PHILIPPINE ENDEMIC SPECIES CONSERVATION PROJECT

(PESCP)

Fourteenth Annual Report

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In tight cooperation with

Aklan State University (Philippines)
Department of Environment and Natural Resources (Philippines)
Frankfurt Zoological Society (Germany)
Ruhr-University Bochum (Germany)
GTZ / CIM (Germany)

Environmental devastation and PESCP's struggle to stop it

Front cover clockwise:

Upper left: **Hunter's family with Educator Julius Venus (middle back) and Forest Rangers Raymund Alejandro (front left) and Faustino Guillermo (middle left) in primary forest between Aglonok and Dumara, Aklan Province; on mission to eliminate hunting.** Courtesy Forest Rangers/ PESCP

Upper right: **Julius Venus with Forest Rangers Raymund Alejandro and Faustino Guillermo (from left to right) on their monitoring operation near Dumara, Aklan Province.** Courtesy Forest Rangers/ PESCP

Lower left: **Confiscated timber stashed being scaled for record keeping by Forest Ranger Jose Matinong, Sebaste, Antique Province.** Courtesy Forest Rangers/ PESCP

Lower middle left: **Confiscated chain saw – the deadliest weapon assaulting the primary forest.** Courtesy Forest Rangers/ PESCP

Lower middle right: **Warty Pig (*Sus cebifrons*) snares collected by PESCP's Forest Rangers and Community Conservationists.** Courtesy Forest Rangers/ PESCP

Lower right: **PESCP Forester John Espiritu raising public awareness of the function of primary forest as watershed area; near Dumara, Aklan Province.** Courtesy Forest Rangers/ PESCP

Impressum:

The Fourteenth Report of PESCP builds on contributions from

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and was edited by E. Curio.

Pandan and Bochum, January 2008

The Project has been funded in 2007 by the

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Contents

Fourteenth Report 2008

An Update and Thorough Revision of the ‚Thirteenth Report' 2007

Title of Project and Time Period:

Philippine Endemic Species Conservation Project (PESCP); the time period covered is the year 2007.

The project's work is formalised under the aegis of a Memorandum of Agreement between the DENR and Ruhr-University Bochum, renewed in 2006, and a collecting permit, covering collecting (blood, plants, ectoparasites), the realised and potential prey of the Marine Toad or Cane Toad (*Bufo marinus*, locally known also as 'Hawaiian Frog'), and accidentally obtained specimens (e.g. road kills) that represent new species or new distributional records. Links with many environmentally concerned agencies/ institutions are continuing to thrive and many others are developing: Asian Institute for Lithurgy and Music, Pres. Dr. F. Feliciano and CEO Lillibeth Nacion-Puyot (Quezon City), BII (Birds International Inc., Quezon City), Erwin-Warth-Stiftung, Pres. Hilde Stühlinger (Stuttgart, Germany), Green Forum - Western Visayas (Iloilo, Panay), the GTZ and CIM (German Agency for Technical Assistance, Eschborn; Centre for Internatl. Migration and Development, Frankfurt/M.), the Negros Forest and Ecological Foundation, Inc., Pres. G. Ledesma (Bacolod, Negros), North of England Zoological Society, CEO Roger Wilkinson (Chester, UK), both CENTROP and SUAKCREM at Silliman University (Dumaguete, Negros), the Philippine National Museum (Manila), Radio Station DWWW, President Roberto N. Bacsal, the Philippine Working Group (Manila), 'Save the Rainforest' (Hamburg, Germany), and UP Diliman (Dr. P. Ong). Internationally, PESCP is thankfully supported by a number of sponsors too numerous to mention (see page of Acknowledgment above).

The most significant link forged with Aklan State University (ASU) since 2003 continued to prosper. Accordingly, joint endeavours in the field of community-based development and conservation of both ASU and PESCP saw their outreach work in Aklan province expanding and solidifying, thanks to a grant from EU/ UNDP; this joint endeavour in reforestation and various agro-forestry and husbandry livelihood measures will go some way toward protection of tropical forests of Panay (see Manager's Report and Technical Adviser's Report). A cornerstone of this cooperation was the continuing co-financing of the position of an Environment Program Coordinator by ASU through the Frankfurt Zoological Society (FZS) and the German Government (GTZ/CIM). The people in charge are ASU's President Dr. B. Palma in conjunction with Prof. R. Felizardo (ASU) and PESCP's Technical Adviser Thomas Künzel who thereby has been assigned a double role (see Reports 2004 to 2007). Recently, ASU supported the research of Ms. Ann-Marie Hartmann, a German master's student of the College of Trier, Campus Birkenfeld (Germany), on flow management of consumables and the optimisation of campus emissions of ASU.

The most significant development in terms of future prospects of PESCP and, hence, conservation plus development in Panay, was a step toward 'nationalisation' of the project. Ultimately, it is the Philippine nation that is expected to carry on with the uniquely important agenda initiated by PESCP. Accordingly the Filipinisation has made a big leap forward in the

past year by a Filipina, Ms. Maria Teresa Ibabao, taking the helm of PESCP's Manager while the previous leaders Mr. Thomas Künzel, by now the past Manager, and Prof. Dr. E. Curio, the Project Director, stepped down from their offices and became Technical Consultant and Scientific Adviser, respectively (**App. 1**). This development met with great acclaim from many LGUs the DENR included and our partner ASU.

A similar development occurred in the Board of Directors (= Incorporators) of the NGO Philippine Association for Conservation and Development, Inc. (PhilConserve) that PESCP erected in 2005. Prof. Curio, then Mr. Leocadio Dioso, and Thomas Künzel stepped down from their offices as President and Treasurer to become BOD members at large while Ms. Maria T. Ibabao, PESCP's Manager (see above), was elected President and Dr. Enrique Sanchez, DVM, was elected Vice President. The other BOD offices were likewise taken over by way of the same election of new BOD members by Mr. Arnold Demegillo, MENRO (Municipal Environment and Natural Resources Officer) of Pandan, and Mr. John Espiritu, PESCP's Forester, as Treasurer and Secretary, respectively. In this way all official offices of PhilConserve's BOD have been taken over by Filipino nationals.

As before, PESCP's Research Station 'Sibaliw' accommodated a number of visitors from variousl ways of life, most of them practical students supervised by E. Curio, research guests, a photographer, the film team of ARD Bayern TV under the leadership of E. Meyer, and our Forest Rangers during 'foot operations' (**App. 2**).

Sad to say, BioCon, an NGO and earlier outgrowth of PESCP, failed all along with its mandate of strengthening PESCP financially since its erection six years ago. Accordingly the founding of a new NGO PhilConserve by concerned citizens in 2005 laid the ground for fostering the hope for effective biodiversity conservation in Panay; preparations toward fund-raising have been promoted by Mr. Leocadio Dioso, one of PhilConserve's founders and BOD members.

PESCP gratefully acknowledges again the factual and moral support received from the LGU of Pandan. I take this opportunity to extend my deep-felt gratitude to *Hon. Plaridel Sanchez VI*, Municipal Mayor of Pandan, and the Head of the Pandan Department of Agriculture, *Mr. Ronald S. Sanchez,* for their great understanding and perspicacity of giving leeway to their staff in assisting PESCP tremendously in its zeal of pushing its and the municipality's environment agenda. Accordingly I am pleased to mention the assistance of *Mr. Arnold Demegillo*, Pandan's MENRO and Agricultural Technologist, who took pains in advising PESCP in community liaison matters while introducing to this tricky business Ms. Maria Ibabao who was serving with great commitment as a project Liaison Officer and Chief of Forest Rangers all along prior to becoming Manager. Similarly both Congressman Hon. Florencio Miraflores (Aklan) and Congressman Hon. Exequiel B. Javier (Antique) have been amenable to the idea of supporting PESCP financially in the year to come; the latter co-financed, along with PESCP, important community development agenda and pledged to so in 2008, too. Similarly both Senator Pia Cayetano and the Governor of Antique, Hon. Salvacion Perez, assisted PESCP in pledging certain amounts for promoting wildlife conservation in conjunction with community development in 2008. Likewise, our community-based work received high-spirited support from the Barangay Cptn.of Idio (Sebaste), Atty. Mr. Bulos.

As before, Prof. Dr. E. Schneider, President of the German 'Bird Protection Committee' (Göttingen), was circumspectly funding our *ex situ* work focused on the rehabilitation and release of wildlife, specially endangered birds. And Mr. Reinhard Behrend, President of 'Save the Rainforest' (Hamburg), assisted PESCP in its ranger-based forest protection that recently

expanded its agenda by actively embarking on humanitarian, i. e. search and rescue operations in our areas of activity (see Manager's Report below).

To all these people and institutions we are deeply grateful and hope that they will support the cause of both PESCP and its umbrella NGO PhilConserve also in the future.

Editorial

> ‚I will affirm that, I should say it is that I should declare that a strong family makes for a strong republic.'[1]

What the President of the Republic meant by 'strong family' is a family with as many heads as possible, as elaborated by her in a similar context when she opposed any sort of family planning (Editorial, 13th Report, PESCP). To put it another way 'Moves to legalize divorce and abortion will not prosper in the Philippines as long as Gloria Macapagal-Arroyo is President' (T. Orejas, Phil. Daily Inquirer, 13 March 06). This outworldish and inhumane policy lies at the root of the country's premier problem, the alleviation of poverty. And poverty in turn lies at the root of the ongoing and even increasing devastation of nature and destitution in general. The prospects of doing away with poverty are not encouraging. As explained earlier the increase of the national income does not keep pace with the increase of the population with a per capita rate of increase of 2.36% per year (Editorial, 13th Report, PESCP). This is highlighted by the fact that more than 50% of the labour force or roughly 16.1 million Filipino workers earn P33-53 per person per day for a family of five, an income level that hovers around the 2007 poverty threshold pegged at P40/person/day (Natl. Statistical Coordination Board, fide A. R. Roces, Daily Inquirer, 16 Oct 07). There is no doubt that it is the burgeoning population numbers that are the causal agent of the deplorable poverty that renders any conservation effort enormously difficult.

