

ASSESSMENT OF HUMAN-SNAKE INTERACTION IN INDUSTRIAL ZONE OF PORT QASIM, MALIR, KARACHI, PAKISTAN

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ABSTRACT

In every part of, human beings have experienced uncomfortable courting with serpent. Serpents are reptiles that bewitch a lot of person and frighten else, for better or for worse. Almost all person have powerful affections towards serpent, even so not many carry on impartial. Nearly all interactivity between humans and snakes has resulted in the snake's destruction caused by humans' incapacity to capacity fright and nervousness. The non selective homicide of serpent to protect people's protection has extremely made less the populations of numerous serpent types to extinction levels. However, the aim is to study snake-human interactions in Karachi's Port Qasim industrial area. Urban residents of Karachi need to be educated about snake behavior, toxic and non-toxic verity in the locality, as well as the environmentally and medicinal value of serpents.

Keywords: Living soul-Serpents Interplay, Port Qasim, Karachi.

INTRODUCTION

There are 12,060 species (up from 12,000 reptile species in the April, 2023 release), plus another 2,133 subspecies (excluding nominate subspecies), that is, a total of 14,193 taxa (<http://www.reptile-database.org/data/>). About 3500 known species of snakes found throughout the world and out of these about 84 known species of snakes are found in Pakistan including both aquatic and terrestrial species (Lal *et al.*, 2019). The "Large-4" Toxic serpents across Pakistan are known as common krait (*Bungarus caeruleus*), Indian cobra (*Naja naja*), Russell's viper (*Daboia russelii*), and the saw-scaled viper (*Echis carinatus*) as these are the deadliest venomous and medically the most valuable snakes of Pakistan. Pakistani serpents be affiliated to 8 families: Leptotyphlopidae, Typhlopidae, Boidae, Colubridae, Elapidae, Hydrophiidae and Crotalidae. The no. of snake species accounts in Pakistan has often increased since Minton's (1966) report. Serpents bite outline have being on the whole listing for Pakistani almost inhabit territory, the Harappa (Punjab) and the Indus Delta (Sindh), site about 95% of the cultivation affair of the Pakistan occur. Tharparkar is a semitropical bare part and the almost south portion of Sindh, reports the next most registered snake bites cases in Pakistan (Kanth *et al.*, 2020). Human-being wild animals interplay this every time pilot to dispute is a vital be about of almost person livelihood near wild territory or where agricultural activities are doing. dispute is defined here as any relationship in between peoples and wild animals that adversely affects the public, productive, and ethnic life of peoples or the protection of fauna populace, or on the ecology (Anon., 2005). People generally attempt to keep away from contact to serpents. They sometimes have meanings that extend later than carry through into the kingdom of society Human -being serpents connections has every time been affiliated with unlike result likes' animal's death, habitat destruction, mortality and morbidity to people, mortality and injuries to wild animals (Magige, 2012). normally, there are greater than 3500 types of serpent in the planet and all reside in the two earthbound and inhabiting in the sea habitat and are predacious flesh eating accompanied by broad scale of hunt species (WHO, 2010; Bijeets, 2012).

In spite of metropolitan, socio-economic development and demolition of their natural ecology, serpents endure abundant in almost all portion of Pakistan. Serpent's co-inside with human-being in residence, park and out houses even so their appearance normally process neglected. Serpents are economically useful to human-being by murder undesirable arthropod and rodents in food mart and agricultural fields. Serpents' skin is utilize to make shoes and handbags for tourist attractions such as Snake Park, and toxin is utilized for things like making livening antivenoms and biomed analysis. Other curative drugs. In India, China, Philippines, Thailand and Africa, few types of serpents are utilized as derivation of flash (Oi-Fung *et al.*, 2009; WHO, 2010). In Asian Territory like Thailand, Indonesia, and Cambodia, sips the blood of serpents like cobra is have confidence to grow sexual libido. In the Westernmost globe some serpents, especially passive types like the royal python, boas and red rat snake, are retain as pets. Serpents are reptiles that are useful for acclaim and even revering in few parts like India and Some part of Africa,

