

Observation of the Status, Distribution, Habitat and Population Estimation of the Indian Spiny Tailed Lizard *Saara hardwickii* (Gray, 1827) of Thatta District of Sindh Pakistan

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Abstract Present abstraction included the current population, status and distribution, habitat of spiny tailed lizard (*Saara hardwickii*) in Thatta district of Sindh. Investigation was agitated out on february 2012 to february 2014. During the present abstraction 247 spiny tailed lizard (*S.hardwickii*) were captured for the ascertainment their morphometrics and length mass relationship. Two main habitat were begin in Thatta district which were Jung-shahi and Run- Pathani. Atleast 10 sq/km area of Run-pathani and 13 sq/km in the Jung-shahi area has been observed as the patchy population of spiny tailed lizard. The burrows were aswell advised and begin about 5 anxiety ambit to one and each other burrows. *Saara hardwickii* already included in the IUCN Red list and CITES appendix. Major threats of the species are added Village size, Villagers, Hakims, Jogi, Laboratory use, Hunting for meat, Hunting for trade, Hunting for oil etc. Present analysis achieve that spiny tailed lizard is a Endangered species of Thatta district of Sindh Pakistan.

Keywords: status, distribution, habitat, population, *Saara hardwickii*

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1. Introduction

In abounding decade we are blind of the population status and distribution, current habitat of *Saara hardwickii* and agency which may affecting the population of the species of Thatta district of Sindh. Due to the said purposes we made field survey for the studies of current population status and distribution, habitat of the spiny tailed lizard of Thatta district. Indian spiny tailed lizard *Saara hardwickii* has skatchy population in India, Pakistan and Afghanistan, [9,10,15,16]. *S.hardwickii* has a dorso ventrally bedfast physique with blubbery spiny tailed that awning whorls of annoying scales, average admeasurement with edgeless bill circadian agamids, [16,18]. *S.hardwickii* usually bare amber albino olive and darker in colour methods, it some time appearance afragmentous spots and bastard like adornment on the foreground of the thigh, their physique has blubbery and derma appearance channelled in some locations of the physique side. The tail has either bluish, blah or albino coloured, [16]. They breeds in spring after emerging from hibernation and lay white pigeon-sized

eggs. During ascertainment sun-bath action was aswell empiric, some observation about status and distribution, habitat etc of the lizards are accessible the observer are ([1,2,6,7,8,9]).

2. Study Area

The study area away from the Haleji lake, on the way of Haleji road. The colonies of *S.hardwickii*, located at 24.84073- N, 067.74580-E at Jung-shahi and 24.80652-N, 067.74079-E at the Run-pathani area were observed. At least 5-10 Sq / km in Run pathany area has appearance limited of population of *S.hardwickii*. The abstraction breadth about dry just like desert, bushes and herbs annoying cospere were as well scatterd in this area, In Jung-shahi abreast to the Hajji Essa Khan goath has as well appearance of *S.hardwickii*. This breadth in fact appearance apparent with some sand dunes bristling area, no baptize accessible here, Euphorbia and *Accasia* were acclaimed in locations of this area.

3. Methods

3.1. Sightings

Sightings of Active burrow were considered as evidence of presence in location and. alone alive couch acclimated to appraise population density of *S.hardwickii*. Following techniques were used for population estimation and capturing of species etc.

3.2. For Population, Burrows Estimation

For the population density and burrows was estimated by belt transect methods were applied which were previously use and give successful result by [14], in which the belt transects were placed 10 km a part(at every second TCS site), 50m from the road's edge. each belt was 100x20m area and oriented in the north and south direction. three eyewitness absolved paralld 10m apart, along 1, belt transect and counted the number of *S.hardwickii* and burrows (active and in active).The average time taken to traverse the belt was 7 minutes. if sand dune occurse, only two observers were required travers the belt 20m apart from each other.

3.3. Time Constrained Searches

In this adjustment were activated forth the anchorage at even 5 km point to ascertain the attendance of *S.hardwickii* in anniversary sites. In the abstraction breadth two searcher, beam for best of six account on either ancillary of the alley by walking forth a aisle that resembled ellipsoidal and amid the attendance of *S.hradwickii*.Searching were chock-full if apparent an *S.hardwickii* or an alive couch was sighted in one breadth of absorption or accustomed time if accomplished 6 minutes. This methods was adopted by [3].

3.4. Methods of Capturing or Hunting

Hunting or capturing techniques were adopted by Jogis,Hunters, Local Villagers, local Tribes were very useful to capture or hunt for *S.hardwickii* in certain study areas. It was observed that all active or un active burrows have single opening or mouth and which extended a long single tunnel. Following techniques were also very helpful for capturing of *S.hardwickii*.

(1)Noosing. (2)Flooding. (3)Excavation. (4)Smashing. (5)Made Snake Mimicry. (6)Chasing with two Observer / Hunters. (7)Hunting Through pets animals, Dogs, Cats Etc.

