PHILIPPINE FRESHWATER TURTLE CONSERVATION PROGRAM (PFTCP)

2011 Annual Report

By

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Puerto Princesa City, Palawan, Philippines

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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)
Provincial Government of Palawan
City Government of Puerto Princesa
Municipal Governments of Narra, Roxas, Dumaran, and Taytay
Concerned agencies and authorities

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ACRONYMS and ABBREVIATIONS

Barangay	Filipino term for village
CE	Conservation Education
CENRO	Community Environment and Natural Resources Office(r)
CI	Conservation International
CRF	Chelonian Research Foundation
DENR	Department of Environment and Natural Resources
EAZA	European Association of Zoos & Aquaria Shellshock Campaign
ELAC	Environmental Legal Assistance Center
IEC	Information Education Campaign
ENRO	Environmental Natural Resources Office
IP	Indigenous People
IUCN	International Union for Conservation of Nature and Natural Resources or World Conservation Union
KFI	Katala Foundation, Inc.
KIEBC	Katala Institute for Ecology and Biodiversity Conservation
LGU	Local Government Unit
LPF	Loro Parque Fundación
MOA	Memorandum of Agreement
NCIP	National Commission of Indigenous People
NGO	Non-Governmental Organization
NEZS	North of England Zoological Society
OP	Ocean Park
PASu	Protected Area Superintendent
PAWB	Protected Areas and Wildlife Bureau
PAWVI	Philippine Association of Wildlife Veterinarians Inc.
PCCP	Philippine Cockatoo Conservation Program
PCP	Pawikan Conservation Program
PCSD(S)	Palawan Council for Sustainable Development (Staff)
PENRO	Provincial Environment and Natural Resources Office
PFTCP	Philippine Freshwater Turtle Conservation Program
PNP	Philippine National Police
PO	Peoples Organization
PPDO	Provincial Planning and Development Office
PPSRN	Puerto Princesa Subterranean River National Park
PWRCC	Palawan Wildlife Rescue and Conservation Centre
SEP	Special Environmental Plan
TCF	Turtle Conservation Fund
TFTSG	Tortoise and Freshwater Turtle Specialist Group
TSA	Turtle Survival Alliance
USFWS	United States Fish and Wildlife Service
WCSP	Wildlife Conservation Society of the Philippines
WPU	Western Philippines University
ZGAP	Zoologische Gesellschaft für Arten- und Populationsschutz

PHILIPPINE FRESHWATER TURTLE CONSERVATION PROGRAM

Background Information

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). The said program has the following objectives:

1. **Conservation** of Philippine freshwater turtle populations and their habitats, particularly but not restricted to Puerto Princesa City, 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.

Highlights of Accomplishments 2011

These highlights are in line with the objectives of PFTCP and the work plan for 2011.

On December 22, 2011 KFI and PAWB renewed the PFTCP MOA for another five years.

1. Conservation of Philippine freshwater turtle populations and their habitats

1.1. Captive management. Since August 2007 the Katala Institute of Ecology and Biodiversity Conservation (KIEBC) in Antipuluan, Narra, Palawan is holding the only range country assurance colony of the critically endangered Philippine Forest Turtle *Siebenrockiella leytensis*. Furthermore, the facilities hold specimens of all other Palawan native freshwater turtle like the Southeast Asian Box Turtle *Cuora amboinensis*, the Asian Leaf Turtle *Cyclemys dentata* and the Malayan Softshell Turtle *Dogania subplana*. In 2011, a total of 15 hatchlings of *C. amboinensis,* 8 infertile eggs of *C. dentata,* and 5 infertile eggs of *S. leytensis* were produced. A total of 6 *C. amboinensis* had been turned over to KIEBC. During the course of the year we had a total of six fatalities due to harm or disease: 1 *C. amboinensis*, 1 *C. dentata* and 4. *S. leytensis*, leaving us with 27 *S. leytensis*, 51 *C. amboinensis*, 9 *C. dentata*, and 1 *D. subplana* as of Dec. 31, 2011.

From the very turnover of specimens from PWRCC, the Philippine Forest Turtle turned out to be difficult to manage in captivity. They are stress-prone, show high intraspecific aggression, especially among males, and need a pH of 8 or below (Schoppe and Fernando, 2009; Schoppe, 2010). To address this, KFI had build with funds from the Turtle Survival Alliance and Turtle Conservation Fund, 20 new 3x2m enclosures and a water filter tank system in 2010.

Plate 1: Set of 20 enclosures for *S. leytensis* (right) and water tank filtering system (left).

This helped to reduce the pH to 8 and improve water quality. It also allowed keeping males separate from each other. Although we still had incidents of shell rot the new tank system seemed to have solved or at least reduced problems. However, now that females were paired with males and pairs were kept in a

comparatively smaller space than before the females had few options to escape from the continuous mating attempts of the males. As it seemed, a female was even drowned by its partner and the remainder of the females got sickly and was mostly affected by shell rot. We tried – in as much as enclosure availability allowed – separating smaller females from males and leaving only large and strong females paired with males. Accordingly we had to put some females in quarantine while we kept others in small groups of females only. In July, we had to transfer one female (#34) with severe shell rot and respiratory problems to Puerto Princesa City where it could get antibiotic shots every 48 hours.

Plate 2: *S. leytensis* # 34 with severe shell rot received regular antibiotic injections and spent most of the time under a heat bulb.

Keeping females together also caused problems at least when there were subordinate / sub-adult females within a group. We had to separate a sub-adult female (#64) and also put her in quarantine. In October, another female was allegedly drowned by her male partner. We then concluded that keeping *S. leytensis* individually is necessary. At that time we had 29 (17 male and 12 females) *S. leytensis* but only 20 enclosures. Since three females were in quarantine for shell rot treatment, we kept the remaining females in groups of three together in one enclosure. In December, these females showed an increasing number of cases with ulceration and dermatitis. Another two females had to be transported to Puerto Princesa for regular antibiotic injection. All of the above culminated into a meeting of KFI board members and zoo keepers resulting into the mutual understanding that we needed to build additional enclosures. It was briefly discussed whether those new enclosures should be in KIEBC or rather in Puerto Princesa City to allow proper veterinary care / regular injections for turtles with health problems. A decision was not made since this needed to discussed with authorities first.

