

# PILOT REINTRODUCTION OF ASIAN BROWN TORTOISE (*Manouria emys phayrei*) IN INTANKI NATIONAL PARK

## SUPPLEMENTARY REPORT

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## EXECUTIVE SUMMARY

TSA India strives for state-of-the-art conservation, research, and community outreach programs that bring turtles and tortoises as well as other less known aquatic wildlife such as dolphins, gharials, and muggers and their habitats on the conservation map of the country.

One such notable species in dire need of conservation intervention is the Asian Giant Tortoise (*Manouria emys phayrei*), which is a critically endangered species inhabiting tropical semi-evergreen forests of South and Southeast Asia. A long history of over-exploitation and a lack of awareness have led to unsustainable rates of consumption by tribal communities and brought the species to the brink of functional extinction, now warranting rigorous conservation interventions. Turtle Survival Alliance had acknowledged the unsung call for conservation support of this neglected species years back, and consequently initiated successful conservation breeding programs with their partners, across the species' native

ranges viz. India, Bangladesh, and Myanmar. The efforts hugely focus into population replenishment endeavors via exploration of the probable release sites, threat amelioration via participatory approaches, and pilot reintroduction with captive bred individuals from assurance colonies.

In a first such landmark step, ten radio-tagged tortoises were re-wilded in Intanki National Park, Peren District in Nagaland on December 19, 2022 marking the first monitored rewilding of the species in India after over five years of conservation breeding efforts. The exercise shall aid in species replenishment within the forests of Nagaland following successful phase wise reintroductions of head started tortoises apart from development of effective long-term conservation and recovery strategy for the species and an eventual release strategy for supplementation with support of government and other stakeholders in the region.



## BACKGROUND

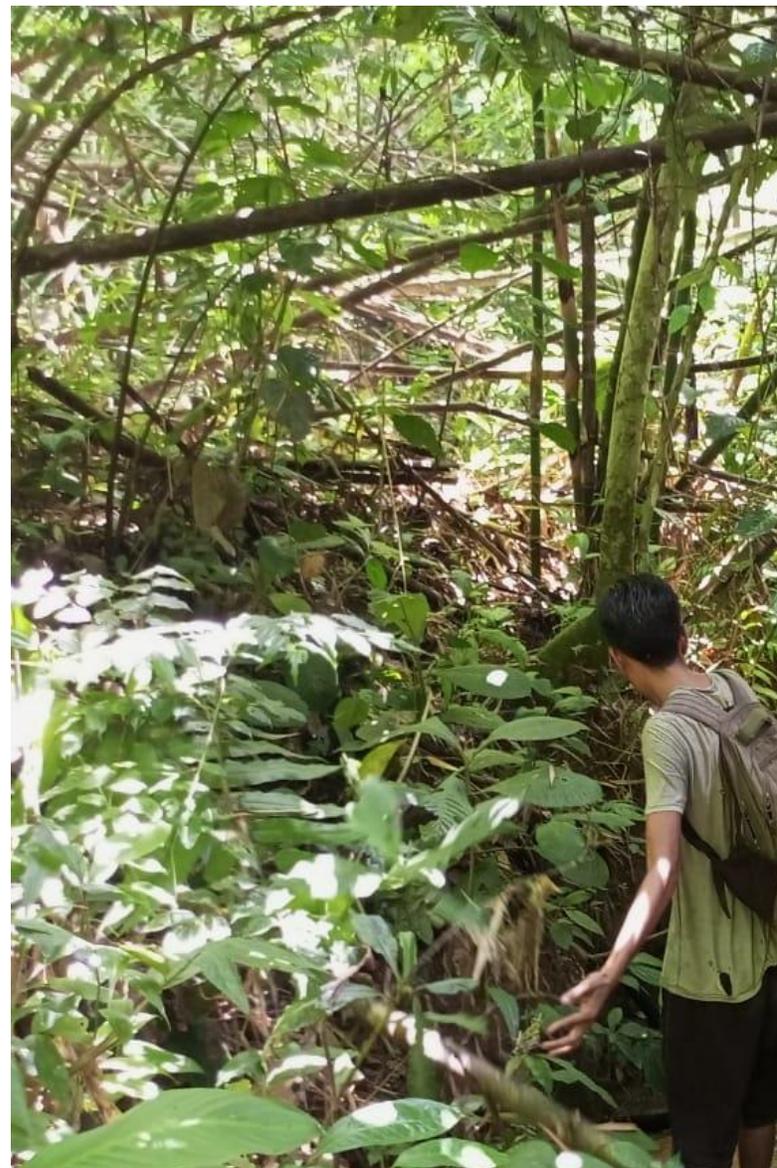
With pristine forests and some of the rarest species, northeast India is the richest repository of biodiversity in the country, housing ironically the some of the most threatened chelonian species. Asian Giant Tortoise is the largest tortoise in mainland Asia that historically inhabited mountainous forest in northeast India. Decimated across its distributional range due to different anthropogenic factors, the species warrants immediate conservation interventions. Experts also believe that the species may possibly be functionally extinct in the wild, and this may trigger cascading effect on various ecosystem key processes which the species influences through herbivory, seed dispersal and detritivory.

