



Special Article

RECENT OBSERVATIONS ON THE DISTRIBUTION AND STATUS OF WILDLIFE OF BALOCHISTAN

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ABSTRACT

Field surveys were undertaken from 2015 to 2019 in major ecological zones of the Balochistan province to collect data on the distribution and status of its wildlife. Based on five years field observations, 92 species of mammals, 373 species of birds, 120 species of reptiles and seven species of amphibians were documented. The present study gives an update list of Wildlife Protected Areas of the Province, the list of Threatened/Near-threatened species, the important wildlife hotspots, important ecotourism sites and key/peculiar of wildlife species. In regard to the Threatened/Near-threatened species of wildlife, among mammals four species are Endangered (EN), eight species are Vulnerable (VU) and three species are Near-threatened (NT). Among birds, two species are Critically Endangered (CR), four species are EN, three species are Vulnerable and 15 species are Near-threatened. Among reptiles, one species is Critically Endangered, one species is Endangered and six species are Vulnerable. The threats along with Protected Areas Management issues have also been identified and Priority Actions for the conservation and management of wildlife and its habitats have been suggested. The achievements made so far in the Province have been highlighted for awareness of the scientific community and for appreciating the commendable efforts in the Province made so far.

Keywords: Wildlife of Balochistan, protected areas of Balochistan, ecotourism sites, threatened wildlife species, key species.

INTRODUCTION

Balochistan, with an area of 350,000 sq. km, is the largest province while it has the lowest population of 0.7 millions. It consists of 32 districts and contains the coastal area of about 800 km (Fig. 1). The geographical coordinates include 24.32N and 60.70E. The mountainous ranges exist in the eastern and northern part of province. Mountains of about 7000 ft height are also found. While, Valleys are situated above 1500 m of sea level.

In regard to the variety of biodiversity, this province is quite rich in wildlife. Three National Parks, 14 Wildlife Sanctuaries, and six Game Reserves are present in the Province for the protection and conservation of wild species (Govt. of Balochistan and IUCN, 2000).

Much work on the wildlife of Balochistan has been previously done which includes Ahmed and Ghalib (1979), Ahmed *et al.* (1992, 1993, 2011), Ahmed (2003, 2013), Ali *et al.* (2018), Ali *et al.* (2012), Arshad *et al.* (2002), Azam (2004), Balochistan Forest and Wildlife Department (2006), Begum *et al.* (2013, 2016), Ghalib *et al.* (1997, 2000, 2004, 2007, 2008), Ghalib and Hasnain (1997, 1999), Gore *et al.* (2012), Government of Balochistan and IUCN-Pakistan (2000), Groombridge (1987), Grimmett *et al.* (2008), Iffat (1998), IUCN-Pakistan (2017), Javed and Azam (2005), Kanwal *et al.* (2018), Karki (2016), Khan (2002), Khan (2006, 2008, 2010), Khan and Siddiqui (2011), Khan *et al.* (2004, 2010), Khurshid *et al.* (1995), Kiani and Waerebeek (2015), Mian (1997), MMF Pakistan (2018), Nawaz (1984), Pandrani *et al.* (2005), Rasool and Hasnain (2008, 2009), Rehman and Theodore (2005), Roberts (1984, 1991, 1992, 1998), Sarwar *et al.* (2016), Shafiq and Barkati (2002), Shafiq *et al.* (2002), Shaikh and Molour (2004), Siddiqui *et al.* (2008), Van Gils and Baig (1992) and Waqas *et al.* (2011). In this study period, from 2015

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to 2019, we documented recent observations on the distribution and current status of the wildlife of Balochistan as well as highlighted the efforts and needs

for conservation and management of wildlife in the Province.



Fig. 1. Map of Balochistan showing Districts in the Province.

MATERIALS AND METHODS

Techniques used for Survey of Mammals

There are several techniques used for survey and observation of mammals. Methods which were adopted for the current study included Track Counts, Point Surveys, Roadside Counts, Line Transects, Strip Census and Pellet Counts.

Track Counts

Track count is an important technique used for identification of many species. Specifically nocturnal animals can easily be traced by track count method. The rainy season sometimes becomes supportive as old tracks diminish while the new tracks can easily be identified. Track count method was adopted during the survey in selected areas.

Point Surveys

In this method, different points were selected as the observation points for the wildlife. It becomes easier if that point is present on high elevation as it became easy to record the status of wildlife. Mostly, the time duration varies from one hour to five hours for observation. Different habitats can be selected for different observations. Dawn and dusk time were found suitable for the implementation of point count method.

Roadside Counts

As large mammals can easily detect the human presence by their strong sense of smell so it is not an easy task to easily approach them by entering their territory. So Road side count is much safer technique for the observation of large mammals. Brower *et al.* (1990) used this technique

as the researcher passed through the road side on some vehicle and sighted the number of species. The road side count technique was adopted to study the large mammals from the roads/ highways. Many different species of mammals were sighted including Foxes, Jackals, Cats and Mongooses. A vehicle was used to survey the study areas on a very slow speed to create the least disturbance in their natural habitat. The time of dawn and dusk were selected for these surveys.

Line Transects

Line Transect method is the most common technique used by various researchers to study the wild animals. A transect line is set to observe the transferring animals. Time has also been recorded for their sighting. Distance has also been estimated between the sighted animal and the observer. The total number of individuals of various species was collated by recording the number of sighted animals.

This technique was adopted during the surveys for observing the large mammals like Ibex, Urial and Chinkara. The surveys of marine mammals were done by boats. Different boats of different sizes were used for marine survey. The speed of boats were kept below 12 knots, while the transect area was observed from both sides of the boats. Two people worked as observers while one person worked as a recorder. Binoculars were used for the observations.

Pellet Counts

Pellet Counts Technique is also a very helpful tool during the survey for wildlife. Fecal material of various species can act as their identifying tool as well as for providing information about status of the species.

Spot Light Method

Spot light method was used to detect the nocturnal animals including Hare, Porcupine, Hedgehog, Fox, Wild Cat and Jackal.

Recording of Fresh Holes and Tracks

According to Brower *et al.* (1990) the holes and tracks method can be used to determine the range and status of small mammals. Fresh holes and tracks were counted in the study area of one sq. km, for the purpose.

Techniques used for Survey of Birds

Extensive fields surveys were used to record the migratory and resident birds. Line Transect method and Point Survey methods were used for bird fauna in bays, coastal, terrestrial and mountainous areas. Field equipments and field guides were used for identification of bird species.

Techniques used for Survey of Reptiles and Amphibians

Visual Surveys

Visual survey method was used to identify the presence of turtles in specific locations. This technique facilitates the study of population richness, type of habitat and species identification.

Line Transact Method

Line transacts method was used for reptile surveys. Suitable sampling areas were selected and transact walks were made to record the data.

Plot Searching

Plot searching is an important technique to study the population of reptiles and amphibian. This included the plot searching in main habitats of reptiles and amphibians.

Indirect Data Collection

Indirect record of occurrence of species was made by noting the presence of signs like tracks, den or tunnels (egg lying excavation), impressions of foot prints, or tail, presence of fecal pallets and information which was collected by indirect ways including the interviews of associated people like fishermen, wildlife officials, traders, hunters and local communities together with reviewing of the scientific published literature.

RESULTS AND DISCUSSION

Reliable assessment of distribution and population status of wild animals is a long-standing challenge in wildlife. In this study, we conducted several detailed surveys during 2015-2019. Based on our five year field studies and also taking into account the reliable secondary informations species of mammals, birds, reptiles and amphibians as recorded from the Province were documented (Table 1).

Table 1. Vertebrate Fauna of Balochistan.

S. No.	Group of animals	Number of species recorded
1	Mammals	92
2	Birds	373
3	Reptiles	120
4	Amphibians	7

Mammals of Balochistan

Ninety two species of mammals were recorded in the province (Table 11). Based on our findings Chiltan-Hazarganji National Park, Hingol National Park (HNP), Ziarat National Park, Qila Saifullah, Zhob, Noshki, Chagai, Kharan and Khuzdar areas have been identified as hotspots for wildlife in Balochistan.

Birds of Balochistan

373 species of birds have so far been recorded. Out of which, 256 species are migratory and 117 species are resident.

The potential bird areas of the province are: Chiltan/Hazarganji, Ziarat and Hingol National Parks, Rakshan Valley including Nag area, Chagai area, Zhob valley from Qila Saifullah to Zhob, Makran Coast, Zangi Nawar lake, Siranda Lake, Hub Dam, Saji Dam, Sonmiani, Bund Khushdil Khan, Beroon Kirthar Canal, Marao Lake and Astola Island. Zhob valley has been important for Siberian Crane. Chagai and Kharan areas are important for Houbara Bustard. A Houbara Research Rehabilitation and Breeding Centre (HRRBC) has been established at Kirchi, Nag Valley in district Kharan since 1999 by the Houbara Foundation International Pakistan with the aim to prevent unsustainable hunting, and to rescue Houbara from trappers for rehabilitation in the wild, and to reestablish the population of Houbara in the Nag Valley.

Status of the Coastal Birds

The most common, widespread and dominant waterbirds on the Coast are the waders or the shorebirds including the gulls and terns. Majority of these birds are found in shallow water habitats during the non-breeding period.

Nine species of birds have been recorded to be localized over the coast. These include Red Breasted Merganser, Marbled Duck, Black Stork, White Ibis, Glossy Ibis, Sooty Gull, White Winged Black Tern, White-checked Tern and Black shafted Ternlet.

Only three coastal sites on the Balochistan Coast now support large concentrations of waterbirds. These are Jiwani Coastal Area, Hingol National Park and Miani Hor. Other sites such as Ormara, Pasni, Gwadar, Sur Bandar, Khappar, Pishukan and Ganz have lost their significance as important waterbird sites due to large scale disturbance by developmental activities in the area.

Table 3. Prominent Birds migration through Balochistan.

S. No.	Common Name	Scientific Name	Seasonal Status
1	Blackheaded Bunting	<i>Emberiza melanocephala</i>	Common DPM
2	Red-headed Bunting	<i>Emberiza burniceps</i>	Abundant DPM
3	Redthroated Flycatcher	<i>Ficedula parva</i>	Very Common DPM
4	Common Crane	<i>Grus grus</i>	Prominent PM
5	Demoiselle Crane	<i>Grus virgo</i>	Prominent PM
6	Rufoustailed Rock Thrush	<i>Monticola saxatilis</i>	Abundant SPM
7	Bluecheeked Bee-eater	<i>Merops persicus</i>	Abundant SBV
8	European Bee-eater	<i>Merops apiaster</i>	Widespread SBV
9	Eurasian Cuckoo	<i>Cuculus canorus</i>	Widespread SBV
10	Common Chaffinch	<i>Fringilla coelebs</i>	Common WV
11	Finche's Wheatear	<i>Oenanthe finschii</i>	Frequent WV

Legend: DPM= Double Passage Migrant, PM= Passage Migrant, WV= Winter Visitor, SPM= Spring Passage Migrant, SBV= Summer Breeding Visitor

In regard to the seasonal status of the coastal birds, 50 species were recorded as resident, while 83 species were found to be migrants. Wilsons Storm Petrel, Crab Plover, Great Crested Tern, Lesser Crested Tern and Sandwich Tern were recorded as Year Round Visitors. Yellow-wattled Lapwing and Blackshafted Ternlet were recorded as Summer Breeding Visitors, while Sooty Gull, Common Tern, White Cheeked Tern and Bridled Tern were recorded as Summer Visitors and Yellow Wagtail was recorded as Passage Migrant.

Important Bird and Biodiversity Areas (IBAs) in Balochistan

In Balochistan, eight important Biodiversity Areas have been identified (Table 2). The list may be further expanded by addition of four such areas due to their importance as significant wetland sites viz. Hub Dam Wildlife Sanctuary, Ormara Turtle Beaches and Miani Hor.

Table 2. List of IBAs in Balochistan.

S. No.	Area Name and Category
1	Hingol National Park, Lasbella, Gwadar, Awaran
2	Chiltan-Hazarganji National Park, Quetta
3	Ziarat National Park, Ziarat
4	Juniper Wildlife Sanctuary, Ziarat
5	Ras Koh Wildlife Sanctuary, Chagai
6	Torghar Nature Sanctuary and the Shingar Range, Zhob
7	Jiwani Beaches and Dasht Kaur, Gwadar
8	Zangi Nawar Lake Game Reserve, Chagai

Prominent Bird Migrations in Balochistan

Eleven prominent and notable bird migrations have been recorded in Balochistan (Table 3). They must be closely monitored to find out the trends particularly in case of Cranes and Buntings.

Brief account of Some Important Bird Species of the Province

Three important groups of birds have been briefly discussed below as being the species of high economic importance and conservation values.

Cranes

Many groups of Cranes have been frequently seen in extreme southern parts of Pakistan. The majority of the cranes are seen on river Indus and on small rivers west to Indus like Zhob, Luni, Kashu and Kurram, flowing through the districts of Zhob, Dera Ismail Khan, Bannu, and Parachinar. In the south, big flocks of Common Cranes (Fig. 2) and Demoiselle Cranes have often been recorded along the sea coast, during February and March, while smaller groups are seen over small rivers and streams in the interior of southern Balochistan, heading towards North West.

Thousands of cranes are frequently seen in the districts of Zhob, Bannu and Dera Ismail Khan during spring each year. Their entry point is located between Zaro and Anam Bostan of Chagai District, which lies in the south-west direction of famous Abe-Istada Lake and south east of Kajaki dam of Afghanistan. These lakes are known for harbouring cranes for various durations.

After entering Pakistan through the above point, the cranes arrive in the vast stretches of arid, flat grounds, often deserts, spread over hundreds of square kilometers.

Since extremely arid in nature, vegetation in most of this area is very sparse while it is non-existent in certain portions. In some places, sand dunes could also be seen but more prominently, around a wetland, called Zangi Nawar Lake. The arial distance of the wetland from the entry point in Pakistan is about 50 km.

Zangi Nawar Lake consists of 32 natural sections of water, all interconnected through small water channels, enclosing islands of various sizes. Some of these islands are bare sand dunes, while others have good vegetation of trees like *Tamarix sp.* Such islands are the preferred nesting sites of a variety of resident bird species and are used for as resting place for migratory cranes (Roberts, 1984).

Cranes are known to local inhabitants as a very common feature of the area. Many of them still remember the sites where huge congregations of cranes used to occur. The number, though drastically declined over the last decades, still ranges in thousands. Unfortunately, bird shooting on Zangi Nawar has forced the cranes to use alternate sites.

The most popular flyway for the Demoiselle Crane passes through Zhob district. Qamar Din Karez is another staging area for Demoiselle Cranes located close to Pakistan-Afghanistan border. It is locally believed that cranes, that do not stop at Umer Zai, stay here. The cranes do not stop on any of these places during the autumn migration.



Fig. 2. Flock of Common Cranes (Photo Credit: Mirza Naim Beg).

Sooty Falcon

Sooty Falcon (*Falco concolor*) is peculiar to Hingol National Park as a summer breeder in the Aghor area of the Park and it is in need of special attention for its conservation. It is a rare summer breeder along the Makran Coast from Ormara westward. The breeding season is July-September/October. Sooty Falcons are known to breed in mid-May at the mouth of Hingol River in HNP.

Saker Falcon

Saker Falcon (*Falco cherrug*) locally known as Chargh or Saqar is a species which affects desert and semi-desert biotope. It had been recorded as a frequent winter visitor from Tajikistan and Afghanistan, but now it has almost been extirpated from the province due to heavy trapping.

