

# Wildlife of Border Belt Game Reserve District Narowal, Punjab, Pakistan

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#### Abstract

Indo-Pak border belt area of district Narowal was established a Game Reserve, with a view to conserve local wildlife species. The area is a complex of aquatic and terrestrial habitat which is surrounded by agricultural lands. During study 15 mammal species from 11 families and 6 orders were identified. Among birds 86 species representing 64 genera, 35 families belonging to 17 orders were identified. Passeriformes is the most dominant order represented by 31 species belonging to 13 families, followed by anseriformes represented by 8 species all belonging to a single family, Anatidae. The area is a very important staging place for a variety of migratory waterfowl. Different types of waterfowl visit this area during winter every year. Due to enhanced threats to wildlife it is concluded that there is urgent need to safeguard the over all biodiversity of the area.

**Key Words:** Species, Mammals, Birds, Population, Biodiversity.

### Introduction

Five miles strip along Indo-Pak Border in the Punjab Province was constituted a Game Reserve under the Punjab Wildlife Act, 1974, vide Government Notification No. SOFT(EXT)XII-1/77, dated 19<sup>th</sup> September, 1995. Border belt area of district Narowal approximately 130 km in length is also included in the Game Reserve. The area is a complex of aquatic and terrestrial habitat because river Ravi also flows in this area. The area is riverine and surrounded by agricultural lands. The natural vegetation of the area is tropical thron forest type with species of trees, such as Kikar Acacia nilotica, Shisham Delbergia sisso, Ber Zizyphus mauritiana and Safeda Eucalyptus camaldulensis. The main species of shrubs are Kahi Saccharum spontanium, Kana S. munja, Frash Tamarix aphylla, Aak, Calotropis procera, Lai Tamarix dioica and Dila Capparis decidus. Ground flora consists mainly of Bhakhra Tribulius oratus, Medhana Dactyloctenium aegytium, Hermal Peganum hermela, Bathu Chenopodium album and Mako Solanum nigrum which provide forage to wild animals.

Major crops cultivated in agricultural lands are Bajra *Pennisetum typhoides*, Chari *Sorghum vulgare*, Rice *Oryza sativa*, Wheat *Triticium indicum* and Mash *Phaseolus radiatus*. These crops provide food to the grainivorus wild birds found in the area.

Corresponding author: M. Akbar Department of Zoology Government College University Faisalabad. The area has a very good potential for scientific research, conservation education and sport hunting. For the effective management of a species or population, Rubin et al. (1998) stressed for the need of accurate knowledge of its spatial distribution. With this aim, present study was thoroughly conducted first time which will provide a baseline for the future management of the area.

### **Materials and Methods**

Border belt area of Shakarghar and Narowal tehsil of district Narowal was surveyed during January 2002 and January, October 2003. As the area was very wide spread and it was not possible to survey the whole area, therefore, study was conducted by random sampling of the area. During daytime survey was conducted by beating the area from one side to the other in a straight line and observing the birds and animals found in the area. Survey was also conducted by moving at a very low speed in a 4x4 vehicle and observing outside. Study was conducted with special reference to diversity of birds and animals. Binocular standard EZ (10x30 mm) Minolta and Swift Telemaster Model 841, Zoomscope were used to observe, spot and identify the birds species following Roberts (1991, 1992) and Ali & Ripley (1983, 1987). Mammals are rather shy creatures and difficult to observe in the field, therefore, in addition to direct observations indirect clues of their presence such as scatterings, faecal pallets and foot prints were also given due consideration during survey. Hog deer being key species of the area was given special consideration and its survey was also conducted during night with help of search light and head lights of the vehicle. Informations were also collected from the local people to have some idea of the mammalian fauna.

## **Results and Discussion**

### Mammals

During present study 15 mammal species from 11 families and 6 orders were recorded Table-1. Among these species of special interest are those which are judged to be locally important for their rarity or for utilitarian, scientific or economic value and warrant special management attention. These are as under:

Macaca mulatta: No animal was physically observed in the field but the presence of a family of four animals in the wild was reported by the staff of rangers check post, Tugalpura. The area is not suitable habitat for monkey. Most probably these monkeys might have migrated from Jammu Kashmir.

