REPORT

Assessment and Activity Report
Ganga Aqualife Rescue and Rehabilitation Centre, Narora, Uttar Pradesh

July, 2018

Component IV- Rescue and Rehabilitation
WII-NMCG Biodiversity Conservation and Ganga Rejuvenation Project

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WII-NMCG Assessment and Activity Report (2018). Assessment and Activity Report; Ganga Aqualife Rescue and Rehabilitation Centre, Narora, Uttar Pradesh, WII-NMCG Biodiversity Conservation and Ganga Rejuvenation Project. Pp

INTRODUCTION

1.1 Background and Purpose

The Ganga Aqualife Rescue and Rehabilitation Centre, Narora functioning under the aegis of the WII-NMCG Biodiversity Conservation and Ganga Rejuvenation project since December 2016 currently houses 6 species of turtles. This facility also functions as a rescue and rehabilitation facility and has the ability to undertake as a basic training for activities related to the WII-NMCG Biodiversity Conservation and Ganga Rejuvenation project mandate.

The first technical assessment visit was made in February 2018 and action items were highlighted for up-gradation in the infrastructure and husbandry protocols at the facility. The enclosures had minimal enrichment and civil faults. A generalistic overhaul was essential keeping in mind the capacity of the facility and the future work plans. The July 2018 assessment visit was made to revisit the issues flagged in February 2018 and put in place some modifications in the enclosures and animal care regimen.

LIST OF ANIMALS CURRENTLY HOUSED AT GANGA AQUALIFE RESCUE AND REHABILITATION CENTRE NARORA

Sr No	Species	Number of individuals
1	*Lissemys punctata* (Indian Flapshell Turtle)	2
2	*Geoclemys hamiltonii* (Spotted Pond Turtle)	7
3	*Batagur dhongoka* (Three Striped Roofed Turtle)	6
4	*Pangshura tecta* (Indian Tent turtle)	1
5	*Pangshura smithii (Brown Roofed Turtle)*	1
6	*Hardella thurjii (Crowned River Turtle)*	1
TOTAL		18

ENCLOSURE UPGRADES AND ENRICHMENT

Environment enrichment was undertaken using locally available material. The enrichment was planned and executed based on species needs and also to minimise the stress from idiopathic causes like enclosure separation and animal movement.

ENCLOSURE 1: No changes had been implemented in the enclosure post the assessment visit of February 2018. Thus during the current visit to the facility, the pond was separated into 4 separate compartments within enclosure 1. Metal partitions were installed in the water and on the land area. The partitions were covered by shade cloth and also camouflaged using aquatic vegetation like water hyacinth.

Batagur dhongoka, Hardella thurjii, Panshura sp, Lissemys punctata andersonii housed in this enclosure are thus in species specific areas. There is a common water inlet and the water circulates through a filtration unit.

Deep riverine species like *Batagur dhongoka* and *Hardella thurjii* have deeper pools (depth greater than

5 feet) with haul out slopes. *Lissemys punctata andersonii,* that mainly prefer bogs/ponds with loose sand are now housed in the shallower part of the pond.

Fig: Enclosure before enrichment and species wise separation

Fig: Enclosure after enrichment and species wise separation

Enclosure enrichment in the form of logs for basking have been placed in each enclosure.

Aquatic macrophytes were added, hides were placed in enclosure 1. Logs and hides have been placed thoughtfully to create niches for basking and also provide visual barriers for the animals in the enclosure. Broad leaved plants like land lilies have been planted to provide shade and also to improve aesthetic appeal. Access to corners of the enclosure has been limited so as to avoid piling up of animals in the corners. The metal rods were covered with sand so as to prevent abrasions. The sand that flows down into the pond is put back with each pond cleaning routine.