Houbara Bustard

There is a vast plain area in Hingol National Park by the side of the Coastal Highway near Phor Naddi (25° 30' 37.8" N, 65° 51' 00.3" E). It is the main habitat of Houbara Bustard (*Chlamydotis macqueenii*) (Fig. 3) in the area (Ghalib *et al.*, 2008). Wintering Houbaras arrive in Pakistan via Afghanistan, from mid September-December. The Houbara Bustard (*Chlamydotis macqueenii*) wintering population visiting western Balochistan comes from Kazakhstan. Return migration takes place in February-March and by March most of the birds have gone back. Chagai and Kharan are the most favourite areas for these birds in Balochistan.

Houbara meat is also considered as an aphrodisiac. A ban on Houbara hunting was imposed by the Supreme Court in 2015. The Federal and the Provincial Governments challenged the decision before a larger bench of Supreme Court that lifted the ban in January 2016.



Fig. 3. Houbara Bustard (Photo Credit: Shumail Larik).

Reptiles of Balochistan

As many as 120 species of reptiles have so far been recorded from Balochistan (Table 12) comprising of six main groups (Table 4).

Amphibians of Balochistan

Seven species of amphibians have so far been recorded from Balochistan including three Frog and four Toad species (see Table 15).

Table 4. Groups and number of species in each group of reptiles recorded.

S. No.	Main Groups		Number of Species recorded		
1	Marine Turtles		05		
2	Fresh Water Turtles		02		
3	Tortoise		01		
4	Marsh Corcodile		01		
5	Lizards		64		
6	Snakes	Poisonous Snakes	Marine Snakes	11	47
			Terrestrial Snakes	08	
		Non-poisonous Snakes		28	

Protected Areas in Balochistan

There are three National Parks, 14 Wildlife Sanctuaries and six Game Reserves, in Balochistan (Table 5). Torghar area in Qila Saifullah is the stronghold of Straight horned Markhor (*Capra falconeri jerdoni*).

Other Areas

There are five Private Game Reserves mainly for Ibex and Urial. Balochistan Black Bear was previously reported from two such areas viz. Gaj Kolachii and Lahindo in Khuzdar.

Table 5. Wildlife Protected Areas of Balochistan.

S. No	Name	District	Area	Year	Established to Protect
National Parks					
1	Hazarganji National Park	Quetta and Mastung	67759 Acre	1980	Chiltan Wild Goat
2	Hingol National Park	Lasbella, Gwadar and Awaran	619043 ha	1988 and 1997	Sindh Ibex, Urial, Chinkara, Marsh Crocodile, Green Turtle, Houbara Bustard, Dalmatian Pelican, Plumbeous Dolphin, Mahseer
3	Ziarat National Park	Ziarat	41936 Acre	2018	Junpier Forest
Wildlife Sanctuaries					
1	Ziarat	Ziarat	37247 ha	1971	Markhor and Urial
2	Sasana Mana	Ziarat	6607 ha	1971	Juniper Forest
3	Chorani	Khuzdar	19433 ha	1972	Black Bear, Ibex, and Urial
4	Shashan	Khuzdar	29555 ha	1972	Ibex and Urial
5	Kachau	Khuzdar	21660 ha	1972	Urial
6	Kolwa Kap	Awaran	33198 ha	1972	Chinkara
7	Ras Koh	Kharan	99498 ha	1962	Ibex and Urial
8	Raghai Rakshan	Kharan	125425 ha	1972	Urial
9	Buzi Makhola	Gwadar	145101 ha	1972	Ibex, Urial, and Chinkara
10	Khurkhara	Lasbella	18345 ha	1972	Chinkara

11	Maslakh	Qila Abdullah	46559 ha	1968	Urial and Chinkara
12	Koh-e-Gishk	Kalat	24356 ha	1983	Ibex, Urial and Chinkara
13	Gut	Chagai	165992 ha	1983	Ibex, Urial, and Chinkara
14	Bund Khushdil Khan	Pishin	1296 ha	1983	Water birds
Game Reserves					
1	Gogi	Harnai	10364 ha	1962	Game Birds
2	Wam	Harnai	3887 ha	1962	Game Birds
3	Kambran	Chagai/Dalbandin	211433 ha	1983	Ibex, Urial and Chakor
4	Duzdara and Koh-e-Surko	Mastung	2351 ha	1999	Wild animals
5	Dureji	Lasbella	178259 ha	1998	Ibex, Urial, Chinkara and Marsh Crocodile
6	Zawar Khan	Pishin	2619 Acre	1963	Markhor and Urial
Private Game Reserves					
1	Dher	Bolan		Traditional use	Ibex and Urial
2	Harpursi	Kalat		Traditional use	Ibex and Urial
3	Gaj Kolachii (Kinjoo)	Khuzdar		Traditional use	Black Bear, Ibex and Urial
4	Lohindo	Khuzdar		Traditional use	Black Bear
5	Tobati	Kalat		Traditional use	Ibex and Urial
Community Conservation Areas					
1	Torghar	Qila Saifullah		1985	Straight-horned Markhor

Brief Description of the National Parks of Balochistan

Chiltan-Hazarganji National Park

It is located about 20 km southwest of Quetta. The habitat consists of Chiltan range of hills, with the highest peak at 3264 m, falling steeply to stony scree at the eastern end of the park at 2000 m. Dotted with juniper at higher elevations, and at their foot with scattered Pistachio and Mountain Ash (*Fraxinus xanthoxyloides*), *Artemisia* and dramatic yellow globes of *Ferula oopoda*.

Birds species recorded in Hazarganji National Park are See-see and Chukar Partridges, European Bee-eater, Pallid Scops Owl, Eurasian Nightjar, Red-rumped Swallow, Bay-backed Shrike and Desert Finch. At higher elevations there is a small population of Yellow-billed Cough. Detailed studies on the ecology and fauna of Chiltan-Hazarganji National Park have been undertaken.

Hingol National Park (HNP)

Hingol National Park covers an area of about 619, 043 ha located in Lasbella, Awaran and Gwadar districts. It was declared as a National Park in 1997.

With a variety of ecosystems such as sea shores, hilly areas, desert, sand dunes, rivers, croplands, water bodies and the mountainous ranges. There are two mud volcanoes also present in Haro range including Chandragup mud volcano and Khandewari mud volcano.

Archeological and historical such as Nani Mandar and Princess of Hope are also located here. There are many hotspots in the Hingol National Park which include Ras Malan, Hingol River Estuary, Hingol River, Central Hingol, Hinglaj Area, Sapat, Sanguri, Dhrun, Kukeri Bhent and Rodaini Kacho.

Grimmett *et al.* (2008) reported different species of birds in Hingol National Parks including Pallid Swift, Black-bellied Sandgrouse, Chestnut-bellied Sandgrouse (Fig. 4),

Sooty Falcon, Brown-necked Raven, Hooded Wheatear, Chestnut-shouldered Petronia, Dalmatian Pelican, Great

White Pelican, Laggar Falcon, Eurasian and Hobby and Finsch's Wheatear.



Fig. 4. Chestnut bellied Sandgrouse in Hingol National Park.



Fig. 5. A view of the way to Hinglaj Mandir in HNP.

Site of Religious Importance in HNP

Hinglaj is one of the most important Hindu Pilgrim destinations located inside the Hingol National Park (Fig. 5) about 20 km from the Makran Coastal Highway accessible from the Aghor. The name Hingol is derived

from Hingula (Sindhoo) of the Goddess Sati. Hinglaj is believed to be the place where dismembered goddess head with its Hingol Sindhoor vermillion fell (Balochistan Forest and Wildlife department, 2006).

Ziarat National Park

Ziarat National Park is located 96 km west of Quetta. This is a high altitude valley, situated about 2400 m, with the highest nearby peak Mount Kaliphat at 3945 m. A climax habitat, which comprises of open-canopy tall juniper forest with flowering Tulips, Foxtail Lilies and purple tussocks of *Onobrychis sp* in summer. There is some deciduous fruit cultivation in the valley.

Birds of the area are summer breeding Eurasian Scops Owl, Eurasian Sparrowhawk, Mistle Thrush, Spotted Flycatcher, Black Redstart, Lesser Whitethroat, Eurasian Rock Nuthatch, Eurasian Crag Martin, Sulphur-bellied and Plain Leaf Warblers, Fire-fronted Serin, White-winged Grosbeak, Common and Red-mantled Rosefinch and White-capped Bunting.

Ramsar Sites in Balochistan

There are five Ramsar Sites in Balochistan (Table 6). There are also other important sites for the birds such as Bund Khushdil Khan, Zanginawar and Siranda Lakes being notable sites for supporting large concentration of waterbirds during winter. The population of waterbirds has declined considerably during the past seven years due to drought in the province and degradation of wetlands.

Waterbirds have been previously recorded on these wetlands during the Asian Waterbirds Census (AWC)

conducted each year in Pakistan. As these censuses have not been regularly conducted for a long period of time, hence the latest data on waterbirds are missing. Recently some studies have been undertaken on the Astola Island which is a Ramsar Site as well as a Marine Protected Area (MPA). Thus useful data on the biodiversity of this site have been collected. This wetland site is now being studied and managed on priority basis. Other Ramsar Sites such as Hub Dam, Jiwani Coastal Wetland, Miani Hor and Ormara Turtle Beaches are degraded and need to be revisited and managed properly.

Table 6. Ramsar Sites in Pakistan.

S. No.	Ramsar Sites	Province
1	Astola Island (Haft Talar)	Balochistan
2	Jiwani Coastal Wetland	Balochistan
3	Miani Hor	Balochistan
4	Ormara Turtle Beaches	Balochistan
5	Hub Dam	Balochistan/Sindh
6	Deh Akro	Sindh
7	Drigh Lake	Sindh
8	Haleji Lake	Sindh
9	Indus Delta	Sindh
10	Indus Dolphin Reserve	Sindh
11	Jubho Lagoon	Sindh
12	Keenjhar Lake	Sindh
13	Nurri Lagoon	Sindh
14	Rann of Kutch	Sindh
15	Tanda Dam	KPK
16	Thanedar Wala	KPK
17	Chashma Barrage	Punjab
18	Taunsa Barrage	Punjab
19	Uchhali Complex (including Khabbaki, Uchhali and Jahlar Lakes)	Punjab

Marine Protected Area (MPA) in Balochistan

Astola Island has been declared as first Marine Protected Area by Government of Balochistan on 15th June, 2017 (Kanwal *et al.*, 2018). It is 25 km away from the coast of Balochistan, covering an area of about 6.7 sq km. It is considered as hotspot for nesting of Green turtle, Hawksbill turtle and migratory birds. Another fauna includes the saw scale viper, ascidians and a large variety of corals.

Subsequent surveys and detailed baseline studies were conducted and data was published to highlight the importance of the site (MFF Pakistan, 2018). Other Marine wetland sites are being considered for designation as Marine Protected Areas viz. Churna Island and Miani Hor.

Potential MPAs Sites in Balochistan

The following three sites in Balochistan that may be considered to be designated as MPAs in future.

1. Churna Island

It is a small uninhabited island 1.2 km in length and 0.82 km in width located about 9 km west of the mouth of the Hub River along the coast of Balochistan. Primarily, it is a rocky island with diverse marine life including corals. Because of its location near Karachi city, it is a popular destination of snorkelers, scuba divers, cliff jumpers, jet skiers, sport fishermen and picnickers.

2. Gwatar Bay

It is a trans-boundary bay situated on the coast of the Sistan-Balochistan province of Iran and Balochistan province of Pakistan. It is one of the largest embayments along the entire coast of the two countries and covers an

area of around 1000 sq.km (including the adjacent floodplains) and 64 km of coast. The area is biologically and commercially important fishing site that provides livelihood sources for the fishing communities. The area is home to three species of marine turtles, as well as five species of small cetaceans and numerous bird species.

3. Miani Hor

It is a lagoon located along the coast of Balochistan at a distance of 90 km from Karachi. The average width of this lagoon is 7 km, with a narrow and shallow connection with the open sea. Due to its special significance for migratory and resident birds this lagoon has been declared a Ramsar Site. It is the only habitat in Pakistan where three species of mangroves, *Avicennia marina*, *Rhizophora mucronata* and *Ceriops tagal* occur naturally. This lagoon also provides a habitat for Humpback and Bottle-nosed dolphins and variety of fish species.

Asian Waterbirds Census (AWC) in Balochistan

Asian Waterbird Census started in 1987 on major wetlands. Useful data was collected mainly on 15 important wetlands of the province (Table 7). However, the practice could not progress regularly and hence there are now many gaps in the study.

Table 7. Important Wetlands of Balochistan with reference to AWC.

S. No.	Wetlands
1.	Akra River Estuary
2.	Akra Kaur Dam
3.	Astola Island
4.	Beron Kirthar Canal
5.	Bund Khushdil Khan
6.	Dasht Hor
7.	Gwadar Beach
8.	Hingol Hor
9.	Jiwani Mangroves
10.	Kalimat Hor
11.	Pasni Hor
12.	Ras Juddi
13.	Sonmiani / Damb
14.	Sur Bandar
15.	Zangi Nawar Lake

Biosphere Reserve in Balochistan

A Biosphere Reserve is a site established under UNESCO's Man and Biosphere Programme to promote sustainable development of conservation of biological and cultural diversity.

Ziarat is located 127 km from Quetta at a height of 2445 meters **Ziarat Juniper Forest** was declared as a Biosphere Reserve in 2013, covering an area of 1,11,852

hectares. It is globally significant as being vital for carbon sequestration. It has core, transition and buffer zones.

Juniper is called Sanober in Urdu and Obusht in Pushto, it is an enigmatic tree found in the upper regions of the Ziarat Valley. The tree has many uses such as fuel wood, manufacturing of pencils, as thatching materials, oil extraction from the berries and as flavor base for drinks.

Some Important Coastal Biodiversity Sites of Balochistan

There are four sites of high ecological and biological values on the coast of Balochistan that deserve to be studied and managed for the conservation of Wildlife of the area on priority basis. These sites are described below:

Ormara

Ormara is situated in a similar position to Gwadar, i.e., on a sandy strip of land, about 10 km long, connecting a large mountain block (Ras Ormara), some 20 km long and up to eight kilometers wide, with the mainland. This structure, again as at Gwadar, defines an extensive bay on each side, a west bay and an east bay, the former here being particularly well-marked at its western end by the cliffs of a low mountain ridge known as Kamgar, and the eastern tip of a low coastal ridge, some 25 km long, known as Ras Sakani. Both Bays are edged by continuous sandy beach, that of West Bay extending for about 24 km between Ormara and Kamgar.

The signs of concentrated nesting are evident along the beach at the foot of Kamgar Hills at the western end of West Bay. The beach here is in parts somewhat steeper ingradient than elsewhere around the bay. It is also edged by a near horizontal rocky foreshore platform for parts of its length, and is backed at a distance of around 50-100 meters by the precipitous Kamgar cliffs. The nesting beach extends for around 4 km in all, with the fishing village of Tak being sited about a kilometer from its southern limit.

The three kilometers stretch from Tak northward toward Ormara has dense nesting along most of the beach. Large number of Green turtles came ashore on the high tides during March to September for nesting in the area. The site also supports a large number of waterbirds such as Oystercatchers, Avocets, Plovers, Sandpipers, Gulls and Terns. It is a Ramsar site (Groombridge, 1987).

