes was classified as: 'Calligonum Dune Sorub'. Champion, Seith and Khattak (1965) described the following floristic composition:

- I/III *Calligonum polygonoides* (a), *Tamarix* sp. (o), *Capparis decidua* (o),
 Prosopis spicigera (o), *Leptadenia spartium* (o), *Haloxylon griffithii* (1a).
- IV a *Dicanthium* spp., *Aristida depressa*, *Cenchrus* sp., *Pennisetum* sp., *Chloris* spp.,
 Eleusine sp., *Elionurus hirsutus*, *Panicum* sp., *Saccharum spontaneum*.

Besides these the following species were also found:

Zizyphus nummularia, *Euphorbia prostrata*, *Crotalaria bruhia*, *Nestia* sp., *Trianthema crystallina*, *Eragrostis* sp. and *Agrostis* sp.

Wild animals. Blackbuck were the primary occupants of the enclosure and enjoyed full protection from predators and poachers. Supplemental feed-maize, gawara (*Phaseolus aconitifolius*) and jawar (*Sorghum vulgare*) were provided during winter. A water pond was also made in the enclosure. Later it was decided to introduce other native species of the tract as well. In September 1975 one male chinkara was released and on January 12, 1976, 9 chinkara (2 males, 7 females), 2 nilgai (one male, one female) and 6 hog deer *Axis (porcinus)* 3 males, 2 females, one young) were also introduced. The feed was reduced to maize only.

During December 1977, 8 wild boar crossed the fence by breaking it at a weak point, seven of these were captured and removed from the enclosure, one still remains.

The present population of the animals in the enclosure is as follows:

	Male	Female	Fawn/calf	Total
Blackbuck	10	10	2	22
Chinkara	6	8	4	18
Nilgai	1	1	2	4
Hog deer	3	2	—	5

Amongst the game birds, black and grey partridges (*Francolinus francolinus* and *F. pondicerianus*) and sandgrouse (*Pterocles* spp.) are commonly found. 6 peacocks (*Pavo cristatus*) were introduced on August 8, 1975, none could survive. Amongst the predators caracal cat (*Felis caracal*), desert cat (*Felis libyca*) and the small Indian civet (*Viverricula indica*) have been recorded from the area but no damage on their account was reported. Jackals (*Canis aureus*), and Indian fox (*Vulpes bengalensis*) are also present. Porcupine (*Hystrix indica*) and wild hare (*Lepus nigricollis*) are the other mammals.

Habitat. Three distinct habitat types occur in the area: irrigated plantations, tropical thorn forest and the Calligonum dune scrub. All the three habitats provide good escape cover, ranging between 20 to 100%. During February 1978 maximum cover was observed under tropical thorn forest and the irrigated plantations, whereas cover under Calligonum scrub type ranged between zero to 70%. However, on the dune crests shrub cover reached 100% at some places. Shisham was the dominant species in irrigated plantation. The under story mainly consisted of various grasses, most frequent being *Saccharum munja*. Maximum cover in tropical thorn forest was provided by *Tamarix aphylla*, *T. dioica*, *Prosopis spicigera* and *Acacia jacquemontii*. *Saccharum munja* contributed maximum to the under canopy layer. *Calligonum polygonoides* was the main species on the dunes with some *Acacia jacquemontii* and *Calotropis procera*. *Aristida* sp. and *Elionurus hirsutus* contributed the maximum to ground cover in more than 60%. The 3rd most frequent species was *Cenchrus ciliaris*.

Feed requirements. Mirza and Waiz (1973) offered 22 plants naturally occurring in the area to a captive blackbuck which had been kept hungry for 24 hours. Of these *Acacia nilotica*, *Leptadenia pyrotechnica*, *Calotropis procera*, *Haloxylon recurvum*, *Crotalaria burhia*, *Capparis decidua*, *Salvadora oleoides*, *Trianthema crystallina*, and *Neslia* sp. were found preferred in the order mentioned. Besides these *Euphorbia prostrata* and *Cymbopogon martinii* were also relished. The grazing capacity of the area is 40 animal units (after Khan, 1973) and it has only 20 animal units on it at present. Thus there is no dearth of food for the wild animals.

Mortality. Mortality is one of the causes of slow population increase, 10 blackbuck (3 males, 7 females) received in April 1970 had increased to 13 (7 males, 4 females and 2 fawn) in July 1973, at the time. As the figures show, at least 3 females had died whereas

4 males and 2 fawn were the addition through births, the cause of death has not been recorded.

Since then, the following deaths have been reported:

<i>Date</i>	<i>Animal died</i>	<i>Cause</i>
	Blackbuck	
20-5-1974	Female	Snake bite
21-10-1975	Male	Pneumonia
21-2-1976	Female	Pneumonia
5-6-1976	Male	Snake bite
-5-1977	Male	Snake bite
	Chinkara	
22-1-1976	Female	Pneumonia
27-10-1977	Female	Snake bite
	Hog deer	
24-1-1976	Fawn	Pneumonia

No records, were maintained after May 1977, 2 deaths by snake bite were, however, communicated by the staff after May 1977.

Causes of mortality. Whereas pneumonia would have been caused due to physical deficiencies, the special concern was the mortality caused by the snake bites. A survey conducted by the World Wildlife Fund team during August 1977 revealed the presence of all the 3 poisonous snakes viz., cobra (*Naia tripudians*), krait (*Bungaris caeruleus*) and the viper (*Echis carinata*) (Mirza, 1977). Besides these other species were also recognised which could not be identified. Amongst the 3 poisonous species, viper were the most abundant and harmful as they exhibited mimicry and the animals feeding on the undergrowth in all probability could not see them and were bitten. The viper snake bite is always fatal. The occurrence of snake burrows was compared inside and outside the enclosure. The frequency was more inside the enclosure and on or around the sand dunes.

The study revealed that the dunes had a very large frequency of rat holes. Within 10 m² plots, there were on the average 58 rat holes on the dunes as compared to 15 on the flats. The number ranged between 30 to 120 and zero to 40 respectively. Rat holes are not only used as hiding places (burrows) by the snakes but also provide them with food.

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