Fig: Enrichment with log inside pond for basking

Fig: Enrichment with log for visual barriers

Fig: Enclosure after enrichment with hide

Fig: Enclosure after enrichment with logs and duckweed

Fig: Species wise separation with metal partitions were covered by shade cloth

Fig: Enclosure after enrichment and species wise separation

ENCLOSURE 2: *Geoclemys hamiltonii* (7 numbers) were moved into enclosure 2. The animals are of larger size. They are more terrestrial in their behaviour and need a larger land space to thermoregulate. Hides using metal platforms old plastic drum covered in hay have been created for the animals to hide. Logs were placed in the deep pools for animals to haul out and bask. A rubber mat was placed on the slope to allow animals to haul out easily on land and to protect the sand from washing down into the water pool.

Fig: Enclosure II before enrichment with logs and duckweed

Fig: Enclosure after enrichment with logs and duckweed

Fig: Enclosure II enrichment with logs and duckweed

Fig: Enclosure II with hide

FILTRATION UNITS: There are filtration units in both enclosures. Both units are functional. The filtration unit in enclosure 2 needs engineering input to modify the water flow.

Fig: Bio-filtration Unit of Enclosure I

Fig: Filtration Unit of Enclosure II

SET-UP: The facility is still lacking space for an office and a store to keep all the equipment related to animal care and enclosure maintenance. There is limited space in the enclosure to store equipment safely. Also this would be against all animal care and husbandry protocols. Therefore, the equipment has currently been shifted to the base camp and is transported back and forth each morning.

MORPHOMETRY: Detailed morphometric measurements were noted for all the animals and marking of individuals was confirmed and recorded.

MORPHOMETRY				
ANIMAL ID	**CL (mm)**	**CW (mm)**	**PL (mm)**	**Weight (gram)**
Geoclemys hamiltonii				
1	240	160	20	1810
2	255	170	187	1980
3	255	165	225	2095
4	225	147	187	1980
5	215	145	180	1240
6	95	68	85	150
7	79	55	69	80
Batagur dhongoka				
ANIMAL ID	**CL (mm)**	**CW (mm)**	**PL (mm)**	**Weight (gram)**
2	132	103	117	320
3	137	109	122	380
4	137	104	123	350
5	113	88	105	215
6	127	101	115	270
7	127	99	112	275
Hardella thurjii				
ANIMAL ID	**CL (mm)**	**CW (mm)**	**PL (mm)**	**Weight (gram)**
1	143	103	129	410
Lissemys punctata andersonii				
ANIMAL ID	**CL (mm)**	**CW (mm)**	**PL (mm)**	**Weight (gram)**
Spot	230	185	230	1469
Dot	250	230	230	1770
Pangshura smithii				
ANIMAL ID	**CL (mm)**	**CW (mm)**	**PL (mm)**	**Weight (gram)**
1	95	67	86	105
Pangshura tecta				
ANIMAL ID	**CL (mm)**	**CW (mm)**	**PL (mm)**	**Weight (gram)**
11	117	91	109	270

Fig: Weighing

Fig: Morphometric data collection

Blood samples were collected phlebotomy from the dorsal caudal vein or the sub-carapacial vein from the sub carapacial sinus. The blood was collected in plain vials for serum analysis and blood smears were made on the field for analysis of differential leucocyte counts. All the samples were labelled and stored appropriately.

A field laboratory was set up onsite and a faecal analysis was done for all individuals. None of the individuals showed presence of any ecto or endo parasites.

Fig: Field Laboratory

Fig: Faecal Examination

Fig: Blood collection from sub-carapacial vein

Fig: Blood collection from caudal vein

FEEDING AND DIET: The feeding strategies and the diet (including quantities fed) has been reviewed and a fresh protocol instated based on the current morphometric analysis and separation of individuals in the enclosure.