1.2. **Assistance in identifying areas/habitats for in-situ conservation.**

So far the most pristine and largest population of the Philippine Forest Turtle assessed is the one in Tagabinet, near the buffer zone of the Puerto Princesa Subterranean River National Park (PPSRNP). As a result of the post-project stakeholder workshop of the project “In-situ conservation of the Philippine Forest

Turtle in Tagabinet, PPC, Palawan" in which the stakeholders among others expressed their interest of having the *S. leytensis* population in Tagabinet protected, we proposed for a follow up project including two neighboring villages (Cabayugan and Marufinas). The said project proposed IEC campaigns, law enforcement, tour guide as alternative livelihood and lobbying for the protection of Tagabinet Stream as *S. leytensis* protected area. Although funding was granted for the project, we did not proceed since the time line for implementation had been shortened. With deadline early 2012, KFI will propose for two other funding agencies for the establishment of protected areas for S*. leytensis* in Palawan. The Provincial Government of Palawan had expressed in several occasions their interest of having at least one protected area for the species in the Province of Palawan.

In order to identify additional areas that eventual need special conservation measures, we wanted to know if populations within the core zone of the Subterranean River National Park are comparable in size or larger than the one in Tagabinet which is just along the buffer of the PA. As early as October 2010 we had requested permission for reconnaissance surveys for four sites from the Protected Area Management Board which was granted in May. After that we were able to finish the reconnaissance survey for two of the four sites but we discontinued the survey due to continuous rain that hampered field work and made results no longer comparable with previous data taken during the dry season. Hence the reconnaissance survey for the four sites was postponed to the dry season in 2012.

Plate 3: To access the site for the reconnaissance survey we had to cross Babuyan River and walk for about an hour (left). Jacky, staff of PPSRNP joined our group and learned the sampling techniques.

1.3. Wildlife law enforcement and information dissemination.

With the aim of sharing experiences from the project "**BACOCO – Conservation of the Philippine Forest Turtle *Siebenrockiella leytensis* in Palawan"** with local government official, law enforcers from the target municipalities and local partners we conducted a seminar workshop on Wildlife Conservation and Law Enforcement from Aug. 17-19, 2011. It was aimed at capacitating participants to

efficiently enforce environmental laws, especially the Wildlife Act, and strengthen their skills in the arrest, search and seizure, evidence gathering, and custody. Last but not least it was intended to initiate the organization of a WILDLIFE ENFORCEMENT TEAM. The workshop was jointly organized by KFI and the Palawan Council for Sustainable Development Staff (PCSDS). In addition to lecturers from PCSDS and KFI, we had lecturers from DENR PAWB and DENR CENRO Roxas.

We had invited a total of 28 representatives from our eight target municipalities. Invitees were from the Philippine National Police, Philippine Coast Guard, Barangay (Village) officials, Municipal Agriculturist Offices (MAO), and Local Government Units (LGU). A total of 22 of the invitees were able to attend.

After the opening program with welcome and inspirational messages, we asked the participants what they expect from the training. The following were their main concerns: improve documentation skills, learn more about wildlife conservation, learn more on how to conduct IEC, learn about the procedures in enforcing the Wildlife Act, identify smuggling techniques of traders, help in strengthening law enforcement, learn more about related laws, learn how to file a case, and how to deal with corruption. The expectation check was followed by lectures on biodiversity and conservation needs, the legal framework, relevant laws, wildlife trade in Palawan, smuggling techniques, and an introduction to CITES and IUCN. This was followed by a practical part about arrest, search and seizure procedures, investigation and documentation and about evidence.

During the last day, participants reported on the situation in their respective municipalities this included the available man power, skills, budget, issues and wildlife trade activities. Insufficient budget allocated for law enforcement is an issue in all municipalities. Sabine then reported on the known wildlife trade routes and the importance of a chain of information and action among the various law enforcers/municipalities. The group agreed and expressed the interested for further closer collaboration and the formation of an active task force in the near future. Mr. Robert Jaboli of the El Nido Environmental Law Enforcement Council (ENELEC), a body that was created under the Municipality of El Nido to investigate and impose administrative fines and penalties related to environmental cases, shared his experiences with the group. This was very encouraging and triggered a long discussion. The group then discussed the potential role of each and every one and identified one main contact person per municipality, such as SPO Allen Noel D. Ortiaga (San Vicente), Albert Ladica (Roxas), Nestor Arzaga/wildlife wardens Dumaran (Dumaran), Robert L. Jaboli (El Nido), Remegio C. Rodrigues (Araceli), Hernan P. Fenix (Taytay), PO2 Floro L. Roque (PPC), and Armen G. Molleno (Aborlan). A follow up meeting was scheduled for the last quarter of 2011.

Plate 4: Pictures from the seminar-workshop on wildlife conservation and law enforcement.

2. Research on biology, ecology, diseases, threats, captive management, veterinary medical procedures

2.1. *Palawan Freshwater Turtle Conservation Program.* With the aim of deeper establishing the turtle conservation work of KFI in Palawan, KFI proposed a concept proposal for the said program to several barangays / municipalities in Palawan. The proposal covered research activities on the biology, ecology, habitat, and threats of Palawan's freshwater turtles with special reference to the Philippine or Palawan Forest Turtle *S. leytensis*. In a series of meetings KFI defended the proposal in front of 13 barangay councils that were new to the program[1]. Once we got the endorsement from the barangay level we proceeded to the municipal/city level and then the provincial level. We finally attended the PCSD Council meeting in October and were granted SEP Clearance No. RES-102811-010.

Plate 5: Attending the regular session of the Protected Areas Management Board in El Nido.

[1] KFI has existing SEP clearance for research on turtles or cockatoos and threatened species sharing the habitat with them covering several areas from north to south of Palawan. The current new SEP clearance intended to cover additional areas for turtle conservation work.