Herpestes edwardsi: It is very beneficial to man. It feeds on scorpions, venomous snakes and stinging hymenoptera. This adaptable and useful predator is

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captured by nomadic "Jogi" tribes who make a living using the tethered mongoose to stage fights with cobra. Though apparently hesitating occasionally to tackle large snakes (Stockley, 1930) there are many authentic observations of their killing and devouring highly venomous snakes. Its method of attack has been well documented by Sterndale, 1884.

Sus scrofa: It is a pest for cultivation and causes serious damage to crops.

Axis porcinus: It is valuable due to sport hunting. It's skin and head is used as trophy by preserving through chemicals. Preserved skin is also used as prayer mat. A very good population is surviving in the area. During study 9 Hog deer in tehsil Shakerghar and 7 in tehsil Narowal were observed, on the basis of which total population was estimated as, 168 animals in tehsil Shakerghar and 112 in tehsil Narowal, whereas total 280 animals in the said game reserve area.

Lepus nigricolis: This is an important game species which is hunted both by shooting and coursing dogs. This is the only "halal" mammal whose hunting is legally allowed under the provisions of Wildlife Act, 1974.

*Hystrix indica:* It is wide spread in the area. It causes damage to plants by trunk barking, stem and branch cutting. They eat succulent plants of many species and are especially fond of garden trees.

#### Birds

The area is a complex of aquatic and terrestrial habitat because it has characteristics of both these types, therefore it is accommodating a large variety of birds. During the study 86 bird species from 65 genera, 35 families and 17 orders were recorded. Passeriformes is the most dominant order represented by 31 species

belonging to 13 families, followed by anseriformes represented by 8 species all belonging to a single family, Anatidae. Charadriiformes was also represented by 8 species belonging to 4 families. Coraciiformes, Accipitriformes, Galliformes, Ciconiiformes and Columbiformes, represented by 7, 6, 5, 4 and 4 species belonging to 4, 1, 1, 1, and 1 family respectively.

Order Gruiformes, Falconiformes and Cuculiformes represented by 3, 2 and 2 species respectively Table-2. The area is a very important staging and wintering place for a variety of migratory waterfowl. Different types of waterfowl visit this area during winter every year. The area around Heer check post in Shakerghar, Kakay-kay and Chindian in tehsil Narowal are very good wintering places of waterfowl where thousands waterfowl visit every year. The most abundant are Fulica atra, Anas crecca, A. platyrhynchos, A. acuta, A. clypeata, A. Penelope, Anser indicus and Tadorna ferruginea. Other species found in the area are Ardea cinerea, Ardeola grayii, Egretta garzetta, Phalacrocorax niger, Tachybaptus ruficollis, Amaurornis phoenicurus and Porphyrio porphyrio. Waterfowls are important as game species. It is very good source of food for sport hunters.

Among phasianidae, most important is *Pavo cristatus* which is endangered in the Punjab. It was observed at three different places in groups of 25, 10 and 7 birds. These birds were found feeding on *Oryza sativa* crop near Zero-line in the area of Dera Bhindran and Yousaf Butt tehsil Narowal. It was reported that these birds come from India daily for feeding purposes and go back to India to pass their nights.

Table-1 Mammals of Border belt area of Narowal

Order	Family	Scientific Name	Common Name
Insectivora	Erinaceidae	Hemiechinus collaris	Hedgehog
Primates	Cercopithecidae	Macaca mulatto	Rhesus monkeys
Carnivora	Canidae	Canis aureus	Jackal
	Felidae	Felis chaus	Jungle cat
	Herpestidae	Herpestes javanicus	Small Indian mongoose
	•	H. edwardsi	Common Indian mongoose
Artiodactyla	Suidae	Sus scrofa cristatus	Wild boar
	Cervidae	Axis porcinus	Hog deer
Lagomorpha	Leporidae	Lepus nigricolis	Indian hare
Rodentia	Pteromyidae	Funambulus pennantii	Five striped palm squirrel
	Hystricidae	Hystrix indica	Porcupine
	Muridae	Rattus rattus	House rat
		Mus musculus	House mouse
		M. booduga	Little Indian field mouse
		Nesokia indica	Short-tailed mole rat

