PHILIPPINE FRESHWATER TURTLE CONSERVATION PROGRAM

2007 Annual Report
&
2008 Progress Report

By

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COUNTRY: PHILIPPINES

PROJECT TITLE: PHILIPPINE FRESHWATER TURTLE CONSERVATION PROGRAM

PROJECT DURATION: December 2006 - December 2011

PROJECT SITE: Philippines

PHILIPPINE PROJECT COOPERATORS:

Department of Environment and Natural Resources (DENR)
Protected Areas and Wildlife Bureau (PAWB)
Palawan Wildlife Rescue and Conservation Center (PWRCC)
Palawan Council for Sustainable Development (PCSD)
Municipal Government of Narra, Palawan, Philippines
Western Philippines University (WPU)
Concerned agencies and authorities

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PHILIPPINE FRESHWATER TURTLE CONSERVATION PROGRAM

EXECUTIVE SUMMARY
On 26 December 2006, DENR-PAWB and Katala Foundation Inc. (KFI) entered into a Memorandum of Agreement for the implementation of the “Philippine Freshwater Turtle Conservation Program” (PFTCP). Progress of the said program since its early stages in 2007 were integrated in the technical progress reports of the Philippine Cockatoo Conservation Program (PCCP) of Katala Foundation Inc. Kindly refer also to the monthly accomplishment reports of one of the project components, that was funded by the Association of Zoos and Aquaria (EAZA) through the Shellshock Turtle and Tortoise Conservation Campaign. Said reports are accessible through the internet at http://www.eaza.net/index.php. Major accomplishments in line with the objectives of PFTCP in 2007 were the establishment of turtle quarantine and holding facilities for Philippine freshwater turtles at the Katala Institute for Ecology and Biodiversity Conservation (KIEBC). The said facilities are the first of KIEBC which is still in the early phase of implementation. When the facilities were finished last June 2007 four species of freshwater turtles were transferred from the Palawan Wildlife Rescue and Conservation Center (PWRCC) to KIEBC. At the same time research on the morphology and population size of freshwater turtles in Palawan were conducted on wild population, and massive information education campaigns were conducted all over Palawan. In the first half of 2008 the major accomplishments were the start of three long-term population surveys on the critically endangered Philippine Forest Turtle (Siebenrockiella leytensis).

OBJECTIVES
The Philippine Freshwater Turtle Conservation Program has the following objectives:

1. Conservation of Philippine freshwater turtle populations and their habitats, particularly but not restricted to PPC, Narra, Dumaran Island, and Rizal
   1.1. Establishment and development of facilities for conservation breeding / captive management / rescue of threatened freshwater turtle species
   1.2. Provision of assistance in identifying areas / habitats of freshwater turtle for priority protection as well as in implementing conservation and protection measures and sustainable development of identified priority areas
   1.3. Provision of assistance in wildlife law enforcement and information dissemination
   1.4. Conduct of experimental soft release of turned-over / donated / confiscated and captive bred freshwater turtles

2. Conduct of scientific research on the biology and management of Philippine freshwater turtles and their habitats, and socio economic frame conditions leading to threats and strategies for conservation, such as, among others studies / researches:
   2.1. Research on biology such as but not limited to breeding, population dynamics, feeding ecology, synecology, diseases, threats, taxonomy, captive management, veterinary medical procedures, and behavior, among others
2.2. Habitat conservation and restoration techniques

3. Education and capacitating stakeholders of PFTCP on natural resource management and conservation; rehabilitation/restoration of species habitats, and environmental awareness by:

3.1. Conducting environmental education on the status and threats of Philippine freshwater turtle species for key stakeholders like poachers, buyers, traders, decision makers, law enforcers, in and out of school youth, local communities, academe and local government units, among others;

3.2. Capacitating local communities concerned on turtle conservation, including pre and post release activities for the species in their respective areas;

3.3. Disseminating information on Philippine freshwater turtles and related conservation / protection issues through multi media, including publications and distribution of research outputs/results generated from this undertaking;

3.4. Establishing a Center in Narra, Palawan as venue for biodiversity education and research

PROGRAM HIGHLIGHTS

In line with the objectives of PFTCP the following highlights were accomplished:

1. Conservation of Philippine freshwater turtle populations and their habitats, particularly but not restricted to PPC, Narra, Dumaran Island, and Rizal

1.1. One thousand square meters of the land area of the Katala Institute of Ecology and Biodiversity Conservation (KIEBC) facilities for keeping freshwater turtles were developed. This includes among others 2 large and 10 small quarantine cells, 4 large outdoor enclosures, 1 caretaker house, drainage, and septic tank.