The less informed have opinioned that it is the unequal distribution of wealth that causes the large-scale, depressing poverty in the Philippines. The answer to this notion is a resounding NO. Suppose that the 100 richest Filipinos would dish out from their wealth say P20 billions that would trickle down to the poor in the order of about 1000 P/ family if distributed equally to the 'non-rich' segment of the population. There can be no doubt that this gift would neither alleviate poverty in the long run nor stop the population to increase. By contrast, since doling out the gift is a once and for all measure without a trifle of education it might even promote birth rate. What is needed is long-term education to break up the vicious circle between lack of education and birth rate; studies, both national and international, have led to the insight that there is an almost perfect relationship between the degree of education and family size: the most educated parents have the least children. Therefore only long-term counselling on family planning and education in general will reduce sustainably the unacceptable further increase of population numbers, the only way to both reduce poverty and improve conservation of the country's riches. This is because the most serious threat to the country's rich biodiversity, for

[1] President Gloria Macapagal-Arroyo at the occasion of Archbishop Paciano Aniceto's 69th birthday, epitomizing her exclamation by dubbing it 'the best birthday gift I can offer you.' (Tonette Orejas, PDI Central Luzon Desk, Philippine Daily Inquirer 13 March 2006). The Archbishop is the chair of the Catholic Bishops Conference of the Philippines' commission on family life.

example, is non-sustainable overexploitation of its unique resources, and overexploitation is a consequence of overpopulation.

Another obstacle to sustainable protection of the country's resources is the zigzag course of the government in terms of curbing logging of the country's remaining primary forest. (see already Editorial, 13th Ann. Report, PESCP). Whereas the DENR Secretary Angelo Reyes had issued a memorandum by 12 July 2007 ordering a total log ban in the three towns of Real, Infanta and General Nakar in Quezon Province (Philipp. Daily Inquirer, 14 Aug 2007) where recently killer flash floods had ravaged he approved on 24 August 2007, i. e. days after the log ban mentioned and shortly before he left the DENR, of five special cutting permits to clear land for mining activity on Sibuyan Island. This latter activity would threaten a biota boasting a rare concentration of animal and plant endemite (organisms that occur only in the area under consideration) numbers that had earned Sibuyan the name 'Galapagos of the Philippines'. Clearance was given to cut down an estimated 59,000 trees up to 100 m from the core zone of the Protected Area including Mt. Guiting-guiting National Park, i. e. by the very department whose mandate it was to sustainably manage the area. To make things worse a local barangay council of Taclobo approved the island's first mining application, paving the way for Sibuyan Nickel Properties Development Corp. Ltd., and some 12 more foreign funded companies up to mining around the National Park were licensed later on. Consequently antimining rallies on the island climaxed in feverish unrest among their clout when it transpired that the proceeds of these companies would leave Sibuyan and bring greater wealth to the mainland (Phil. Daily Inquirer, 5 Oct 07). The failing governance then spelt disaster to Sibuyan. When a rally against the Sibuyan Nickel Properties Development Corp. Ltd., with links to the Australian-based BHP Billiton, the world's largest mining concern, was staged by 150 islanders led by Armin Marin, a heated debate between the guard personnel and the protesters ensued in the course of which Marin was shot dead by the chief guard. Marin had been an environmentalist for many years, serving in offices for WWF Philippines and other local services as councillor, kagawad and community organiser. The murderer went into hiding to escape the anger of the protesters that was about getting out of control. As a consequence the Alyansa Tigil Mina called on the DENR as well as the Mines and Geodetics Bureau to halt further mining activities in the area. (Phil. Daily Inquirer, 5 Oct 2007). Whether this advice has been acted upon officially is currently unknown to me Nonetheless this advice is expected to be heeded by all staff in charge and should be heeded by the government before new mining licenses are issued or running ones renewed. Even so-called 'Surface Mining' would spell disaster for the forest at stake since it needs to be felled before excavations can start. And one should be aware that several dozen of mining applications targeting the Central Panay Mountain Range and the NW Panay Peninsula, encompassing a Protected Area, are pending, i. e. precisely the areas with the last remaining forests of Panay.

The deplorable death of Armin Marin underscores what I had underscored already in my last Editorial (13th Ann. Report, PESCP), namely that working for conservation in the Philippines is not without risk to life. My concern then was triggered by the similarly violent death of Cebu City's Director of Fisheries, Elpidio de la Victoria, that was widely echoed in the media. Here again it was a powerful lobby fearing economic losses due to sustainable fishing that had in this case masterminded a murder; this very lobby engaged in threatening also to kill a friend of de la Victoria with a similar environmental agenda. Given this violence against environmentalists it must be regarded grossly irresponsible when a foreign-funded organisation working on Negros is effectively denying this very risk.

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Executive Summary

Conservation, Education, Livelihoods, Rehabilitation

1. PESCP being an integrated conservation and development project, continuously funded by the Frankfurt Zoological Society (FZS), went ahead with long strides as in 2006. The main goal during the first years of PESCP's work on Panay has been to make the lowland-rainforest of the NW-Panay Peninsula (NWPP) – one of the last of its kind in the Philippines – a Protected Area (PA) under the NIPAS Act. Setting up of a Protected Area Management Board (PAMB) for the PA consolidated conservation though a task force erected to give it forceful backing remained largely non-operational for want of funds though these had been pledged by the five mayors of the NWPP. PESCP started to shift its focus to the Central Panay Mountain Range (CPMR) some six years ago, working there in the spirit of our – then new - overall vision: **The protection of the forested areas of the CPMR**. The to-be-PA at stake covers ca **40,000 ha** good forest, the home of a number of **critically endangered, endemic wildlife such as the Dulungan Hornbill (*Aceros waldeni*), the Visayan Spotted Deer (*Cervus alfredi*), the Mabitang (*Varanus mabitang*), the Negros Bleeding-heart (*Gallicolumba keayi*)**, and others. PESCP has been active in all four provinces of the CPMR already over the last six years focusing successfully on the protection of forests and the virtually last viable population of the critically endangered Dulungan living here.

2. In the spirit of Nationalisation, more precisely Filipinisation, PESCP's core staff has undergone a marked change. Ms. Maria T. Ibabao became the new Project Manager, thereby remaining also Chief of the Forest Rangers as before, and both Mr. Thomas Kuenzel as well as Prof. Curio stepped down from their offices of Manager and Director of PESCP to become Technical Consultant and Representative of the FZS in joint capacity, and Scientific Adviser, respectively. Additionally, Mr. Kuenzel continues to render his services to Aklan State University as their Environmental Program Coordinator, being thereby co-financed by FZS and GTZ/ CIM as before. Both he and Prof. Curio continue in giving constant support at all levels of the project's agenda and thus make the change-over unfelt. - Concomitant with this change there has been a similar development in the Board of Directors of the NGO PhilConserve under whose umbrella PESCP is operating since 2005. All key offices have been assigned by elections in 2007 to Filipino nationals in that, e. g. Ms. Maria Ibabao has taken the helm of President und Dr. Enrique Sanchez that of Vice-President (see also section on 'Update and Through Revision…' above).

3. The main pillars of PESCP's work have remained as before:

   A. Habitat Protection, Environmental Law Enforcement and Rainforestation
   B. In situ protection of Critically Endangered/ Endangered Wildlife
   C. Livelihood-based sustainable Community Development
   D. Conservation and Development Education
   E. Nationalization/ Sustainabilization of PESCP's Activities and Programmes
   F. Rehabilitation and Release of captive Wildlife

   The activities and outcomes guided by this agenda can be detailed as follows:

4. The remaining pristine forest habitat in the north western portion of the CPMR was protected by consistent law enforcement and partially restored by rainforestation. Lobbying for the CPMR to become a PA went on at various levels of society. Large amounts of illegally cut timber and many illegally used chain saws were apprehended by PESCP staff and then confiscated by the Philippine National Police (PNP) and illegal wildlife trading for pets and novelty food was curbed. The law enforcement was smoothed by the deputation through DENR of PESCP's Forest Rangers (FRs) as Wildlife Enforcement Officers (WEOs). Similarly the support from LGUs and PNP to operations of PESCP has substantially improved, thus rendering many of its operations successful. A new, humanitarian dimension of these came very much to the attention of the public when PESCP's FRs in search and rescue actions helped retrieve elderly people who had gone lost in the forest. Facilitated by its wider acceptance by LGUs and the media, e. g. televion companies, the project extended its various conservation measures to all four provinces of Panay though shortage of manpower prevents the badly needed patrolling of the entire area of the CPMR. - Lobbying for the Forest Rangers (FRs) being taken over by the DENR is ongoing but is severely curtailed by the government's cutback on funds for this authority (and others). – Thanks to the funding by EU/ UNDP the CoFoPa Project operating in various places of the CPMR could considerably extend its rainforestation with native timber and with fruit trees but came to an end early last year.

5. The livelihood program has been further extended and refined, partly as community-based measures flanking the rainforestation scheme co-financed by FZS and EU/UNDP in five counter part communities (see below 6.). Among other measures, clean drinking water, mother cows and rice hull stoves as alternatives to the use of firewood were made available (for further details see Technical Adviser' Report). Taken together the measures aim at empowering the uplanders to become less and less dependent on the use of the forest.

6. The protection scheme was favourably flanked by a rainforestation program that had massively started in March 2005 and ended in Jan 2007. Funded by an EU/UNDP grant PESCP was able to out plant some 50,000 native forest tree seedlings in the provinces of Antique and Aklan, thus complying with the government's Order of 24 July 2007 in the Green Philippines Program and even predating it. In executing this massive endeavour PESCP received thankfully the help of the DENR, LGUs, universities and schools. For technical reasons yet another lot of nearly 30,000 seedlings are still awaiting to be out planted in July 2008.

7. The activities of PESCP were given wider publicity and prominence by their documentation through the Bavarian TV company under the supervision of Eberhard Meyer (Germany) and the first broadcasting of their film 'In the forest of the hornbill' in July 2007. This film showed quite impressively the progress that had been made since the same company had documented PESCP's operations in 1996.