2.2. *Population size assessment of the Philippine Forest Turtle*. Since 2008, KFI conducts long term population surveys of the Philippine Forest Turtle *S. leytensis* at three sites in Palawan. The sites differ in as much that in one site the habitat is still relatively pristine, on the other site exploitation through local consumption is rampant, while the third site is exploited for the pet trade. These surveys are conducted for a total of five years in the hope of assessing population trends and determining if populations are stable over time. To keep external variables stable, the surveys are e done at the same time of the year that is in February / March.

Plate 6: Sometimes we have volunteers who help up setting the traps.

Plate 7: Captured individuals are first checked for notches made during previous samplings. This year, a WPU student and her adviser joined our group for some days, because they wanted to learn the methodology. Here, student and adviser are instructed on how and where to look for the individual markings (left). Diverlie who is doing this research from the very beginning knows best and will always have the final check and say in the identification (right).

The population sizes can only be estimated once mark-recapture data from all surveys (2008-2012) are available. The 2011 fieldwork under this project entitled "*Siebenrockiella leytensis* over time – are populations stable?" had been finished by April 2011. During the 2011 sampling, we collected 84, 16 and 16 *S. leytensis* in Site I, II and III, respectively (Schoppe and Acosta, 2011b). An interim report covering activities in 2011 was submitted to the funding agency and partners in July 2011. The 2011 fieldwork was funded by TCF/CI and IDEA Wild had contributed equipment. Renewal application was submitted to IDEA Wild in October 2010 and granted April 2011.

2.3. *Home range and seasonality of S. leytensis*. A proposal to assess the home range and seasonality of *S. leytensis* for one year was submitted to North of England Zoological Society – Chester Zoo in November 2010 and was granted in December of the same year. Field work had started in February 2011 and 11 *S. leytensis* had been equipped with transmitters and were then followed on a regular basis to assess the extent of their movements, the direction, whether they return to a certain area, where they forage etc. An interim report and application for extension was submitted to the funding agency in September 2011 (Schoppe and Jose, 2011). We had requested the extension for another year due to the life span of some of the transmitters which is two year. Extension was granted and hence research will continue until March 2013.

Plate 8: In small individuals the transmitter is attached with epoxy putty (left) and in larger ones it is tied with nylon and bolted to the posterior margin of the carapace (right).

Plate 9: Turtles are tracked along the stream (left) or right or left from the stream if no signal is received from the stream (right).

Plate 10: The turtles can be traced with the receiver even if they are in underground tunnels but they cannot be caught from there (left). In rare occasions a tracked turtle is also caught. In case we are able to catch one, we check attachment of transmitter and status of turtle (right).

Plate 11: Dr. Roger Wilkinson of Chester Zoo visited the site in April and Edgar explained the fieldwork set up to him (left). Edgar tracking the turtles during the night (right).

2.4. *Nutrition*. A proposal entitled "To see is to believe – Camera trapping of the critically endangered Philippine Forest Turtle *Siebenrockiella leytensis*" was granted early 2011 by Cleveland Metropark Zoo but due to the unavailability of some of the most important equipment the research was converted to assessing the nutrition of *S. leytensis* and its role as seed disperser and pest controller; a project now entitled "Diet of the critically endangered Palawan-endemic Philippine Forest Turtle *Siebenrockiella leytensis* and its importance in pest control and seed dispersal" The implementation period for that project was moved to Jan. to Dec. 2012. Part of the original research was the acquisition of an endoscope that can be inserted into the dens to check for occupancy and extent of the tunnel system.

Plate 12: Sabine explaining the endoscope to Research Assistant Edgar (left). Edgar inserted the endoscope neck into a den, the opening of which is under the water surface.

2.5. *Ecological studies.* Diverlie Acosta – research assistant and education officer under PFTCP - and her team had submitted a proposal entitled "Ecological Studies to Promote the Conservation of the Endemic Philippine Forest Turtle in Palawan, Philippines" to the Conservation Leadership Programme (CLP) in November 2010. They were granted the 2011 Leadership Award and are now assessing the habitats for freshwater turtles from northern to southern Palawan during the rainy and the dry season. PFTCP Director Sabine Schoppe is advising the team. During the reporting period of this report they had covered the rainy season.

Plate 13: The streams are marked at 10-meter-intervals and physical and chemical measurements are taken (left). Team members measuring stream width, depth and water current speed (right).

Plate 14: Team members taking a sediment core sample (upper left). Advisor and team are discussing the pebble count methodology (upper right). Team members survey the turtle composition at the site (lower left). Team during a "wet" dinner after sampling (lower right).

The CLP project intends to assess the distribution and composition of the freshwater turtle fauna and their habitats in Palawan. It will assess a total of 18 rivers from Culion in the north to Rizal and Brookes Point in the south of the province. Research activities are covered by SEP Clearance No. 102811-010.

2.6. Threats.

Pet trade. We conducted quarterly turtle surveys of the large pet markets in Manila such as Arranque, Tiendesitas, and Cartimar since 2009. For comparative reasons we provide the data from previous surveys here as well. The Southeast Asian Box Turtle is the most abundant in trade (Tab. 1). Juveniles of the species that are intended for the pet trade are usually openly displayed; larger volumes of adults are rather hidden. Even more alarming is that each survey was able to locate the critically endangered Philippine Forest Turtle in at least one of the three markets (Tab. 1). We never encountered a Philippine Forest Turtle in Arranque, however at least one dealer stated that he can acquire individuals upon request for a couple of thousand Peso per individual. Generally, the Philippine Forest Turtle was the most expensive

among the native species and one individual cost at least PHP 500.00 in 2011. Compared to previous years, prices had gone down.

Table 1: Number of Philippine native freshwater turtles displayed at pet markets in Manila between Dec. 2009 and June 2011. (Results combined from Cartimar, Arranque and Tiendesitas.)

	Dec. 09	Mar. 10	Jul. 10	Nov. 10	Mar. 11	Jun. 11
S. leytensis	59	4	13	2	2	1
C. amboinensis	418	151	88	100	46	15
C. dentata	2	2	2	1	2	1
D. subplana	0	0	0	0	0	0

One store in Tiendesitas that always displayed the Philippine Forest Turtle, declared that they are not for sale, however the life history stage of individuals displayed changed from juveniles to hatchlings over the time and also the number of individuals was inconsistent.