and they are show as carryout animals by standard serpents' charmers (WHO, 2010). All these and so many others are uses of snakes for humans. Apart from the benefits that snakes have, the general public has always been afraid of snakes, especially their bites and their appearance. It's natural to fear snakes, as they cause numerous bites, deaths, and permanent disability. But for all that, serpents do not generally hunt on humans and almost won't assault humans otherwise they feel frighten, damaged or evoked. With the uncommon of big pythons, non-venomous snakes pose no dangerous to human being, but of the approximately seven hundred twenty five species of toxic serpents globally, at most two hundred fifty can murder humans with a nibble (Bijees, 2012).

Snakebites are common in almost remote parts and are a source of sickness and death included agriculturalist, pastoralists, trappers, and youngster (Maregesi *et al.*, 2013).The huge large number of snake bite prompt murder happen in Asia, approximate fluctuate from fifteen thousand four hundred to fifty seven thousand and six hundred, murders every year (Kasturiratne *et al.*, 2008). As stated by the World Health Organization (WHO), snake venom remains a neglected tropical disease. Indian sub continent account for roughly seventy percent of the globe snake bites murder. Roughly forty thousand bites are reported in Pakistan each year, resulting in approximately eight thousand and two hundred deaths. Comprise of 84 species of serpents are dispense all over the Pakistan. Those ones 84 species, forty are Toxic. The "Big Four" venomous snakes are common krait, the saw-scaled viper, Russell's viper, and the Indian cobra in the region (Memon *et al.*, 2023). The present research was running to evaluate human-being and serpents' relation and expected consequence. Overall idea is based on sustainably conserving snakes and protecting their health as others are piece of the ecology. The present study observation is focus at confirmed observation on how the residents of Karachi metropolitan lead their sentiments, particularly when they meet by chance serpents in home, farm land, shrubs, factories, ware houses, wild areas and in residential areas. The un challenged truth that so many persons are yet to have understand on both the biological and medicinal significance of snakes, but a bit acknowledge these creepers to be fatal in bites generate an exceptionally antagonistic alliance. As a consequence, the inhabitants of serpents have awfullyless in almost parts due to the randomly human-being murder behavior embedded into serpent-horror. Human being dislike for serpents appear to be inherent in states such as Pakistan, may possibly force the serpents residents into extinction if protection academic programs have not to assist the mankind realized the worth, significance, and behavior of snakes.

MATERIALS AND METHODS

Study area

These researches were presiding over in the Bin Qasim Industrial Zone that is surrounding at the north-east and north-west of Port Qasim in Bin Qasim Town Karachi. Gadap city is encircling by Bin Qasim to the north, Thatta and Indus Rivers to the east, the Arabian Sea to the south, and the Malir River to the south. and the towns of Landhi, Malir and Korangi cantonment regions' the west.

Field studies were done in the industrial zone of Port Qasim of district Malir of Karachi, Sindh from January to December of 2022. We have also collected data located 244739.9 N 672321.2 E. Population and species assessment, natural habitat, distribution and threats of the species were observed in these study areas in Karachi. Field surveys were conducted fortnightly from January 2022 to December 2022 (12 months). More than 35 visits were made and information collected on the general characteristics of the selected research areas of the target species. The data of recorded about snakes either dead or live from Port Qasim industrial area were obtained from August 2021 to August 2023 (25 months). . Field studies were done in the industrial zone of Port Qasim of district Malir of Karachi, Sindh from January to December of 2022. We have also collected data located 244739.9 N 672321.2 E. Population and species assessment, natural habitat, distribution and threats of the species were observed in these study areas in Karachi. Field surveys were conducted fortnightly from January 2022 to December 2022 (12 months). More than 35 visits were made and information collected on the general characteristics of the selected research areas of the target species. The data of recorded about snakes either dead or live from Port Qasim industrial area were obtained from August 2021 to August 2023 (25 months).