8. Results of a protection scheme benefiting the flying foxes on Boracay Island including the critically endangered Golden-crowned Flying Fox came to fruition lastly by finding its way into the international literature. Started in 2003 with a grant from Haribon Foundation the behaviour of the foxes as impacted by human acitivities both on Boracay and in Mambukal, N Negros, was studied via analysing indicators of stress in the faeces. This study led to a better understanding of flying fox behaviour at the roost site though a between-roost comparison of human-induced

stress is still pending. As a welcome side-effect of this study hunting pressure on Boracay went almost down to zero and the roosting sites appear to receive better protection through Shangri-la Hotel though land nearby is also being developed, a process that must be monitored in the future, too.

9. In the wake of an eye-catching destruction of 62 airguns in 2006 (see 13th Report, PESCP, unpublished) a mere five airguns were surrendered from around Pandan in 2007. This decline is encouraging news indicating that leastways this important hunting area has been virtually 'purged' from airguns though protesting the sale of slingshots must become part of the project's ongoing agenda.

Conservation Management

10. The protection of critically endangered wildlife, especially the Dulungan (Writhed-billed) Hornbill, made again a big leap forward in that the number of protected nest holes rocketed to the unprecedented high of 750 successfully fledged broods, thanks to the funding from FZS, GEO, NEZS/ Niehoff Vaihinger and – earlier – NGS cum Seaworld and Busch Gardens. A good number of previous hornbill nest poachers/ hunters had again been won over to become engaged in hornbill nest guarding. There is a need to expand the nest protection scheme into the southern reaches of the CPMR to embrace the entire population of the Dulungan, the flagship species of PESCP. A team sent by NEZS evaluated positively the protection scheme and made helpful suggestions PESCP will heed in the near future. – There have been several training and workshop attendances, largely by PESCP management staff, who could give input for formulating an improved advocacy for having new ordinances issued on environmental management, law enforcement and ex situ maintenance of wildlife and the legal bases for it all.

11. The most significant events in the project's wildlife rehabilitation agenda have been the erection of three stationary dipole antennas at higher elevations near three barangays in the NWPP and the re-erection of the big flight cage in the Mag-aba facility that had been destroyed by a typhoon in 2006. The improved telemetry will permit to monitor radio-tagged birds upon release more continuously. And the flight cage allows for a proper power flight training of the large raptors before release. Routine treatments of wildlife admitted a Spotted Deer included and releases of animals successfully rehabilitated went on as usual. The project's vet got involved in the release back into the sea of an adult Dugong the same day that it had been accidentally captured by fishermen off the shore of the NWPP.

Conservation Research

12. The Mabitang telemetry project made a big leap forward in that six individuals could be radio-tagged, aside from being equipped with transponders that allow identification only when handling the animal. This progress permitted to record for the first time data on home range, preferred resting trees, predators (Python) and the growth of this rare and endangered Panay endemite. Particularly heartening was the fact that animals stayed in exactly the same spot where they had been captured before and released upon radio-tagging hours later. An in-depth study of the diet gave new insights into the biology of the Mabitang. – As before, the inventorying of

the herp fauna yielded new descriptions of yet another two Panay endemites, a new gecko (*Luperosaurus corfieldi*) and a new frog (*Platymantis paengi*) from areas in the NWPP, the latter also from the area of the telemetry project mentioned.

13. Ongoing research on the Marine (= Cane) Toad, a destructive alien from South America, revealed an impressive array of soil fauna species of various invertebrate (whipscorpions, whipspiders, scorpions, harvestmen, millipedes, numerous insect species and their larvae) and vertebrate (frog, both species of Panay's blind snakes) prey in its diet. As expected, smaller toads had taken a significantly lesser number of prey species as measured by the Shannon-Wiener-Index of information H, and toads from inland forest had taken a significantly larger number of prey species, possibly due to their larger size as measured the same way. The impact on the fauna by this invasor needs urgently to be assessed.

14. A study of human-induced stress in two roost areas of flying foxes of three species the critically endangered Golden-crowned included came to fruition. A detailed look at a colony in N Negros (Mambukal) resulted in insights of the within colony relationship between stress as measured by stress hormone levels in the faeces and behaviour elements in the daytime. There are indications that human impact increases stress within a colony (e. g., foxes in the roost centre being more disturbed than those in the periphery). However, for want of an inter island comparison of hormone-assessed stress the jury is still out on the pressing question as to whether human construction activities as on Boracay Island increase stress levels adversely. Why Golden-crowned numbers on Boracay have plummeted from 50% to a low of 12% in only seven years is likewise a pressing yet unanswered question.

Basic Research

15. An unprecedented impact of spider webs on bird mortality coming to light spurred a broader look at spider caused mortality of more typical spider prey animals in the upland around Station Sibaliw. Both arena experiments as well as observations in more natural experimental setups of a stenogastrine wasp (*Parischnogaster* sp.) that habitually steals prey from spider webs (*Nephilengys* sp.) revealed an extraordinary degree of orb web evasion. Web avoidance, including also webs of two other orb web weavers, is achieved visually as evidenced by manipulation of both ambient light and background illumination. A pierid butterfly *Eurema* sp. avoids likewise *Nephilengys* webs visually both in arena experiments and around a food plant with a rather small proportion falling prey to the spider.

16. The Philippine Bent-toed Gecko had been found in 2006 to be capable of homing to its original home range upon translocation to a site up to 150m away (40% returners). This finding received corroboration through a new translocation experiment with a new release site, thus ruling out the possibility that particulars of the spatial topography of the release site used in the year before; the return rate from the new release site could be pegged at 46%. Indications as to whether this remarkable ability, the first of a squamate reptile, involves perception of the earth's magnetic field are currently followed up with an improved technique manipulating the ambient magnetic field at the release site.

17. In a first study of the breeding biology of the Elegant Tit, a Philippine endemite, the habit of nesting underground in primary forest, the clutch, incubation and other parental behaviour were described. A comparison with three Palaearctic continental species the closely related Yellow-bellied Tit of China included suggests that the deviation from 'customary' tit behaviour is functionally best explained by climate and predation.

1. Conservation, Education, Livelihoods, Rehabilitation

1.1 Manager's Report

PESCP's FR based Habitat Protection
and Enforcement of Environmental Laws

by Maria Theresa C. Ibabao

Introductory remark: PESCP's habitat protection and law enforcement activities have been very successful during the last two years, and in the following I shall try to give an overview about our activities implemented and results obtained.

Since the then Project Manager of PESCP, Mr. Thomas Kuenzel, in 2006 took the risk, amid some negative reactions, of having a female FR Leader, there has been a drastic increase of apprehensions of illegally cut timber and unregistered chainsaws not only on the Antique side but almost all over the whole of the NWPP. There have been also some apprehensions on the southern side of Aklan particularly in the Ibajay area, which is also considered a hot spot of large scale timber poaching and wildlife trading for pets or as novelty food.

In the beginning for me as a woman going out with the all male PESCP FRs was a challenge in itself, but it was not really difficult because the FRs were and are still willing to stand as reinforcement to me while I do the negotiating and diplomatic discussions with the so called illegalists. Most male illegalists don't really appreciate being apprehended by a conservation officer who is a female, and there are some cases when they display their typical male macho behaviour. In these rural areas most Filipino men expect a woman to stay home and just wait and listen to what a man might dictate.

Problems of deputation overcome: I am the first female FR around in all four provinces of Panay, and the PESCP is the only NGO here on Panay having (1) FRs, and (2) who are deputized as Wildlife Enforcement Officers (WEO) by the Regional Executive Director of the DENR. Before that they were already deputized as Deputy Environment Natural Resource Officers (DENRO) by the DENR. After the deputation of our FRs as DENROs had run out there was a certain time when our FRs had to perform their duties in the field without the deputation, and some politicians, who are dishonest enough to ensure their re-election by supporting illegal activities of their constituents, used this time to challenge PESCP's FR activities claiming that these were not covered by the law. Therefore we were compelled to ask the DENR to speed-up the deputation of our FRs as DENROs. When I personally made a phone call to Director Dr. Mundita Lim of the Central Office of the DENR/PAWB (Protected Area and Wildlife Bureau, the section of DENR in charge of Deputation of WEOs) on 09 March 2007, to discuss with her the problem we as FRs are encountering in the field, I told

her that I am personally going out on monitoring/apprehension missions and it is me and my FR team who are risking our safety and incurring also the negative reactions from the illegalists and their supporters. The least the DENR could do, I opinioned, is to deputize the PESCP FRs giving them blanket authority to execute the job on behalf of the DENR. The deputation came shortly after, which is a huge positive improvement, and for which we are really grateful to Dr. Mundita Lim for reacting fast to cover the activities of our FRs. The WEO deputation stipulates that the PESCP FRs shall have the full authority to seize illegally traded wildlife and arrest violators of RA 9147 SUBJECT TO EXISTING LAWS, RULES AND REGULATIONS ON ARREST AND DETENTION.

The political climate: It is also a sad fact that the DENR, the country's only government agency in charge of the environment, is not fully equipped with the resources that would enable them to do the job effectively as they themselves would want to. It is not the fault of the Regional/Provincial /Community Heads of the DENR why this agency is ill equipped. The problem is related to the highest political leaders of the country, who give priority to the environment in political talks only, but not in reality.

It is also a deplorable truth that most of our Philippine public officials think that they should simply leave the natural resources of the country to anybody who thinks they are entitled to it because these officials don't like to offend the voting public (for fear of losing the next elections' vote) who are using these resources as their personal vault for subsistence. As a Filipina I am sad to say that we as a people here are so indifferent to the problems of society. Most of my people here do not have the civil courage to say or do something uncomfortable to effect positive change. I am not saying that all of us are indifferent or don't care but it seems to me there is not enough of us here with the same mindset as I would want it to be, and as it would be needed for an effective protection of the last forests.

Being a first time Project Manager and Chief FR and also at the same time juggling other roles as a single parent, a daughter to an elderly parent and at the same a responsible citizen is a challenge in itself, which encourages me to give my best performance to whatever role I am doing at a specific moment.