Table-2 Birds of Border belt area of Narowal

Podicipediformes         Podicipedidae         Tachybaptus ruficollis         Little grebe           Pelecaniformes         Phalacrocoracidae         Phalacrocorax niger         Little cormorant           Ciconiiformes         Ardeidae         Ardea cinerea Bubulcus this Egretta garzetta Ardeola grayit         Grey heron           Anseriformes         Anatidae         Araecia grayit         Bar headed goose Ruddy shelduck Pintail           Anseriformes         Anatidae         Ansecuta Goomen teal Anse acuta Pintail         Muldy shelduck Pintail           Accepca A. Patryfhynchos         A. chypeata Ansecuta Pintail         Northern showeler           Accipitriformes         Accipitridae         Milvus migrans Elanus caerulus Pernis pillorhyncus Circus acrugionsus Backwinged kite Pernis pillorhyncus Circus acrugionsus Pracellus pusard         Laggar falcon           Falconiformes         Falconidae         Falco jugger Pernis pillorhyncus Circus acrugionsus Pracellus fancolinus Pracellus Prac	Order	der belt area of Naro Family	Scientific Name	Common Name
Ciconiiformes Ardeidae Ardea cinerea Bubulcus ibis Egrettu garzetta Ardeola grayii Indian pond heron Indian pond Marsh harrier Rough-legged buzzard Indian pond heron Indian p	Podicipediformes	Podicipedidae	Tachybaptus ruficollis	Little grebe
Anseriformes  Anatidae  Anseriformes  Anseriformes  Anatidae  Anseriformes  Anatidae  Anseriformes  Anseriformes  Anatidae  Anseriformes  Anseriformes  Anatidae  Anseriformes  Anseriformes  Anatidae  Anatidae  Anatidae  Anatidae  Aneliopus  Anatidae	Pelecaniformes	Phalacrocoracidae	Phalacrocorax niger	Little cormorant
Anseriformes  Anatidae  Anseriformes  Anseriformes  Anatidae  Anseriformes  Anatidae  Anseriformes  Anseriformes  Anatidae  Anseriformes  Anseriformes  Anatidae  Anseriformes  Anseriformes  Anatidae  Anatidae  Anatidae  Anatidae  Aneliopus  Anatidae	Ciconiiformes	Ardeidae	Ardea cinerea	Grey heron
Anseriformes  Anatidae  Anser indicus			Bubulcus ibis	
Anscriformes  Anatidae  Anser indicus Tadorna ferruginea Anas acuta Anas maria Anas acuta Anas acut			Egretta garzetta	_
Tadorna ferruginea   Ruddy shelduck   Pintail   Anas acuta   Pintail   Common teal   A. Pereca   A. Pepelape   Eurasian Wigeon   Spot-billed duck   A. Penelope   Eurasian Wigeon   Spot-billed duck   Sp			Ardeola grayii	Indian pond heron
Accipitriformes	Anseriformes	Anatidae	Anser indicus	Bar headed goose
Anas acuta A. crecca Common teal A. clypeata A. clypeata A. pelapryhynchos Spot-billed duck  Accipitriformes Accipitridae  Milvus migrans Elanus caeruleus Pernis pillorhyncus Crested honey buzzard Circus aeruginosus Buteo lagopus Black partridge Common quall C. coromandelica Cournix coturnix Common quall Rain quall  Gruiformes  Rallidae Amaurornis phoenicurus Fulica atra Porphyrio porphyrio Purple swamphen  Charadriidor Purple swamphen  Charadriidor Purple swamphen  Charadriidor Purple swamphen  Charadriidae Charadrius dubius Columba livia Columba li			Tadorna ferruginea	_
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Accipitriformes  Accipitridae  Milvus migrans Elanus caeruleus Pernis ptilorhyncus Circus aeruginosus Buteo lagopus Buteo lagopus Bureo lagopus Burghinus Long-legged buzzard Long				
Elanus caeruleus   Black-winged kite   Crested honey buzzard   Circus aeruginosus   Marsh harrier   Buteo lagopus   Rough-legged buzzard   Long-legged b			A. poecilorhyncha	Spot-billed duck