We never encountered the Malayan Softshell Turtle in the markets but rather the exotic Chinese Softshell Turtle *Pelodiscus sinensis* (Plate 15). The latter is offered for food on wet markets for example in Arranque. This species is farmed in various provinces and as a result feral populations have become successfully established in many parts of the country. Yet an even larger ecological problem is caused by the introduction of the Red-eared Slider *Trachemys scripta elegans* (Plate 15) and to lesser extend of the Painted Turtle *Chrysemys picta*.

Plate 15: *Pelodiscus sinensis* (left) and *Trachemys scripta elegans* hatchlings (right) offered for sale on wet and pet markets, respectively.

Hatchlings of especially the Red-eared Slider are offered in almost every pet shop and are favorite pets of children. The kids use to buy one of the cute

hatchlings in a glass bowel and since they grow relatively fast get rid of them by just releasing them to the wild. Consequently, feral populations have established in several regions of the Philippines. The Red-eared Slider has been introduced all over Southeast Asia and in some countries it became the only species that is caught in the wild while the native species are over-exploited or locally extinct. So far Palawan has no feral populations yet probably due the fact that only very recently the species reached the pet shops of the province.

During surveys in Palawan we countered many families keeping either *C. amboinensis* or *S. leytensis* as pet because people believe it will improve the health of life stock. They use to keep one or two turtles in the food container for their pigs believing that the feces of the turtle have medicinal powers. They are convinced of the powers of the turtles and would not let go of their pets.

Others keep turtles as pet for themselves or their children and upon knowing that this is unlawful, they eventually turn their pets over. For example a person from Poblacion Dumaran turned over one S*. leytensis* and six *C. amboinensis* incl. three eggs to KFI staff on Oct. 13, 2011.

Plate 16: This juvenile Philippine Forest Turtle is kept by a family that believes keeping it in the food container of the pig will bring strength, fast growth and good health to the pigs (left). ***Siebenrockiella leytensis*** **and** ***C. amboinensis*** **that were turned over by a private person to staff of KFI in Dumaran Island (right).**

Trade surveys were also conducted in Cebu City in February 2011 and in Davao City in July 2011.

In Cebu City we surveyed 38 traders, 18 of which are internet traders using istorya.net (http://www.istorya.net/forums/pets/), 12 are pet shop operators and four are restaurants offering freshwater turtle dishes. Turtle species traded are the Southeast Asian Box Turtle, the Chinese Softshell Turtle, the Red-eared Slider, the African Spurred Tortoise *Geochelone sulcata,* the Indian Star Tortoise *Geochelone elegans,* the Pig Nose Turtle *Caretochelys insculpta,* and the Alligator Snapping Turtle *Macrochelys temminckii*. Of these only *C. amboinensis* is native to the Philippines. There was no sighting of the Philippine Forest Turtle *S. leytensis* during the conduct of the research. Interesting to note though is that most if not all *C. amboinensis* are sourced out from neighboring islands since

populations in Cebu Island are either seriously depleted or even locally extinct. Sources - as mentioned by the traders - are Palawan, Negros Oriental, Leyte, Bohol and Mindanao. Most vendors mentioned Palawan as source area and one explained that the turtles together with other wildlife especially birds are shipped by transient fisher folks ("dayo") on pump boats to Cebu. A shipment contains some two sacks with approximately 200 *C. amboinensis* each. Such a shipment is shared with other vendors from the area and they receive at least two shipments per year.

In Davao, the survey was conducted in Panabo City some 45 min. north of Davao City. Here, wildlife traders were located along the highway and they displayed wildlife, mostly birds, in plain view, but also had other species out of sight. Sellers were generally cautious since they had been raided by the authority in the past. We did not observe turtles during this survey but interview with a reptile enthusiast in Davao City revealed that reptiles including tortoises are easily transported from Manila to Davao by air. A second short survey of pet shops in Davao City in September 2011 found one shop that was selling *S. leytensis* for PHP 5,000.00.

We were informed by Ting Zhou, a Chinese turtle breeder that she saw some 50 juvenile and sub-adult *S. leytensis* in a pet market visit in Guangzhou in May 2011. According to her they all had pronounced growth rings indicating fast growth in captivity. They were sold for some $400.00 each. Regular surveys by members of the Wildlife Conservation Society however never saw the species on that market.

Plate 17: *Cuora amboinensis* from a pet market in Cebu City (©J.Gatus), and *S. leytensis* from a market in Guangzhou, China (©T.Zhou).

Collection sites and trade routes of the Philippine Forest Turtle. With special reference to the critically endangered and Palawan-endemic *S. leytensis* we conducted interview surveys in eight municipalities in Palawan. In the northernmost (El Nido), southernmost (Aborlan) and north-easternmost (Araceli on Dumaran Island) municipalities covered by surveys we could not confirm the occurrence of the Philippine Forest Turtle. Despite the presumed absence in El

Nido, the town serves as exit point for the illegal trade in this and other species of wildlife. In those towns where the Philippine Forest Turtle species is known to occur and where interviews again confirmed its presence (Puerto Princesa City, Roxas, San Vicente, Dumaran and Taytay) we found collection activities of this and other freshwater turtle species. This confirms earlier findings by Schoppe et al. (2010). Collection is conducted with the purpose of own consumption, pet, barter, local or international trade.

In three towns (El Nido, Taytay and San Vicente) we confirmed freshwater turtle trade activities. Based on our information and earlier surveys, traded animals are delivered to Manila, Cebu, Iloilo, Davao and Zamboanga (this study, Schoppe et al. 2010, Diesmos et al. in prep.). From there the turtles are shipped across Southeast Asia, Indochina, China, Japan, Europe, and the US (this study, Gavino and Schoppe 2004; Yuyek 2004; Diesmos et al. 2008; Fidenci and Maran 2009; Schoppe et al. 2010, Diesmos et al. in prep).