Climatic Condition of the study area

The study area has a tropical climate; despite being located slightly above the Tropic It is located on the coast of the Arabian Sea of Pakistan, the climate is relatively mild. In some cases, the region is classified as semi-arid due to its mild climate with a short but distinct rainy season and a long dry season. Summer lasts the longest of the year. Rain falls from late June to mid-September (monsoon). The city has a tropical climate, with mild and dry winters and hot, humid, and rainy summers. It is usually humid from March to November, but the humidity is very low in winter due to the northeasterly wind direction. In winter, there are days when the temperature drops below 10°C, and the daytime temperature is around 26°C.

https://en.wikipedia.org/wiki/Climate_of_Karachi

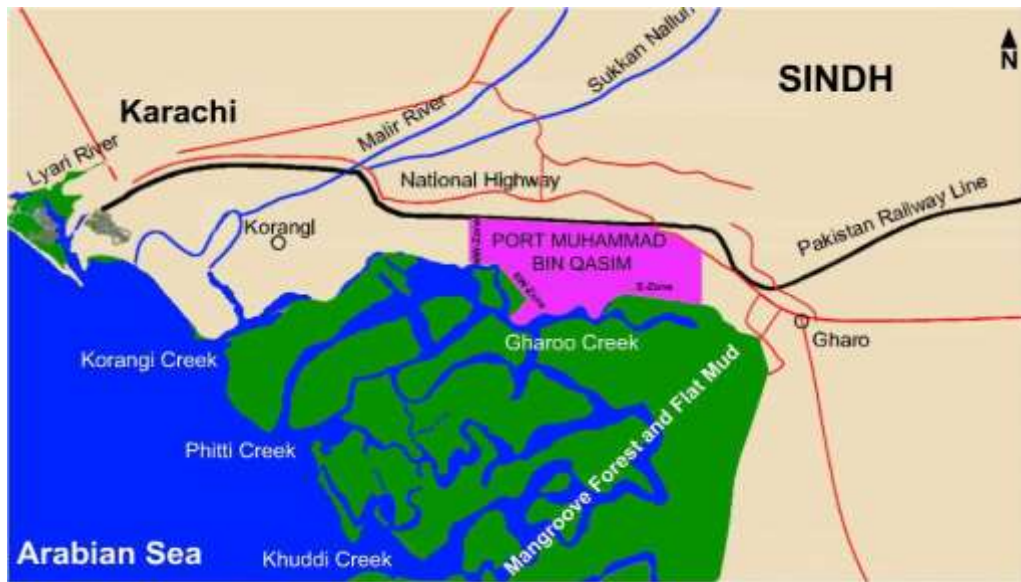


Fig. 1: Map of Bin Qasim, Karachi.

RESULTS

The relationship between humans and many wildlife species is very smooth, which is why humans have traveled to so many areas of the globe to practice wild animals exploration. Wildlife exploration is familiar to have changed the economies of most developing States, especially sub-Saharan Africa, and helped many people recognize the significance of wild animals protection. Even so while it moves nearer to serpents, so many persons oppose their protection, even though they play a lot of require eco-friendly part. And for numerous, populations of human being enemies such as snakes must not be run. Serpents killing remain a widespread practice because many people still know and accept the importance of snakes. People don't seem to believe that snake venom has medicinal properties. For many people, snake bites cannot be treated medically, but for a small number of patients, bites can only be treated using traditional methods.

Snake species of the study area

Out of the cue facts and straight monitoring results, 9 snake species established in the investigation region were noted (Table 1). It was observed that 80% of the snake were non-toxic.

Table 1. Checklist of snake species found in the study area.