For population estimation random sampling were taken and monthly sample were collected by capture release, recapture and relaease method for noted their morphometrics characters. A total Counts of *S.hardwickii* was done once in each season for density of population and age and nearest neighbor analysis for the pattern of burrow distribution, the average distance of hatchling burrow from adult burrows was tested with that from equal number of any burrow. After captured of *S.hardwickii* first of all Tagged, and then noted Sexes, Length, Mass (weight), Colouration and others imporant character were observed respectively.

4. Results and Discussion

During field survey and observation it is observed that Indian spiny tiled lizard (*S.hardwickii*) use only self

burrow, Spiny tailed lizard are know excavate their own burrows and their exists a 1:1 correspondance of active burrows to individual, [15,16]. Through observation we are able to conclud that *S.hardwickii* are observed, active and forgaging between March to August and Spetember and other remains of months they may hibernate. So the best time of the population observation and burrows searchning were noted March to September when *S.hardwickii* movined easily in their Territory. All hunting techniques accept chasing with two man and with chasing pets animals, involved destruction /damaged of the Burrows (house) of the *S.hardwickii*. During observation we find out some others facts that some villagers and tribes believe that use of meat of *S.hardwickii* in the cold temperature for maintained body temperature, as wel as 'Sanda Oil' were also use for pain relives in the joints pain, Specialy chronic pain, back pain and also maintain sex stamina of male orgasm,(a main cause of hunting in huge quantity), use as kajal in the eyes, for better vision of the eyes, use small amount of oil in the lamps in the villages and others medicinal purposes. Some other facts were also noticed that when first time individual of *S.hardwickii* emerge from the burrow. *S.hardwickii* show olive gray in colour and due to basking the resultened become lighter and show then brown in colour or sandy colour as wel as on back dark vermiculations are very much clear, Figure 5 - Figure 6. Juvenile live with mothers burrow. The burrow pattern were very much interesting in manner, Adult burrow were mostly zigzag (z) shape or (L) in shape in depth (Figure 7) with one opening and for the first un- mature of *S.hardwickii* show the pattern of burrow in (u) shape or spiral manner and less depth as compared to adult Figure 8. For population estimation random sampling were taken by capture release, recapture and relaease method for their morphometrics characters. due to capture release and recapture release method we are able to find out changes of the morphometrics, and others singnificant changes.



Figure 1. Complete Closed Burrow (Active Burrow)



Figure 2. Active burrow of *S.hardwickii*



Figure 3. A – Juvenile of *S.hardwickii*



Figure 7. None Active, Eroded Burrow of *S.hardwickii*



Figure 4. *S.hardwickii* During hibernation in their chamber



Figure 8. Some Active Burrows of *S.hardwickii*



Figure 5. *Saara hardwickii* (lighter colour)



Figure 6. *Saara hardwickii* (Dark colour)

Investigation for population estimation, The present observation of *S.hardwickii* was done in Thatta district, It was found that *S.hardwickii* has show very less population and considered as endangerd species in Run- pathani and Jung-shahi of Thatta, Figure 9 and Table 1. as compared to last 5-10 years. The covered population area are very-much reduced by human activities. The burrows were lie 4-5 feet in distance to each other burrows. The burrows were noted 5-10 burrows in one sq/km. During investigation it was noted that mostly burrows were Destroyed by human intrest, Villagers, Hunters, captured for food for oil, for laboratory experiments, research, for herbal medicine, folk medicine, also use as pet animals, some predators as like foxes, *V.griseus*, Snakes, Eagles Etc, are the main threats of the specis of *S.hardwickii* of Thatta district of Sindh. The average (SVL) of *S.hardwickii* of Thatta were 24.183 cm in the length range of 05-49cm, and average male (SVL) were 32.128cm, in the length range of 15-49cm, and average female (SVL) of *S.hardwickii* were 32.456 cm, in the length range of 05-49cm. The average mass of male were 196.02gm, and average mass of female were 187.63gm. The juvenile were noted 40 in numbers, where as (SVL) were 12.95cm, in the legh range of 05-14cm, and mass of juvenile were 54.975gm, Table 1. The present field survey and observation has show that *Uromastyx hardwickii* (*S.hardwickii*) is still considerd as endangerd species, as before the worker considerd as endangerd species in Pakistan, [9]; ‘Vulnerable’ in India, [13], Since the distribution range appears to have contracted drastically in both countries. [19], Observed that the burrow mouth were kept open for a considerable time in the early morning, stimulating the animal to emerge, and blocked with loose soil on retreat.

This maintained a thermal refuge for the lizard under temperature extremes and protected them from predators, same observation was done during observation of *S.hardwickii* of Thatta district of Sindh. [17], observed some of predators of *U.hardwickii*. We were also observed

same investigation of preydtors of *S.hardwickii* as like Eagles, Foxes, *V.griseus*, Snakes. Crows observed to be detritous feeder not a preydtor animal, which are opposed by the investigation of [17].