Internet trade. The trade of highly priced turtles has more and more shifted to the internet. A common practice is that announcements for sale will not be published for more than 10-14 days. By this illegal traders avoid getting traced. Philippine web sites that offer the Philippine Forest Turtle and other freshwater turtles (as well as anything else) are www.sulit.com.ph and www.philippinepetfinder.com. Some recent postings are shown below. Just to give some examples, in May 2011 somebody offered a juvenile *S. leytensis* for PHP 2,000.00, while in June somebody who obviously possessed already some individuals aimed at buying additional ones for PHP 500.00 (Plate 18). In December 2011, the buyer renewed his announcement either because he was not able to buy yet or because he wanted to acquire more.

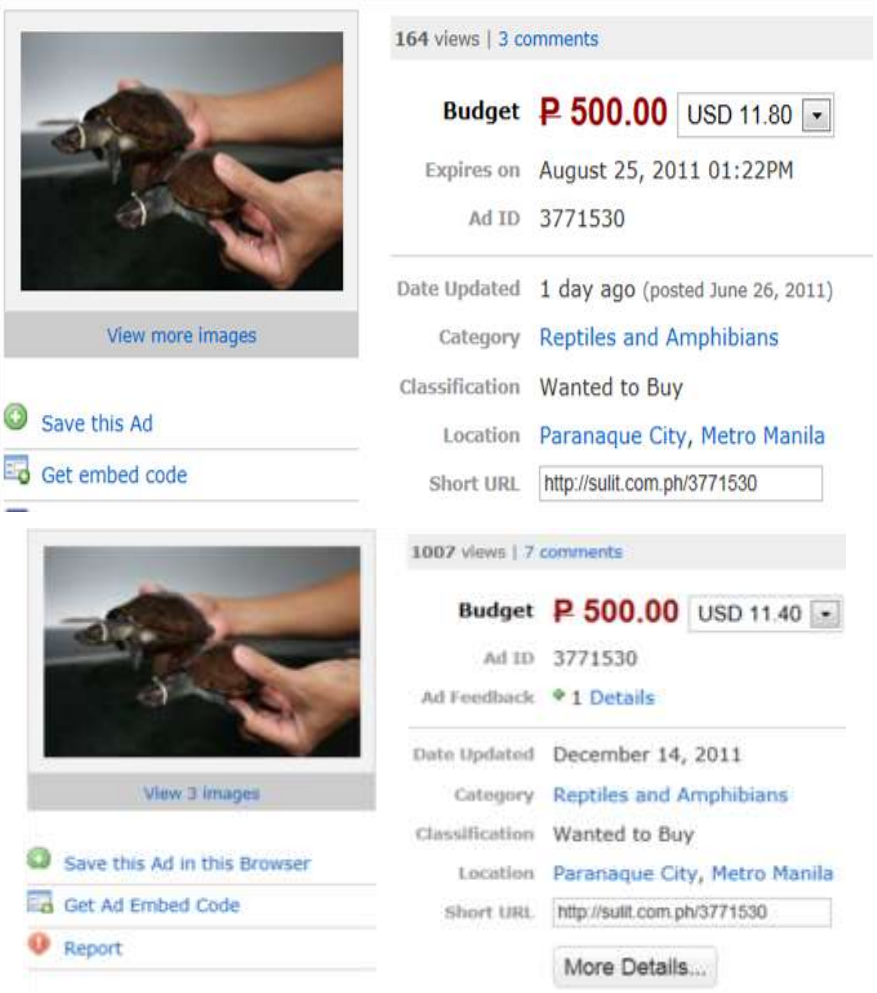

Plate 18: Juvenile *S. leytensis* for sale or wanted to buy through http://sulit.com.ph

Yet another announcement at www.sulit.com.ph offered sub-adult or adults individuals for PHP 1,500 first in May 2011 and then after the announcement had expired posted it again in August 2011 (Plate 19).

Plate 19: Internet trade of an adult female *S. leytensis* for some PHP 1,500.

The most recent offer – December 2011 - sells a specimen for PHP 2,500 (Plate 20).

Plate 20: This post offers "brand new" *S. leytensis* for PHP 2,500.

Likewise the species is offered on international web pages for sale. In an offer from July 2010 in "TERRARISTIK" somebody from Prague offered alleged captive-bred *S. leytensis* for sale. On the same internet platform three juveniles were offered for €1,250 each, while adults were priced a € 2,300 each for two males and one female by somebody from Slovenia in August 2011. The adults are declared captive-bred in 1999 at a time the species had not yet been rediscovered and was believed to be extinct.

Biete Schildkröten	Lucka S	11000 Praha Mo, 19. Jul 10 16:50

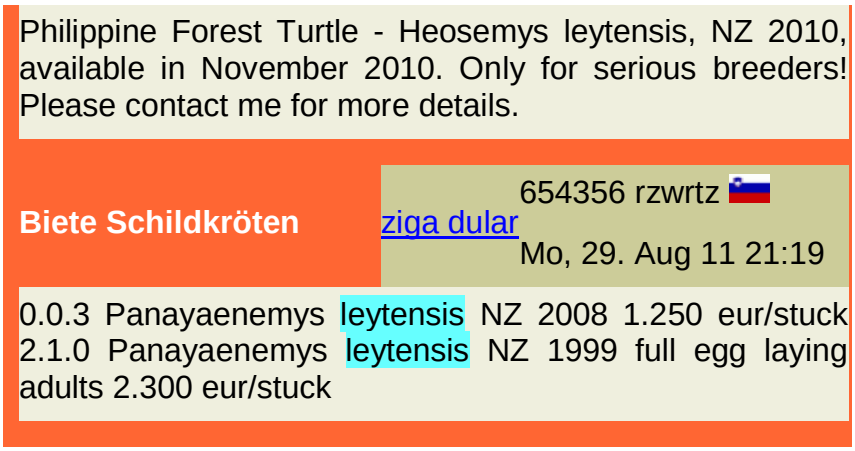

Plate 21: Allegedly captive-bred Philippine Forest Turtle offered for sale in Prague and Slovenia and posted at www.terraristik.com.

