

**REPORT**  
**ON SITE ACTIVITIES OF WILDLIFE CONSERVATION SOCIETY (WCS) VETERINARIAN**  
**Bonnie L. Raphael**  
**CUC PHUONG**  
**15-19 March 2004**

In partial fulfillment of activities outlined in the 2002 AZA CEF grant, Bonnie L. Raphael, senior veterinarian with the Wildlife Conservation Society (WCS), Bronx, New York, USA, was on site at Cuc Phuong National Park from 15-19 Mar, 2004. The purpose of the visit was to provide training, consultation, disease survey and veterinary services for staff associated with the Turtle Conservation Center (TCC). The training was follow-up to that performed at Cuc Phuong in Mar 2003 by Paul Calle, John Behler and Henk Zwartstoorp and that received by Bui Dang Phong at WCS facilities in the USA in July 2003.

**Activities:**

During the 5 days on site at TCC, veterinary protocols were reviewed and revised as necessary. Some new protocols were developed to provide additional assistance in day-to-day veterinary operations. Assessment of daily activities, care, and feeding of the animals was made. Information about diet preparation, food items used and feeding schedule was gathered and recorded. Newly acquired animals were examined and processed. *Indotestudo* underwent blood sampling for disease survey work.

**Existing Veterinary protocols.**

Protocols for medication dosing (vitamin B, metronidazole) that Dr. Calle had developed in 2003 were posted in the clinic and were being used as necessary. However, it appeared that actual dosing of medications may be quite inaccurate. There was little evidence that small syringes (1 cc) were being used (only one small syringe was in the clinic)

Necropsy records for animals that had undergone post-mortem examination were complete and thorough.

Individual animal records and daily notes on ill animals in the clinic or in quarantine are being filled out by the keeper. Phong keeps records on animals receiving treatments as they are performed. Individual medical examination sheets were not being used as originally intended. They are being used as part of the necropsy records.

Deworming protocol. An addition to the deworming protocol was made to include injectable levamisole.

**New protocols**

Medication schedules/dosing. New schedules for determining dosage and doses of enrofloxacin, oxytetracycline, amikacin and levamisole were made in a spreadsheet program and printed out for use in the clinic. The schedules include both diluted and full strength medications.

Dilutions. Phong was shown how to make dilutions, and a protocol for diluting medications was written up. There is a need to dilute most of the antibiotics prior to use in order to assure accuracy of dosing.

Fecal examinations. A protocol was written up for the procedures Phong is using for setting up and performing direct and floatation examinations of fecal samples.

Nasal flushes. A protocol was written up describing the process of performing nasal flushes.

Blood processing. The process of preparing blood samples after collection from animals was written up. This included preparation of samples for genetics and plasma storage.

Animals coming in from the trade. Recommended procedures for treatment of animals newly arrived from the wildlife trade were outlined as requested by Doug. These should be refined over time.

Prolapses. Due to the occurrence of several prolapses during the past year, Phong requested a protocol for treating them. Included was a recommendation for anesthetic dose,

should one be needed. Since no anesthetics are kept on site, that step would require the intervention of a veterinarian.

### **Animal activities**

The following hands on procedures were performed:

Review of injection sites and procedures.

Review of measuring accurate medication amounts

Review of dosing schedules of antibiotics and injectable dewormer, and review of when to use them.

Review of how to tube feed using soft tubing and restraint of the head. In addition, Phong was shown how to administer tube feeding using a metal ball ended feeding "needle" without having to pull an animals head out. A metal probe used for opening the mouth without injuring it was left with him in the clinic. The procedure was demonstrated to him on a 6 month old and an adult tortoise. Phong performed the procedure with proficiency on two 6 month olds.

A demonstration of how to open the shell for tube feeding box turtles was done using a *C. amboinensis*.

11 recent acquisitions into quarantine were processed in two afternoons using the new medical protocol. Physical exams were performed, weights obtained, ticks removed, antibiotics and b vitamins and dewormer were administered.

Sites and procedures for collecting blood samples from the tail and front leg were demonstrated.

Examinations and blood collection were performed on twenty five *Indotestudo*. Blood was processed for genetics and frozen plasma. Blood samples were collected from brachial or subcarapacial blood vessels. An export permit had been obtained, which allowed for those samples to be taken to the USA for analysis.

Detailed nutritional data including weights of some food items and dietary procedures were collected. Data were entered into a nutritional analysis program on site.

### **Recommendations**

1. Juvenile animals should be provided with direct natural sunlight for at least 30 minutes per week. Care will need to be taken not to allow them to overheat or dehydrate during that time.
2. When sick animals move over to the clinic/quarantine area a physical exam sheet should be filled out at that time. Daily notes can then continue as they are done now.
3. When new animals come into quarantine, a physical exam sheet should be filled out at the same time as the ID sheets. The treatments that are performed that day as part of the processing should be recorded on that initial form. Subsequent treatments can be recorded the same way as now.
4. Fecal examinations should be performed on new and sick animals within the first week if possible.
5. There should always be a supply of 1 cc syringes in the clinic.
6. A keeper should be trained to perform tube feeding and to assist with injections.
7. A calander was set up by Phong to show when individual animal treatments are due to be performed. This will allow for easier tracking of treatments that need to be performed on a given day.
8. If additional animals are to be taken if from the trade in response to confiscations additional quarantine enclosures should be constructed.

### **Summary**

Animals at the TCC are being well cared for. Enclosures are well maintained and reflect the individual species requirements. The addition of caging for security puposes may present challenges in allowing for enough sunlight to penetrate during cooler times of the year. The storm in summer 2003 resulted in substantial reduction in tree cover allowing for adequate basking areas temporarily. Records of weights and close attention to individuals is allowing for ill animals to be isolated at the clinic where they receive daily attention. Phong has done a good job in

assessing ill animals and initiating treatment or supportive care when needed. Keepers and security personnel were interested in activities, and appeared to be conscientious in performance of procedures. Diets, prepared daily, appeared appropriate and in alliance with the written protocols. The incubation/hatching operation seems to be functioning well. Phong is overseeing daily care in that area. New shelving is due to go into the room to reduce space limitations experienced at present. The "nursery" area appears to be at near capacity due to the hatching success achieved in the past year. Additional shelving will probably be needed soon.

The TCC has a very good program of care and is developing successful breeding techniques. As more data is acquired regarding individual species needs for reproduction and growth those techniques will be refined. It will not be long before the present facility capacity is outgrown.

Future veterinary procedures will probably include training additional staff, refinement or adjustment of protocols.



Dr Bonnie Raphael (Visiting WCS field Vet) with  
Bui Dang Phong the Turtle Conservation  
Centers Coordinator