Gwadar

Gwadar town is situated on a wide sandy tract, about 10 km long, connecting the mainland with a large mountain mass, three or four kilometers wide and 24 km long, oriented parallel to the coast. This mountain block bears several sandy coves and more extensive beaches around its periphery. Some of these have turtles nesting sites such

as Chil Kassipp turtle beach, Link Koh and Pittak, Kochoo, Committee, Shambo Pashi and Hablap.

Chil Kassipp, a cove beach, is a little more than one hundred meters long located on the seaward side of the Gwadar massif. Link Koh and Pittak run into each other forming a beach that is 750 meters long to the east of Chil Kassip, and similarly on the seaward side of the mountain.

Jiwani

The Jiwani beach is of pure sand, moderately wide and very gently sloping, with an indistinct platform at the back of the beach. It extends for around 1.5 to 2 km, with the cliff a meter or so high in the west and rising in an eastward direction to perhaps 30- 40 m about halfway along the beach. The light beacon is located at this point. The cliff then ends abruptly and for the remainder of its length the beach is backed by a low plain of sand with scrubby vegetation and a muddy lagoon close to a rocky promontory at the beach's eastern limits. Turtles nest on most of the beach except at each extremity, but concentrated along the portion backed by cliffs.

Daran beach is located at a distance of 15 km south-east of Jiwani town. Area of turtles nesting is 25° 02'.592" N and 061° 49'.109" E. The area is divided into five regions, from east to west, and is separated by cliffs, Daran Taak, Shaheed Taak, Jangan Taak, Deedlo Taak and Charlo. Green Turtles nest on sandy beach at the foot of the cliff. The cliff is 1-2-meter-high in the west and rises up to 30 - 40 meters in the east. The beach at the foot of the cliff is sandy and gently sloping. Daran village is the only settlement in the area.

Jiwani Wetland Complex situated in the extreme south western corner of Balochistan on the coast of Arabian Sea is also an ecologically important area. It supports mangroves, endangered marine turtles, marine mammals such as finless porpoise, humpbacked and bottle-nosed dolphins, marsh crocodiles and a variety of birds. A Jiwani Conservation and Information Centre (JCIC) has been established by WWF-Pakistan to conserve the biodiversity of the area by establishing nurseries for mangroves, protection of nesting sites of marine turtles, field investigations to explore the extent and numbers of migratory birds and enhancement of public awareness.

The Jiwani Coast provides important passage and wintering habitats for the migratory waterbirds. It provides ground to large flocks of Herring Gull (*Larus argentatus*), Lesser Blackbacked Gull (*Larus fuscus*) and limited number of Sooty Gull (*Larus hemprichii*). Arshad

et al. (2002) recorded 125 species of birds from Jiwani Wetland Complex and Pandrani *et al.* (2005) recorded 81 species of waterbirds from this area. Pelicans, Flamingos, Waders, Gulls and Terns are commonly seen in winter. Migratory Ducks also visit the nearby water ponds and reservoirs in the area in winter. See-see Partridge, Grey Partridge and Sandgrouses are important game birds being widely distributed and quite common. Jiwani Coastal Wetland is also a Ramsar site.

Astola Island

It is a Ramsar site. It is situated at a distance of about 20 nautical miles east of Pasni. It is locally known as Haft Talar. The major portion of the island consists of rocky hills which are about 200 m above sea level and cover an area about 3 km in length and about 1 km in width. The eastern portion of the cliff is mostly sandy and faces continuous process of erosion by the strong wave action. The coastline along the cliffs is a small area with sandy cum rocky beach. The sandy area of the beach is the nesting site for marine turtles as well as a staging and wintering ground for the water birds. The upper plain area of the island is also rocky cum sandy. Most of the area is flat with some depressions and crevices towards the northern edge of the cliffs (Govt. of Balochistan and IUCN, 2000; MFF-Pakistan, 2018; Kanwal *et al.*, 2018).

Astola Island once had the largest colony of Great Crested Tern (*Sterna bergii*) and Sooty Gull (*Larus hemprichii*) which has now been extirpated due to introduction of rats to the Island (Fig. 6).

Grey Heron, Grey Plover, Black-tailed Godwit, Eurasian Curlew, Little Stint, Herring Gull, Slender-billed Gull, Crested Lark and Desert Warbler have been recorded from this area. Quails are commonly reported during September and October. Sooty Gull used to breed here sometimes ago (Khurshid *et al.*, 1995).

Potential Mangrove Areas

There are three potential mangrove areas along the coastline at Miani Hor, Kalmat Khor and Guatar Bay extending over 7750 acres, 5400 acres and 5000 acres, respectively. The mangrove species recorded from the Balochistan Coast are *Avicennia marina* from Kalmat Hor, *Avicennia marina*, *Rhizophora mucronata* and *Ceriops tagal* from Miani Hor areas.

Peculiar Species of Balochistan

The following 15 species of mammals, 13 species of birds and 5 species of reptiles have been recorded as peculiar or species of particular interest being threatened/ localized/ indicator species (Table 8).



Fig. 6. A view of Gulls and Terns at Astola Island.

Table 8. Peculiar Wildlife Species of Balochistan.

S. No.	Common Name	Scientific Name
Mammals		
1	Balochistan Black Bear	<i>Ursus thibetanus gedrosinus</i>
2	Marbled Polecat	<i>Vormela peregusna</i>
3	Leopard	<i>Panthera pardus</i>
4	Blanford's Fox	<i>Vulpus cana</i>
5	Ruppell's Fox	<i>Vulpus rueppelli</i>
6	Chiltan Wild Goat	<i>Capra aegagrus chialtanensis</i>
7	Goitered Gazelle	<i>Gazella subgutturosa</i>
8	Straight horned Markhor	<i>Capra falconeri megaceros</i>
9	Pika	<i>Ochotona rufescens</i>
10	Balochistan Pygmy Jerboa	<i>Salpingotus michaelis</i>
11	Small Five-toed Jerboa	<i>Allactaga elater</i>
12	Hotson's five-toed Jerboa	<i>Allactaga hotsoni</i>
13	Greater Three-toed Jerboa	<i>Jaculus blanfordi</i>
14	Spinner Dolphin	<i>Stenella longirostris</i>
15	Humpback Whale	<i>Megaptera novaeangliae</i>

Birds		
16	Sooty Falcon	<i>Falcon concolor</i>
17	Saker Falcon	<i>Falco cherrug</i>
18	Houbara Bustard	<i>Chamydotis macqueenii</i>
19	Grey Hypocolius	<i>Hypocolius ampelinus</i>
20	Upcher's Warbler	<i>Hippolias languid</i>
21	Menetries Warbler	<i>Sylvia mystacea</i>
22	Bar-tailed Lark	<i>Ammomanes cinctures</i>
23	Siberian Crane	<i>Grus leucogerinus</i>
24	Marbled Duck	<i>Marmaronetta angustirostris</i>
25	Brown Noddy	<i>Anous stolidus</i>
26	Little Owl	<i>Athene noctua</i>
27	Brown-necked Raven	<i>Corvus ruficollis</i>
28	Dead Sea Sparrow	<i>Passer moabiticus</i>
Reptiles		
29	Green Turtle	<i>Chelonia mydas</i>
30	Olive Ridley Turtle	<i>Lepidochelys olivacea</i>
31	Hawksbill Turtle	<i>Ermochelys imbricate</i>
32	Horned Viper	<i>Cerastes cerastes</i>
33	Saw-scaled Viper	<i>Echis carinatus astolii</i>

Balochistan Wildlife (Protection, Preservation, Conservation and Management) Act- 2014

It is a very detailed Act for the Conservation and management of the Wildlife of the Province. It was passed in March, 2014. It has 96 articles and five schedules.

1. It gives short title, preamble, definitions, guiding principles
2. Administration
3. Preliminary Protection of Wild animals
4. Hunting of Game Animals
5. Possession and display of wild animals
6. Wildlife Trade and Traffic
7. Protected Areas
8. Ex-situ Conservation
9. Multinational Environmental Agreements (MEAs)
10. Community participation
11. Powers of the Government and Officers
12. Indemnity removal of difficulties and punishment for offences under the Act
13. Miscellaneous duties
14. Trial of Offence Cases
15. Penalties and Punishment
16. Repeals and Savings

There are five schedules to the Act, as given below.

1. Game Animals
2. Lawful Possession of Wild Animals
3. Protected Animals
4. Ramsar Sites in Balochistan
5. Penalties and Punishment

Discrepancies in the Balochistan Wildlife Act- 2014

Species that have not been recorded so far from Balochistan have been mentioned as 'protected' in schedule III of the Balochistan Wildlife Act, 2014 these include: Himalayan Rhesus Monkey, Indus Blind Dolphin, Whitewinged Wood Duck, Pink-headed Duck, Western Horned Tragopan, Himalayan Monal Pheasant, Estuarine Crocodile, Gharial, Great Indian Bustard, Indian Chameleon and Atlantic Ridley Turtle.

Threats

The major threats to the birds particularly the waterbirds and wetland of Balochistan are hunting/ trapping/ poaching of birds, cutting / clearance of vegetation, large scale fishing and partial reclamation of wetlands.

- Hunting/ Poaching
- Habitat Loss
- Fire wood collection
- Developmental activities particularly in the coastal areas
- Drought
- Heavy rainfall/ floods
- Tsunami
- Coastal erosion
- Mining activities in the Protected Areas

Threatened/Near-threatened Species of Wildlife of Balochistan

There are altogether 30 Threatened and 17 Near-threatened species of mammals, birds and reptiles documented (IUCN, 2019) (Table 9).

Table 9. Threatened/Near-threatened Species of Wildlife of Balochistan (IUCN, 2019).

S. No.	Order	Family	Scientific Name	Common Name	IUCN Status
Threatened/ Near-threatened Mammals					
1	Pholidata	Manidae	<i>Manis crassicaudata</i>	Indian Pangolin/ Scaly Anteater	EN
2	Cetacea	Balaenopteridae	<i>Balaenoptera musculus</i>	Blue Whale	EN
3	Cetacea	Delphinidae	<i>Sousa plumbea</i>	Indian Humpback Dolphin	EN
4	Cetacea	Balaenopteridae	<i>Balaenoptera physalus</i>	Fin Whale	VU
5	Carnivora	Felidae	<i>Panthera pardus</i>	Leopard or Panther	VU
6	Carnivora	Mustelidae	<i>Vormela peregusna</i>	Marbled Polecat	VU
7	Carnivora	Ursidae	<i>Ursus thibetanus gedrosinus</i>	Balochistan Black Bear	VU
8	Artiodactyla	Bovidae	<i>Ovis vignei blandfordi</i>	Gad or Afghan Urial	VU
9	Artiodactyla	Bovidae	<i>Capra aegagrus</i>	Sind Wild Goat or Sind Ibex	VU
10	Artiodactyla	Bovidae	<i>Capra aegagrus chialtanensis</i>	Chiltan Wild Goat or Chiltan Markhor	VU
11	Artiodactyla	Bovidae	<i>Gazella subgutturosa</i>	Goitered Gazelle	VU
12	Cetacea	Phocoenidae	<i>Neophocaena phocaenoides</i>	Little Indian Porpoise or Finless Porpoise	VU
13	Carnivora	Felidae	<i>Felis manul</i>	Pallas's Cat	NT
14	Carnivora	Hyaenidae	<i>Hyaena hyaena</i>	Striped Hyaena	NT
15	Artiodactyla	Bovidae	<i>Capra falconeri megaceros</i>	Suleman Markhor or Straight Horned Markhor	NT
Threatened/ Near-threatened Birds					
1	Accipitriformes	Accipitridae	<i>Gyps bengalensis</i>	Indian White-backed Vulture	CR
2	Charadriiformes	Charadriidae	<i>Vanellus gregarious</i>	Sociable Lapwing	CR
3	Accipitriformes	Accipitridae	<i>Neophron percnopterus</i>	Egyptian Vulture	EN
4	Charadriiformes	Scolopacidae	<i>Calidris tenuirostris</i>	Great Knot	EN
5	Falconiformes	Falconidae	<i>Falco cherrug</i>	Saker or Cherrug Falcon	EN
6	Otidiformes	Otididae	<i>Sypheotides indica</i>	Leekh or Lesser Florican	EN
7	Pelecaniformes	Pelecanidae	<i>Pelecanus crispus</i>	Dalmatian Pelican	VU
8	Accipitriformes	Accipitridae	<i>Aquila heliaca</i>	Imperial Eagle	VU
9	Falconiformes	Falconidae	<i>Falco concolor</i>	Sooty Falcon	VU
10	Otidiformes	Otididae	<i>Chlamydotis macqueenii</i>	Houbara Bustard	VU
11	Anseriformes	Anatidae	<i>Marmaronetta angustirostris</i>	Marbled Teal/Duck	NT
12	Anseriformes	Anatidae	<i>Aythya nyroca</i>	Ferruginous Duck	NT
13	Ciconiiformes	Ciconiidae	<i>Mycteria leucocephala</i>	Painted Stork	NT
14	Accipitriformes	Accipitridae	<i>Gypaetus barbatus</i>	Himalayan Bearded Vulture or Lammergeier	NT
15	Accipitriformes	Accipitridae	<i>Aegypius monachus</i>	Cinereous Vulture	NT
16	Accipitriformes	Accipitridae	<i>Circus macrourus</i>	Pale or Pallid Harrier	NT
17	Falconiformes	Falconidae	<i>Falco jugger</i>	Laggar Falcon	NT
18	Otidiformes	Otididae	<i>Tetrax tetrax</i>	Little Bustard	NT
19	Charadriiformes	Burhinidae	<i>Esacus recurvirostris</i>	Great Thick-knee	NT
20	Charadriiformes	Scolopacidae	<i>Calidris testaceus</i>	Curlew Sandpiper	NT
21	Charadriiformes	Scolopacidae	<i>Limosa limosa</i>	Black-tailed Godwit	NT
22	Charadriiformes	Scolopacidae	<i>Limosa lapponica</i>	Bar-tailed Godwit	NT
23	Charadriiformes	Scolopacidae	<i>Numenius arquata</i>	Eurasian Curlew	NT
24	Charadriiformes	Sternidae	<i>Sterna aurantia</i>	River Tern	NT
Threatened/ Near-threatened Reptiles					
1	Chelonia	Cheloniidae	<i>Eretmochelys imbricata</i>	Pacific Hawksbill Turtle	CR
2	Chelonia	Cheloniidae	<i>Chelonia mydas</i>	Indian Ocean Green Turtle	EN

3	Chelonia	Cheloniidae	<i>Caretta caretta</i>	Loggerhead Turtle	VU
4	Chelonia	Cheloniidae	<i>Dermochelys coriacea</i>	Leatherback Turtle	VU
5	Chelonia	Cheloniidae	<i>Lepidochelys olivacea</i>	Olive Ridley Turtle	VU
6	Testudines	Testudinidae	<i>Aspideretes gangeticus</i>	Indian Softshell Turtle	VU
7	Testudines	Testudinidae	<i>Testudo horsfieldii</i>	Central Asian Tortoise	VU
8	Crocodylia	Crocodylidae	<i>Crocodylus palustris</i>	Marsh/Mugger Crocodile	VU

Legend: CR= Critically Endangered, EN= Endangered, VU= Vulnerable, NT= Near-threatened

Protected Areas Management Issues

The following handicaps are noted while considering the activities for protection and management of Protected/ Wildlife Significant Areas of Balochistan

1. Conservation and management of wildlife has never been one of the primary objectives of the planning process and plans.
2. There is a heavy pressure of industrial development in most of the areas of the province with negative impacts on wild lands and natural habitats.
3. There is a heavy pressure of human population growth in the natural habitats causing resource use conflicts including land ownership issues.
4. There is lack of policy about provision of gas/ electric energy to the local communities who have been depending mostly on the resources of the natural areas for collection of firewood.
5. There is lack of resources for capacity building of the Wildlife Department for wildlife management and environmental monitoring of the key species and their habitats.

