

Team TSA in Asia – September 2009

By Rick Hudson, TSA President

This report is the third to chronicle the daily activities of a TSA team's visit to four countries in Asia – Myanmar, Thailand, Malaysia and Philippines - to design turtle facilities, develop conservation programs, and consult on turtle husbandry issues. The team is led by Rick Hudson and includes Bill Zeigler, Lonnie McCaskill and Dave Manser. The team was met in Myanmar by Kalyar Platt and her father Nyunt Thein (a local retired civil engineer).



Team TSA at the KIEBC. Back row (l to r) Eric Goode, Peter Praschag, Bill Zeigler. Front row (l to r) Siegfried Diaz, Diverlie Acosta, Sabine Schoppe and Rick Hudson

Finishing up in the Philippines

After flying all night, Bill and Rick arrive in Puerto Princesa, Palawan on September 7 with Eric Goode, Miye McCullough and Peter Praschag (Behler Chelonian Center) who we met in Manila. We are met by Sabine Schoppe, of the Katala Foundation. Founded in 1998 Katala manages the Philippine Cockatoo conservation program and has a center – the Katala Institute for Ecology and Biodiversity Conservation (KIEBC) - about two hours outside Puerto Princesa. Fortunately, Sabine's background is in turtles because the center also manages a group of 30+ adult Philippine forest turtles, *Siebenrockiella leytensis*, a recently rediscovered species endemic to Palawan that is currently ranked Critically Endangered by the IUCN Red List. Described in the 1920s, only four specimens were known to science until about seven years ago when the species was discovered on Palawan. Previous searches for *leytensis* were focused on the island of Leyte – hence the name - where it was said to be from. Nicknamed the bowtie turtle, *leytensis* has a distinctive white ring around the neck that is prominent in young specimens and obvious when they extend their head.



Philippine forest turtles at the KIEBC. Left to right: an adult turtle, a sub-adult with the distinctive white "bowtie" and an adult being held by Diverlie Acosta (caretaker)

A confiscation of 60+ specimens was received by the Palawan Wildlife Rescue Center (formerly the Crocodile Farming Institute – CFI) that did not have adequate facilities to manage them, so half – including all the adults – were moved to KIEBC. With funding from the EAZA Shellshock campaign, a management facility was built consisting of multiple enclosures and isolation units. The species has turned out to be difficult to manage in captivity - they are stress prone and males are extremely aggressive. Their husbandry at the Center has been complicated by water quality issues resulting in a high incidence of shell rot. Several months ago the TSA sent Dr. Nimal Fernando of Ocean

Park Hong Kong to evaluate the situation and try and diagnose the problem. Nimal is an excellent chelonian clinician – he is particularly well-known for his role in the big Kadoorie Hong Kong confiscation of 2001 – and did a fantastic job of working with staff



Male and female Philippine forest turtles, showing shell lesions

to bring the problem under control (see the full report in the 2009 TSA magazine). But the underlying basis for the medical issues is husbandry and management related, and is the reason for this TSA visit. Designing a facility that will meet the needs of this demanding species promises to be a challenge. As the only potential range-country assurance colony for this endemic species, and given that the wild status is still poorly known, it is important that we figure out how to maintain and breed them in captivity. Even if the species is found to be widespread in Palawan, they are under considerable pressure from the food markets given the large affluent Chinese population in the Philippines. And, considering the growing illegal trade in this species – particularly in Europe and Japan – can this species really ever be considered safe in nature? The TSA believes that we need to develop strong husbandry and captive management techniques now, while the species is still available.

We arrive at our hotel before noon and spend time discussing plans and getting acquainted. After lunch we are off for the Palawan Wildlife Rescue Center to have a look at their *leytensis*. A group of ~25 sub-adult specimens is maintained here and we are soon offering them wild figs and watching them chow down – this is obviously a preferred food item. We spend a few hours photographing turtles and touring the facility then head back for an early dinner and some rest.



Peter and Sabine at the Palawan Wildlife Rescue Center

The next day we are up early for an 8 am departure for the KIEBC. We rent a van and travel along the coastal highway passing thru some scenic mountains until we reach the town of Narra. The Center has an array of turtle enclosures, varying in size, design and complexity. Most enclosures are nicely planted and landscaped with both earthen and concrete pools fed with well water. We spend time asking questions and interviewing staff – primary caretakers Diverlie Acosta and facilities manager Siegfred Diaz (Fred for short). Currently, all turtles are in isolated treatment tanks where they have been undergoing antibiotic therapy, betadine scrubs and dry docking. The shell lesions look good and are well on the way to healing, and the infection is under control. Theories abound as to the source of the health problems but there are likely several contributing factors, including:



Sabine examines one of the turtles at the KIEBC

- 1) Water pH is high, or alkaline, and the cement pools may still be leaching;

- 2) During the rainy season there is a backwash of water from the surrounding cow pasture, so fecal coliform contamination may be an issue;
- 3) Shallow water that warms quickly – in nature this animal lives in shady rivers with deep pools, and probably does not experience a lot of bright sunlight or warm water;
- 4) Concrete pool surfaces are semi-rough and when pool levels are low, animals may struggle to get out of the pool when under social stress, and abrade their feet;
- 5) Social stress – males fight with each other and are aggressive to females.



Ponds and isolation areas (center) at the KIEBC. The brown color of the water is due to the tannins in the leaves that are added to the ponds to control the alkaline levels

We spend hours discussing ways to remedy the situations and come up with a set of recommendations that we hope will provide some immediate relief and a long-term plan that should solve their water quality issues. We suggest that the 14 females be set up in two to three “all girl” groups, and that males be segregated singly. Fortunately, they have the space to do this and we hope will reduce or eliminate the social stress problem. Raising the water level, thus lowering the water temperature, and providing an easier way out of the pool will help too. The alkalinity problem appears to be controlled by the addition of a deep layer of decaying leaves that drops the pH. All these are low cost fixes; however improving the water quality issue will not be cheap. Bill and Fred design a system that prevents contaminated water from washing back into the ponds, by adding a below ground collecting tank. From there water pumps back to a settling basin that contains plants for biological filtration, then to a treatment tank for acidifying, then gravity fed back to the ponds - basically a closed system.



Bill Zeigler discusses filtration and exhibit modifications with the KIEBC staff

We spend the rest of the day photographing turtles and tweaking the new filtration system. Bill will complete design diagrams once he returns to the US and from there we get cost estimates. By then we hope to have good news of reduced social stress and improved health. We head back to the hotel feeling pretty good about the potential here, and it is obvious that the staff have learned a lot about the captive requirement of this

species through trial and error. Considering that this facility was built without a lot of knowledge of the biology of this turtle, and the degree of retrofitting and modifications that have been required to accommodate this difficult species, our hats are off to the persistence and dedication of the staff in dealing with this challenging situation.



Miye and Eric with a softshell turtle (Dogania subplana)

On September 9, we return to the Center for some more photographs, and then we pay the mayor a courtesy visit. Next, it's on to the airport for our flight to Manila to spend the night. We depart the next day for Taipei and the long trip home. I am so ready for football, red wine and red meat! It's been an incredible trip with a packed agenda - four countries and 18 flights (for me). We have designed at least ten new facilities in two countries, built or strengthened strategic partnerships in four countries and kicked off some new initiatives – all in all a very successful mission.

Acknowledgements

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Diverlie and Sabine

Onward!!

Rick Hudson