Eyeing a fleeting hope to replenish the wild populations via a regional conservation breeding network, TSA India Program team documented captive populations of these tortoises at six regional facilities following extensive surveys at 15 zoos across eight states from 2017 through 2018. Setting up a successful conservation breeding program in association with Nagaland Zoological Park, Dimapur under a long-term Memorandum of Understanding with the Nagaland Government, the largest assurance colony for the species in India was established at the zoo with 106 juveniles from 2018-22 along with 10 founders (adults).

Targeting repopulating potential habitats, the project is striving to expand the regional *Manouria* conservation breeding program, and sustain phase-wise the re-wilding program to produce baseline survival and dispersal and fine-tune release strategy for species on the regional scale, involving the ethnic tribal

communities. The program has an eventual goal of establishing viable populations of *M. e. phayrei* across its historical habitats in northeast India which could be only achieved via a strongly interlinked in-situ and ex-situ conservation approaches.

Two recent records of the presence of an adult *M. e. phayrei* was obtained from Intanki National Park in 2022. The park, spreading over an area of 202.02 sq. km, and being a protected area of the highest status in the state, and bordered by Dhansiri Reserve Forest in Assam to its west, warrants a full-fledged protection and a chance for the reintroduced colony to flourish in course of time.





## **PLAN OF ACTION: PRE-RELEASE**

### **Site assessment**

The site of release (25°38'48.9" N 93°32'19.7"E) was assessed to have an average of 60-70° slope with moderately even areas in between to accumulate groundwater naturally, with 80% canopy cover and abundant choices of food. We recorded at least 16 species of plants within the 8000 sq feet area of soft release, where 12 species would provide food options. The elevation is 765 feet and is a mixed deciduous and semi-evergreen type vegetation, with bamboo patches towards the core zone.

### **Construction of soft-release enclosure**

Prior to pilot release of ten captive bred individuals from Nagaland Zoological Park to Intanki National Park, a 7500 square feet soft-release pen was constructed at the selected release site (near Misapdisa watch tower) using locally sourced bamboo (3.5 ft in height) for the post-release acclimatization and develop site fidelity in the individuals for the first 3 months. 10 animals of average weight 2.5 kg have been fitted with Very High Frequency (VHF) transmitters weighing 15 g (25 x 13 mm) and have a battery life of 24 months with frequency in the range of 150.060-150.840 MHz.

## **Pre-release health assessments**

Necessary pre-release health assessments were conducted under the supervision of NZP and TSA veterinarians. Following U.S. Fish and Wildlife Service (2015) guidelines on health assessment for Mojave Desert tortoises, pre-release health assessments were conducted using a combination of overall physical examination, faecal (parasitic load) and radiography. Body Condition Scores (BCS) was done on for all ten individuals and faecal samples were collected by the zoo veterinarians for which, parasitic load results came negative and the animals were declared healthy for release.



## THE RELEASE CEREMONY

In a first such landmark step, ten radio-tagged tortoises were re-wilded in Intanki National Park, Peren District in Nagaland on December 19, 2022 marking the first monitored rewilding of the species in India after over five years of conservation breeding efforts. The ten tagged animals were transferred from NZP to Intanki NP in the Zoo vehicle on the same morning. The release ceremony was organized at Forest Protection Camp, Intanki NP at Beisumpuikam village, in presence of Nagaland Forest department officials, project team and local communities with over 100 individuals. The Chief Wildlife Warden, Nagaland graced the event by symbolically releasing the tortoises in the wild, followed by which the forest staff and project team moved to the actual release site near Misapdisa.





## POST-RELEASE MONITORING

Following successful release, the project team with utmost support from the Intanki National Park staff, has been constantly monitoring the condition of the tortoises and enclosure. Basic enclosure enrichment has been done to make sure there is sufficient water and food inside the soft release enclosure given the prevalence of dry season. Attempts has been made to maintain the ambient temperature of the release site by lighting fire in a vessel and placing around the enclosure during cold hazy or rainy days. The team has been observing the dietary and habitat preferences and recorded that tortoises have started to forage upon the wild plants, stem, fruits since the first week of release. It is thought that they may be developing the site fidelity, as they are rarely seen to move significant distance.

Two local field assistants were employed to monitor the enclosure very closely for the first three months alongside me. Upon arrival of biological activity period of the tortoises (early March, 2023), the gate of the soft release pen was opened for animals to disperse voluntarily.

Radio tracking is being done for 3-4 days every week between 0900 AM and 0400 PM during peak activity hours and will be continued till late May, while the area is still accessible, using RA-150 folded/handheld Yagi antenna and R-1000 telemetry receiver and GPS coordinates are being collected.



## WAY FORWARD

Tracking for the animals will be resumed after monsoon during late August or early September and continued through the year by local youths alongside me. In case of mortality, the carcass will be photographed and necropsied, when possible, to determine the cause of death.

The study on survival and dispersal of these released Asian Giant Tortoises will also form a chapter in my PhD study.

Furthermore, radiotelemetry exercises for survival and dispersal data of the tortoises will help to ascertain the ecological and behavioral patterns, abiotic factors influencing the seasonality of the animals and survivorship of the juveniles from predation in their wild habitats, so as to effectively bridge the existing knowledge gaps, and additionally, enhance the understanding of the species' ecology and to developed scientifically informed strategies for broad scale rewilding programs.

