

Project Update: January 2022

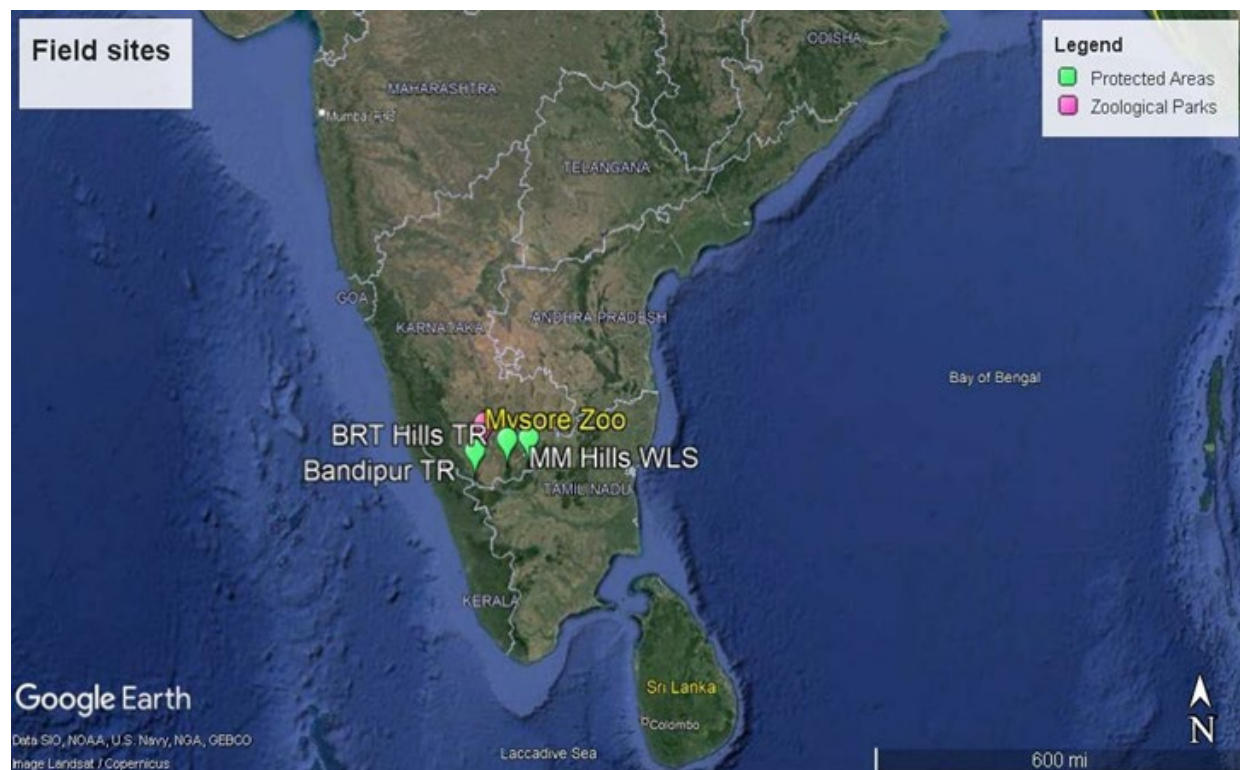
(October 2021 to January 2022)

Progress during period:

To build a genetic database of Indian star tortoises to combat illegal wildlife trade, in the first phase, we have covered field sites in Karnataka and collected biological samples while conducting interactive sessions with forest and zoo staff in the respective areas.

Field sites: Protected areas (PAs) and zoos in states of Rajasthan, Gujarat and Andhra Pradesh

State	Site	Site type	No. of samples
Karnataka	Bandipur	National Park	1
	BRT	Tiger Reserve	1
	MM Hills	Wildlife Sanctuary	5
	Mysore	Zoological Park	15



4 field sites (1 National Park + 1 Wildlife Sanctuary + 1 Tiger reserve + 1 Zoological Park) were covered across Karnataka in Southern India.

Outreach programmes: Awareness campaigns in PAs and capacity building workshops in Zoos

In protected areas, interactive awareness building workshops were held with range officers, forest guards and forest watchers. Similarly, interactive seminars were held for

zoo education officer, biologists and zoo staff. Promotional materials such as posters (in English and vernacular language), standee and stickers were used. Also, information booklets and species identification booklets were distributed to all attendees. Pictorial power point presentations were used which were followed by interactive discussion sessions.