There is much to learn on this job. Everyday is a challenge in itself, there is always something new and exciting. I am officially working with PESCP in the capacity of Chief FR for one year now not counting the first year when I started as Assistant FR Coordinator and Liaison Officer for an EU/ UNDP sponsored project implemented by PESCP. Most of the successful operations we have done here have been those when I was with my male FR colleagues. I am doing the negotiations with them acting as reinforcements to me. Most times on every monitoring/apprehending situation it starts on hot grounds but due to persistent diplomatic approach to the violators and painstakingly explaining to them the violations they have committed, they also see our point of view and most times voluntarily surrender their illegally acquired forest products, saws or other paraphernalia used to commit their illegal activities detrimental to the environment.

The Bayern TV film expedition: It is of considerable importance to include in this report the advent of the Bayern TV crew under the leadership of Eberhard Meyer and his very competent crew composed of Christian Mayrhofer and Ulrich Schramm. They spent together with us a full week making the film and they were really professional and hardworking. It never occurred to me that making movies could be so difficult. We went around the areas wherein PESCP is active with livelihood, law enforcement, research and conservation activities. Except for the activity in Sibaliw were I was not able to join, I was involved with

all the rest of the activities that were covered by the film making. There was the activity of going out to the nearest nest hole site of hornbills,"nearest" meaning almost 5 hours trek uphill. The whole team stayed in the forest for three days and I saw the real dedication of the TV team to come up with a good project and they never complained about the food and the situation there. The whole expedition was composed of more than 30 persons made up of FRs, porters, guides and PESCP's Wildlife Educator, Alexander Alabado, in charge of the area and, of course, the ever active participation of the Project's then Manager, Thomas Kuenzel, who by transferring the Manager's seat to me has even become more indispensable for the project as Technical Adviser.

The involvement of the Philippine National Police was highlighted in the film especially that it was very timely that the Pandan Police had made a spectacular apprehension of a truck full of illegally cut Narra timber which is the Philippines' national tree. The PESCP came into the picture in this situation because the Police and even the local DENR are sometimes put in a lot of pressure when most high ranking politicians are demanding that these apprehended forest products be released to the "illegal" owners. The PESCP has no problem in handling such situations and discussing things with these "supporters of illegalists" and so to be used as a scapegoat by the Police or the DENR to inform these officials that such demands are impossible to grant; this is so because PESCP is looking into their performance and they don't like to be complained about to the National Headquarters for giving in to political demands. I would also especially like to include here the projects' appreciation of the current Police Chief of Pandan, Police Inspector Nead, who like his predecessors, especially Police Officer Jose Partisala, is always ready to provide PESCP with full support through police escorts within the area of Pandan. It regularly happens that the Pandan PNP goes out for forest monitoring together with the PESCP FRs – sometimes even leaving their area of jurisdiction when necessary as, e.g., in an operation with point of entry in Pandan's jurisdiction coming out of Ibajay, Aklan, and intercepting an ongoing hauling activity of illegally cut Lauaan timber which belongs to the barangay captain of the latter area. Said forest products have been apprehended and given into the custody of the Ibajay Police under the leadership of Police Captain Gaylord Loyola who is also a staunch supporter of PESCP's activities. There is also now an encouraging improvement regarding the working relationship with the Nabas Police Station; I like to mention here that the PNP have come to realize that they have a mandate to also protect the environment including to provide assistance to concerned civilians requesting their assistance when in pursuit of environmental conservation activities. I am happy to put in writing that every time we approach the Nabas Police Station the Chief is always ready to give us the support of his station in the best way he can. Last but not least the Police Chief of Libertad, Chief Liban, who is also newly assigned to the area, expressed his support and willingness to give us the assistance in times we might ask his Station to do so.

A word of thanks: I am taking this opportunity to state also how much PESCP appreciates the activities of the MENRO of Nabas, Engineer Johann Ken Juguan, who is always supporting us in the effort of rescuing what is left of the NWPP's natural riches.

On the home front, this report would be incomplete if I would not extend the project's appreciation of Pandan Municipal Mayor Hon. Plaridel Sanchez VI for all the support he extended to us. A special mention of thanks to my personal friend and colleague, Pandan-MENRO designate Arnold D. Demegillo, who was previously PESCP's FR Coordinator and who in spite of his busy schedule still takes the time to give his support to the project in one way or another accepting even the position as PhilConserve's Treasurer for this year in addition to his considerable workload from the municipal government.

PESCP's humanitarian activities: Since September 2006, PESCP has also been involved in important search/rescue/retrieval missions here in Pandan and its neighbouring villages as follows:

(1) A very prominent family here in Pandan approached PESCP to request our help in locating their relative male, 74 years old, who was missing for a week already. After a few hours of search we were able to find the already decomposing body. This activity strengthened the reputation of PESCP and renewed the trust of the community in the group which was once tarnished by the involvement of some of the previous FRs in illegal activities (pictured above).

Retrieving body of old villager located by PESCP Forest Rangers after having got lost in the forest. © Forest Rangers/ PESCP

(2) Another time we were requested was in June 2007 when fortunately the missing person, a also male of around 50 years, was still alive after five days of being disoriented out in the forest of Duyong, Pandan. This search and rescue has been done with the full support of elements of the 79th IB under the competent command of Lt. Col. Porlucas. In addition to this retrieval mission, the battalion, while being still in the province on their tour of duty, has given PESCP all the support and manpower needed for doing our activities, even sending soldiers with us to the deep forest of the NWPP when there where "news" of threats against our unarmed FRs.

Ms. Maria Ibabao taking carost in t he forest and had then been located by PESCP's Forese of old lady who had met with a fatal accident when having got lt Rangers. Courtesy Forest Rangers/ PESCP.

(3) As of October 25, 2007, PESCP FRs where requested by some Barangay Officials from Brgy Duyong, jurisdiction of Pandan, to help locate a 74 year old woman who was missing since Oct.19, 2007. After her family was not able to find her for three days they approached us and after two more days of looking for her we were able to find her body. I personally took care of her, cleaning her face and hair when it was found already infested with maggots from the wounds she sustained in her fall. As a fellow woman she needed to have her last piece of respect and dignity and I took it as my responsibility to give it to her (foto). On the day of her funeral the family head officially thanked the PESCP in public in the church and the more than 200 people who came for the event acknowledged the civic help that the project is giving to the community.

It is also noteworthy that the people are not hesitating to approach the PESCP for help because it is already an established belief that FZS Representative /Technical Adviser, Thomas Kuenzel, together with PESCP's new manager is willing to extend help in almost every way possible if it is really needed. It was also for me a personal challenge and I am happy with myself for being able to do such things. I know for myself that I am capable of conquering bigger events out there. PESCP before was not as recognized as it is now, in a sense that before I came there was no other FR who was able to do such things for the people. I am capable of doing it in an everyday manner.

Another proof that PESCP is being more and more recognized in bigger circles is the invitation we received in November 2007 from the Office of the Regional Technical Director for Forestry, DENR, to attend the Regional Multi-Sectoral Forest Protection Committee wherein said government agency was requesting PESCP's support and cooperation to provide solutions to concerns, issues and problems affecting the forest resources. The inputs and suggestions from PESCP and from other stakeholders would be collectively used to frame the advocacy agenda and implementing guidelines for the next two decades. It is also of note to add here that to all activities of the Regional DENR office in relation to issuing guidelines and regulations the management level of PESCP has been invited. Thus I joined a three days conference in Jawili, Tangalan, in October 2007 wherein of our opinions regarding the elimination of exotic tree species being out planted in the open /watershed area could be voiced. The DENR is gradually seeing the PESCP as a genuine partner in the vision and goal to rehabilitate and conserve the natural resources in the area.

At the level of the individual FRs, some of them have already qualified to train as reservist in the Armed Forces of the Philippines and in November 2007 there were another two undergoing training on Sea/Mountain Search and Rescue operations, which they would also echo with the other PESCP FRs and other office field staff once they are back from the said training that is sponsored by the Provincial and Municipal government.

Anti-timber poaching activities: One of the biggest successes of PESCP FRs in this year has been the discovery of about 61.09 cubic meter of White Lauan timber inside the PA of Tagororoc, Nabas, Aklan Province, in March 2007, that allegedly was intended for financing the May 2007 elections of certain politicians. PESCP, in tight cooperation with the Philippine Army/ CAFGU (Civilian Armed Forces Government Unit) and the PNP, Nabas, did a full time watch/patrol by setting up a permanent FR camp in the area to keep said forest products safe for the last nine months. On September 17, 2007, it was officially agreed with the Northwest Panay Biodiversity Management Council's Chairman, Mayor Norberto Raymundo, that the safeguarding of said forest products would be given into the responsibility of the Council. Accordingly the Council would facilitate the procurement of finances to slice and

haul said forest products. On November 01, 2007, PESCP had officially left the guarding of the Tagororoc cutting site but we still do the routine patrol/monitoring in the area as well as in the other hot spots in the NWPP. The same thing with the CPMR, where the PESCP FRs have been expanding their area of patrolling to the effect of having already made substantial apprehensions of illegally used chainsaws and illegally acquired forest products. The Central Panay area is still having substantial forest products which are really interesting for the illegalists or any other contractors who are keen to make quick cash. We have once encountered illegalists who had hired armed goons to keep them untouchable by the PESCP FRs who are, of course, under strict instruction from the management not to engage in violent confrontation with such criminal elements. This was a very isolated case and so far we never had such an experience again in our succeeding operations in the vicinity. - In a related case the PESCP was gaining the understanding and cooperation of hunters and poachers from the upland areas who were willingly surrendering to PESCP WEOs their hunted Spotted Deers.

Due to the presence of PESCP FRs and the consequent manner with which they thoroughly check all chainsaws met along the road there is now a higher encashing of revenues by the municipalities for issuing Mayor's permits to operate as well as higher registration turnovers in DENR offices because chainsaw owners and operators came to understand they were losing good business if they would not have their chainsaws registered. Chainsaws would be apprehended when used without proper Registration Permit issued by the DENR, which is the only government agency authorized to issue said registrations. The chainsaw owners and operators also understood that the PESCP FRs have nothing personally against them. It is now a common practice that they voluntarily show their registration papers and chainsaws to PESCP FRs whom they meet in the field. It is also worth mentioning that new owners of chainsaws have been advised by their barangay captains to see the PESCP FRs to inform them about their plans to have their chainsaws registered such that they voluntarily give the PESCP office copies of their registration papers for our use as reference for future checking.