1.2. The physical, chemical and biological properties of the KIEBC deep well water, the water source for the turtle ponds, had been analyzed and found negative for fecal coliform and conform with the Philippine National Standards for drinking water.

1.3. An assurance colony of threatened Philippine turtle species obtained from confiscation has been established in the facilities of KFI in Narra, Palawan. On 28 of June 2007, a total of 40 *Siebenrockiella leytensis*, 7 *Cuora amboinensis*, 3 *Cyclemys dentata* and 1 *Dogania subplana* were transferred from PWRCC to KIEBC. As of 31 December 2007 considering turtles that were newly turned over from private collectors, birth and mortality, KIEBC held 37 *Siebenrockiella leytensis*, 11 *Cuora amboinensis*, 11 *Cyclemys dentata*, and 2 *Dogania subplana*. As of July 2008 KIEBC holds 35 *Siebenrockiella leytensis*, 19 *Cuora amboinensis*, 11 *Cyclemys dentata*, and 1 *Dogania subplana*.

1.4. In collaboration with a project of the Western Philippines University KFI has been conducting five short-term population surveys of *S. leytensis* in sites in Puerto Princesa City, Roxas, Dumaran and Taytay. Each survey lasted between four to six weeks and resulted in population size estimates, habitat descriptions and identification of threats. Studies also provided estimates on population size of *S. leytensis*, *C. amboinensis* and *C. dentata*. Furthermore, morphological data of a total of 240 *S. leytensis*, 67 *C. amboinensis* and 108 *C. dentata* were
collected. Surveys as well helped to identify potential pilot site(s) for soft-release and conservation.

1.5. A CITES and Wildlife Act Enforcement Training Workshop convened by TRAFFIC Southeast Asia, Katala Foundation and PCSDS was conducted from Nov. 7-9, 2007. During the said workshop KFI gave a presentation on Palawan’s traded and threatened wildlife. Emphasis was given to the status of the critically endangered Philippine Forest Turtle.

1.6. Together with PCSDS, the National Police and other law enforcement offices, Katala Foundation joined a house-to-house information campaign on Nov. 28, 2007. The campaign intended to inform citizens about the Dec.-1-deadline for registration of wildlife in line with the implementation of the Wildlife Act (RA 9147). Besides numerous birds (Blue-naped parrots and Talking Myna) at total of 22 freshwater turtles were encountered as a guest attraction in a local restaurant. The turtles were composed of 3 S. leytensis, 18 C. amboinensis, and C. dentata.

2. Conduct of scientific research on the biology and management of Philippine freshwater turtles and their habitats, and socio economic frame conditions leading to threats and strategies for conservation.

2.1. A total of two trainings on basic turtle identification, morphology, health and captive care have been conducted by KFI. Twenty-nine people including caretakers, volunteers, college students, KFI staff, wildlife wardens, MENRO Narra, PASu Rasa, and staff of the DENR PENRO were trained.

2.2. The KIEBC turtle care taker is conducting daily observations of the turtles with special reference to feeding, time of major activity, behavior and reproduction and biology. Mating was observed in three (S. leytensis, C. amboinensis and D. subplana) of the four species kept. A total of 11 S. leytensis eggs were encountered in the enclosure. Most of them were not properly laid but just deposited in the water or in the mud. All did not develop and were discharged. It is expected that they were not fertile. So far, nobody has ever successfully bred S. leytensis. The other two hard shell species were more successful. Five live and two dead Cuora amboinensis hatchlings and four eggs were encountered in the outdoor enclosure. Hatchlings are measured regularly to calculate the daily growth rate. A total of six C. dentata eggs were encountered and transferred to Styrofoam box with a sand soil mixture for incubation.