Through our awareness sessions, we achieved the following:

- Provided the local forest staff and zoo staff with basic knowledge on turtles and tortoises, their behaviour, and rules for immediate rescue steps till veterinary aid is available.
- Provided knowledge on signs of good and bad health status of Indian star tortoise, age estimation and sexing, preferred dietary habits, breeding behaviour, favourable environment for egg laying to build suitable enclosures in zoos and augment existing ones and clarified doubts on carapacial deformities such as pyramiding (commonly seen in captive tortoises).
- Basic knowledge on the diet and habitats of local turtle fauna and invasive turtles along with the negative impact of exotic species on native chelonians.
- Identification guides (procured from TRAFFIC, India) were distributed to be used in field and zoos for reliable identification of local and captive chelonians.
- Posters with information on Indian star tortoise in English and Hindi were provided to zoos and forest offices.
- Stickers of Indian star tortoises for school children visits in zoos were also provided.
- Apart from relaying our share of knowledge, we also received information on probable sites in the respective areas from field forest officers where the tortoises may be found, apart from many valuable behaviour and ecology traits which were extremely helpful in sighting the rare species for sample collection.



Species identification guides (procured from TRAFFIC, India)



Interactive session with zoo staff at Mysore Zoo, Karnataka.

Field survey and sample collection

Field surveys to collect keratin tissue samples of Indian star tortoise (*Geochelone elegans*) from southern India were undertaken. The field surveys were carried out with the forest department field staff and locals as field assistants. Sampling was done from both natural sites as well as zoological parks from various field sites.



Field area in BRT TR, Karnataka.



Field area in BRT TR (L) and field sampling in BRT TR (R).



Forest staff and field assistants with a star tortoise found in MM Hills WLS.



Field area in Bandipur TR.



Field staff and assistants with star tortoise found in BRT TR.

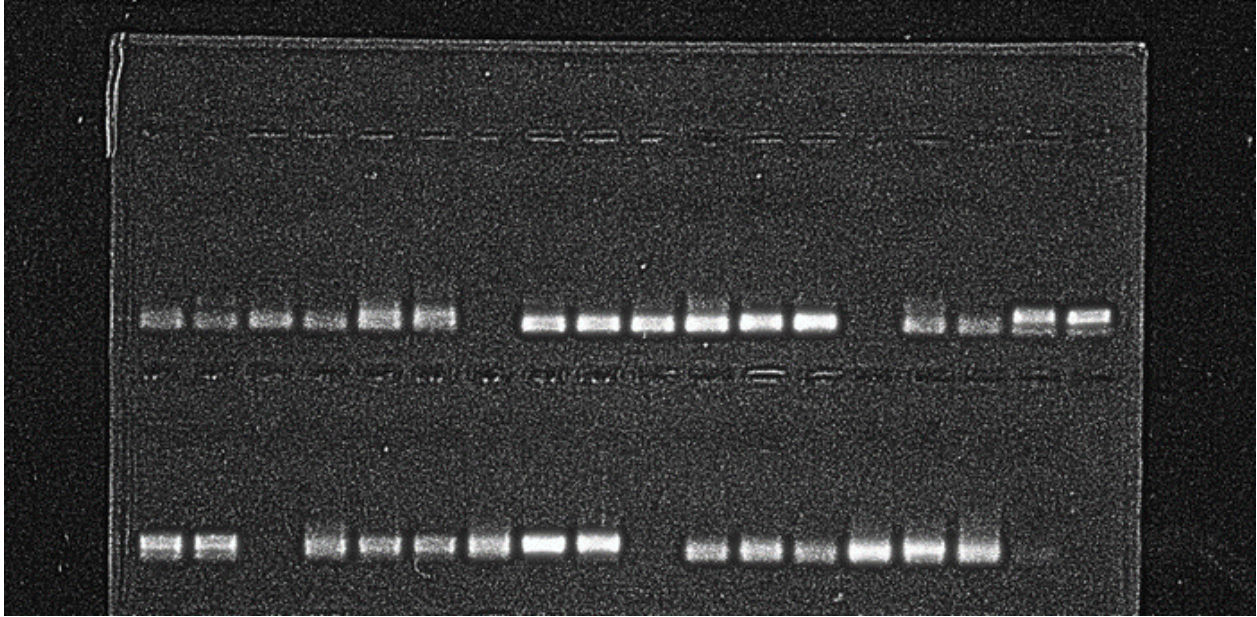
Laboratory analyses

DNA lysis and extraction

Collected tissue samples have been minutely chopped and lysed using tissue lysis buffer from commercially available DNA extraction kit (blood & tissue DNA extraction kit, Qiagen) and DTT reagent, thereafter, extracted using the same kit. The concentrations of the extracted DNA were sufficient for further analysis.

Microsatellite amplification

We have standardised 10 microsatellite loci for genetic structuring that are being tested on the collected samples.



A gel image showing amplification of multiple tagged microsatellite panels.