Priority Actions Required

1. Special arrangements to manage turtle breeding sites at Ormara/ Taq and Daran Beach.
2. Management of the degraded wetland sites such as Bund Khushdil Khan, Zangi Nawar, Hannah Lake, and Siranda Lake.
3. Special studies on Cheetah, Goitered Gazelle, Chiltan WildGoat, Leopard, Wolf, Cetaceans, Houbara Bustard, Siberian Crane, Saker Falcon, Sooty Falcon, Mahseer, Corals and Mangroves.
4. Management of fisheries activities at Hub Dam.
5. Regular conduction of AWC on the important wetlands of the province particularly on the five Ramsar Sites.
6. Development of Management plans for the PAs and the Ramsar sites.
7. Mitigation of the impact of developmental activities related to China-Pakistan Economic Corridor (CPEC) in Balochistan.
8. Capacity building and Training of the Balochistan Wildlife Department personnels.
9. Control on hunting, and Falcon trapping and illicit wildlife trade.

10. Special care and protection to the endemic species of small mammals.
11. Coastal protection and restoration at Jiwani, Gwadar and Gadani due to coastal erosion.
12. Development of ecotourism at Hingol National Park, Ziarat National Park, Chiltan-Hazarganji National Park, Kund Malir, Hinglaj, Jiwani, Ras Malan, Chandragup, Gadani, Gwadar, Sonmiani and other historical and archeological sites of Balochistan (Table 10).

Table 10. Archeological/ Historical/ Ecotourism sites in Balochistan.

S. No.	Site Name
1	Astola Island, Gwadar
2	Beloar and Loi
3	Bibi Nani
4	Buzi Pass/ Princess of Hope, Gwadar
5	Chandergup Volcanos, Gwadar
6	Chautair Valley, Ziarat
7	Churna Island, Hub
8	Dargah Aari Peer, Lasbella
9	Dargah Dewaney Shah, Lasbella
10	Dargah Hassan Peer on Sakran Road Hub, Lasbella
11	Dargah Peer Mubarak (Roomi's Graveyard)
12	Dargah Shah Noorani, Lasbella/ Dureji
13	Dureji, Lasbella
14	Gokshat
15	Gondrani Caves/ Mai Gondrani/ Shehr-e-Roughan, Lasbella
16	Hanna Lake, Quetta
17	Hannidaan
18	Harboi Mohammad Bin Haroon tomb, Kalat
19	Hingol River, Gwadar
20	Hinglaj/ Nani Mander
21	Kakkar Dam
22	Kali Devi Mandir, Gwadar
23	Khajoori
24	Khojak Pass, Chaman
25	Koh-e-murad, Turbat

26	Lasbella Graveyard, Lasbella
27	Mahargarh, Sibi
28	Mairi Kalat
29	Mazar Kharwari Baba, Ziarat
30	Pinjirah Pull
31	Pir Ghaib waterfall
32	Robert Sandeman Grave, Lasbella
33	Roomi Tomb (Hub), Lasbella
34	Sandeman Tangi
35	Sassi Punhoon Tomb, Lasbella
36	Spin Karez, Quetta
37	Spin Tangi, Quetta
38	Talaangah action Dam
39	Zeezri, Sibi
40	Ziarat Residency, Ziarat

Efforts/Achievements for Conservation of Wildlife in Balochistan

We feel that good and substantive work has been done by the Balochistan Forest and Wildlife Department for the conservation and management of Wildlife in the province. The highlights are given below to acknowledge their contribution in this regard:

1. The Balochistan Wildlife Conservation Act was notified in 2014. It is a major achievement.
2. One of the major contributions to manage the wildlife of Hingol National Park was to prepare the (Draft) Management Plan of Hingol National Park in 2003. Subsequently, development plans for the improvement of the environment and conservation and management of the key species are actively underway.
3. It is a remarkable step to declare Ziarat National Park to conserve the unique wildlife of the Ziarat area.
4. It is a major achievement to establish Astola Island as the First Marine Protected Area in Pakistan.
5. The four Community Game Reserves viz. Torghar, Dureji, Taloo band and Shah Noorani have been established to undertake successful

Community Based Trophy Hunting Programmes in the areas.

6. A refuge has been created in Zhob District for the safeguard of Common and Demoiselle Cranes.
7. Conservation of Green Turtle Programme has been implemented at Jiwani.
8. Hunting fee for Houbara Bustard hunting has been levied on the foreign hunting visitors.
9. The Balochistan Wildlife Department also actively participated in the formulation of National Vulture Conservation Strategy (Karki, 2016).
10. The Conservation Action Plan for Fresh Water Turtles (IUCN, 2017) has been prepared with the active collaboration of Balochistan Wildlife Department.
11. The Balochistan Wildlife Department recently took action to control illegal capture and transportation of Black Bear and Common Cranes in Balochistan.

Prime Minister's Green Pakistan Program

The Ministry of Climate Change and Ministry of Science and Technology with the cooperation of Space and Upper Atmospheric Research Commission, Pakistan (SUPARCO) have stepped upon unique longterm actions for the conservation of forests and wildlife in the four provinces, Azad Jammu and Kashmir (AJK), Gilgit Baltistan and Federally Administrated Tribal Areas (FATA) since March, 2016.

Restoration of Internationally Renowned Seven National Parks in Pakistan viz. Khunjerab National Park (Gilgit Baltistan), **Hingol National Park (Balochistan)**, Lal Sohanra National Park and Salt Range Area (Punjab), Margalla Hills National Park (Islamabad Capital Territory), Kirthar National Park (Sindh), Chitral Gol National Park (KPK) and Machiara National Park (AJK).

Checklist of Mammals of Balochistan

As many as 92 species of mammals have so far been recorded (Table 11). These belong to eight Orders and 28 Families.

Table 11. Checklist of Mammals of Balochistan (IUCN, 2019).

S. No.	Order	Family	Scientific Name	Common Name	National Status	IUCN Status
1	Insectivora	Erinaceidae	<i>Hemiechinus auritus</i>	Afghan Hedgehog	LC	LC
2	Insectivora	Erinaceidae	<i>Paraechinus micropus</i>	Pale Hedgehog	LC	LC
3	Insectivora	Erinaceidae	<i>Paraechinus hypomelas</i>	Brandt's Hedgehog	LC	LC
4	Insectivora	Soricidae	<i>Suncus etruscus</i>	Etruscan Pygmy Shrew	LC	LC
5	Insectivora	Soricidae	<i>Corocidura gmelini</i>	Balochistan Short-tailed Shrew	LC	LC
6	Insectivora	Soricidae	<i>Corocidura zarudnyi</i>	Zarudny's Shrew	LC	LC

7	Chiroptera	Pteropidae	<i>Rousettus egypticus</i>	Egyptian Fruit Bat	VU	LC
8	Chiroptera	Pteropidae	<i>Pteropus giganteus</i>	Flying Fox	LC	LC
9	Chiroptera	Rhinopomatidae	<i>Rhinopoma hardwickii</i>	Lesser Mouse-tailed Bat	LC	LC
10	Chiroptera	Rhinopomatidae	<i>Rhinopoma microphyllum</i>	Large Mouse-tailed Bat	LC	LC
11	Chiroptera	Rhinopomatidae	<i>Rhinopoma muscatellum</i>	Least Mouse-tailed Bat	NT	LC
12	Chiroptera	Rhinolophidae	<i>Rhinolophus ferrumequinum</i>	Greater Horse shoe Bat	VU	LC
13	Chiroptera	Rhinolophidae	<i>Rhinolophus macrotis</i>	Big-eared Horseshoe Bat	NT	LC
14	Chiroptera	Hipposideridae	<i>Hipposideros fulvus</i>	Fulvous Leaf-nosed Bat	LC	LC
15	Chiroptera	Hipposideridae	<i>Trienops persicus</i>	Persian Trident Bat	VU	LC
16	Chiroptera	Hipposideridae	<i>Asellia tridens</i>	Trident leaf-nosed Bat	EN	LC
17	Chiroptera	Vespertilionidae	<i>Myotis emarginatus</i>	Geoffrey's Bat	EN	LC
18	Chiroptera	Vespertilionidae	<i>Eptesicus nasutus</i>	Sind Bat/ Persian Serotine	DD	LC
19	Chiroptera	Vespertilionidae	<i>Pipistrellus tenuis</i>	Least Pipistrelle	LC	LC
20	Chiroptera	Vespertilionidae	<i>Pipistrellus kuhlii</i>	Kuhl's Pipistrelle	LC	LC
21	Chiroptera	Vespertilionidae	<i>Scotoecus pallidus</i>	Yellow Desert Bat	NT	LC
22	Chiroptera	Vespertilionidae	<i>Scotophilus heathii</i>	Greater Yellow House Bat	LC	LC
23	Carnivora	Felidae	<i>Panthera pardus</i>	Leopard or Panther	CR	VU
24	Carnivora	Felidae	<i>Felis caracal</i>	Caracal or Red Lynx	CR	LC
25	Carnivora	Felidae	<i>Felis chaus</i>	Jungle Cat	LC	LC
26	Carnivora	Felidae	<i>Felis manul</i>	Pallas's Cat	NT	NT
27	Carnivora	Felidae	<i>Felis margarita</i>	Sand Cat or Dune Cat	CR	LC
28	Carnivora	Felidae	<i>Felis silvestris</i>	Indian Desert Wild Cat	DD	LC
29	Carnivora	Herpestidae	<i>Herpestes edwardsii</i>	Indian Mongoose or Indian Grey Mongoose	LC	LC
30	Carnivora	Herpestidae	<i>Herpestes javanicus</i>	Small Indian Mongoose	LC	LC
31	Carnivora	Canidae	<i>Canis lupus</i>	Indian Wolf	EN	LC
32	Carnivora	Canidae	<i>Canis aureus</i>	Indian Jackal	NT	LC
33	Carnivora	Canidae	<i>Vulpus bengalensis</i>	Indian or Bengal Fox	NT	LC
34	Carnivora	Canidae	<i>Vulpus cana</i>	Blandford's/ King Fox	NT	LC
35	Carnivora	Canidae	<i>Vulpus rueppelli</i>	Sand/ Ruppell's Fox	VU	LC
36	Carnivora	Canidae	<i>Vulpus vulpus</i>	Common Red Fox	NT	LC
37	Carnivora	Hyaenidae	<i>Hyaena hyaena</i>	Striped Hyaena	CR	NT
38	Carnivora	Ursidae	<i>Ursus thibetanus gedrosinus</i>	Balochistan Black Bear	CR	VU
39	Carnivora	Mustelidae	<i>Martes fonia</i>	Beech or Stone Marten	DD	LC
40	Carnivora	Mustelidae	<i>Vormela peregusna</i>	Marbled Polecat	LC	VU
41	Carnivora	Mustelidae	<i>Mellivora capensis</i>	Ratel or Honey Badger	CR	LC
42	Pholidata	Manidae	<i>Manis crassicaudata</i>	Indian Pangolin/Scaly Anteater	VU	EN
43	Artiodactyla	Bovidae	<i>Ovis vignei blandfordi</i>	Gad or Afghan Urial	VU	VU
44	Artiodactyla	Bovidae	<i>Capra aegagrus</i>	Sind Wild Goat or Sind Ibex	NT	VU
45	Artiodactyla	Bovidae	<i>Capra aegagrus chialtanensis</i>	Chiltan Wild Goat or Chiltan Markhor	VU	VU
46	Artiodactyla	Bovidae	<i>Capra falconeri megaceros</i>	Suleman Markhor or Straight Horned Markhor	VU	NT
47	Artiodactyla	Bovidae	<i>Gazella bennettii</i>	Chinkara or Indian Gazelle	VU	LC
48	Artiodactyla	Bovidae	<i>Gazella subgutturosa</i>	Goitered Gazelle	CR	VU
49	Artiodactyla	Suidae	<i>Sus scrofa</i>	Indian Wild Boar	LC	LC
50	Lagomorpha	Leporidae	<i>Lepus capensis</i>	Cape Hare	VU	LC
51	Lagomorpha	Leporidae	<i>Lepus nigricollis</i>	Indian Hare or Desert Hare	LC	LC

52	Lagomorpha	Ochotonidae	<i>Ochotona rufescens</i>	Afghan or Collared Pika	LC	LC
53	Rodentia	Sciuridae	<i>Funambulus pennantii</i>	Northern Palm Squirrel	LC	LC
54	Rodentia	Hystriidae	<i>Hystrix indica</i>	Indian Crested Porcupine	NT	LC
55	Rodentia	Dipodidae	<i>Allactaga elater</i>	Small five-toed Jerboa	LC	LC
56	Rodentia	Dipodidae	<i>Allactaga hotsoni</i>	Hoston's five-toed Jerboa	LC	LC
57	Rodentia	Dipodidae	<i>Jaculus blandfordi</i>	Greter Three-toed Jerboa or Blandford Jerboa	LC	LC
58	Rodentia	Dipodidae	<i>Salpingotus michaelis</i>	Balochistan Pygmy Jerboa or Dwarf Three- toed Jerboa	LC	DD
59	Rodentia	Gliridae	<i>Dryomys nitedula</i>	Forest Dormouse	VU	LC
60	Rodentia	Muridae	<i>Apodemus rusiges</i>	Himalayan Wood Mouse or Field Mouse	VU	LC
61	Rodentia	Muridae	<i>Millardia meltada</i>	Soft-furred Field Rat or Matad	LC	LC
62	Rodentia	Muridae	<i>Millardia gleadowi</i>	Sand-coloured Rat	LC	LC
63	Rodentia	Muridae	<i>Rattus rattus</i>	Roof/ House Rat or Black Rat	LC	LC
64	Rodentia	Muridae	<i>Rattus norvegicus</i>	Brown Rat or Sewer Rat or Norway Rat	LC	LC
65	Rodentia	Muridae	<i>Mus saxicola</i>	Grey Spiny Mouse	DD	LC
66	Rodentia	Muridae	<i>Mus musculus</i>	Little Indian Field Mouse	LC	LC
67	Rodentia	Muridae	<i>Acomys cahirinus</i>	Cairo Spiny Mouse	NT	LC
68	Rodentia	Muridae	<i>Golunda ellioti</i>	Indian Bush Rat	LC	LC
69	Rodentia	Muridae	<i>Nesokia indica</i>	Short-tailed Mole Rat	LC	LC
70	Rodentia	Muridae	<i>Calomyscus bailwardi</i>	Mouse-like Hamster	LC	LC
71	Rodentia	Muridae	<i>Cricetulus migratorius</i>	Little Grey Hamster	LC	LC
72	Rodentia	Muridae	<i>Gerbillus nanus</i>	Balochistan Gerbil	NT	LC
73	Rodentia	Muridae	<i>Gerbillus cheesmani</i>	Cheesman's Gerbil	VU	LC
74	Rodentia	Muridae	<i>Tatera indica</i>	Indian Gerbil	LC	LC
75	Rodentia	Muridae	<i>Meriones crassus</i>	Sundevall's Jird	NT	LC
76	Rodentia	Muridae	<i>Meriones hurrianae</i>	Indian Desert Jird	LC	LC
77	Rodentia	Muridae	<i>Meriones libycus</i>	Libyan Jird	LC	LC
78	Rodentia	Muridae	<i>Meriones persicus</i>	Persian Jird	LC	LC
79	Rodentia	Muridae	<i>Rhombomys opimus</i>	Greater Gerbil	NT	LC
80	Rodentia	Muridae	<i>Ellobius fuscocapillus</i>	Afghan/ Quetta Mole Vole	NT	LC
81	Cetacea	Balaenopteridae	<i>Balaenoptera musculus</i>	Blue Whale	EN	EN
82	Cetacea	Balaenopteridae	<i>Balaenoptera physalus</i>	Fin Whale	EN	VU
83	Cetacea	Balaenopteridae	<i>Balaenoptera edeni</i>	Bryde's Whale	DD	DD
84	Cetacea	Balaenopteridae	<i>Megaptera novaeangliae</i>	Humpback Whale	VU	LC
85	Cetacea	Kogiidae	<i>Kogia simus</i>	Dwarf Sperm Whale	DD	DD
86	Cetacea	Phocoenidae	<i>Neophocaena phocaenoides</i>	Little Indian Porpoise or Finless Porpoise	DD	VU
87	Cetacea	Delphinidae	<i>Delphinus tropicalis</i>	Long-beaked Dolphin	DD	DD
88	Cetacea	Delphinidae	<i>Sousa plumbea</i>	Indian Humpback Dolphin	DD	EN
89	Cetacea	Delphinidae	<i>Peponocephala electra</i>	Melon-headed Whale	DD	LC
90	Cetacea	Delphinidae	<i>Tursiops truncatus</i>	Bottle-nosed Dolphin	DD	LC
91	Cetacea	Delphinidae	<i>Stenella longirostris</i>	Spinner Dolphin	DD	LC
92	Cetacea	Ziphiidae	<i>Ziphius cavirostris</i>	Cuvier's- beaked Whale	DD	LC