Allegedly captive-bred *S. leytensis* individuals continue to appear in trade despite the fact that interested reptile collectors/breeders/enthusiasts should know that so far the species has never been bred in captivity. The company Animal Source Group (www.animalsourcegroup.com) for example offers *S. leytensis* since (at least) 2010 and insists they are captive bred at a Philippine Zoo with which they cooperate for many years and that they have seen the facilities and that they are "pretty confident" the animals have been bred in captivity, based on the documentation they have received (Milica Ekmescic in lit. to SS, June 20, 2011). However, based on official records, no zoo or other entity has a record of breeding and or trading *S. leytensis* (PAWB in lit. to SS April 5, 2012, July 8, 2011; DENR IV-A in lit. to SS on Nov. 24, 2010; DENR V in lit. to SS on Oct. 12, 2010; DENR XI in lit to SS on Oct. 13, 2010; DENR NCR, I and 10 in lit. to SS on Oct. 26, 2010; DENR VI in lit. to SS on Oct. 29, 2010).

Certificate of Wildlife Registration. We also compiled from DENR-PAWB (as per Nov. 18, 2010) and DENR regional offices records of those people who are holders of a Certificate of Wildlife Registration (CWR). Based on those records a total of 39 individuals / entities keep *S. leytensis* in the Philippines excluding Palawan. Together they keep some 389 individuals, all sourced out from the wild. The number of unreported / not registered specimens might be even higher.

Confiscations of traded Philippine Forest Turtles. Wildlife confiscation and seizure records are compiled on an annual basis from the Palawan Council for Sustainable Development in Palawan, the Palawan Wildlife Rescue and Research Centre (PWRCC) in Palawan, the Provincial office of the Department of Environment and Natural Resources (PENRO) in Palawan, the City Environmental and Resources Office, the Philippine Coast Guard in Palawan, the Palawan NGO Network Inc., the Philippine National Police in Puerto Princesa City, and the Protected Areas Wildlife Bureau of the Department of Environment and Natural Resources in Manila.

To compare with previous data we show here the confiscation data from 2009-2011. Based on those data the Philippine Forest Turtle ranked number 6 among the 10 most commonly confiscated species in terms of the number of individuals

confiscated (Tab. 2). A total of 75 individuals from two different occasions were confiscated. Alarming is that all Palawan-native freshwater turtle species were among the 10 most abundantly confiscated.

Table 2: Ten most commonly confiscated wildlife species in 2009-2011.

Rank	Taxon	Species	No of individuals				No of cases
			2009	2010	2011	Total	
1	Bird	Palawan Hill Mynah	613	521	290	**1424**	46
2	Reptile	Southeast Asian Box turtle	2	1003	68	**1073**	7
3	Bird	Blue-naped Parrot	277	70	57	**404**	26
4	Reptile	Asian Leaf Turtle	0	89	21	**110**	3
5	Mammal	Palawan Anteater	29	68	4	**101**	8
6	Reptile	Philippine Forest Turtle	0	75	0	**75**	2
7	Reptile	Tokay Gecko	0	65	0	**65**	1
8	Bird	Tabon Scrub fowl eggs	0	15	6	**21**	2
9	Reptile	Malayan Softshell Turtle	0	0	18	**18**	1
10	Bird	Palawan Peacock Pheasant	0	17	0	**17**	1

Captive management. Under the PFTCP we supervised two undergraduate theses, one on the population structure of *C. amboinensis* in an area in Narra, Palawan and one on the behavior of *S. leytensis* in captivity at our facility in Antipuluan, Narra. Drafted results are expected in early 2012 to be able to graduate in April 2012. We will report on major findings during the 2012 report. We also published our experience with the new water filter system in KIEBC (Schoppe and Diaz, 2011).

3. Education and capacitating stakeholders

3.1. Environmental education

In 2011 we implemented the project entitled “BACOCO – Conservation of the Philippine Forest Turtle *Siebenrockiella leytensis* in Palawan” in its second year. The objectives were:

- Conservation of the Philippine Forest Turtle Populations in Central and Northern Palawan.
- Strengthening law enforcement to reduce collection and trade of the Philippine Forest Turtle.

In addition to the numerous IEC materials (e.g. backpacks, T-shirts, book marks, coloring sheets, posters etc.) that had been developed already in 2010, we had designed a brochure entitled “Alam mo ba?” that introduces the reader to freshwater turtles in general and to the Philippine Forest Turtle specifically. This received funding from Cleveland Metropark Zoo in 2011 (Plate 22).

Plate 22: Both sides of the brochure "Alam mo ba?"

