

## An Annotated Checklist of Herpeto Fauna of District Haripur, KPK, Pakistan

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### ABSTRACT

An updated checklist of amphibians and reptiles that occur in District Haripur KPK, Pakistan, is provided. The study was conducted as a type of survey during the year 2018. Results were deducted from the collection and observation of fauna from the selected five localities of district Haripur. Due to the various habitats in its geography this district exhibits a diverse herpeto fauna. Including nine species of amphibians and 32 species of reptiles total of 41 species of herpeto fauna were recorded from District Haripur. So there is need to take care of this valuable Habitat in order to conserve these species.

**Keywords:** Amphibians; Reptiles; Herpeto fauna; Biodiversity

### INTRODUCTION

Amphibians have great numbers of species that are widespread global invaders are perhaps most well known for their highly threatened status [1]. Worldwide both purposeful and accidental introductions of amphibians have occurred. Motivations for purposeful amphibian introductions include their use as bio control agents and cooking ambitions (Wilcox). Class Amphibia includes more than 6,500 species, contained in three orders: Anura, Apoda and Urodela. Order Anura consists of 33 Families, out of which family Ranidae is one of the richest in species, with 61 Genera having 750 species. The family Ranidae includes truly aquatic frog species and Family Bufonidae of Order Anura includes about among 37 genera, 500 true toad species [2]. Amphibians that are being accidentally introduced and becoming widespread there are an increasing number. In amphibian and reptile populations in recent year's worldwide declines have caused great concern in the scientific community, for informing ecological knowledge and conservation for regional accounts are invaluable tools [3].

About 30% (1895 out of 6285) of the assessed amphibians and around 28% (470 out of 1678) assessed reptiles in the world are threatened [4]. For its wound healing efficiency Frog skin has also been Valuated [5]. The pioneer work on the systematic of amphibian fauna of Pakistan is recently done by Muhammad Sharif khan 1997, 2002, 2004, 2006 and 2008 in different parts of Pakistan. The most common causes of their population decline include increased exposure to ultraviolet radiation,

pathogens, climate change, acid rain, and chemical stressors such as pesticides and fertilizers introduced species, habitat destruction and modification Province [6]. The other subsequent and relatively recent studies [7] have been made to unveil the herpetological wealth of Pakistan.

By single order (Anura), amphibians are represented in Pakistan, while four categories of reptiles (Sauria, Serpentes, Testudines, Crocodilia) are recognized. Previously reptiles and amphibians of India and Pakistan were described by [8], described Burma and Ceylon (Sri Lanka), which was later updated by [9]. Two accurate and classical records of the herpeto fauna of Pakistan are by Mertens (1969) and Minton (1966). On amphibians and reptiles detailed account were also given by [10], of Pakistan. There is lack of Quantitative data in Pakistan.

So the preset study was therefore conducted to obtain data on herpeto faunal species richness and abundance in the districts Haripur Pakistan. That is the first recorded study for the first time from the area; Most of the herpetological studies carried out in Pakistan are either old or mainly restricted to the Sind and Balochistan provinces of Pakistan and little from KPK.

Vegetation of district Haripur is largely the result of the monsoon, various medicinal important plants and trees are present their fruits which are mainly present there are peach greengage, apple, almond, mulberry, apricot, walnut and Eriobotrya (lukat). The main cultivated crops in the area are maize wheat and mustard. The Pakistan largest dam also located

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their Tarbela dam, Haripur district also have different river systems flowing from it, the haro is one of them, various types of birds are present their so the habitat of Haripur is favourable for the biodiversity.

## MATERIALS AND METHODS

### Study area

Study area was conducted in the district Haripur KPK Pakistan. Haripur is the main city of the Haripur District in Hazara, Khyber Pakhtunkhwa in Pakistan, with Swabi and Buner to the west, some 65 km north of Islamabad and 35 km south of Abbottabad. It is in a hilly plain area at an altitude of 520 m having the 33.9946° N, 72.9106° E with the pleasant weather and hilly areas with grasses and pine trees.