Legend: CR= Critically Endangered, EN= Endangered, VU= Vulnerable, NT= Near-threatened, DD= Data Deficient, LC= Least Concern

Checklist of Birds of Balochistan

As many as 373 species of birds belonging to 22 Orders

and 71 Families have so far been recorded from Balochistan (Table12).

Table 12. Checklist of Birds of Balochistan.

S. No.	Order	Family	Scientific Name	Common Name	Status
1	Gaviiformes	Gaviidae	<i>Gavia stellata</i>	Red-throated Diver	V
2	Podicipediformes	Podicipedidae	<i>Podiceps cristatus</i>	Great Crested Grebe	W V
3	Podicipediformes	Podicipedidae	<i>Tachybaptus ruficollis</i>	Little Grebe	R
4	Podicipediformes	Podicipedidae	<i>Podiceps nigricollis</i>	Black-necked Grebe	WV
5	Podicipediformes	Podicipedidae	<i>Podiceps auritus</i>	Salvonian Grebe	WV
6	Procellariiformes	Procellariidae	<i>Puffinus tenuirostris</i>	Short-tailed Shear Water	V
7	Procellariiformes	Procellariidae	<i>Puffinus persicus</i>	Persian-billed Shear Water	V
8	Procellariiformes	Hydrobatidae	<i>Oceanites oceanites</i>	Wilson's Storm Petrel	YRV
9	Pelecaniformes	Phaethontidae	<i>Phaethon aethereus</i>	Red-billed Tropic Bird	WV
10	Pelecaniformes	Sulidae	<i>Sula dactylatra</i>	Masked Booby	WV
11	Pelecaniformes	Phalacrocoracidae	<i>Phalacrocorax carbo</i>	Large Cormorant	WV
12	Pelecaniformes	Phalacrocoracidae	<i>Phalacrocorax niger</i>	Little Cormorant	R
13	Pelecaniformes	Phalacrocoracidae	<i>Phalacrocorax pygmaeus</i>	Pygmy Cormorant	V
14	Pelecaniformes	Pelecanidae	<i>Pelecanus onocrotalus</i>	White or Rosy Pelican	WV
15	Pelecaniformes	Pelecanidae	<i>Pelecanus crispus</i>	Dalmatian Pelican	WV
16	Pelecaniformes	Pelecanidae	<i>Pelecanus philippinus</i>	Spot-billed Pelican	WV
17	Ciconiiformes	Ardeidae	<i>Nycticorax nycticorax</i>	Night Heron	R
18	Ciconiiformes	Ardeidae	<i>Ixobrychus minutus</i>	Little Bittern	R
19	Ciconiiformes	Ardeidae	<i>Butoroides striatus</i>	Little Green Heron	R
20	Ciconiiformes	Ardeidae	<i>Ardeola grayii</i>	Pond Heron	R
21	Ciconiiformes	Ardeidae	<i>Egretta gularis</i>	Indian Reef Heron	R
22	Ciconiiformes	Ardeidae	<i>Egretta garzetta</i>	Little Egret	YRV
23	Ciconiiformes	Ardeidae	<i>Egretta intermedia</i>	Smaller or Median Egret	R
24	Ciconiiformes	Ardeidae	<i>Casmerodius alba</i>	Great Egret	WV
25	Ciconiiformes	Ardeidae	<i>Ardea cinerea</i>	Grey Heron	WV/PM
26	Ciconiiformes	Ardeidae	<i>Ardea purpurea</i>	Purple Heron	YRV
27	Ciconiiformes	Ciconiidae	<i>Mycteria leucocephala</i>	Painted Stork	R
28	Ciconiiformes	Ciconiidae	<i>Ciconia nigra</i>	Black Stork	WV
29	Ciconiiformes	Ciconiidae	<i>Ciconia ciconia</i>	White Stork	WV
30	Ciconiiformes	Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy Ibis	WV
31	Ciconiiformes	Threskiornithidae	<i>Platalea leucorodia</i>	Spoonbill	WV
32	Ciconiiformes	Phoenicopteridae	<i>Phoenicopterus roseus</i>	Flamingo	WV
33	Anseriformes	Anatidae	<i>Cygnus olor</i>	Mute Swan	V
34	Anseriformes	Anatidae	<i>Cygnus cygnus</i>	Whooper Swan	V
35	Anseriformes	Anatidae	<i>Anser anser</i>	Graylag Goose	WV
36	Anseriformes	Anatidae	<i>Tadorna ferruginea</i>	Ruddy Shelduck	WV
37	Anseriformes	Anatidae	<i>Tadorna tadorna</i>	Common Shelduck	WV
38	Anseriformes	Anatidae	<i>Anas penelope</i>	Wigeon	WV
39	Anseriformes	Anatidae	<i>Anas strepera</i>	Gadwal	WV
40	Anseriformes	Anatidae	<i>Anas crecca</i>	Common Teal/Duck	WV
41	Anseriformes	Anatidae	<i>Anas platyhynchos</i>	Mallard	WV
42	Anseriformes	Anatidae	<i>Anas poecilorhyncha</i>	Spotbill Duck	SV
43	Anseriformes	Anatidae	<i>Anas acuta</i>	Pintall	WV
44	Anseriformes	Anatidae	<i>Anas querquedula</i>	Garganey	DPM/ WV
45	Anseriformes	Anatidae	<i>Anas clypeata</i>	Shoveller	WV
46	Anseriformes	Anatidae	<i>Marmaronetta angustirostris</i>	Marbled Teal/Duck	WV

47	Anseriformes	Anatidae	<i>Netta rufina</i>	Red-crested Pochard	WV
48	Anseriformes	Anatidae	<i>Aythya ferina</i>	Common Pochard	WV
49	Anseriformes	Anatidae	<i>Aythya nyroca</i>	White-eyed Pochard or Ferruginous Duck	WV/PM
50	Anseriformes	Anatidae	<i>Aythya fuligula</i>	Tufted Duck	WV
51	Anseriformes	Anatidae	<i>Clangula hyemalis</i>	Longtail Duck or Old Squaw	V
52	Anseriformes	Anatidae	<i>Bucephalus clangula</i>	Golden-eyed Duck	V
53	Anseriformes	Anatidae	<i>Mergus albellus</i>	Smew	WV
54	Anseriformes	Anatidae	<i>Mergus merganser</i>	Goosander or Common Merganser	WV
55	Anseriformes	Anatidae	<i>Mergus serrator</i>	Red-breasted Merganser	WV
56	Anseriformes	Anatidae	<i>Oxyura leucocephala</i>	White-headed Stiff-tailed Duck	WV
57	Accipitriformes	Accipitridae	<i>Elanus caeruleus</i>	Black Winged Kite	R
58	Accipitriformes	Accipitridae	<i>Pernis ptilorhynchus</i>	Oriental /Crested Honey Buzzard	M
59	Accipitriformes	Accipitridae	<i>Milvus migrans</i>	Black Kite	R
60	Accipitriformes	Accipitridae	<i>Haliastur indus</i>	Brahminy Kite	R
61	Accipitriformes	Accipitridae	<i>Haliaeetus albicilla</i>	White-tailed Sea Eagle	WV
62	Accipitriformes	Accipitridae	<i>Gypaetus barbatus</i>	Himalayan Bearded Vulture or Lammergeier	WV
63	Accipitriformes	Accipitridae	<i>Gyps fulvus</i>	Indian Griffon Vulture	R
64	Accipitriformes	Accipitridae	<i>Gyps bengalensis</i>	Indian White-backed Vulture	R
65	Accipitriformes	Accipitridae	<i>Neophron percnopterus</i>	Egyptian Vulture	R
66	Accipitriformes	Accipitridae	<i>Aegyptius monachus</i>	Cinereous Vulture	R
67	Accipitriformes	Accipitridae	<i>Circaetus gallicus</i>	Short-toed Eagle	R
68	Accipitriformes	Accipitridae	<i>Circus aeruginosus</i>	Eurasian Marsh Harrier	WV
69	Accipitriformes	Accipitridae	<i>Circus cyaneus</i>	Hen Harrier	WV
70	Accipitriformes	Accipitridae	<i>Circus macrourus</i>	Pale or Pallid Harrier	WV
71	Accipitriformes	Accipitridae	<i>Accipiter nisus</i>	Eurasian/ Asiatic Sparrow-Hawk	WV
72	Accipitriformes	Accipitridae	<i>Accipiter badius</i>	Central Asian Shikra	SBV
73	Accipitriformes	Accipitridae	<i>Butastur teesa</i>	White-eyed Buzzard	SBV
74	Accipitriformes	Accipitridae	<i>Buteo vulpinus</i>	Desert Buzzard	WV
75	Accipitriformes	Accipitridae	<i>Buteo rufinus</i>	Longlegged Buzzard	WV
76	Accipitriformes	Accipitridae	<i>Aquila rapax</i>	Tawny Eagle	R
77	Accipitriformes	Accipitridae	<i>Aquila nipalensis</i>	Steppe Eagle	WV
78	Accipitriformes	Accipitridae	<i>Aquila heliaca</i>	Imperial Eagle	WV
79	Accipitriformes	Accipitridae	<i>Aquila chrysaetos</i>	Golden Eagle	WV
80	Accipitriformes	Accipitridae	<i>Hieraaetus fasciatus</i>	Bonelli's Eagle	R
81	Accipitriformes	Accipitridae	<i>Hieraaetus pennatus</i>	Booted Eagle	WV
82	Accipitriformes	Pandionidae	<i>Pandion haliaetus</i>	Osprey	WV
83	Falconiformes	Falconidae	<i>Falco tinnunculus</i>	Common Kestrel	WV
84	Falconiformes	Falconidae	<i>Falco subbuteo</i>	Eurasian Hobby	WV
85	Falconiformes	Falconidae	<i>Falco columbarius</i>	Merlin	WV
86	Falconiformes	Falconidae	<i>Falco chicquera</i>	Red-headed Merlin	R
87	Falconiformes	Falconidae	<i>Falco concolor</i>	Sooty Falcon	R
88	Falconiformes	Falconidae	<i>Falco jugger</i>	Laggar Falcon	R
89	Falconiformes	Falconidae	<i>Falco cherrug</i>	Saker or Cherrug Falcon	WV
90	Falconiformes	Falconidae	<i>Falco peregrinus</i>	Peregrine Falcon	WV
91	Galliformes	Phasianidae	<i>Ammoperdix griseogularis</i>	See-see Partridge	R
92	Galliformes	Phasianidae	<i>Alectoris chukar</i>	Chukor	R
93	Galliformes	Phasianidae	<i>Francolinus francolinus</i>	Black Partridge	R

94	Galliformes	Phasianidae	<i>Francolinus pondicerianus</i>	Grey Partridge	R
95	Galliformes	Phasianidae	<i>Coturnix coturnix</i>	Grey Quail	M/PM
96	Galliformes	Phasianidae	<i>Coturnix coromandelica</i>	Black-breasted or Rain Quail	SBV
97	Galliformes	Rallidae	<i>Rallus aquaticus</i>	Water Rail	WV
98	Galliformes	Rallidae	<i>Porzana parva</i>	Little Crake	WV
99	Galliformes	Rallidae	<i>Porzana pusilla</i>	Baillon's crake	WV
100	Galliformes	Rallidae	<i>Porzana porzana</i>	Spotted Crake	WV
101	Galliformes	Rallidae	<i>Amaurornis phoenicurus</i>	Whit-brested Water Hen	R
102	Galliformes	Rallidae	<i>Porphyrio porphyrio</i>	Indian Purple Moorhen	R
103	Galliformes	Rallidae	<i>Gallinula chloropus</i>	Indian Moorhen	R
104	Galliformes	Rallidae	<i>Fulica atra</i>	Common Coot	WV
105	Gruiformes	Gruidae	<i>Grus grus</i>	Common Crane	PM
106	Gruiformes	Gruidae	<i>Grus leucogeranus</i>	Siberian Crane	M
107	Gruiformes	Gruidae	<i>Grus virgo</i>	Dermoiselle Crane	PM
108	Otidiformes	Otididae	<i>Tetrax tetrax</i>	Little Bustard	WV
109	Otidiformes	Otididae	<i>Chlamydotis macqueenii</i>	Houbara Bustard	WV
110	Otidiformes	Otididae	<i>Sypheotides indica</i>	Leekh or Lesser Florican	SBV
111	Charadriiformes	Jacaniidae	<i>Hydrophasianus chirurgus</i>	Pheasant-tailed Jacana	R
112	Charadriiformes	Rostratulidae	<i>Rostratula bengalensis</i>	Painted Snipe	R
113	Charadriiformes	Haematopodidae	<i>Haematopus ostralegus</i>	Eurasian Oyster Catcher	WV
114	Charadriiformes	Recurvirostridae	<i>Himantopus himantopus</i>	Indian Black-winged Stilt	R
115	Charadriiformes	Recurvirostridae	<i>Recurvirostra avosetta</i>	Avocet	WV
116	Charadriiformes	Dromadidae	<i>Dromas ardeola</i>	Crab Plover	M
117	Charadriiformes	Burhinidae	<i>Burhinus oedicnemus</i>	Eurasian Thick-knee	R
118	Charadriiformes	Burhinidae	<i>Esacus recurvirostris</i>	Great Thick-knee	R
119	Charadriiformes	Glareolidae	<i>Cursorius cursor</i>	Cream Coloured or Desert Courser	R
120	Charadriiformes	Charadriidae	<i>Charadrius dubius</i>	Little Ringed Plover	WV/R
121	Charadriiformes	Charadriidae	<i>Charadrius hiaticula</i>	Ringed Plover	WV
122	Charadriiformes	Charadriidae	<i>Charadrius alexandrinus</i>	Kentish Plover	SBV
123	Charadriiformes	Charadriidae	<i>Charadrius mongolus</i>	Lesser Sand Plover	WV
124	Charadriiformes	Charadriidae	<i>Charadrius leschenaultii</i>	Large Sand Plover	WV
125	Charadriiformes	Charadriidae	<i>Pluvialis squatarola</i>	Grey Plover	WV
126	Charadriiformes	Charadriidae	<i>Pluvialis apricaria</i>	Golden Plover	V
127	Charadriiformes	Charadriidae	<i>Vanellus indicus</i>	Red-wattled Lapwing	R
128	Charadriiformes	Charadriidae	<i>Vanellus malabaricus</i>	Yellow-wattled Lapwing	SBV
129	Charadriiformes	Charadriidae	<i>Vanellus leucurus</i>	White tailed Lapwing	WV
130	Charadriiformes	Charadriidae	<i>Vanellus gregarius</i>	Sociable Lapwing	WV
131	Charadriiformes	Charadriidae	<i>Vanellus vanellus</i>	Lapwing or Green Plover	WV
132	Charadriiformes	Scolopacidae	<i>Calidris tenuirostris</i>	Great Knot	WV
133	Charadriiformes	Scolopacidae	<i>Calidris canutus</i>	Red Knot	V
134	Charadriiformes	Scolopacidae	<i>Calidris albus</i>	Sanderling	WV
135	Charadriiformes	Scolopacidae	<i>Calidris minutus</i>	Little Stint	WV
136	Charadriiformes	Scolopacidae	<i>Calidris alpinus</i>	Dunlun	WV
137	Charadriiformes	Scolopacidae	<i>Calidris ferruginea</i>	Curlew Sandpiper	WV
138	Charadriiformes	Scolopacidae	<i>Limicola falcinellus</i>	Broadbilled Sandpiper	WV