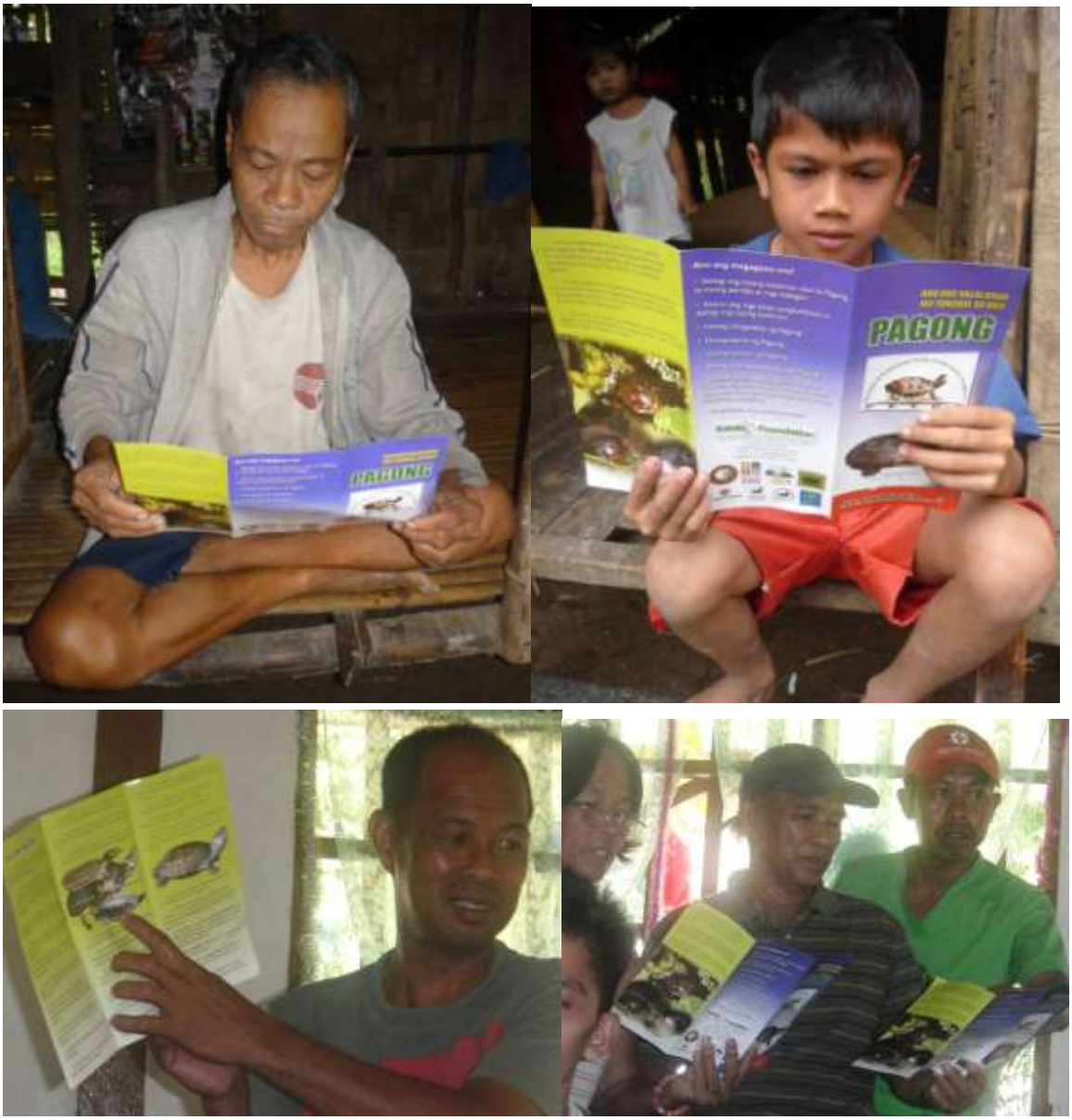

Plate 23: The text in the brochure gives an introduction to Palawan's freshwater turtles with special references to the Philippine Forest Turtles its status and conservation needs.

Within the framework of the project we conducted interviews about the distribution and abundance of the Philippine Forest Turtle and about threats to the species and its habitat. We also conducted lectures in academic institutions, focused group discussions in the villages of the eight target municipalities (Aborlan, Puerto Princesa City, Roxas, Dumaran, Araceli, San Vicente, Taytay and El Nido), attended barangay and municipal sessions and such like. We used laminated pictures of the six native freshwater turtles during our interviews. We learned that most people have difficulties in identifying species from a picture and we intend to make models for future similar projects.

Plate 24: Interviewing people about the occurrence and threats of freshwater turtles in their areas.

The BACOCO project ended in September and during those nine months we had an average of 13 IEC interventions such as lectures and focused group discussions conducted monthly (Tab. 3). In total 5,797 people were reached, that is an average of 644 people per months or 50 people per information education campaign.

Table 3: Total and average number of IEC interventions conducted and audience reached.

	No of IEC	No of audience
Total Jan. - Sept. 2011	120	5797
Average per month	13	644
Average per activity		50

IEC interventions also included community visits, focused group discussions, and house-to-house visits in the eight target municipalities.

Plate 25: Turtle IEC in schools, barangay session and during a tour at the Palawan Wildlife Rescue and Conservation Centre.

In 2009, Katala Foundation (KFI) started celebrating World Turtle Day. World Turtle Day was founded by the American Tortoise Rescue on 23 May 2000. Turtle Day is celebrated worldwide in a variety of ways to bring attention to, and increase knowledge of and respect for turtles and tortoises and encourage human action to help them survive and thrive. With the start of the BACOCO project in 2010, KFI jointly organized a World Turtle Day event with the Western Philippine University (WPU). We had to move the date to July though to catch a greater audience among students since May is still semester break. In 2011 we celebrated the event on July, 13.

We invited some 18 different high schools and colleges. The theme of the activity was “Philippine Turtle – At risk?”. 2011 was also the International Year of the Turtle. The opening program with messages by WPU officials and an

inspirational message by KFI was followed by introductory lectures about Philippine marine and freshwater turtles, and a performance about marine turtle conservation by volunteers of the Tubbataha Management Office (TMO). Other activities were Quiz Bee, Painting Contest, Turtle Making Contest, Extemporaneous Speech and Bakoko Jingle Contest. To judge the activity we had representatives from the DENR Provincial Environmental and Natural Resources Office (PENRO), the Palawan Council for Sustainable Development Staff (PCSDS), the Palawan Wildlife Rescue and Conservation Centre, WWF Palawan, the City Agricultural Office, the Palawan Conservation Corps, the Tubbataha Management Office (TMO), and the Dos Palmas Island Resort and Spa.

The event attracted wide interest and between 300 to 400 students, contestants and their coaches attended. Each of the participating institutions brought at least one prize home. Prizes included cash gifts, books, T-shirts, face towels with turtle print and other little tokens. In addition, DENR-PENRO distributed brochures, posters, and bookmarks on marine turtle conservation to the audience.

Plate 26: Highlights during the 2011 World Turtle Day: Quiz Bee (upper left), awarding of best extemporaneous speech (upper right), sing and dance performances (lower).

Plate 27: Awarding the winners of the turtle making contest.

3.2. Information dissemination through multimedia incl. publications and distribution of research outputs/results generated

Publications and Presentations during Conferences. A number of publications about turtles and activities under the PFTCP have been published in 2011:

Schoppe, S., 2011 (represented by Chris Shepherd TRAFFIC). Country Report – Philippines. Conservation of Asian Tortoises and Freshwater Turtles Workshop, Singapore Zoo, Singapore, 21–24 February 2011.