Pernis ptilorhyncus	Accipitriformes	Accipitridae	Milvus migrans	Common pariah kite
Circus aeruginosus   Buteo lagopus   Rough-legged buzzard				Black-winged kite
Falconiformes Falconidae Falco jugger Laggar falcon Shaheen falcon  Galliformes Phasianidae Pavo cristatus Indian peafowl Black partridge F. pondicerianus Grey partridge Coturnix coturnix C. coromandelica Rain quail  Gruiformes Rallidae Amaurornis phoenicurus Fulica atra Coott Porphyrio porphyrio Purple swamphen  Charadriiformes Recurvirostridae Charadriidae Vindicus Red-wattled lapwing Little ringed plover Tringa nebularia Green shank Red shank Actitis hypoleucos Sternia aurantia Indian river tern  Columbiformes Columbidae Psittacidae Sterna aurantia Rose-ringed parakeet  Cuculiformes Psittacidae Cuculidae Centropus sinensis Clamator jacobinus Fied cuckoo  Strigiformes Strigidae Asio otus Long-eared owl			Pernis ptilorhyncus	
Falconiformes Falconidae Falco jugger F. peregrinus Shaheen falcon Shaheen falcon Shaheen falcon  Galliformes Phasianidae Pavo cristatus Francolinus francolinus Francolinus francolinus Francolinus francolinus Grey partridge Coturnix coturnix Common quail C. coromandelica  Gruiformes Rallidae Amaurornis phoenicurus Fulica atra Porphyrio porphyrio Purple swamphen  Charadriiformes Charadriidae Panchius vanellus Vanellus vanellus Vindicus Charadrius dubius Charadrius dubius Scolopacidae Tietanus Actitis hypoleucos Sternidae Columbiformes Columbiformes Columbidae Columba livia Sterna aurantia Columba livia Streptopelia decaocto S. senegalensis S. chinensis Spotted dove  Psittaciformes Psittacidae Cuculidae Centropus sinensis Clamator jacobinus Compacated Crow pheasant Pied cuckoo  Strigiformes Crow pheasant Pied cuckoo  Strigiformes Strigidae Asio otus Long-eared owl			_	
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Columbiformes  Columbidae  Columba livia Streptopelia decaocto Stitle brown dove Streptopelia decaocto Spotted dove  Psittaciformes  Psittacidae  Psittacula krameri Rose-ringed parakeet  Cuculiformes  Cuculidae  Centropus sinensis Clamator jacobinus  Pied cuckoo  Strigiformes  Strigidae  Asio otus  Long-eared owl				
Columbiformes  Columbia livia Streptopelia decaocto S. senegalensis Spotted dove  Psittaciformes  Psittacidae  Psittacula krameri  Cuculiformes  Cuculidae  Centropus sinensis Clamator jacobinus  Cong-eared owl				
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S. chinensis  Spotted dove  Psittaciformes  Psittacidae  Psittacula krameri  Rose-ringed parakeet  Cuculiformes  Cuculidae  Centropus sinensis  Clamator jacobinus  Pied cuckoo  Strigiformes  Strigidae  Asio otus  Long-eared owl				
Psittaciformes Psittacidae Psittacula krameri Rose-ringed parakeet  Cuculiformes Cuculidae Centropus sinensis Crow pheasant Clamator jacobinus Pied cuckoo  Strigiformes Strigidae Asio otus Long-eared owl			_	
Cuculiformes Cuculidae Centropus sinensis Crow pheasant Pied cuckoo  Strigiformes Strigidae Asio otus Long-eared owl			S. chinensis	Spotted dove
Clamator jacobinus Pied cuckoo  Strigiformes Strigidae Asio otus Long-eared owl	Psittaciformes	Psittacidae	Psittacula krameri	Rose-ringed parakeet
Strigiformes Strigidae Asio otus Long-eared owl	Cuculiformes	Cuculidae	Centropus sinensis	
			Clamator jacobinus	Pied cuckoo
Caprimulgiformes Caprimulgidae Caprimulgus asiaticus Indian night jar	Strigiformes	Strigidae	Asio otus	Long-eared owl
	Caprimulgiformes	Caprimulgidae	Caprimulgus asiaticus	Indian night jar