139	Charadriiformes	Scolopacidae	<i>Philomachus pugnax</i>	Ruff	PM
140	Charadriiformes	Scolopacidae	<i>Capella minima</i>	Jack Snipe	WV
141	Charadriiformes	Scolopacidae	<i>Capella gallinago</i>	Common or Fantail Snipe	WV
142	Charadriiformes	Scolopacidae	<i>Gallinago solitaria</i>	Solitary Snipe	R
143	Charadriiformes	Scolopacidae	<i>Scolopax rusticola</i>	Wood Cock	V
144	Charadriiformes	Scolopacidae	<i>Limosa limosa</i>	Black-tailed Godwit	WV
145	Charadriiformes	Scolopacidae	<i>Limosa lapponica</i>	Bar-tailed Godwit	WV
146	Charadriiformes	Scolopacidae	<i>Numenius phaeopus</i>	Whimbrel	WV
147	Charadriiformes	Scolopacidae	<i>Numenius arquata</i>	Eurasian Curlew	WV
148	Charadriiformes	Scolopacidae	<i>Tringa erythropus</i>	Spotted or Dusky Redshank	WV
149	Charadriiformes	Scolopacidae	<i>Tringa totanus</i>	Common Redshank	WV
150	Charadriiformes	Scolopacidae	<i>Tringa stagnatilis</i>	Marsh Sandpiper	WV
151	Charadriiformes	Scolopacidae	<i>Tringa nebularia</i>	Green Shank	WV
152	Charadriiformes	Scolopacidae	<i>Tringa ochropus</i>	Green Sandpiper	WV
153	Charadriiformes	Scolopacidae	<i>Tringa glareola</i>	Wood or Spotted Sandpiper	WV
154	Charadriiformes	Scolopacidae	<i>Tringa terek</i>	Terek Sandpiper	WV
155	Charadriiformes	Scolopacidae	<i>Tringa hypoleucos</i>	Common Sandpiper	WV
156	Charadriiformes	Scolopacidae	<i>Arenaria interpres</i>	Turnstone	WV
157	Charadriiformes	Scolopacidae	<i>Phalaropus lobatus</i>	Red-necked Phalarope	WV
158	Charadriiformes	Stercorariidae	<i>Stercorarius pomarinus</i>	Pomarine Jaeger	WV
159	Charadriiformes	Stercorariidae	<i>Stercorarius parasiticus</i>	Parasitic Jaeger	WV
160	Charadriiformes	Laridae	<i>Larus hemprichii</i>	Sooty Gull	SV
161	Charadriiformes	Laridae	<i>Larus ichthyaetus</i>	Great Black-headed Gull	WV
162	Charadriiformes	Laridae	<i>Larus ridibundus</i>	Black-headed Gull	WV
163	Charadriiformes	Laridae	<i>Larus brunnicephalus</i>	Brown-headed Gull	WV
164	Charadriiformes	Laridae	<i>Larus genei</i>	Slender-billed Gull	R
165	Charadriiformes	Laridae	<i>Larus argentatus</i>	Herring Gull	WV
166	Charadriiformes	Sternidae	<i>Gelochelidon nilotica</i>	Gullbilled Tern	WV
167	Charadriiformes	Sternidae	<i>Hydroprogne caspia</i>	Caspian Tern	M
168	Charadriiformes	Sternidae	<i>Sterna bergii</i>	Greater Crested Tern or Swift Tern	M/YRV
169	Charadriiformes	Sternidae	<i>Sterna bengalensis</i>	Indian Lesser Crested Tern	YRV
170	Charadriiformes	Sternidae	<i>Sterna sandvicensis</i>	Sandwich Tern	M/YRV
171	Charadriiformes	Sternidae	<i>Sterna aurantia</i>	River Tern	R
172	Charadriiformes	Sternidae	<i>Sterna hirundo</i>	Common Tern	SV
173	Charadriiformes	Sternidae	<i>Sterna repressa</i>	White-cheeked Tern	SV
174	Charadriiformes	Sternidae	<i>Sterna anaethetus</i>	Bridled Tern	SV
175	Charadriiformes	Sternidae	<i>Sterna albifrons</i>	Little Tern	R
176	Charadriiformes	Sternidae	<i>Sterna saundersi</i>	Black Shafted Ternlet	SBV
177	Charadriiformes	Sternidae	<i>Chidonias hybridus</i>	Indian Whiskered Tern	M/YRV
178	Charadriiformes	Sternidae	<i>Anous stolidus</i>	Common or Brown noddy	V
179	Pterocliiformes	Pteroclididae	<i>Pterocles lichtensteinii</i>	Close Barred Sandgrouse	R
180	Pterocliiformes	Pteroclididae	<i>Pterocles coronatus</i>	Crowned Sandgrouse	R
181	Pterocliiformes	Pteroclididae	<i>Pterocles senegallus</i>	Spotted Sandgrouse	WV
182	Pterocliiformes	Pteroclididae	<i>Pterocles exustus</i>	Chestnut-bellied or Indian Sandgrouse	R
183	Pterocliiformes	Pteroclididae	<i>Pterocles orientalis</i>	Imperial or Black-bellied Sandgrouse	WV
184	Pterocliiformes	Pteroclididae	<i>Pterocles alchata</i>	Pintailed Sandgrouse	R
185	Columbiformes	Columbidae	<i>Columba livia</i>	Rock Pigeon	R
186	Columbiformes	Columbidae	<i>Columba palumbus</i>	Wood Pigeon	R
187	Columbiformes	Columbidae	<i>Streptopelia decaocto</i>	Ring Dove	R/SBV

188	Columbiformes	Columbidae	<i>Streptopelia turtur</i>	Western Turtle Dove	V
189	Columbiformes	Columbidae	<i>Streptopelia senegalensis</i>	Little Brown or Senegal Dove	R/SBV
190	Psittaciformes	Psittacidae	<i>Psittacula krameri</i>	Rose -ringed Parakeet	R
191	Cuculiformes	Cuculidae	<i>Cuculus conoror</i>	Asiatic Cuckoo	PM/ SBV
192	Cuculiformes	Strigidae	<i>Phaenicophaeus leschenaultia</i>	Sirkeer Malkoha	R
193	Strigiformes	Strigidae	<i>Otus brucei</i>	Striated or Pallid Scops Owl	WV
194	Strigiformes	Strigidae	<i>Otus scops</i>	Eastern Scops Owl	WV
195	Strigiformes	Strigidae	<i>Bubo bubo</i>	Indian Great Horned or Eagle Owl	R
196	Strigiformes	Strigidae	<i>Ketupa zeylonensis</i>	Indian Brown Fish Owl	WV
197	Strigiformes	Strigidae	<i>Athene noctua</i>	Little Owlet	R
198	Strigiformes	Strigidae	<i>Athene brama</i>	Northern Spotted Owlet	R
199	Strigiformes	Strigidae	<i>Strix aluco</i>	Tawny Owl	WV
200	Strigiformes	Strigidae	<i>Strix butleri</i>	Hume's wood Owl	R
201	Strigiformes	Strigidae	<i>Asio otus</i>	Longeared Owl	WV
202	Strigiformes	Strigidae	<i>Asio flammeus</i>	Shorteared Owl	WV
203	Caprimulgiformes	Caprimulgidae	<i>Caprimulgus europaeus</i>	Hume's or European Nightjar	SBV/ WV/PM
204	Caprimulgiformes	Caprimulgidae	<i>Caprimulgus mahrattensis</i>	Syke's or Sind Nightjar	R
205	Caprimulgiformes	Caprimulgidae	<i>Caprimulgus aegyptius</i>	Egyptian Nightjar	SBV
206	Apodiformes	Apodidae	<i>Apus apus</i>	Common Swift	SBV
207	Apodiformes	Apodidae	<i>Apus melba</i>	Indian Alpine Swift	SBV
208	Apodiformes	Apodidae	<i>Apus pallidus</i>	Pallid Swift	WV
209	Apodiformes	Apodidae	<i>Apus affinis</i>	House swift	SBV
210	Coraciiformes	Alcedinidae	<i>Ceryle rudis</i>	Indian Pied kingfisher	R
211	Coraciiformes	Alcedinidae	<i>Alcedo atthis</i>	Indian Small Blue Kingfisher	R/WV/ SBV
212	Coraciiformes	Alcedinidae	<i>Halcyon smyrnensis</i>	White-breasted Kingfisher	R
213	Coraciiformes	Meropidae	<i>Merops superciliosus</i>	Blue-cheeked Bee-eater	SBV
214	Coraciiformes	Meropidae	<i>Merops orientalis</i>	Sind Small Green Bee-eater	SBV
215	Coraciiformes	Meropidae	<i>Merops apiaster</i>	European Bee-eater	SBV
216	Coraciiformes	Coraciidae	<i>Coracias garrulus</i>	Kashmir Roller	PM
217	Coraciiformes	Coraciidae	<i>Coracias benghalensis</i>	Roller or Blue Jay	R
218	Coraciiformes	Upupidae	<i>Upupa epops</i>	Hoopoe	SBV
219	Piciformes	Picidae	<i>Picus squamatus</i>	Scaly-bellied Green Woodpecker	R
220	Piciformes	Picidae	<i>Jynx torquilla</i>	European Wryneck	PM
221	Piciformes	Picidae	<i>Dinopium auriceps</i>	Brown Fronted Woodpecker	R
222	Piciformes	Picidae	<i>Picoides assimillis</i>	Sind Pied Woodpecker	R
223	Passeriformes	Alaudidae	<i>Eremopterix grisea</i>	Ashy-crowned Finch Lark	R
224	Passeriformes	Alaudidae	<i>Eremopterix nigriceps</i>	Black-crowked Finch Lark	R
225	Passeriformes	Alaudidae	<i>Ammomanes deserti</i>	Indian Desert Finch Lark	R
226	Passeriformes	Alaudidae	<i>Ammomanes cinturus</i>	Bartailed Desert Lark	R
227	Passeriformes	Alaudidae	<i>Alaemon alaudipes</i>	Hoopoe Lark or Bifasciated Lark	R
228	Passeriformes	Alaudidae	<i>Melanocorypha bimaculata</i>	Calandra Lark	WV
229	Passeriformes	Alaudidae	<i>Calandrella brachydactyla</i>	Great Shorttoed Lark	WV
230	Passeriformes	Alaudidae	<i>Calandrella acutirostris</i>	Hume's Short- toed Lark	SBV
231	Passeriformes	Alaudidae	<i>Calandrella rufescens</i>	Lesser Short- toed Lark	WV

232	Passeriformes	Alaudidae	<i>Calandrella raytal</i>	Indus Sand Lark	R
233	Passeriformes	Alaudidae	<i>Galerida cristata</i>	Crested Lark	R
234	Passeriformes	Alaudidae	<i>Alauda arvensis</i>	Common Skylark	WV
235	Passeriformes	Alaudidae	<i>Alauda gulgula</i>	Oriental Small Skylark	R
236	Passeriformes	Hirundinidae	<i>Riparia riparia</i>	Collared Sand Martin	WV
237	Passeriformes	Hirundinidae	<i>Riparia paludicola</i>	Grey Throated Indian Sand Martin/ Plain Martin	R
238	Passeriformes	Hirundinidae	<i>Ptyonoprogne fuligula</i>	Rock Martin	R
239	Passeriformes	Hirundinidae	<i>Hirundo rupestris</i>	Eurasian Crag Martin	SBV
240	Passeriformes	Hirundinidae	<i>Hirundo smithi</i>	Wire-tailed Swallow	R
241	Passeriformes	Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	WV
242	Passeriformes	Hirundinidae	<i>Hirundo fluvicola</i>	Cliff swallow/ Sreake-throated Swallow	R
243	Passeriformes	Hirundinidae	<i>Hirundo daurica</i>	Red-rumped Swallow	WV
244	Passeriformes	Motacillidae	<i>Anthus rufulus</i>	Paddyfield Pipit	R
245	Passeriformes	Motacillidae	<i>Anthus sylvanus</i>	Upland Pipit	R
246	Passeriformes	Motacillidae	<i>Anthus campestris</i>	Tawny Pipit	WV
247	Passeriformes	Motacillidae	<i>Anthus similis</i>	Long-billed Rock Pipit	R
248	Passeriformes	Motacillidae	<i>Anthus spinoletta</i>	Water Pipit	WV
249	Passeriformes	Motacillidae	<i>Anthus trivialis</i>	Tree Pipit	PM
250	Passeriformes	Motacillidae	<i>Motacilla flava</i>	Yellow Wagtail	PM
251	Passeriformes	Motacillidae	<i>Motacilla citreola</i>	Yellow-headed/Citrine Wagtail	R
252	Passeriformes	Motacillidae	<i>Motacilla cinerea</i>	Grey Wagtail	SBV
253	Passeriformes	Motacillidae	<i>Motacilla alba</i>	White or Pied Wagtail	WV
254	Passeriformes	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sind Wood Shrike	R
255	Passeriformes	Campephagidae	<i>Pericrocotus ethologus</i>	West Himalayan Long-tailed Minivet	WV
256	Passeriformes	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Sind Small Minivet	R
257	Passeriformes	Pycnonotidae	<i>Pycnonotus leucogenys</i>	White-eared Bulbul	R
258	Passeriformes	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	R
259	Passeriformes	Bombycillidae	<i>Hypocolius ampelinus</i>	Grey Hypocollius or Shrike Bulbul	WV
260	Passeriformes	Bombycillidae	<i>Bombycilla garrulous</i>	Waxwing	V
261	Passeriformes	Troglodytidae	<i>Troglodytes troglodytes</i>	Winter Wren	R
262	Passeriformes	Prunellidae	<i>Prunella ocularis</i>	Radde's or Accentor	V
263	Passeriformes	Prunellidae	<i>Prunella atrogularis</i>	Black-throated Accentor	WV
264	Passeriformes	Turdidae	<i>Cercotrichas galacototes</i>	Rufous-tailed Scrub Robin	SBV
265	Passeriformes	Turdidae	<i>Luscinia megarhynchos</i>	Common Nightingale	V
266	Passeriformes	Turdidae	<i>Luscinia svecica</i>	Bluethroat	WV
267	Passeriformes	Turdidae	<i>Phoenicurus erythronotus</i>	Red-backed Redstart	WV
268	Passeriformes	Turdidae	<i>Phoenicurus ochruros</i>	Black Redstart	SBV
269	Passeriformes	Turdidae	<i>Phoenicurus phoenicurus</i>	Common Redstart	PM
270	Passeriformes	Turdidae	<i>Saxicola torquata</i>	Collared Indian Bushchat Stonechat	PM/ SBV
271	Passeriformes	Turdidae	<i>Saxicola caprata</i>	Pied Bushchat	R/SBV
272	Passeriformes	Turdidae	<i>Oenanthe isabellina</i>	Isabelline Wheatear	WV/ SBV
273	Passeriformes	Turdidae	<i>Oenanthe oenanthe</i>	Northern Wheatear	PM