Filipinisation of PESCP comes of age: PESCP, when it decided in 2007 to have a filipinised management, went already a long way from being (seen as) a conservation and research group only around 12 years ago to become a very well known and acknowledged integrated forest conservation project, which is engaged not only in taking care of the endangered species in Panay but also engaging in humanitarian affairs for the people here and is very much appreciated by a larger segment of the inhabitants.

It is also noteworthy to mention here that since me as a Filipina have been sitting as Project Manager it is easier for PESCP to communicate through me with my fellow Filipinos sitting in high government positions. It is the first time that we have the commitment of the Provincial Government of Antique to grant the amount of 200,000 P to our NGO "Philippine Association for Conservation and Development" (PhilConserve), a body created in 2005 under which umbrella PESCP is now operating. We are confident that if the Provincial Government sees the capacity of PhilConserve/PESCP implementing our livelihood activities, FR based forest protection as well as the reforestation efforts in the past it would grant, on proper request, additional amounts to help extend our area of coverage even further to the south of the CPMR.

On November 15, 2007, I had the opportunity to visit the office of the PAWB Director, Dr. Mundita Lim, and had a very good and fruitful conversation with her as well as with Madam Josie De Leon, both of whom are looking with much respect to all the effort that Prof. Curio has been putting to the ground here in the area since 1995. We have been discussing on how to fast track the declaration of the CPMR into a PA. Director Dr. Lim gave the advice and

assurance that the concerned LGUs, in partnership with PESCP and based on PESCP's wildlife monitoring activities and findings, could declare their areas as PAs because of the presence of the Dulungans (as found by PESCP, see **App. 3**) and other forms of critically endangered wildlife in the area such as the Spotted Deer. This could be done in the form of ordinances or resolutions passed by the local officials and submitted to the CENR office concerned and forwarded to the DENR Regional Office and Director Lim assured me that she would fully endorse it. These undertakings will be implemented together with the LGUs and the DENR during the first half of 2008. One of the first activities to be done is a thorough mapping of the area where PESCP found critically endangered species like the Dulungan and the Spotted Deer for which activity PESCP is looking still for a partner organisation experienced in mapping activities.

It is also of importance to mention here that with regards to PESCP's GEF Proposal that was submitted on behalf of PhilConserve by Prof. Curio some time ago, Director Lim clarified to me that it will figure as part of a composite proposal to be screened again in March 2008, and representatives from each proponent that would qualify would then be invited to a workshop in June 2008; the submitting agency qualifying for Panay is PhilConserve. There is an allocated 12 million US$ to be divided up among the qualified proponents, and a 1:1 ratio of counter parting in finance and in kind expected from the proponents. The fact that PhilConserve is the only agency that submitted a final proposal for Panay, with maximally one accepted per island, gives it a good chance that it will be entrusted with a greater amount of funding to implement that very part of the composite proposal on Panay, that will be accepted by the said screening committee.

On November 16, 2007, I visited also the office of the Assistant Director for ROCS (Regional Operations and Coordination Services) of the DBM (Department of Budget and Management) in Malacañang (Headquarter of the Philippine Government in Manila), and I was assured by the good Madam Gene Follosco (Assistant Dir. of DBM) that it is to be taken as 100% sure that PhilConserve would get the pledged amount of 300,000 P from the DBM which would then be used by PESCP to conduct more environmental conservation efforts in the area.

Another proof of PESCP's wider acceptance by the public and the media is the privilege the Provincial Radio station has accorded the Project when there was a time that some conflict arose from one village the inhabitants of which opposed PESCP's installing of a telemetry antenna. They claimed that the antenna constituted a health hazard. The inhabitants still complained to the radio station even after we took the time to visit them at their village together with a prominent doctor, a former municipal councilor, explaining to them the nature of this structure merely receiving but not emitting radio signals (from our tagged birds) and assuring them that it was not in any way a health hazard. But the people proved close minded by believing that in addition to health hazards the structure would also monitor their illegal movements inside the PA. This was the only barangay which had a negative reaction to the installation. It could be explained in a sense that late in 2006 Thomas Kuenzel and I confiscated from one villager, Teban Tamboong, an air gun used for hunting and he perpetuated the rumour that PESCP is actually causing hunger and poverty because of declaring their hunting and tree cutting actions as illegal as it was "monitored" by the telemetry antennas. When the radio station heard of this concern they called up the project and both Thomas and me explained how wrong and biased was these people's understanding and on air I mentioned how I wish that the telemetry could really do what they are accusing it of that it could indeed trace human illegal activity in the forest so the PESCP FRs could apprehend them. It was cleared on air that all the accusations were unfounded. The Philippine

Government agency in charge for the registration and permit of such installations NTC (National Telecommunication Commission) issued to PESCP an official letter stating that our antennas are not emitting any form of electromagnetic radiation. The people's complaints to the radio station about the alleged wrong practice of PESCP actually worked to the benefit of the project because we were given the chance to correct this very misconception and set the records straight. The Radio Station management was so convinced of PESCP's genuine conservation activities that they invited us to send them our reports on environmental protection and law enforcement activities, thereby making the whole of Panay and neighbouring islands hear about PESCP's activities every time the broadcasters are airing them.

A few months ago I made the fortunate acquaintance of the newly installed MENRO designate of two towns in the southern part of Antique: MENRO Roger Ledason in Patnongon and MENRO Emerson E. Ogatis in Barbaza. I was very much pleased to hear from them how much they are impressed by what PESCP is doing in northern Panay. They also asked for inputs from us to be integrated into their own Municipal Environmental Code. This is a positive development for the project because it is paving our way to expand to the southern part of the CPMR with the municipalities over there themselves inviting us.

Another matter of particular importance is that one of our Wildlife Educators was able to successfully talk with some hunters from the innermost upland Barangay of Lauaan, Antique, and they voluntarily surrendered an injured Spotted Deer caught by hunters to PESCP that at the moment is undergoing rehabilitation under the competent management of resident vet. Dr. Enrique Sanchez Jr. The project is discussing with the people living in the Spotted Deer area how to intervene with the providing of sustainable community based livelihoods in the area to ensure that the hunters refrain from further poaching activities. On Dec. 3, 2007, PESCP's Project Manager, Maria Ibabao, met with these upland hunters from the CPMR and theLGU officials concerned to discuss with them the best plan of action and sustainable livelihood for them to insure them of leaving the forest resources alone and especially to stop hunting of Spotted Deer, hornbills and other endangered wildlife. It is of importance to mention the result of the Project Manager's trip to the Municipality of Calinog, Province of Iloilo, where I was able to meet with the reported hard core hunter/poacher, Rebus Dalumpines, on December 3, 2007. I discussed with him and his friends how hard it is for them to make their living without hunting and cutting of trees and what we could do to help them. It is not new for us to hear and to understand that these people are not hunting for fun, but they are hunting and poaching trees to keep their families alive. We were able to reach a certain level of bonding with each other in as far as I understood that you simply cannot come to a poor hunter's place demanding him to stop hunting because it is against the law, but you also have to enable him to do so; and this is in terms of intervening with a community based sustainable livelihood. In this municipality, I had also the privilege of having dinner with these people and their family and the film about PESCP's activities produced by Eberhard Meyer and his team was shown to them and it helped them understand what PESCP is really doing in the area. The film as a medium of showing PESCP's activities is a very good way of making the upland people understand our job and to make them to trust us – which is a very important step towards a fruitful cooperation with these upland people often being cheated by low-landers. In pursuing a better cooperation with the people in the uplands I passed by the Municipality of Libacao, Aklan, and met with the Municipal Civil Registrar, Alex Dionela. He is a very good civil employee and is well esteemed by the mayor and almost anybody else in the municipality and it is my personal honour to be blood related to him. His personal endorsement of me to the local officials and to the upland Indigenous People's Chieftain made it easy for them to understand what PESCP is aiming at. The project gained added

credibility by Alex Dionela's stating that the LGU Libacao is very fortunate that PESCP is active in the area and his making the people to be more open and cooperative to our efforts because it is them who are going to profit from PESCP's interventions; I sensed how these local leaders put value in what Alex Dionela was saying. In dealing with people from the upland community there is a lot of different matters to be taken into consideration, one very important thing is that great importance be given to the local elders or chieftains of a particular barangay. It is one of them who has the last say over matters and it is him who decides if an upland community would cooperate with any conservation effort in his area of authority.

In February 2008 we are planning to go up to the innermost Barangay of Dumara, jurisdiction of Lauan, Antique, to see for ourselves what is the best plan of action for the villagers concerned who are dependent on forest resources.

Before finally closing this report I would like to acknowledge the most hardworking people within PESCP, the FRs, of whom I am proud to be one. They are very strong men in their own sense, also strong in a sense that they were able to accept orders from a female leader and comply with it to the best of their capacities. In their own strength they made me even stronger when I was with them or alone on my own, all of them from my most senior in age and experienced FR Carlito and Robert down to the youngest among us, Cerwin, and the rest of the team. In recognizing me as their Chief they somehow changed their stereotype of a woman not being able to lead a group of men and do it as well or better than any man. In particular I really like to give credit to the two dynamic FRs, Raymund Alejandro, who is now the PESCP FR Field Coordinator, and Armelito Ebon, who is Field Liaison Officer for FR affairs. In addition to the call of duty these two gentlemen have really helped me do my job effectively in a sense that they are always ready to extend their assistance to me even in personal matters/ errands when I am away on official trips. I could rely on them to check on my household when I had to leave my two children (at the age of 7 and 12 years) at home. Knowing I have somebody to trust makes me feel comfortable to go out and do an important job and do it effectively.