2.3. One artificial nesting area was constructed for S. leytensis. So far it has not been used by the turtles.

2.4. Three potential sites for future soft-release of S. leytensis or needing special conservation support identified through the 2007-Shellshock-funded short-term studies will be monitored for five consecutive years (2008-2012). The funding for the first two years (2008-2009) of fieldwork was secured from the Turtle Conservation Fund (TCF) through EAZA-Shellshock Campaign. Funding for the following three years has yet to be secured. From February to March 2008 the first assessment of the three selected populations was conducted. In the first site, a total of 78 S. leytensis and 6 C. dentata were caught, measured and released. No C. amboinensis were encountered. In the second site, a total of 21 S. leytensis, 2 C. dentata, and 6 C. amboinensis were collected, measured and
released, and at the third site 10 *S. leytensis*, 17 *C. dentata*, and 11 *C. amboinensis* were surveyed and released. The same sites will be monitored at the same time of the year in 2009 and consecutive years.

2.5. KFI team conducted a faunal survey in the Culasian Managed Resource Protected Area (CMRPA), one of the PCCP project sites from 31st March to 5th April 2008. The survey concentrated on birds, small mammals, amphibians and reptiles. The herpetofauna was collected during night visual encounter surveys and with pit fall traps. After identification, measurements and documentation, individuals were released. Only a maximum of 3 individuals of those species that might be of special interest to science were kept as voucher specimens (GP No. 2008-002). They were properly preserved and with permits transported for further identification to PCCP office in Puerto Princesa City. Among other herps (3 lizard species, 12 frog species) the team found the Malayan Softshell Turtle *Dogania subplana* to be relatively common. The locals who are mainly members of the Palawan tribe, admitted that they sometimes eat this turtle species.

2.6. A scientific poster entitled “Conservation status of the critically endangered Philippine Forest Turtle *Siebenrockiella leytensis* (Taylor, 1920) in Palawan” authored by Sabine Schoppe and Joie Matillano was presented at the 17th annual symposium of the Wildlife Conservation Society of the Philippines in Baybay, Leyte from 14-17 April 2008.

2.7. KFI is a formal collaborator and research partner of “The Comparative Biogeography and Conservation of Philippine Vertebrates” (CBCPV) project through the Herpwatch Philippines research consortium. Herpwatch Philippines represents a partnership between the Curator of Herpetology at the University of Kansas Biodiversity Institute (Dr. Rafe Brown) and the Curator of Herpetology at the National Museum of the Philippines (Mr. Arvin Diesmos). The research activities of CBCPV and its agents are supported by a valid Memorandum of Agreement (signed by Eliza Gozun, Secretary of the DENR, 2004) between DENR Manila and the University of Kansas Biodiversity Institute. Additionally, CBCPV is certified by DENR to collect scientific specimens and genetic samples under the provisions of a valid Gratuitous Permit to Collect (GP 159, 2007; GP 171, 2008).

2.8. We enrolled our turtle care taker in the upcoming zookeepers training seminar to be held in Puerto Princesa City in September 2008.

3. **Education and capacitating stakeholders of PFTCP on natural resource management and conservation; rehabilitation/restoration of species habitats, and environmental awareness.**

3.1. Educational materials on the status of Palawan’s non-marine turtles, the threats to the species, and the laws and legislation pertaining to illegal trade of the species have been developed. A total of 2000 bookmarks, 8 posters one each per species (4 in English, 4 in Tagalog), 1000 calendars, and one fact sheet were developed and distributed.

3.2. A total of 50 conservation education campaigns were conducted in Narra (21), Puerto Princesa City (2), Dumaran (13), Roxas (3), Taytay (4) and Rizal (7), approximately reaching 5300 students of both high school and elementary
schools, college students, barangay officials, and community members from all target sites.

3.3. Twice high school and college students conducted an educational cross visit to KIEBC.

3.4. Facts about Palawan’s freshwater turtles were presented during a festival in Narra, the Ecology Week of the Western Philippine University and a national conference on wildlife trade.

3.5. A radio interview regarding wildlife trade in Palawan was given in a local radio channel on Nov. 24, 2007.

3.6. From 21st – 25th April 2008, a separate reconnaissance survey was conducted at a tribal community in Puerto Princesa City to identify the need for in-depth information education campaigns.

3.7. Turtle calendars were distributed in Liminangkong, Northern Palawan in February through the help of Ms. Matillano from WWF-Palawan.