Sr No	Species	Diet
1	*Lissemys punctata* (Indian Flapshell Turtle)	Fish, shrimp
2	*Geoclemys hamiltonii* (Spotted Pond Turtle)	Fish, shrimp, snails, aquatic macrophytes, vegetables
3	*Batagur dhongoka (*Three Striped Roofed Turtle)	Vegetables and fish
4	*Pangshura tecta* (Indian Tent turtle)	Vegetables and fish
5	*Pangshura smithii* (Brown Roofed Turtle)	Vegetables and fish
6	*Hardella thurjii* (Crowned River Turtle)	Aquatic Macrophytes, vegetables and fish

SPECIESWISE FEED CHART

Species	Day	Food To Be Given
Hardella thurjii		
	MONDAY	Pumpkin, Aquatic macrophytes
	TUESDAY	Carrot ,Cucumber
	WEDNESDAY	Spinach, Aquatic macrophytes
	THURSDAY	Beetroot, Amaranth
	FRIDAY	Fish
	SATURDAY	Cucumber, Carrot
	SUNDAY	Shrimp

Species	Day	Food To Be Given
Pangshura sp		
	MONDAY	Pumpkin, Aquatic macrophytes
	TUESDAY	Carrot ,Cucumber
	WEDNESDAY	Spinach, Aquatic macrophytes
	THURSDAY	Beetroot, Amaranth
	FRIDAY	Fish
	SATURDAY	Cucumber, Carrot
	SUNDAY	Shrimp

Species	Day	Food To Be Given
Batagur dhongoka		
	MONDAY	Pumpkin
	TUESDAY	Carrot ,Cucumber
	WEDNESDAY	Spinach, Aquatic macrophytes
	THURSDAY	fish
	FRIDAY	Beetroot, Amaranth
	SATURDAY	Cucumber, Carrot
	SUNDAY	fish

Species	Day	Food To Be Given
Geoclemys hamiltonii		
	MONDAY	Fish, Aquatic Macrophytes
	TUESDAY	prawns/fish, carrots
	WEDNESDAY	fish
	THURSDAY	live fish, Pumpkin/ beetroot
	FRIDAY	prawns/fish
	SATURDAY	Fish, Cucumber
	SUNDAY	fish

Species	Day	Food To Be Given
Lissemys punctata andersonii		
	MONDAY	Fish
	TUESDAY	Fish/shrimp
	WEDNESDAY	live Fish
	THURSDAY	Fish/shrimp
	FRIDAY	Fish
	SATURDAY	Fish/shrimps
	SUNDAY	Fish

Variety may be increased viz: Mustard leaves, Raddish leaves, Hibiscus flowers, Mulberry leaves and fruit based on season and availability.

Fruits and Ficus may be added once in a fortnight based on availability.

SANITATION AND HYGIENE (Recommended)

1) Foot Bath: Foot bath outside enclosure 1 and 2 to have dilute Potassium Permanganate solution. The foot bath to be cleaned and solution to be changed every alternate day. Entry is permitted only for essentail staff.

2) Enclosures to be cleaned of remnant food and debris everyday in the morning. Leftover food to be weighed and recorded.

3) Water Change: Partial water change every 3 days (Tuesday, Thursday and Saturday). Complete water change with a thorough scrubbing and cleaning of the ponds every 3 weeks along with water testing onsite.
   The water from enclosures should be pumped out into the sump outside of the enclosures. Scrubbing can be done with a brush where possible. Due to the sand substratum and sand on the side slopes use of any chemicals must be avoided.

4) Sand substartum should be thoroughly washed every fortnight when the pond water is changed. The sand can be changed every three months based on availability and degradation of quality.

5) Feeding utensils and plates for food distribution must be kept separate and must be thoroughly cleaned before and after use

6) All boxes/ tubs used to house turtles during routine procedures like treatments, morphometry etc must be thorougly disinfected with Savlon, dried and stored away outside the enclosures.

7) Keepers must wash hands thoroughly with soap before and after feeding

8) Keepers must wash hands thoroughly with soap before and after handling any animals.

9) All equipments used for the animals must be cleaned and disinfected before and after use and stored separately.

ADDITIONAL WORK

Surveys have been planned in the areas around the Ganga Aqualife Rescue and Rehabilitation Centre, Narora to identify potential release sites for the animals deemed healthy based on the health analysis. The survey will aim to identify locations suitable to various species housed at the centre based on habitat attributes, presence or absence of pressures and also the actual visual sighting of animals.