A few days ago, PESCP's FRs after coming from their hectic tree planting activity in Castillo, Makato, Province of Aklan, again intercepted, with the help of the Police, the hauling in Sitio Laguinbanwa, Listoga, Pandan, Antique, of an illegally cut premium species tree, Narra, for which no cutting permit would be issued by the DENR because of a cutting ban on all so-called premium species. The timber at stake valued no less than 20,000 P and it was given into the custody of the CENRO Culasi for proper disposition, also to avoid the criticism and pressure the local Police Station is receiving from politicians or other high profile citizens oftentimes asking for favours to release the poached forest products back to the illegal "owners". PESCP is comfortable with the situation of being used as a "scapegoat" by the Police or DENR once these agencies are approached for favours; such "favours" can then not be extended because PESCP is looking closely at the performances of Police and DENR and would raise a terrible noise once the integrity of said agencies' personnel were compromised by doling out such "favours".

In a related activity sometime in November 2006 the PESCP FRs in close coordination with the Sebaste Police station under the leadership of Deputy Chief Ruperto Dagohoy apprehended about 691.60 board feet of libtog timber.

Last but not least, to critics and friends alike, thank you for the comments and criticism extended my way, it surely made me work harder and hopefully better and surely making me

bring PESCP to the attention of even more people. In closing I would like to repeat here that working with the two most knowledgeable and active persons I have been very fortunate to meet, Eberhard Curio and Thomas Kuenzel, is enough of an incentive for me to work even harder and give my tasks my best effort.

1.2 Report of PESCP's Technical Adviser

By Thomas Künzel

1.2.1 Project Outline and Update

PESCP, which started its work in the Western Visayas in 1996 as a small project focusing on the conservation of endangered wildlife species, during the years, with the continuous support of the Frankfurt Zoological Society (FZS), has become a medium sized organisation well known in the region and is now one of the main players in northern Panay in the fields of forest protection including enforcement of the environmental laws and community-based reforestation, protection of critically endangered wildlife species and sustainable development of the up-land villages/barangays (brgys.).

The main goal during the first years of PESCP's work on Panay has been to make the lowland rainforest of the NW-Panay Peninsula (NWPP) – one of the last of this forest type in the Philippines – a Protected Area (PA) under the NIPAS Act. A first major step towards this goal had been reached when the President of the Philippines signed the document declaring that lowland forest a PA in April 2001. By and by and over the years, the PA (12,000 ha with ca. 5,000 ha good forest) enjoys the appreciation, care taking and conservation effort of the Department for Environment and Natural Resources (DENR), of the new Protected Area Management Board (PAMB) working since Aug 2004, of the five Municipalities embracing the PA, and of the task force "Anak-Talon" being planned for the special protection of the forest in the PA already two years ago but not yet operational. This positive development made the PESCP shift the core of its activities to the Central Panay Mountain Range (CPMR) in an appropriate time frame boosting our new overall vision: To turn the forested areas of the CPMR into a Protected Area.

The to-be-PA at stake covers ca. 40,000 ha of good forest, and is the home of a number of critically endangered, endemic wildlife such as the Dulungan (= Writhed-billed) Hornbill (*Aceros waldeni*), the Visayan Spotted Deer (*Cervus alfredi*), the Mabitang (*Varanus mabitang*), the Negros Bleeding-heart (*Gallicolumba keayi),* and others.

Already over the last 4 years, PESCP has been active in all four provinces of the CPMR focusing successfully on the protection of forests and the probably last viable population of the critically endangered Dulungan. Following the municipal elections in 2007, when lobbying for the CPMR to become a PA, we have been able to win the sympathy of the new Mayor of Libertad, Antique. He is very close to the highly influential Congressman Exequiel Javier, who himself is an accomplished, senior politician who is looking to leave behind a legacy of enduring value when going into retirement; this legacy, he believes, could be to turn the still good forest of the CPMR mentioned above into a PA. In a meeting with Forester Vicente Sardina (the DENR CENRO of Culasi, Antique) in September 2007, we have been discussing the best/fastest way to achieve this goal, and he agreed with us to make use of

PESCP's data about the breeding range of the critically endangered hornbill Dulungan (*Aceros waldeni*) that is also the "Provincial Bird" of the Province of Antique. Our breeding data on the Dulungan cover nearly all the forests of the CPMR and therefore could well function as the core of our argumentation to turning the CPMR into a PA. The new Manager of PESCP, Maria Theresa C. Ibabao, will present this proposition to the head quarter of the DENR in mid November. After the DENR has critically reviewed and would have approved of our proposition Congressman Javier would present it to the Sangguniang Panlalawigan (provincial law makers) in S. Jose, Antique.

PESCP's work in 2008 will be executed by 31 permanent local staff plus further staff of around 197 local co-workers (17 Community Conservationists, 143 Nest Wardens, 20 station porters) paid part-time, all of whom are supported by a Philippine Manager (Maria Theresa C. Ibabao) and a German Technical Adviser (Thomas Kuenzel) who both are permanently stationed in the project area. A German Scientific Adviser (Prof. Dr. Eberhard Curio) spends at least 4 months per year in the project area. Since Jan 2004 PESCP's Technical Adviser is also holding the position of the Environment Program Coordinator of Aklan State University (ASU) in which capacity he is being sponsored by GTZ/CIM, the German Technical Development Agency. PESCP's Scientific Adviser inaugurated the project in the Philippines 12 years ago and acted as its Director until June 2007.

From March 2005 to Sep 2006, PESCP executed a reforestation project on Panay in tight cooperation with the 25-Peso Multipurpose Cooperative of ASU and on behalf of UNDP/EU with a total value of 46,000 EUR. This endeavour was made possible only because of the counterpart funding from FZS. In 2007 PESCP was able to raise additional funds from national and international donor agencies amounting to 25,000 EUR. To carry on in 2008, PESCP has been able to raise additional funds of ca 23,000 EUR coming from (1) Congressman Javier (600,000), (2) one Senator (300,000), (3) the Government of Antique (200,000), and the German NGO 'Save the Rainforest' (300,000 P). All these additional funds become available only because of the permanent backbone funding from FZS enabling PESCP to offer counter parting to potential donors, which proved the most successful way to make potential donors have an interest in what a certain project is doing.

PESCP's activities in the Philippines are based on MOAs and MOUs forged with the DENR, a number of LGUs, NGOs, Police Stations, Military Units and Aklan State University (ASU). The MOA with the DENR is the most important one because it stipulates that PESCP is conducting its activities as partner of and on behalf of the DENR, the governmental frontline organisation mandated with the conservation and sustainable use of the natural resources of the country. All PESCP Forest Rangers are deputized by the DENR as Wildlife Enforcement Officers (WEOs) giving them the same power and rights as the Forest Rangers of the DENR.

In March 2005 PESCP and its friends created a fully accredited Philippine NGO "Philippine Association for Conservation and Development" (PhilConserve). Since October 2007 the President of PhilConserve is Maria Theresa C. Ibabao who acts also as the Manager of PESCP. PhilConserve can be seen as PESCP's umbrella enabling us to take part in all official activities for which an NGO-status is needed for. We are also hoping that over time PhilConserve will be able to win the trust of funding agencies which could help lessen the financial support PESCP needs soliciting every year from FZS. In 2007 we were already able to raise funds through PhilConserve from Congressman Javier and from one Senator. For technical reasons both of these donors would have been barred from releasing funds to PESCP because of its 'non-NGO' status.

All programs and activities of PESCP are depending on funds being raised from national and international donor organisations among which the FZS is by far the biggest sponsor since the start of the project 12 years ago. The main pillars of PESCP's activities thus supported are presented in decreasing order of priority as follows:

G. Habitat Protection, Environmental Law Enforcement and Rainforestation
H. Protection of Critically Endangered/Endangered Wildlife
I. Livelihood-based sustainable Community Development
J. Conservation and Development Education
K. Nationalization / Sustainabilization of PESCP's Activities and Programs
L. Rehabilitation and Release of Captive Wildlife
M. Conservation Research

1.2.2 Project update

1.2.2.1 Overall goal of project

The good forests of the NW Panay Peninsula (ca. 5,000 ha) and of the Central Panay Mountain Range (CPMR. ca. 40,000 ha) and its wildlife are sustainably protected/conserved by and to the benefit of the people living in and around the areas in question, and that protection/conservation does not rely on foreign support.

1.2.2.2 Successes and evaluation of past activity

1.2.2.2.1 Habitat Protection, Law Enforcement and Rainforestation

<u>Successfully lobbying to turn still existing good forests into Protected Areas</u>
In April 2001 the low elevation rainforest of the NW-Panay Peninsula (one of the last of this kind of forest in the Philippines, and therefore of immense importance for the country's biodiversity maintenance) has been declared a Protected Area (PA) by the President of the Philippines due to the many years of advocacy of PESCP/FZS in cooperation with the local DENR offices and the nascent NW Panay Biodiversity Management Council (NPBMC). PESCP's analogous lobbying for the declaration of the good forests of the CPMR has been partly successful already; in October 2006 the Brgy Cptn. of Idio stated his willingness to declare all Idio (and Sebaste) bound forests where part of the Dulungan population occurs as PA thanks to the authority given to LGUs over the protection of their area of jurisdiction. When voiced in the end of 2006 this statement struck a chord in all of us. Unfortunately, until today (end of 2007) those promises of the Brgy Cptn of Idio did not come true. The main reason was that he entered the arena for the election of municipal mayors in May 2007. For this reason he avoided to make the voters regard him too much of a "green" man, which in the Philippines is still thought to be a hindrance for any political career. Anyway he lost the election and in the October 2007 elections for brgy. cptns. he did not run again – meaning for us to win over the new brgy. cptn.in whom to instill our visions. More promising seems to be our cooperation with Antique's Congressman Hon. Javier and the DENR to have the forest of the CPMR turned into a PA as explained in section 1.