3.8. A national TV network, GMA interviewed Co-manager Dr. Sabine Schoppe and KFI staff about the Philippine Forest Turtle. The documentary was aired on 2nd February 2008 nationwide under the program hosted by Jessica Soho.

3.9. Construction work leading to the establishment of the Katala Institute of Ecology and Biodiversity Conservation (KIEBC) as an Education and Biodiversity Centre in Narra continues. Within the reporting period the following had been accomplished: Manual excavation to establish three ponds (of 4x5m) as natural sewage plant for discharges from quarantine enclosures. Central ponds were placed with rice hull and the remaining with gravel and water plants. The excavated soil was used to backfill around perimeter fence ready for planting. Establishment of canal systems (estimated 120 linear meters with 50cm width and 60cm deep) outside quarantine area to drain waste waters from turtle enclosures to the sewage ponds. Planting sorghum seeds on backfilled areas beside quarantine fence and dikes. Reconstructing the nursery shed with a portion roofed with Nypa shingles and the rest with mesh nets. Shed house dimension is about 165m length & 4m width. Seedlings sorted and prepared for planting. Brushing/under brushing of grasses which are competing with planted pioneering species along perimeter fence. A spacious information hut with an elevated view deck was constructed beside the quarantine area. This information hut provides venue for meetings and allows interaction between staff and visitors on KIEBC’s activities without disturbing restricted areas. Malunggay cuttings were planted beside information center. To prepare for future infrastructures, water and electric connection from the main source is being discussed in cooperation with the municipal government. A multi-partite monitoring team (MMT) completed the 1st quarter monitoring, and the KFI Pollution Control Officer submitted the quarterly self-monitoring report for the second quarter of the year.
MAJOR CONSTRAINTS, ISSUES AND ACTIONS TAKEN

1. Diseases

1.1. Shell rot was identified as one of the major health problems of *C. amboinensis* and *C. dentata*. It first occurred in November 2007 in *C. dentata* and later in *C. amboinensis*. It is assumed that the development of shell rot in these two species is related to the dump soils in KIEBC, the surroundings of which are typical wetlands. Shell rot was treated with Betadine and external application of antifungal and antibacterial cream. To avoid future problems, the substrate in 1/3 of each enclosure was elevated to create dry zones. This seems to be effective but has to be monitored.

1.2. External parasites

The only external parasites that were encountered so far are aquatic leeches and ticks. These parasites were encountered in those *C. dentata* that were turned over to KIEBC by private individuals. Leeches and ticks were removed, the individuals treated with *Frontline* tick spray and kept in quarantine for one month.

1.3. Internal parasites

Common internal parasites of the hard shell turtles are nematodes. Therefore all newly turned over individuals are treated with *Panacur* dewormer and kept under quarantine conditions for one month. As preventive treatment all turtles are treated with *Panacur* on a biannual basis.

1.4. Respiratory and other health problems

*Siebenrockiella leytensis* has experienced health problems starting end of June 2008. On 28 June 2008 one individual with a respiratory problem was transferred from the enclosure to a small quarantine cell. When other individuals also showed signs of weakness they were all transferred to quarantine cells for easy monitoring and better treatment. KFI management immediately consulted PAWVI veterinaries (Dr. Esteven Toledo, Dr. Nielson Donato, Dr. Emilie A. Lastica), PWRCC Head of Clinical Section Dr. Joanne Justo, and Dr. Sonja Luz, Senior Veterinarian at Singapore Zoo and KFI veterinary consultant. Common agreement was to treat turtles with daily warm bath and a *Vetracin* and Multivitamin oral application. While most individuals reacted positive to this treatment, two (#13 and 21) remained very weak and were therefore brought to PWRCC for injection of antibiotics (*Enrofloxacin*) on July 4, 2008. For the duration of the treatment and until animals were considered fully recovered they remained in PWRCC. They were returned to KIEBC on July 29, 2008 and still kept under quarantine. The other individuals had in the meantime reacted positive to the *Vetracin* and warm bath treatment, became active again and ate daily with appetite, giving the impression of recovery. Then suddenly without prior new signs of weakness one individual died in the evening of July 31 and another in the morning of August 1, 2008 (see below).