Schoppe, S., 2011. The Status of *Cuora amboinensis* in Indonesia, Malaysia and the Philippines. 2nd TSA/IUCN *Cuora* Workshop. Gangkou Sea Turtle National Nature Reserve, Gangkou, Guangdong, China, 23-25 May 2011.

Schoppe, S., 2011. The Philippine Freshwater Turtle Conservation Program. Poster presentation (best poster award), 1st Philippine Biodiversity Conservation and Management Conference. University of San Carlos, Cebu City, Philippines, 23-24 June 2011.

Schoppe, S. and I. Das, 2011. *Cuora amboinensis* (Riche in Daudin 1801) – Southeast Asian Box Turtle. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Iverson, J.B., and Mittermeier, R.A. (Eds.). Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs No. 5, pp. 053.1–053.13, doi:10.3854/crm.5.053.amboinensis.v1.2011, http://www.iucn-tftsg.org/cbftt/.

Schoppe, S. and S. Diaz, 2011. Philippine Forest Turtle assurance colony: Improved husbandry and facilities provide optimism for the future of this challenging species. Turtle Survival Alliance, p. 88-90.

Reports. Highlights of the said program since its early stages after the signing of the MOA are integrated in the technical progress reports of the Philippine Cockatoo Conservation Program (PCCP) of Katala Foundation Inc. Starting

2007, annual reports for PFTCP are produced and accessible at our website (www.philippinecockatoo.org). Regular accomplishment reports are also produced for the various project components under PFTCP.

Schoppe, S., 2011 (June). Philippine Freshwater Turtle Conservation Program (PFTCP): 2010 Annual Report. Katala Foundation Inc., PFTCP, Puerto Princesa City, Palawan, Philippines, 33 pp.

Schoppe, S. and D. Acosta, 2011a (June). BACOCO – Conservation of the Philippine Forest Turtle *Siebenrockiella leytensis* in Palawan. Progress and Financial Report to CMZ. Katala Foundation Inc., Philippine Freshwater Turtle Conservation Program, Puerto Princesa City, Palawan, Philippines, 8 pp.

Schoppe, S. and D. Acosta, 2011b (July). TCF- 0166. *Siebenrockiella leytensis* over time – Are populations stable? Technical and financial interim report. Katala Foundation Inc., Philippine Freshwater Turtle Conservation Program, Puerto Princesa City, Palawan, Philippines, 21 pp.

Schoppe, S. and D. Acosta, 2011c (Dec). BACOCO - Conservation of the Philippine Forest Turtle *S. leytensis* in Palawan. Final report. Katala Foundation Inc., Puerto Princesa City, Palawan, 75 pp.

Schoppe, S. and D. Ibanez, 2011 (March). In-situ conservation of the Philippine Forest Turtle *Siebenrockiella leytensis* through information education. Final report. Katala Foundation Inc., Philippine Freshwater Turtle Conservation Program, Puerto Princesa City, Palawan, Philippines, 73 pp.

Schoppe S. and E. Jose, 2011. Home range and seasonality of the Palawan-endemic critically endangered Philippine Forest Turtle Siebenrockiella leytensis (Taylor, 1920). Interim Report and Proposal for Extension. Katala Foundation Inc., Philippine Freshwater Turtle Conservation Program, Puerto Princesa City, Palawan, Philippines, 12 pp.

3.3. PFTCP Work Plan 2012

PFTCP Work plan 2012

Project/Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Conservation of Philippine freshwater turtle populations and their habitats, particularly but not restricted to PPC, Narra, Dumaran Island, and Rizal												
• Maintenance and improvement of facilities for conservation breeding / captive management / rescue of threatened freshwater turtle species												
• Develop an educational trail and ponds for turtle education – **Ocean Park funding pending**												
• 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												
• Provision of assistance in wildlife law enforcement and information dissemination – **PTFCP proposal pending!**												
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:												
• 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												
• Conduct of long-term populations surveys of the Philippine Forest Turtle												
• Conduct of habitat studies of Palawan Freshwater Turtles												

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
• Conduct of studies on the home range of the Philippine Forest Turtle												
• Conduct of studies on the nutrition of the Philippine Forest Turtle												
• Conduct on studies on captive breeding of the Philippine Forest Turtle												
• Develop a husbandry protocol for the Philippine Forest Turtle												
• Study reproductive behavior of Philippine Freshwater Turtles												
• Studies threats to Philippine Freshwater Turtles												
• Habitat conservation and restoration techniques – **PTFCF and Ocean Park proposals pending**												
• Compile wildlife confiscation records												
• Attend Philippine Zookeeper Association Workshop												
• Attend Wildlife Conservation of the Philippine Workshop for research findings and net working												
• Attend International Zookeeper Workshop												
• Submit proposals for future research projects												
Education and capacitating stakeholders of PFTCP on natural resource management and conservation; rehabilitation/restoration of species habitats, and environmental awareness by:												
• 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. –												

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
• Conduct IEC in sites (Dumaran and Roxas) with potential for the establishment of protected areas - **PTFCF, Ocean Park and TCF proposals pending**.												
• 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;												
• Celebrate World Turtle Day – funding pending												
• Conduct IEC on Philippine Freshwater Turtles, threats to habitat and climate change in PCCP and PFTCP project sites												
• Submit proposals for funding the establishment of a Center in Narra, Palawan as venue for biodiversity education and research												

Philippine / Palawan Forest Turtle
Siebenrockiella leytensis

Asian Leaf Turtle *Cyclemys dentata*

Southeast Asian Box Turtle *Cuora amboinensis*

Malayan Softshell *Dogania subplana*

Spiny Hill Turtle *Heosemys spinosa*

Asian Giant Softshell *Pelochelys cantorii*

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- IDEA Wild,
- IUCN Tortoise and Freshwater Turtle Specialist Group (TFTSG),
- IUCN Turtle Survival Alliance (TSA),
- Loro Parque Fundacion (LPF),
- North of England Zoological Society (NEZS) Chester Zoo,
- Turtle Conservation Fund (TCF),
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