S. No.	Common name	Scientific name	Toxicity category
1.	Saw scaled viper	<i>Echis carinatus</i>	Venomous
2.	Russell's viper	<i>Daboia russelii</i>	Venomous
3.	Indian Cobra	<i>Naja naja</i>	Venomous
4.	SindhKrait	<i>Bungarus sindanus</i>	Venomous
5.	Glossy bellied racer	<i>Platyceps ventromaculatus</i>	Non-Venomous
6.	Black headed royal snake	<i>Spalero sophisatriceps</i>	Non-Venomous
7.	Rough scale sand Boa	<i>Eryx conicus</i>	Non-Venomous
8.	Smooth scale sand Boa	<i>Eryx johnii</i>	Non-Venomous
9.	Indian rat snake	<i>Ptyas mucosa</i>	Non-Venomous

Table 2. Snake species found in month wise of the year 2022 in studyarea.

Month (2022)	<i>Echis carinatus</i>	<i>Daboia russelii</i>	<i>Naja naja</i>	<i>Bungarus sindanus</i>	<i>Platyceps ventromaculatus</i>	<i>Spalero sophisatriceps</i>	<i>Eryx conicus</i>	<i>Eryx johnii</i>	<i>Ptyas mucosa</i>
Jan.	-	-	-	-	-	-	-	-	-
Feb.	-	-	-	-	-	-	-	-	-
March	1	-	-	-	1	-	-	-	1
April	-	1	1	1	1	1	-	1	2
May	1	-	2	-	2	-	1	-	4
June	-	-	1	-	7	1	-	2	3
July	2	-	2	-	4	-	-	1	1
Aug.	4	-	-	1	6	1	-	-	2
Sept.	1	-	1	-	1	1	1	1	5
Oct.	1	1	-	-	2	-	-	-	6
Nov.	1	-	-	-	1	-	-	-	2
Dec.	1	-	-	-	-	-	-	-	1
Total (86)	12	2	7	2	25	4	2	5	27

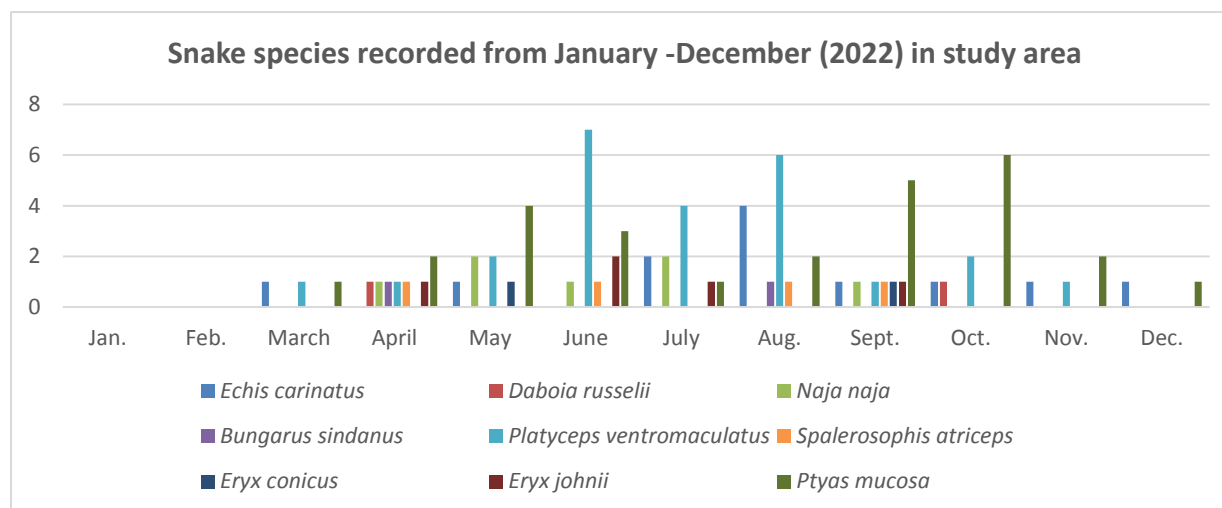


Fig. 2. Different snake species and their population status.