2. Fatalities

Since June 2007 when the first turtles from PWRCC were transferred to KIEBC until today we had a total of nine fatalities (6 *S. leytensis*, 1 *C. amboinensis*, 1 *C. dentata*, and 1 *D. subplana*). The animals had died of various but mainly unknown causes. One *S. leytensis* was probably killed by a Philippine Cobra. The carcasses of the two most recent dead *S. leytensis* (see above) underwent necropsy and samples await
In relation to the total number of individuals held per species, mortality was highest for the two purely aquatic turtle species, that is *D. subplana* (50% mortality), and *S. leytensis* (15% mortality). Since aquatic turtles were more affected than the semi-aquatic ones the death of the aquatic ones might be related to water and/or soil quality. This assumption is also in line with the heavy rainfall in the past few months that sometimes has led to intrusion of water from the surrounding wetland into the enclosures. Hence, KFI had arranged for water analysis of stagnant waters from the surrounding wetland, which were found to be positive for fecal coliform. Whether or not this is related to the health status of the turtles in the center is still unknown. Only microbiological and histological analysis of tissue samples might reveal the real cause of death. In the meantime turtles are closely monitored and under supervision of veterinarians of PWRCC.

**RECOMMENDATIONS/PROSPECTS**

- Source budget and services of a veterinary consultant.

**PROGRAM OF FUTURE ACTIVITIES**

- Participate in the Ecology Week at the Western Philippine University – Puerto Princesa Campus in October 2008.
- Fund sourcing to support feeding and maintenance of turtles in KIEBC.
- During the first quarter of 2009, KFI will continue the long-term population studies intended at assessing trends in three *S. leytensis* populations.
- Continued information / conservation campaigns through the integrated CE approach of PCCP

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- The Western Philippine University (WPU) – Puerto Princesa Campus.
- Bgy. Antipuluan
- And last but not least to the care takers and wildlife wardens at KIEBC.
Figure 1: The entire 2ha of the future Katala Institute of Ecology and Biodiversity Conservation were fenced with boohoo. ©SSchoppe

Figure 2: Signboard informing about project and ECC clearance at the entrance the National highway (left). Turtle care taker house (right). ©SSchoppe

Figure 3: Outdoor enclosures at the start of the project. ©SSchoppe
Figure 4: Large (left) and small (right) quarantine cells.

Figure 5: *Siebenrockiella leytensis* (left) and *Cuora amboinensis* (right). © SSchoppe

Figure 6: *Cyclemys dentata* (left) and the softshell turtle *Dogania subplana* (right). © SSchoppe & DAcosta
Figure 7: Former Mayor L. Demaala (in red), PENOR staff (right), MENRO staff (left) and KFI co-manager (center) inspecting turtles upon arrival in Narra. © SHDiaz

Figure 8: During turtle training: Calculation (left), weighing (center) and filling syringe with the amount of dewormer needed per kg body weight (right). ©JTuapas

Figure 9: DENR-PENRO (left), DENR-CENRO (center) and KFI staff are applying dewormer to the newly acquired S. leytensis individuals. ©SSchoppe
Figure 10: Food and feeding schedule. ©DAcosta.

Figure 11: *Cuora amboinensis*: triple mating (left), egg (center), hatchling (right). ©DAcosta

Figure 12: *Siebenrockiella leytensis* egg (left) and *C. dentata* egg clutch (right). ©DAcosta
Figure 13: Interview with turtle hunter in central Palawan. ©DAcosta

Figure 14: Threats: Sand mining (left), bathing area for people (right). ©DAcosta

Figure 15: Fresh slash-and-burn area (left), and kaingin few days after burning (right). ©DAcosta
Figure 16: Police officer informing the owner of a store about the need to register wildlife by Dec. 1, 2007 (left). Freshwater turtles incl. the Palawan endemic *S. leytensis* encountered in a restaurant in Puerto Princesa City during the house-to-house IEC. ©SSchoppe

Figure 17: CITES and Wildlife Act Enforcement Training Workshop (left) ©RCruz. IEC at Princes Urduja Elementary School (right). ©GAludia

Figure 18: IEC at Tagabenit (left) and Taritien Elementary School (right). ©GAludia
Figure 19: Posters used in IEC were made for all four turtle species.
Figure 20: This calendar was distributed during IEC in Palawan.