274	Passeriformes	Turdidae	<i>Oenanthe pleschanka</i>	Pied Wheatear	PM
275	Passeriformes	Turdidae	<i>Oenanthe deserti</i>	Desert Wheatear	WV
276	Passeriformes	Turdidae	<i>Oenanthe finschii</i>	Finsch's Wheatear	WV/R
277	Passeriformes	Turdidae	<i>Oenanthe xanthopyrma</i>	Rufous-tailed Wheatear	WV/ SBV
278	Passeriformes	Turdidae	<i>Oenanthe picata</i>	Variable Wheatear	PM
279	Passeriformes	Turdidae	<i>Oenanthe monacha</i>	Hooded Chat/ Wheatear	WV
280	Passeriformes	Turdidae	<i>Oenanthe alboniger</i>	Hume's Chat or Wheatear	R
281	Passeriformes	Turdidae	<i>Chaimarrornis leucocephalus</i>	White-capped Redstart	WV
282	Passeriformes	Turdidae	<i>Saxicoloides fulicata</i>	Indian Robin	R
283	Passeriformes	Turdidae	<i>Monticola saxatilis</i>	Rock Thrush	PM
284	Passeriformes	Turdidae	<i>Monticola salitarius</i>	Blue Rock Thrush	WV
285	Passeriformes	Turdidae	<i>Myophonus caeruleus</i>	Blue Whistling Thrush	SBV
286	Passeriformes	Turdidae	<i>Turdus unicolor</i>	Tickell's Trush	WV
287	Passeriformes	Turdidae	<i>Turdus ruficollis</i>	Black-throated Thrush	WV
288	Passeriformes	Turdidae	<i>Turdus philomelos</i>	Song Thrush	V
289	Passeriformes	Turdidae	<i>Turdus viscivorus</i>	Mistle Thrush	R
290	Passeriformes	Sylviidae	<i>Cettia cetti</i>	Cetti's Bush Warbler	WV
291	Passeriformes	Sylviidae	<i>Prinia buchanani</i>	Rufous-fronted Wren Warbler	R
292	Passeriformes	Sylviidae	<i>Prinia criniger</i>	Brown Hill Warbler	R
293	Passeriformes	Sylviidae	<i>Scotocerca inquieta</i>	Streaked Hill Warbler	R
294	Passeriformes	Sylviidae	<i>Acrocephalus melanopogon</i>	Moustached Warbler	WV
295	Passeriformes	Sylviidae	<i>Acrocephalus scirpaceus</i>	Eurasian Reed Warbler	R
296	Passeriformes	Sylviidae	<i>Acrocephalus agricola</i>	Paddy Field Warbler	PM
297	Passeriformes	Sylviidae	<i>Acrocephalus dumetorum</i>	Blyth's Reed Warbler	DPM
298	Passeriformes	Sylviidae	<i>Acrocephalus stentoreus</i>	Clamorous Reed Warbler	R
299	Passeriformes	Sylviidae	<i>Acrocephalus arundinaceus</i>	Great Reed Warbler	V
	Passeriformes	Sylviidae	<i>Hippolais caligata</i>	Booted Tree Warbler	WV/ SBV
300	Passeriformes	Sylviidae	<i>Hippolais launguida</i>	Upcher's Warbler	SBV
301	Passeriformes	Sylviidae	<i>Sylvia mystacea</i>	Menetries Warbler	SBV
302	Passeriformes	Sylviidae	<i>Sylvia nana</i>	Desert Warbler	WV
303	Passeriformes	Sylviidae	<i>Sylvia hortensis</i>	Orphean Warbler	PM/ SBV
304	Passeriformes	Sylviidae	<i>Sylvia curruca</i>	Lesser White-throat	WV/ SBV
305	Passeriformes	Sylviidae	<i>Sylvia communis</i>	Common White-throat	PM
306	Passeriformes	Sylviidae	<i>Phylloscopus nitidus</i>	Green Warbler	PM
307	Passeriformes	Sylviidae	<i>Phylloscopus griseolus</i>	Olivaceous Leaf Warbler	SBV
308	Passeriformes	Sylviidae	<i>Phylloscopus neglectus</i>	Plain Leaf Warbler	SBV
309	Passeriformes	Muscicapidae	<i>Muscicapa striata</i>	Spotted Flycatcher	PM/SBV
310	Passeriformes	Muscicapidae	<i>Ficedula parva</i>	Red-breasted Flycatcher	PM
311	Passeriformes	Monarchidae	<i>Terpsiphone paradisi</i>	Asian Paradise Flycatcher	PM
312	Passeriformes	Timaliidae	<i>Turdoides caudatus</i>	Common Babbler	R
313	Passeriformes	Timaliidae	<i>Garrulax lineatus</i>	Streaked or Himalayan Laughing Thrush	R
314	Passeriformes	Aegithalidae	<i>Aegithalos leucogenys</i>	White-cheeked Bushtit	R
315	Passeriformes	Paridae	<i>Periparus rufonuchalis</i>	Rufous-naped Tit	R
316	Passeriformes	Paridae	<i>Parus major</i>	Great Tit	R

317	Passeriformes	Sittidae	<i>Sitta cashmirensis</i>	Kashmir Nuthatch	R
318	Passeriformes	Sittidae	<i>Sitta tephronota</i>	Eastern Rock Nuthatch	R
319	Passeriformes	Certhiidae	<i>Certhia himalayana</i>	Himalayan/Bar-tailed Trecreeper	R
320	Passeriformes	Oriolidae	<i>Oriolus oriolus</i>	Golden Oriole	PM/ SBV
321	Passeriformes	Laniidae	<i>Lanius isabellinus</i>	Rufous-tailed or Isabelline Shrike	SBV
322	Passeriformes	Laniidae	<i>Lanius excubitor</i>	Great Grey Shrike	V
323	Passeriformes	Laniidae	<i>Lanius vittatus</i>	Bay-backed Shrike	R
324	Passeriformes	Laniidae	<i>Lanius collurio</i>	Red-backed / Longtailed Shrike	PM
325	Passeriformes	Laniidae	<i>Lanius schach</i>	Rufous-backed Shrike	R
326	Passeriformes	Laniidae	<i>Lanius maridionalis</i>	Southern Grey Shrike	V
327	Passeriformes	Dicruidae	<i>Dicrurus adsimilis</i>	Black Drongo	R
328	Passeriformes	Corvidae	<i>Garrulus lanceolatus</i>	Black-headed Jay	R
329	Passeriformes	Corvidae	<i>Dendrocitta vagabunda</i>	Rufous Tree Pie	R
330	Passeriformes	Corvidae	<i>Pica pica</i>	Eurasian Magpie	R
331	Passeriformes	Corvidae	<i>Nucifraga caryocatactes</i>	Nutcracker	R
332	Passeriformes	Corvidae	<i>Pyrrhonorax graculus</i>	Alpine Chough	R
333	Passeriformes	Corvidae	<i>Pyrrhonorax pyrrhonorax</i>	Red-billed Chough	R
334	Passeriformes	Corvidae	<i>Corvus monedula</i>	Western Jackdaw	WV
335	Passeriformes	Corvidae	<i>Corvus splendens</i>	Indian House Crow	R
336	Passeriformes	Corvidae	<i>Corvus frugilegus</i>	Rook	WV
337	Passeriformes	Corvidae	<i>Corvus corone</i>	Carrion Crow	WV
338	Passeriformes	Corvidae	<i>Corvus corax</i>	Common Raven	R
339	Passeriformes	Corvidae	<i>Corvus ruficollis</i>	Brown-necked Raven	WV
340	Passeriformes	Sturnidae	<i>Sturnus roseus</i>	Rosy Starling or Rosy Pastor	PM
341	Passeriformes	Sturnidae	<i>Acridotheres tristis</i>	Indian Myna	R
342	Passeriformes	Sturnidae	<i>Acridotheres ginginianus</i>	Bank Myna	R
343	Passeriformes	Sturnidae	<i>Passer domesticus</i>	House Sparrow	R
344	Passeriformes	Passeridae	<i>Passer hispaniolensis</i>	Spanish Sparrow	WV
345	Passeriformes	Passeridae	<i>Passer moabiticus</i>	Dead Sea Sparrow	WV
346	Passeriformes	Passeridae	<i>Passer montanus</i>	Eurasian Tree Sparrow	R
347	Passeriformes	Passeridae	<i>Petronia xanthocollis</i>	Yellow-throated Sparrow	V
348	Passeriformes	Passeridae	<i>Petronia petronia</i>	Rock Sparrow	WV
349	Passeriformes	Ploceidae	<i>Ploceus manyar</i>	Streaked Weaver Bird	V
350	Passeriformes	Estrildidae	<i>Estrilda amandava</i>	Red Munia or Red Avadavat	SBV
351	Passeriformes	Estrildidae	<i>Lonchura malabarica</i>	Indian Silverbill	R
352	Passeriformes	Fringillidae	<i>Fringilla coelebs</i>	Common Chaffinch	WV
353	Passeriformes	Fringillidae	<i>Fringilla montifringilla</i>	Brambling	WV
354	Passeriformes	Fringillidae	<i>Serinus pusillus</i>	Gold-fronted Finch	V
355	Passeriformes	Fringillidae	<i>Carduelis carduelis</i>	Eurasian Gold Finch	R
356	Passeriformes	Fringillidae	<i>Carduelis cannabina</i>	Eurasian Linnet	WV
357	Passeriformes	Fringillidae	<i>Rhodospiza obsoleta</i>	Desert Finch	R
358	Passeriformes	Fringillidae	<i>Bucanetes mongolicus</i>	Mongolian Finch	WV
359	Passeriformes	Fringillidae	<i>Bucanetes githaginea</i>	Trumpeter Finch	R
360	Passeriformes	Fringillidae	<i>Carpodacus erythrinus</i>	Common Rosefinch	SBV
361	Passeriformes	Fringillidae	<i>Carpodacus rhodochlamys</i>	Red-mantled Rosefinch	R

362	Passeriformes	Fringillidae	<i>Mycerobas carripes</i>	White winged Grosbeak	R
363	Passeriformes	Fringillidae	<i>Coccothraustes coccothraustes</i>	Hawfinch	SBV
364	Passeriformes	Emberizidae	<i>Emberiza leucocephalus</i>	Pine Bunting	WV
365	Passeriformes	Emberizidae	<i>Emberiza stewarti</i>	White-capped Bunting	SBV
366	Passeriformes	Emberizidae	<i>Emberiza cia</i>	Rock Bunting	WV
367	Passeriformes	Emberizidae	<i>Emberiza striolata</i>	Striped or House Bunting	R
368	Passeriformes	Emberizidae	<i>Emberiza buchanani</i>	Grey-necked Bunting	WV
369	Passeriformes	Emberizidae	<i>Emberiza aureola</i>	Yellowbreasted Bunting	V
370	Passeriformes	Emberizidae	<i>Emberiza schoeniclus</i>	Reed Bunting	WV
371	Passeriformes	Emberizidae	<i>Emberiza melanocephala</i>	Black-headed Bunting	PM
372	Passeriformes	Emberizidae	<i>Emberiza bruniceps</i>	Red-headed Bunting	PM
373	Passeriformes	Emberizidae	<i>Emberiza hortulana</i>	Ortolan Bunting	V

Legend: R= Resident, WV= Winter Visitor, M= Migratory, PM= Passage Migrant, V= Vagrant, SBV= Summer Breeding Visitor, SV= Summer Visitor, YRV= Year-Round Visitor, NBR=Non-Breeding Visitor, DPM= Double Passage Migrant

Checklist of Reptiles

The reptilian fauna is quite rich as 120 species have been recorded so far belonging to four Orders, two Sub orders and 16 Families (Table 13). The important species include five species of marine turtles, two species of freshwater

turtles, one species of Central Asian Tortoise, one species of Marsh Crocodile, one species each of Leaf Nosed Viper, Persian Horned Viper and Astola saw-scaled Viper (Table 13).

Table 13. Checklist of Reptiles of Balochistan.