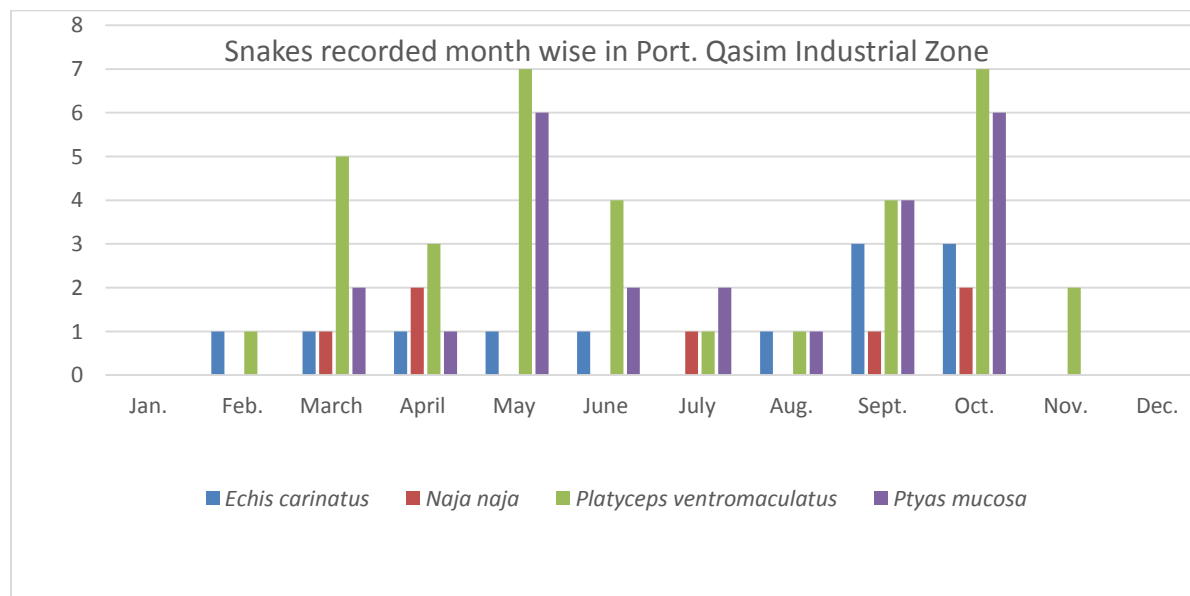


Fig. 3. Different snake species and their population status reported in Port. Qasim Industrial Zone.

Table 3.Snakes recorded in different months of 2021-2023 in Port. Qasim Industrial Zone.

Month (2022)	<i>Echis carinatus</i>	<i>Naja naja</i>	<i>Platyceps ventromaculatus</i>	<i>Ptyas mucosa</i>
August 2021	-	-	-	-
September 2021	-	-	2	3
October 2021	-	-	1	2
November 2021	-	-	2	-
December 2021	-	-	-	-
January 2022	-	-	-	-
February 2022	-	-	-	-
March 2022	-	-	1	-
April 2022	-	1	2	1
May 2022	-	-	2	2
June 2022	-	-	2	-
July 2022	-	1	1	-
August 2022	-	-	-	-
September 2022	2	1	3	1
October 2022	3	2	6	4
November 2022	-	-	-	-
December 2022	-	-	-	-
January 2023	-	-	-	-
February 2023	1	-	1	-
March 2023	1	1	4	2
April 2023	1	-	3	3
May 2023	1	-	5	4
June 2023	1	-	2	2
July 2023	-	-	-	2
August 2023	1	-	1	1
Total numbers (82)	11	6	38	27

A checklist for snakes recorded in Port. Qasim industrial Zone showed that there were 4 species which were at variable numbers (Table 3). The glossy-bellied racer and Indian rat snake (Dhaman snake) were recorded in plentiful population status among non-venomous snakes.