### Methodology

This study was conducted as a type of survey in different selected localities of district Haripur KPK Pakistan, total of 30 field surveys were conducted, spanning a period of 1 year from start of the year till the end (2018). In order to maximize the documentation of the herpeto fauna Observations and collections were made at night and during the day. At all the study sites the active searching were carried out regularly with my colleagues focus on suitable microhabitats for both nocturnal and diurnal species. The study area was subdivided into five different localities naming viz, Tarbela Dam (large water reservoir), haro (large reservoir of running water), chhajjian (mountainous area), maira (hot and plan area), Khanpur was for suitable microhabitats for both amphibians and reptiles then actively surveyed (pond embankment, stones, leaf litter/debris, crevices, rotten logs) and potential breeding sites for amphibian (small water pools, marsh and water channels). During the survey I really amused by hearing the voices of frogs and other diversity mostly at the night.

In aquatic habitats or the presence of the amphibians and reptiles hiding these sites were extensively searched for eggs and tadpoles of amphibians. In winter, prior to the onset of the hibernation period these surveys were conducted mostly in October and November. Most of the amphibians were seems to be emerged in monsoon season so that was the active season for

the surveying them. Before dusk most winter surveys were restricted as low night time temperatures limit the activity of most amphibians and reptiles. Within the localities for study Night surveys were conducted using boots, hand lamps and powerful torches to avoid dangerous snakes.

Not only the herpeto fauna we also found the great biodiversity, one time at night in chhajjian the track to the hill site, on every step there were lots of millipedes. Presence of amphibians and reptiles, were also confirmed by the Passive signs such as body impressions, footprints or tail drags, fecal pellets, tracks, dens, egg laying excavations or hiding places. By using noose traps or other appropriate techniques larger species such as monitor lizards and rock-agamas, were captured. With snake clutches or sticks Snakes, especially venomous species, were caught in shallow water. For the collection of aquatic reptiles and amphibians “Scoop nets” were used and “cast nets” in larger bodies of water [7]. At breeding sites Frogs and toads were collected efficiently by listening for their mating calls [11].

In the field Diurnal species were photographed while on the subsequent day the nocturnal species were brought to the base camp and photographed. In 10% formalin solution or 50-70% alcohol Voucher specimens were injected and preserved and then transported to Pakistan Museum of Natural History (PMNH) laboratory to ascertain their identification using keys [12]. Generic assignment of amphibian and reptilian species is made consistent with the latest available systematic and already published material.

## RESULTS AND DISCUSSION

32 species of reptiles and nine species of amphibian were recorded from district Haripur KPK showed in (Table 1). In Pakistan the amphibian fauna is represented by 21 species allocated to the families Microhylidae, Bufonidae and Ranidae, Megophryidae. Among which the three families are present in district Haripur (Figures 1 and 2). Whereas to the Deosai Plateau in Pakistan a single species of megophriid frog is restricted. Frog belong to the amphibia were also recorded the distribution of these ranid frogs is documented in older literature but *Nanorana vicina* has recently been discovered after 130 years since its initial description [7].

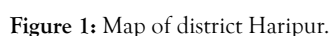
**Table 1:** Species recorded during the survey of different localities of district Haripur KPK Pakistan.

S.No	Scientific names	Distribution				
		Chhajjian	Maira	Terbella Dam	Haro	Khanpur
1	<i>Duttaphrynus Stomaticus</i>	P	p	P	P	P
2	<i>Duttaphrynus Melanostictus</i>	A	P	A	A	P
3	<i>Hoplobatrachus Tigerinus</i>	A	P	A	A	P
4	<i>Euphlyctis Cyanophlyctis</i>	A	P	P	P	P
5	<i>Fejervarya Limnocharis</i>	-	A	A	P	P