S. No.	Order	Sub order	Family	Scientific Name	Common Name	Status
1	Chelonia	Cryptodira	Cheloniidae	<i>Eretmochelys imbricata</i>	Pacific Hawksbill Turtle	CR
2	Chelonia	Cryptodira	Cheloniidae	<i>Chelonia mydas</i>	Indian Ocean Green Turtle	EN
3	Chelonia	Cryptodira	Cheloniidae	<i>Caretta caretta</i>	Loggerhead Turtle	VU
4	Chelonia	Cryptodira	Chelonidae	<i>Dermochelys coriacea</i>	Leatherback Turtle	VU
5	Chelonia	Cryptodira	Chelonidae	<i>Lepidochelys olivacea</i>	Olive Ridley Turtle	VU
6	Testudines	Cryptodira	Testudinidae	<i>Aspideretes gangeticus</i>	Indian Softshell Turtle	VU
7	Testudines	Cryptodira	Testudinidae	<i>Lissemys punctata</i>	Indian Flatshell Turtle	LC
8	Testudines	Cryptodira	Testudinidae	<i>Testudo horsfieldii</i>	Central Asian Tortoise	VU
9	Crocodylia	Sauria	Crocodylidae	<i>Crocodylus palustris</i>	Marsh/Mugger Crocodile	VU
10	Squamata	Sauria	Agamidae	<i>Calotes minor</i>	Small Ground Agama	DD
11	Squamata	Sauria	Agamidae	<i>Calotes versicolor</i>	Indian Garden Lizard	NE
12	Squamata	Sauria	Agamidae	<i>Laudakia caucasia</i>	Caucasian Agama	NE
13	Squamata	Sauria	Agamidae	<i>Laudakia fusca</i>	Asian Rock Agama	NE
14	Squamata	Sauria	Agamidae	<i>Laudakia melanura</i>	Black Agama	NE
15	Squamata	Sauria	Agamidae	<i>Laudakia nupta</i>	Large Scaled Rock Agama	NE
16	Squamata	Sauria	Agamidae	<i>Phrynocephalus clarkorum</i>	Clark's Toad Headed Agama	NE
17	Squamata	Sauria	Agamidae	<i>Phrynocephalus euptilopus</i>	Beautiful Toad Headed Agama	LC
18	Squamata	Sauria	Agamidae	<i>Phrynocephalus luteoguttatus</i>	Yellow-speckled Toad-headed Agama	LC
19	Squamata	Sauria	Agamidae	<i>Phrynocephalus maculatus</i>	Spotted Toad-headed Agama	NE
20	Squamata	Sauria	Agamidae	<i>Phrynocephalus ornates</i>	Ornate Toad-headed Agama	NE

21	Squamata	Sauria	Agamidae	<i>Phrynocephalus scutellatus</i>	Gray Toad-headed Agama	NE
22	Squamata	Sauria	Agamidae	<i>Trapelus agilis</i>	Brilliant Ground Agama	NE
23	Squamata	Sauria	Agamidae	<i>Trapelus megalonyx</i>	Afghan Ground Agama	NE
24	Squamata	Sauria	Agamidae	<i>Trapelus ruderatus</i>	Horny-scaled Agama	LC
25	Squamata	Sauria	Agamidae	<i>Trapelus rubrigularis</i>	Red-throated Agama	NE
26	Squamata	Sauria	Eublepharidae	<i>Eublepharis macularius</i>	Indian Leopard Gecko	LC
27	Squamata	Sauria	Gekkonidae	<i>Agamura persica</i>	Persian Spider Gecko	LC
28	Squamata	Sauria	Gekkonidae	<i>Bunopus tuberculatus</i>	Bloch Rock Gecko	LC
29	Squamata	Sauria	Gekkonidae	<i>Crossobamon lumsdeni</i>	Lumsdeni Gecko	NE
30	Squamata	Sauria	Gekkonidae	<i>Crossobamon maynardi</i>	Whip-tailed Sand Gecko	NE
31	Squamata	Sauria	Gekkonidae	<i>Crossobamon orientalis</i>	Sind Gecko	NE
32	Squamata	Sauria	Gekkonidae	<i>Cyrtopodion agamuroides</i>	Makran Spider Gecko	LC
33	Squamata	Sauria	Gekkonidae	<i>Cyrtopodion kachhensis</i>	Warty Rock Gecko	NE
34	Squamata	Sauria	Gekkonidae	<i>Cyrtopodion montiumsalsorum</i>	Salt Range Rock Gecko	NE
35	Squamata	Sauria	Gekkonidae	<i>Cyrtopodion scabrum</i>	Keeled Rock Gecko	LC
36	Squamata	Sauria	Gekkonidae	<i>Cyrtopodion watsoni</i>	Pakistani thin-toed Gecko	NE
37	Squamata	Sauria	Gekkonidae	<i>Hemidactylus brookii</i>	Spotted Indian House Gecko	NE
38	Squamata	Sauria	Gekkonidae	<i>Hemidactylus flaviviridis</i>	Yellow Belly Gecko	NE
39	Squamata	Sauria	Gekkonidae	<i>Hemidactylus leschenaultii</i>	Bark/Leschenault's Leaf-toed Gecko	NE
40	Squamata	Sauria	Gekkonidae	<i>Hemidactylus persicus</i>	Persian Gecko	NE
41	Squamata	Sauria	Gekkonidae	<i>Ptyodactylus homolepis</i>	Fan-fingered Gecko	NE
42	Squamata	Sauria	Gekkonidae	<i>Rhinogecko femoralis</i>	Sharp-tailed/ Kharan Spider Gecko	NE
43	Squamata	Sauria	Gekkonidae	<i>Rhinogecko misonnei</i>	Misonne's Spider Gecko	LC
44	Squamata	Sauria	Gekkonidae	<i>Teratoscincus microlepis</i>	Small-scaled Wonder Gecko	NE
45	Squamata	Sauria	Gekkonidae	<i>Teratoscincus scincus</i>	Frog-eyed Gecko	NE
46	Squamata	Sauria	Gekkonidae	<i>Microgecko depressus</i>	Low-lying/ Dwarf Gecko	LC
47	Squamata	Sauria	Gekkonidae	<i>Microgecko persicus</i>	Persian Sand Gecko	NE
48	Squamata	Sauria	Lacertidae	<i>Acanthodactylus blanfordii</i>	Mekran Fringe-fingered Lizard	NE
49	Squamata	Sauria	Lacertidae	<i>Acanthodactylus cantoris</i>	Indian Fringe-fingered Lizard	NE
50	Squamata	Sauria	Lacertidae	<i>Acanthodactylus micropholis</i>	Yellowtail Fringe-fingered Lizard	NE
51	Squamata	Sauria	Lacertidae	<i>Eremias acutirostris</i>	Point-snout Racerunner	LC
52	Squamata	Sauria	Lacertidae	<i>Eremias aporosceles</i>	Chagai Short-nosed Desert Lacerta	NE
53	Squamata	Sauria	Lacertidae	<i>Eremias fasciata</i>	Yellow-headed Desert Lacerta	NE

54	Squamata	Sauria	Lacertidae	<i>Eremias persica</i>	Persian Racerunner	NE
55	Squamata	Sauria	Lacertidae	<i>Eremias scripta</i>	Sand Racerunner	LC
56	Squamata	Sauria	Lacertidae	<i>Mesalina brevirostris</i>	Short-nosed Desert Lacerta	LC
57	Squamata	Sauria	Lacertidae	<i>Mesalina watsonana</i>	Persian Long-tailed Desert Lacerta	NE
58	Squamata	Sauria	Lacertidae	<i>Ophisops jerdonii</i>	Snake-Eyed Lacerta	LC
59	Squamata	Sauria	Scincidae	<i>Ablepharus grayanus</i>	Minor Snake-eye Skink	NE
60	Squamata	Sauria	Scincidae	<i>Ablepharus pannonicus</i>	Asian Snake-eye Skink	NE
61	Squamata	Sauria	Scincidae	<i>Chalcides ocellatus</i>	Ocellated Skink	NE
62	Squamata	Sauria	Scincidae	<i>Eurylepis taeniolata</i>	Alpine Punjab Skink	NE
63	Squamata	Sauria	Scincidae	<i>Mabuya macularia</i>	Bronze Grass Skink	NE
64	Squamata	Sauria	Scincidae	<i>Eumeces blythianus</i>	Blyth's Skink	NE
65	Squamata	Sauria	Scincidae	<i>Eumeces schneiderii</i>	Schneider's Skink	NE
66	Squamata	Sauria	Scincidae	<i>Ophiomorus blanfordi</i>	Makran Sand Swimmer	NE
67	Squamata	Sauria	Scincidae	<i>Ophiomorus brevipes</i>	Short-legged Snake Skink	NE
68	Squamata	Sauria	Scincidae	<i>Ophiomorus raithmai</i>	Three-fingered Sand-fish/Indian Sand Swimmer	LC
69	Squamata	Sauria	Scincidae	<i>Ophiomorus tridactylus</i>	Three-toed Skink	NE
70	Squamata	Sauria	Uromastycidae	<i>Saara asmussi</i>	Bloch Spiny-tailed Lizard	NE
71	Squamata	Sauria	Uromastycidae	<i>Saara hardwickii</i>	Indian Spiny-tailed Lizard	NE
72	Squamata	Sauria	Varanidae	<i>Varanus bengalensis</i>	Indian Monitor	LC
73	Squamata	Sauria	Varanidae	<i>Varanus griseus</i>	Desert Monitor	NE
74	Squamata	Serpentes	Leptotyphlopidae	<i>Myriopholis blanfordii</i>	Sindh Thread Snake	NE
75	Squamata	Serpentes	Leptotyphlopidae	<i>Myriopholis macrorhyncha</i>	Long-nosed Worm Snake	NE
76	Squamata	Serpentes	Boidae	<i>Eryx johnii</i>	Indian or Red Sand Boa	NE
77	Squamata	Serpentes	Boidae	<i>Eryx tataricus</i>	Tartar Sand Boa	NE
78	Squamata	Serpentes	Boidae	<i>Gongylophis conicus</i>	Rough-scaled Sand Boa	NE
79	Squamata	Serpentes	Colubridae	<i>Bogia melanocephala</i>	Dark headed Gamma or Cat Snake	NE
80	Squamata	Serpentes	Colubridae	<i>Coluber karelini</i>	Spotted or Banded Desert Racer	NE
81	Squamata	Serpentes	Colubridae	<i>Hemorrhhis ravergeri</i>	Spotted Whip Snake	LC
82	Squamata	Serpentes	Colubridae	<i>Lycodon aulicus</i>	Indian Wolf Snake	NE
83	Squamata	Serpentes	Colubridae	<i>Lycodon striatus</i>	Northern or Barred Wolf Snake	NE
84	Squamata	Serpentes	Colubridae	<i>Lytorhynchus maynardi</i>	Maynrd's Longnose Sand Snake	LC
85	Squamata	Serpentes	Colubridae	<i>Lytorhynchus ridgewayi</i>	Derafshi Snake	LC
86	Squamata	Serpentes	Colubridae	<i>Lytorhynchus paradoxus</i>	Sind Long-nosed Sand Snake	NE
87	Squamata	Serpentes	Colubridae	<i>Oligodon taeniolatus</i>	Streaked Kukri Snake	LC
88	Squamata	Serpentes	Colubridae	<i>Platyceps rhodorachis</i>	Jan's Cliff Racer	NE
89	Squamata	Serpentes	Colubridae	<i>Platyceps ventromaculatus</i>	Glossy-bellied Racer	NE
90	Squamata	Serpentes	Colubridae	<i>Psammophis lineolatus</i>	Steppe Ribbon Racer	NE

91	Squamata	Serpentes	Colubridae	<i>Pseudocyclophis persica</i>	Dark headed Dwarf Racer	NE
92	Squamata	Serpentes	Colubridae	<i>Ptyas mucosa</i>	Dhaman or Indian Rate Snake	NE
93	Squamata	Serpentes	Colubridae	<i>Spalerosophis diadema</i>	Diadem/ Royal Snake	NE
94	Squamata	Serpentes	Colubridae	<i>Spalerosophis schirazianus</i>	Persian Diadam or King Snake	NE
95	Squamata	Serpentes	Colubridae	<i>Spalerosophis arenarius</i>	Red-spotted Diadem Snake	NE
96	Squamata	Serpentes	Colubridae	<i>Spalerosophis atriceps</i>	Black-headed Royal Snake	NE
97	Squamata	Serpentes	Colubridae	<i>Xenochrophis piscator</i>	Asiatic Water Snake	NE
98	Squamata	Serpentes	Lamprophiidae	<i>Psammophis schokari</i>	Schokari Sand Racer	NE
99	Squamata	Serpentes	Lamprophiidae	<i>Psammophis leithii</i>	Pakistan Sand Racer	NE
100	Squamata	Serpentes	Lamprophiidae	<i>Psammophis lineolatus</i>	Steppe Ribbon Racer	NE
101	Squamata	Serpentes	Elapidae	<i>Bungarus caeruleus</i>	Indian or Common Krait	NE
102	Squamata	Serpentes	Elapidae	<i>Naja naja</i>	Black Cobra	NE
103	Squamata	Serpentes	Elapidae	<i>Naja oxiana</i>	Oxus Cobra or Russian Cobra	DD
104	Squamata	Serpentes	Elapidae	<i>Hydrophis stokesii</i>	Stake's or Big-headed Sea Snake	LC
105	Squamata	Serpentes	Elapidae	<i>Enhydrina schistose</i>	Beaked Sea Snake	NE
106	Squamata	Serpentes	Elapidae	<i>Hydrophis cyanocinctus</i>	Annulated Sea Snake	LC
107	Squamata	Serpentes	Elapidae	<i>Hydrophis fasciatus</i>	Striped Sea Snake	LC
108	Squamata	Serpentes	Elapidae	<i>Hydrophis lapemoides</i>	Arabian/ Persian Gulf Sea Snake	LC
109	Squamata	Serpentes	Elapidae	<i>Hydrophis ornatus</i>	Ornate Reef Sea Snake	LC
110	Squamata	Serpentes	Elapidae	<i>Hydrophis spiralis</i>	Yellow Sea Snake	LC
111	Squamata	Serpentes	Elapidae	<i>Hydrophis curtus</i>	Short / Pygmy Sea Snake	LC
112	Squamata	Serpentes	Elapidae	<i>Microcephalophis gracilis</i>	Graceful Small-headed Sea Snake	LC
113	Squamata	Serpentes	Elapidae	<i>Pelamis platurus</i>	Yellow-bellied Sea Snake	LC
114	Squamata	Serpentes	Elapidae	<i>Praescutata viperinus</i>	Viperine Sea Snake	LC
115	Squamata	Serpentes	Viperidae	<i>Daboia russelii</i>	Russel's Viper	NE
116	Squamata	Serpentes	Viperidae	<i>Echis carinatus</i>	Transcaspian or Multiscale Saw Scaled Viper	NE
117	Squamata	Serpentes	Viperidae	<i>Echis carinatus astolae</i>	Astola Saw Scaled Viper	NE
118	Squamata	Serpentes	Viperidae	<i>Eristicophis macmahon</i>	McMahon's/ Leaf-nosed Viper	NE
119	Squamata	Serpentes	Viperidae	<i>Pseudocerastes persicus</i>	Persian Horned Viper	LC
120	Squamata	Serpentes	Viperidae	<i>Macrovipera lebetina</i>	Lavantine Blunt-nosed Viper	NE

Legend: CR= Critically Endangered, EN= Endangered, VU= Vulnerable, NT= Near-threatened, LC= Least Concern, DD= Data Deficient, NE= Not Evaluated

Checklist of Amphibians of Balochistan

As many as seven species of amphibians have so far been

recorded from Balochistan belonging to one Order and two families (Table 14).

Table 14. Checklist of Amphibians of Balochistan.

S. No.	Order	Family	Scientific Name	Common Name	Status
1	Anura	Bufonidae	<i>Duttaphrynus stomaticus</i>	Indus Toad	Least Concern
2	Anura	Bufonidae	<i>Duttaphrynus olivaceus</i>	Olive Toad	LC
3	Anura	Bufonidae	<i>Bufotes surdus</i>	Iranian Toad	LC
4	Anura	Bufonidae	<i>Bufotes zugmayeri</i>	Baloch Toad	LC
5	Anura	Dicroglossidae	<i>Chrysopaa sternosignata</i>	Balochistan Karez Frog	LC
6	Anura	Dicroglossidae	<i>Euphlyctis cyanophlyctis</i>	Skittering Frog	LC
7	Anura	Dicroglossidae	<i>Euphlyctis hexadactylus</i>	Green Pond Frog	LC

CONCLUSION

It is concluded that the Province of Balochistan has a rich variety of wildlife which has been under threat due to hunting/ trapping/ poaching, degradation of habitats and impacts of developmental projects particularly along the Mekran coast area. The Balochistan Wildlife Department has recently taken up prompt action to control the cases of illegal capture and the transportation of wildlife through Balochistan. Moreover, quite recently, the Government of Balochistan has constituted a Committee for the Conservation of wildlife in Takatu, Chiltan Hazarganji and Hingol National Parks. These are commendable wildlife conservation efforts.

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