Saw Scaled viper constituted the majority in number among venomous snake species. It was also observed that larger number of the serpents species at the study area were non-venomous (Fig. 2 & 3; Table 2 & 3). The population of all snake species were found in good numbers during summer season (from April to October) while the population were least during winter season (Hibernating period) from December to February during current study.



Fig. 4. Dorsal view of *Platyceps ventromaculatus* (Glossy bellied racer)



Fig. 5. Ventral view of *Platyceps ventromaculatus* (Glossy bellied racer)



Fig. 6. *Echis carinatus* (Saw Scaled viper)



Fig. 7. A dead *Echis carinatus* (Saw Scaled viper)



Fig. 8. Captured *Naja naja* (Indian Cobra) at PortQasim Industrial Zone.





Fig. 9. *Ptyas mucosa* (Indian rat snake).



Fig. 10. A dead *Ptyas mucosa* (Indian rat snake).

DISCUSSION

While venomous snakes are undoubtedly one of the greatest health risks for most people in tropical and subtropical regions of the globe, lot of person are bitten by snakes each year, particularly in Bharat(India) but also in Africa and the South America. He is presumed dead (Bonnet *et al.*, 1999; Chippaux,1998). In tropical regions, a number of individualistic elements rise the likelihood of eventual death from a snake bite. First, the predatory conduct of a serpent's species actually affects the chance of a bite. . Second, geographic regions with a high verity of toxic snakes are more likely to die from a snake bite than regions with fewer dangerous snakes. For example, in some tropical and subtropical regions, the chance of receiving a fatal bite is definitely higher. Third, geographic areas with high rural population densities are more likely to have higher fatal bite rates than areas with lower rural population densities. Fourth, the expectation of being bitten in a particular tropical region is not constant throughout the year and be based on the routine pursuit patterns of snakes and the correlation between snake and human activity patterns. In fact, it has been shown that in tropical regions, 3-quarters of bites occur while farming, trapping, or walking to and from work, and are therefore associated with professional pursuit (Chippaux, 1998).

Although people normally attempt to keep away from interactions with creepers such as snakes they can sometimes have implications that extend on the far side of survival into the kingdom of civilization. It has also been pointed out that the effect of snakes on humans is fear of being bitten and fear when encountered. Fear of snakes is a natural human behavior. This is because people fear the venom of snakes and their lives may be at risk. All respondents believe that snakes are threatening creatures because they are source of bites to human being and cattle's, and their toxin can be fatal. Despite the risk of snake bites and other negative effects, people should stay out of the way of snakes and stay as close as possible; minimizing the danger they pose while respecting their place in nature. , it is clear that they must learn how to live peacefully with snakes (Hezron and Alex, 2015).

CONCLUSION

Given the ecological and biomedical importance of snakes, the long-standing antagonism between humans and snakes may no longer be necessary. We need snake conservation education programs that educate people regarding the behavior of serpents, mostly in the main commonly encountered species. Snakes are invaluable because they can efficiently control rodent and insect populations without resorting to harmful compound insecticides that can harm the surrounding and hurt other living species. Serpents are very effectual at trapping rodents for the reason they can creep into little tunnel and other places where they hide. These areas are very little toward further predators to invade. Serpents (Snake) protect the existence of countless of persons each year, as their venom is used to treat many serious health conditions such as cancer, heart disease, stroke disease, and Parkinson's disease. A better, and often overlooked, way to control rodents is to let their natural enemies take over the job. If snakes were eradicated worldwide, rodent populations would increase dramatically, impacting floriculture. Except for the threat to safety of food stuff constitute by growing rodent populations, grow sickness incidence will place a significant load on good physical condition resource in few states, especially in developing countries. Few agriculturist and farm laborer might be hope for to grab a nearby stone or stick and kill any snakes they encounter on their farm. The reason is the

misconception that each one of the serpents are harmful and will murdered persons. The fact is that almost serpents are not danger to human being "If you leave the snake solitary, it will leave you alone." Rodents and other catch are at risk when they encounter a snake.

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Conflict of Interest

Authors state that there is no potential conflict of interest.

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