6	<i>Nanorana Vicina</i>	P	A	P	A	A
7	<i>Sphaerotheca Breviceps</i>	P	P	P	A	A
8	<i>Microhyla Ornata</i>	P	P	A	P	A
9	<i>Uperodon Systoma</i>	A	P	P	P	A
10	<i>Pangshura Smithii Smithii</i>	A	P	A	A	A
11	<i>Nilssonina Gangeticus</i>	P	A	P	P	P
12	<i>Lissemys Punctata Andersoni</i>	A	P	A	A	P
13	<i>Saara Hardwickii</i>	A	P	A	A	P
14	<i>Eublepharis Macularius</i>	A	P	P	P	P
15	<i>Calotes Versicolor Farooqi</i>	-	A	A	P	P
16	<i>Laudakia Agrorensis</i>	P	A	P	A	A
17	<i>Hemidactylus Flaviviridis</i>	P	P	P	A	A
18	<i>Hemidactylus Brookii</i>	P	P	P	P	A
19	<i>Cyrtopodion Scabrum</i>	A	P	P	P	P
20	<i>Acanthodactylus Cantoris</i>	P	A	P	P	P
21	<i>Ophisops Jerdonii</i>	A	P	A	A	P
22	<i>Eutropis Dissimilis</i>	A	P	A	A	P
23	<i>Eurylepis Taeniolatus</i>	A	P	P	P	P
23	<i>Asymblepharus Himalayanus</i>	P	A	A	P	P
25	<i>Varanus Bengalensis</i>	P	A	P	A	A
26	<i>Myriopholis Macrorhynchus</i>	P	P	P	A	A
27	<i>Ramphotyphlops Braminus</i>	P	P	-	P	A
28	<i>Typhlops Porrectus</i>	A	P	P	P	-
29	<i>Amphiesma Stolatium</i>	P	A	P	P	P
30	<i>Boiga Trigonata</i>	A	P	A	A	P
31	<i>Platycephalus Rhodorachis Rhodorachis</i>	A	P	A	A	P
32	<i>Platycephalus ventromaculatus</i>	A	P	P	P	P
33	<i>Psammophis schokari</i>	-	A	A	P	P
34	<i>Ptyas mucosus</i>	P	A	P	A	A
35	<i>Spalerosophis atriceps</i>	P	P	P	A	A
36	<i>Xenochro phispiscator</i>	P	P	p	P	P

(A means absent and P means present during the survey)

Throughout the Indo-Pakistan region *Duttaphrynus stomaticus* is widely distributed these previous findings are in agreement with our present record. A taxonomic study on this species suggests the partition of the Indus Valley population into five separate populations, though none are routine of subspecific recognition. By Khan from hazara region Azad Kashmir and Alpine Punjab *Duttaphrynus melanostictus hazarensis* also was previously described also recorded in present study from district Haripur [16]. Second most dominant group of the herpetofauna in district Haripur are Lizards belonging to 12 genera represented by 13 species. From family Eublepharidae [17], it inhabits rocky or stony terrain, mudflats with sparse grass and bushes, in mesic to xeric conditions. This lizard is increasingly exploited in the illegal pet trade. By comparison with the other districts of Pakistan [18], collected 215 individuals of reptiles belonging to two agamid species from Karachi in Sindh, with Common Tree Lizard (n=187) as the most abundant species. In our study Common Tree Lizard was found. Colubrid snakes that are recorded in present study are also present in nearly worldwide, although marginally in Australia. Almost two thirds of the living snakes this family constitutes. From tropical and temperate forests to deserts they occupy a wide spectrum of habitats and have arboreal or fossorial habits. From district Haripur Eight species belonging to seven genera are so far reported. *Boiga trigonata* is a rear-fanged venomous snake, but it is not generally dangerous to humans, while the remaining species are non-venomous [19].



The herpeto fauna of district Haripur is comprises of both type of habitat. In the plain areas there were lizards and snakes were in abundance and in hilly areas there were abundance of amphibians were recorded.

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