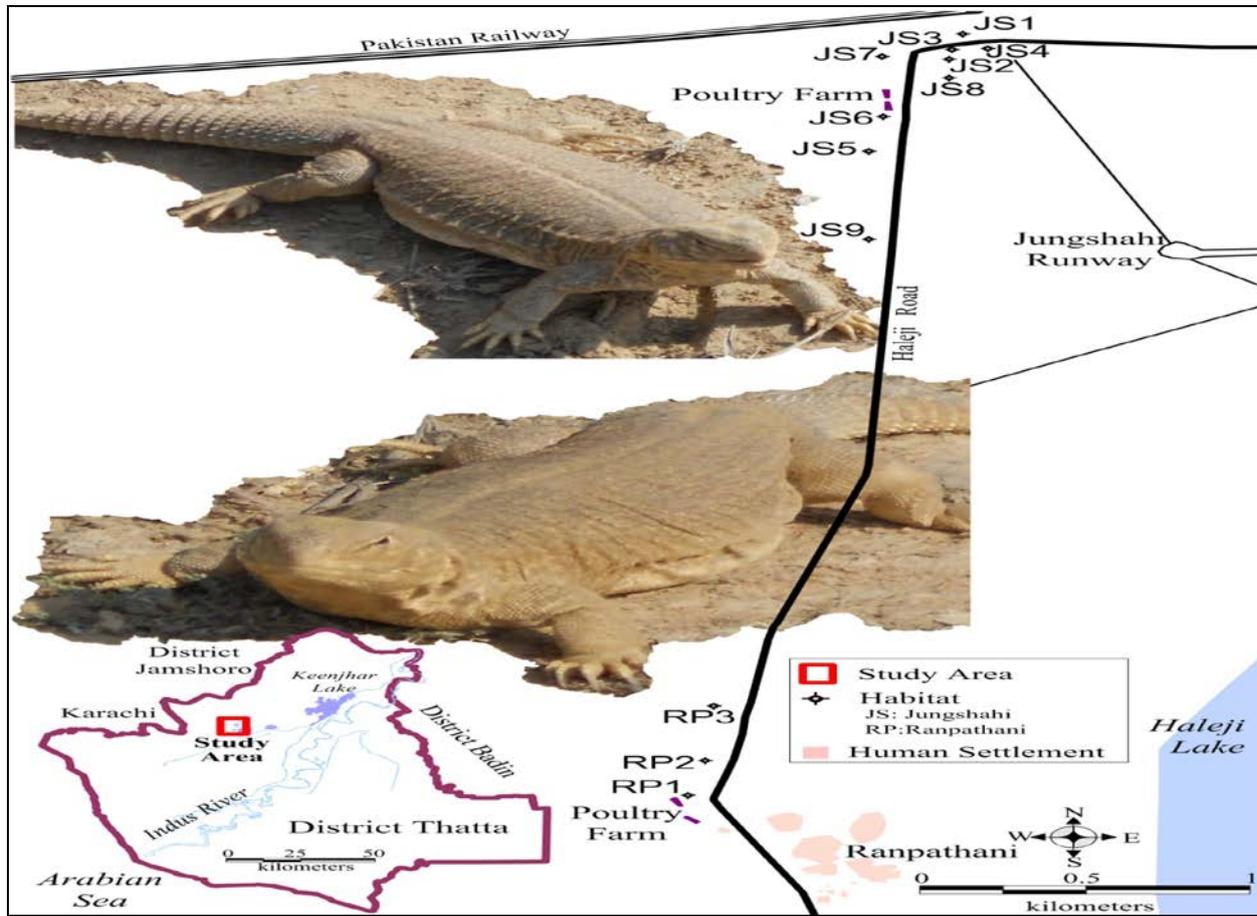


Figure 9. Current Habitat of *S.hardwickii*, Study area At Thatta District of Sindh.Pakistan

Table 1. Current Population and Length / Mass of *Saara hardwickii* in Thatta (Sindh) Pakistan

So. Nos	Length Range/cm	n	Male	Female	Juvenile	Male Mass/gm	Female Mass/gm	Juvenile Mass/gm
01	05-09	13	-	-	13	-	-	299
02	10-14	27	-	-	27	-	-	1900
03	15-19	11	05	06	x	1465	1670	x
04	20-24	33	15	18	x	2723	3413	x
05	25-29	36	20	16	x	3993	2888	x
06	30-34	39	09	30	x	1513	5350	x
07	35-39	37	17	20	x	3120	3493	x
08	40-44	39	30	09	x	5226	1601	x
09	45-49	12	10	02	x	1759	536	x
Total	05-49	247	106	101	40	19799	18951	2199

5. Conclusion

The over all current status of *S.hardwickii* is considered as endangered species of Thatta district. Need very much intention and conservation plan. The major threats are human activities as like Hunting for trade, Hunting for extraction of Oil, Hunting for use meat, increasing villages's Sizes and of Population. *S.hardwickii* is a very much shy lizard, So human interaction or any others activity made aggression of this lizard. Due to human activity, *S.hardwickii* may some what Migrate or Perish.

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