Forest Ranger-based habitat protection and law enforcement

PESCP's habitat protection, and law enforcement programs have been very successful and are acknowledged/ appreciated by the people who quite often let us and others know that PESCP is the first and only organisation here on Panay, which actually implements its announced law enforcement / forest protection activities resulting in a marked reduction of illegal logging in the forests where before the illegal loggers did not have to fear any law enforcing effort. Some of these successes will be briefly highlighted as follows:

- The highly organized efforts of groups of illegal loggers to generate millions of Pesos during 2002, and the first half of 2003 (pre-election time), by chain sawing down a huge number of mature grown native timber trees inside the PA of the NW Panay Peninsula (NWPP) had been stopped through the consequent patrolling of PESCP's Forest Rangers (FRs) in tight cooperation with the Philippine Army by setting up a FR-forest protection camp inside the PA being manned around the clock for ca. 6 months in 2002.

Tree timber poaching activities (illegal logging) in the PA of the NWPP and in the forests of the CPMR slowed down during the years after the election in 2003, but increased again in the year before the latest election in May 2007 culminating in ca. 61 cubic meter illegally cut down White Lauan trees inside the PA of Nabas, Aklan, and found by FRs of PESCP in March 2007. Out of that lumber ca. 40 cubic meter would be marketable lumber after being chain sawed, with a total value of ca. 900, 000 P = 13,789 EUR. At the site of the PA with the felled trees PESCP, on behalf of the DENR, installed an FR camp in March 2007 which was manned day and night by our FRs along with Tanods (village police) of Tagororoc (in whose area of jurisdiction the illegal logging occurred). In the meantime we reached sort of an agreement between the DENR and the NW Panay Biodiversity Management Council (NPBMC) that from Nov 01 it is the municipality of Nabas, which continues to maintain that camp until the lumber can be finally chain sawed and transported to the low-land (not later than mid of Dec 2007) where it will be distributed among the 5 municipalities located around the PA to be used in building schools etc. Such use of illegally cut lumber is unusual because normally such lumber has to be handed over to the DENR where it might be used as evidence if a case could be filed, which here is not in sight because all witnesses we approached are afraid for their lives and are not willing to sign affidavits.

Forest Rangers about to apprehend and turn over to the DENR a cut down Narra Tree. Courtesy Forest Rangers/ PESCP

- Due to the daily patrolling / monitoring effort of PESCP's FRs in tight partnership with the Philippine National Police (especially to be mentioned the PNP of Pandan, Libertad, Nabas, Ibajay and Sebaste) a „climate" has been established in the forests which is feared by the illegalists; chain saws and illegally cut lumber have been confiscated, whenever observed; some illegalists have been imprisoned, and 5 chain saws have been apprehended in 2007 (but ca. 25 chainsaws during the 2 years before). It must be also mentioned that our effort is indeed very successful because the number of unregistered chain saws is decreasing drastically. Chain saw owners even come now to our office to ask us helping them register their chain saws.

- The NPBMC supported by PESCP has planned the task force Anak Talon erected by Police, Army, DENR, LGUs, and NGOs. It will be responsible for the protection of the PA in the NWPP, which should then relieve PESCP's from its protection mandate. Unfortunately, the only active part of that task force as yet are the FRs of PESCP due to lack of funding for that task force, which has been promised since years by the mayors but has still not been released. This unacceptable situation seems to change now to the better, because since May 2007 Libertad has a new mayor who is now also the new Chairperson of the NPBMC, and who from the beginning made a fresh breeze blow through the council's meetings, where he first of all ordered the Task Force Anak-Talon to be newly discussed. This was done during a meeting in Sep 2007 chaired by the MENRO of Nabas who made long strides to ensure the audience that enough men from the brgys could be recruited for monitoring activities of that Task-Force. The money for that Task Force is thought to come partly from the LGUs and partly from the Government as soon as the bill for the PA has passed the Congress – which unfortunately did not happen in 2007.

Ms. Maria Ibabao, Project Manager and FR Coordinator, writing out a receipt on illegally cut timber apprehended by PESCP's FRs. Courtesy Forest Rangers/ PESCP

- Nine out of 13 FRs of the PESCP were deputized by the DENR as Deputy Natural Resource Officers (DENROs) giving them the same authority as the DENR-FRs have with regard to patrolling and confiscations. That deputation ended mid 2005 and has not been renewed because of a general stop put to such deputations through the Secretary of the DENR. To compensate for the missing deputation as DENROs we requested from the DENR to accept our FRs as WEOs giving them the authority over wildlife and forest. This latter deputation has been granted to all of our FRs in the end of 2006 (see Manager's Report).

- Since 2001, PESCP has extended its various measures to ensure habitat protection from the NWPP into all four provinces of the forest of the CPMR, but it is to be noted that the proper protection of the ca. 40,000 ha of good forest there needs ca 100 FRs whereas PESCP commands a total of only 14 who must also cover the forest of the 12,000 ha PA of the NWPP. These figures highlight the dilemma – *we badly need a much higher budget for the employment of more FRs*. This sad situation is somewhat mitigated by the fact that beside the FRs PESCP has on its roster also 17 Community Conservationists and 143 Nest Wardens who are distributed all over the CPMR around 18 villages.

Community-based habitat protection

In all the many up-land communities where PESCP has been active in helping the people to set up livelihood alternatives we are trying to convince our counterparts that for any long-term improvement of their and the coming generations' living conditions rigorous community-based conservation or restoration of a healthy environment is paramount; and helping them to design appropriate conservation plans. In continuous follow-up activities PESCP is monitoring the uncompromised implementation of these community conservation plans. The positive results show us that the combination of livelihood alternatives with community-based environmental conservation is a potent tool in making conservation sustainable.

However, when talking here in terms of e.g. "consequent implementation of community conservation plans", and "the positive results", then it must be understood that the positive responses to our interventions mentioned are still not yet sustainable. To fully understand this, I bring here as an example our effort to protect the Dulungan hornbill population in the CPMR, with which we are extremely successful for ca. 7 years. However, we are fully aware of that poaching of these hornbills would start again as soon as we could no longer maintain our effort (and the reward for each unpoached Dulungan brood) – meaning, we still have to go indeed a long way to sustainability. [A degree of sustainability would already be attained if poaching would not return to the previous level. Ed.] Nevertheless, there is no doubt that we are on the right way – this has even been stated by the NEZS team evaluating PESCP's Dulungan protection program on Panay. In their final report one can read that our effort in protecting the Dulungan could well lead to sustainability, given proper continuation. See also section 1.2.2.2.2 and **App. 3** and **4**.

Rainforestation:

PESCP's efforts to raise funds for the extension of our rainforestation program has been extremely successful. As the only organization in the whole Western Visayas, PESCP in partnership with the 25-Peso Multipurpose Cooperative of ASU, had successfully submitted a rainforestation proposal titled "Community-based Maintenance and Restoration of Forests in Central Panay Mountain Range and Protected Area of NW Panay Peninsula (CoFoPa)" to the EU/UNDP "Small Grants Programme for Operations to Promote Tropical Forests". In March 2005 EU/UNDP released ca. 55,000 US$ enabling PESCP to execute/implement the activities proposed for CoFoPa, that operated for 19 months and ended in Jan 2007. A basic condition to receive that funding from EU/UNDP has been a certain capacity for counterpart funding that PESCP was able to provide through the annual support coming from FZS. Based on funding from FZS and EC/UNDP seven nurseries for native forest trees have been installed and are maintained in the areas of the provinces of Antique and Aklan also after the CoFoPa ended. In 2007 PESCP has been chosen by the DENR as its partner organisation within the scope of the Green Philippines Program (GPP), and in fulfilment of that program PESCP has been able to plant out a total of 60,000 native forest trees in the provinces of Antique and Aklan. To complete that task we received help for seedling transportation, hole digging and planting activities from schools, universities and LGUs. Supporting PESCP's request to the

DENR to promote in large scale the out planting of native tree species instead of exotics the DENR PENRO of Aklan, Forester Roul Lorilla, suggested successfully that this request of ours should be followed-up by the DENR reforestation working group, and we are thanking Forester Roul Lorilla for his understanding, support and associated initiatives.

1.2.2.2.2 Protection of Critically Endangered / Endangered Wildlife

PESCP's protection of critically endangered / endangered wildlife has been especially successful with regard to programs focusing on two "flagship" species – the critically endangered Dulungan Hornbill (*Aceros waldeni)* living in the CPMR, and the endangered Golden-crowned Flying Fox (*Acerodon jubatus*) with one of the last roosts on Boracay Island**.**

Protection of the Dulungan and other wildlife inhabiting the same habitat

PESCP's community-based protection scheme for the Dulungan reduced nest hole poaching during breeding from previous ca. 50+ % to ca. 5 %. Before PESCP became active in the CPMR, the published information about the Dulungan - that no doubt is one of the most threatened hornbill species worldwide - posited that no more than 50 to100 breeding pairs might have survived. After nearly 6 years intervention through PESCP (with funding mainly from FZS, GEO, and NGS) we had the pleasure to protect until successfully fledging a total of 750+ Dulungan nest holes in 2007. Involved in that activity in 2007 were 3 Wildlife Educators, 14 Forest Rangers, 17 Community Conservationists and 143 Nest Hole Owners/Nets Wardens, and a number of porters enabling us to go for longer expeditions deep into the hinterlands of the Dulungan habitat. For the breeding season of 2008 we are planning to have our Dulungan protection effort evaluated again. For this reason we are going to invite interested field ornithologists to participate in our pre-assessment survey in May/June 2008 when we are visiting for verification all Dulungan nest holes known to us.

PESCP's protection scheme focusing on the Dulungan living in the CPMR at the same time serves also the protection of other wildlife in the area as, e.g., the critically endangered Visayan Spotted Deer (*Cervus alfredi*), and the endangered Tarictic Hornbill (*Penelopides panini*).

Protection of flying foxes

In 2003 PESCP was able to receive a donation from Haribon (largest Philippine conservation NGO) to realize a program for the protection and conservation research focusing on the endangered Golden-crowned Flying Fox on Boracay. The most important results of the project are (1) a substantial reduction of the hunting pressure on the Golden-crowned Flying Fox, and on two other flying fox species using the same roosts as the Golden-crowned one, (2) the numbers per species of flying foxes using the roost on Boracay is known (2,500 – 3,500 in 2005), (3) the behaviour of the flying foxes is better understood especially their reaction to stress induced by human activities near the roost, (4) further threats, especially hunting impacting the flying foxes during their nocturnal foraging movements to and from Panay mainland are better understood, and (5) hunting of flying foxes on Boracay went down to nearly zero mainly due to the fact that the forest where the foxes are roosting is now effectively protected through Shangri-la Hotel, the new owner of the land. For research into the question of human-induced stress see sect. 1.5.3.