Apodiformes	Apodidae	Hirundo smithi	Wire tail swallow
Coraciiformes	Alcedinidae	Alcedo atthis Halcyon smyrnensis Ceryle rudis	Common king fisher White-throated kingfisher Pied kingfisher
	Meropidae	Merops orientalis	Little green bee-eater
	Coraciidae	Coracias benghalensis	Indian roller
	Coraciidae	C. garrulus	Kashmir roller
	Upupidae	Upupa epops	Hoopoe
	Орирічас	Орири ерорз	Поорос
Passeriformes	Alaudidae	Galarida cristata	Crested lark
		Alauda gulgula	Sky lark
	Hirundinidae	Hirundo rustica	Common swallow
		Riparia riparia	Sand martin
		Delichon urbica	House martin
	Motacillidae	Motacilla maderaspdlensis	Large pied wagtail
		M. flava	Yellow wagtail
		M. alba	White wagtail
		M. cinerea	Grey wagtail
	Pycnonotidae	Pycnonotus cafer	Red-vented bulbul
		Saxicoloides fulicata	Indian robin
	Timaliidae	Turdoides striatus	Jungle babbler
		T. caudalus	Common babbler
	Lanidae	Lanius vittatus	Bay back shrike
	Sylviidae	Locustella naevia	Grass hopper warbler
		Prinia subflava	Indian prinia
		P. socialis	Ashy prinia
		Phylloscopus sindianus	Brown chiff chaff
	Turdidae	Phoenicurus phoenicurus	Red start
		Saxicola torquata	Stone chat
		S. caprata	Pied bush chat
		Monticola solitarius	Blue rock thrush
	Dicruridae	Dicrurus macrocercus	Black drongo
	Corvidae	Dendrocitta vagabunda	Indian tree pie
	Sturnidae	Sturnus contra	Pied myna
		Acridotheres tristis	Common myna
		$A.\ ginginianus$	Bank myna
	Passeridae	Passer domesticus	House sparrow
	Ploceidae	Ploceus manyar	Streaked weaver
		P. philippinus	Baya weaver bird
		Lonchura punctulata	Spotted munia

Important game species such as Francolinus francolinus, F. pondicerianus, Coturnix coturnix and C. coromandelica were also observed in the area. It was reported that their population is decreasing day by day due to illegal hunting and poaching in the area. Other game birds such as Columba livia, Streptopelia decaocto, S. senegalensis and S. chinensis are commonly found in the area.

A large veriety of singing birds was also recorded in the area which has a very good attraction for ecotourists.

#### Threats:

The major threats to wildlife in the area are given below in order of magnitude.

It is a riverine area therefore floods in the river damage habitat by land erosion. Nests and eggs of the birds are seriously destroyed during flood.

- 2. Illegal hunting, poaching of wildlife and livestock grazing in the area, seriously effect the population of wildlife species.
- 3. Exchange of firing between Indo-Pak forces in the border belt area damage wildlife populations on large scale.
- 4. About two years ago when Indo-Pak war was suspected, mines were laid down in the area by Pakistan army. It was reported that a large number of domesticated and wild mammals were killed/injured with mine

# Conclusions:

It is concluded that the populations of breeding wild birds and mammals are decreasing day by day due to enhanced threats which calls for the urgent management planning to safe-guard the over-all biodiversity of the area.

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