Anti-airgun program

PESCP's Rice-for-Airgun program as an intervention against hunting has been very successful resulting as evidenced by the collection of 62 airguns until end of 2006, which in

Nov 06 have been destroyed during a biodiversity conservation event in the presence of the media. The collection/surrender of airguns has been decreasing because the area around Pandan where that program is best known is nearly 'freed' from airguns. Only five airguns were collected in 2007. We are trying now to execute the same activities in other areas, too. [Protesting efficiently the sale of slingshots that are scarcely less harmless must become part of PESCP's agenda in the future as well. Ed.]

1.2.3 Livelihood-based sustainable Community Development

Over the years PESCP's livelihood-based, sustainable community development programs covering communities in all four provinces of Panay have been executed very successfully.

FZS/NGS/GEO co-financed Dulungan protection related livelihoods

Within the scope of our Dulungan protection scheme during the last six years the implementation of livelihood alternatives in the communities living in and around the forest occupied by the Dulungan has been an indispensable and very successful tool. As a flanking measure it is enabling the up-land communities to refrain from illegal and unsustainable use of the forest and its wildlife – and so to refrain from poaching the Dulungan nest holes and/or thus to and actively engage in and support the proper execution of our Dulungan protection scheme.

FZS/UNDP co-financed livelihoods

From March 2005 to December 2006, due to the co-funding from FZS and EC/UNDP, a full-fledged livelihood program has been executed in five counterpart communities in the provinces of Aklan and Antique. The five counterpart communities were chosen with regard to their location in or near forested land and to the potential positive effect the livelihood interventions would have on the protection of the forest and its wildlife as already explained above for our Dulungan protection scheme – empowerment of the people in our counterpart communities to refrain from illegal and unsustainable use of the forest and its wildlife. In 2007 the livelihood programs in these counterpart communities have been continued, and in five other villages included in our Dulungan protection scheme livelihood programs have been implemented as, for example, making available mother cows (1 for 1 family each), that will be handed over to yet another family after giving birth to a calf, or our potable water programs in which PESCP is enabling villagers to have access to clean drinking water. We also distributed among villagers 10 rice hull stoves as alternatives to the use of firewood.

These FZS and EC/UNDP funded livelihood programs include also native pig and chicken breeding and fattening, agroforestry, sloping agriculture, nursery-based native timber tree and fruit tree farming, as well as vegetable and compost production.

All these livelihood interventions successfully helped PESCP making its habitat and wildlife protection activities sustainable by empowering the up-landers to become less and less dependent on the use of the forest.

1.2.4 Conservation and Development Education

Conservation and development education activities/campaigns are a successfully integrated part of all our community-based livelihood programs in the up-lands of all four provinces of Panay. PESCP has been regularly invited by schools to give students lectures about biodiversity conservation and precautionary economic development. Student groups from Aklan State University and other schools are regularly visiting PESCP's office, our reha facilities, and even the station to learn about wildlife and its conservation that the schools do

not offer them. Small groups of Philippine students together with their teachers are regularly invited to stay a couple of days in our research station to get a first impression and introduction about the rain forest in the Philippines. In 2007 a TV team from Germany has been working for three weeks with PESCP producing a 30 min film about PESCP's activities, which has been on German TV already in July 2007. In March 2008, after being translated into English (already done), the film will be presented to the Philippine public with the support of the German Embassy in Manila.

1.2.5 Nationalisation / Sustainabilisation of PESCP's Activities and Programs

PESCP's linkage with Aklan State University (ASU)

In 2003 PESCP has been able to win over the ASU, located at the western slopes of the CPMR, as a strong local partner for PESCP's activities / programs, and the former Manager of PESCP (now its Technical Adviser), Mr. Thomas Kuenzel, to become also the Environment Program Coordinator of ASU. Within the scope of that partnership Mr. Kuenzel has been accepted by GTZ/CIM for being supported by its program of Integrated Experts making available a salary for these positions for 2004; since 2005 that salary is co-financed by GTZ/CIM and FZS, which funding is planned to be continued for another two years until the end of 2008. By pursuing very successfully the partnership between PESCP and ASU we have been able to make a very big and important step towards the nationalization / sustainabilisation of PESCP's activities and programs. In 2007 during a meeting in ASU we agreed that a biodiversity workshop should be jointly organised and executed at ASU in 2008. 20,000 of the native forest tree seedlings planted out during the Green Philippine Program in 2007 came from the nursery jointly managed by ASU and PESCP on the ASU campus and in Castillo. The cooperation with ASU in nursery based reforestation, agroforestry and in joint research activities will be intensified in 2008.

PESCP and the Philippine Association for Conservation and Development (PhilConserve)

In March 2005 yet another step towards nationalization of PESCP's activities and programs has been successfully done by erecting a Philippine NGO named PhilConserve under whose umbrella PESCP is now operating. In September 2007 Maria Theresa C. Ibabao, who is also the Manager of PESCP, was elected President of PhilConserve. Through PhilConserve we have been able to raise money in 2007 from a Congressman, a Senator and from the Government of Antique (see above). Unfortunately the proposal we submitted to the World Bank in 2006 through PhilConserve did not pass the screening committee of the DENR thus far.

Communities as PESCP's vehicle to sustainability

As another very important move – possibly the most important one - towards nationalization and sustainabilisation of PESCP's activities / programs have to be seen all our conservation and livelihood activities we execute together with our local counterpart communities in the forested up-lands of Panay. It is here that we enjoy a direct link to the people who are the rightful owners of the environment we are concerned about, and who within the scope of our interventions are empowered step by step to accept and execute the idea of conserving nature to the advantage of their coming generations. But nobody should be mistaken about the fact that all education/knowledge remains sterile theory as long as the people do not have an income which enables them to live a decent life. Therefore, the maintenance of biodiversity depends to a large extent on the economic situation of the people involved. If the income situation is not appropriate the people will resort to surviving on mostly unsustainable use of their natural resources.

1.2.6 Rehabilitation and Release of captive Wildlife

PESCP maintains three reha facilities, two in the lowland areas of Pandan and Libertad and another at PESCP's research station in 450 m a.s.l. in the prime and secondary forest of the PA of the NWPP which is used as the only release site for rehabilitated hornbills. Since 2002 all of the released Tarictics are being part of our telemetry program sponsored by the Brehm Fonds for International Bird Conservation and the San Diego Zoo's Wild Animal Park. In 2007 we released the first of our Dulungan hornbills, which unfortunately was found dead after a couple of days being killed by a native predator. For this reason we postponed the further release of Dulungans thinking about a better way to make the Dulungans more fit to join the real life in the forest after being released. A Philippine researcher focusing on the telemetry project has been/is still mainly funded by Prof. Curio's Foundation for Bird Research and Conservation, Inc.

Our former goal of installing a breeding center for Endangered Wildlife in ASU for which we planned to build appropriate breeding facilities for the Dulungan had to be cancelled for technical reasons.

Rehabilitation and release of wildlife surrendered to PESCP from private owners or confiscated through the police or the DENR is successfully going on as overseen by PESCP's veterinary consultant who in turn supervises four care takers. All release activities are executed according to DENR regulations and are often witnessed by DENR staff.

1.2.7 Conservation Research

The project is making use of Tarictic Hornbills, which went successfully through our rehabilitation process after being secured from illegal maintenance on Panay. These Tarictics when being ready for release are equipped with a transmitter to allow us to follow and record their whereabouts, foraging, diet and reproductive behaviour as well as their survival through time, with the first three components mentioned serving as short-term indicators of survival in the wild.
The bulk of the telemetry equipment ordered from Canada, which has been withheld in the customs office in Manila for ca. 2 years, we were able to receive in Oct 2006, and in 2007 we were able to employ a Philippine researcher who is willing to work permanently at the station. The progress of the telemetry project has been hampered again by critical questions from the villagers who were concerned about the question if their health were in jeopardy through our telemetry equipment. Accordingly we were compelled to request an official letter from the National Telecommunication Commission (NTC) attesting to its harmlessness. After receiving that letter in Sep 2007 we held again meetings in all three villages close to our three antennas, which in the mean time have been installed successfully. The undertaking is thought to gain insight into the suitability of release as a conservation technique for strengthening the wild population of hornbills. The project is executed by our Philippine researcher who is supported continuously by volunteers from ASU.

Many other research activities have been executed while using the research station as a base camp, resulting in highly noteworthy records in the fields of ornithology, herpetology and the behaviour of bats in addition to a number of new species discoveries (see above and sect 1.5.).

1.3 Community-based Accomplishments: Forestry

Tree Nursery and Rainforestation (GREEN PHILIPPINES PROGRAM): Project Establishment in 2007

By Forester John R. Espiritu, PESCP Forester
& Sonny E. Galuego, PESCP Assistant Forester

1.3.1 Introduction

In support of President Gloria Macapagal Arroyo's Green Philippines Program (GPP), the (DENR) in collaboration with stakeholders and partners shall undertake a synchronized planting of 20 million seedlings of native trees nationwide starting July to December 2007 (Malacañang Order of PGMA of July 24, 2007).

In tight partnership with the DENR Aklan and Antique and Aklan State University (ASU) in Banga, Aklan, and under the umbrella of the Philippine Association for Conservation and Development (PhilConserve) the PESCP, committed to raise in its nurseries 50,000 seedlings (40,000 in Antique and 10,000 in Aklan). They were to be made available to the DENR and planters' partners in tree planting activities (see tables in **App. 5** below). There were four selected sites in Antique for GPP tree planting (Calabanog in Pandan, Idio in Sebaste, Alojipan in Culasi and San Juan in Libertad) and one site in Aklan (Castillo).

1.3.2 Objective of GPP

General objective: To plant 20 million seedlings nationwide, with PESCP contributing 50,000 native seedlings (40,000 in Antique and 10,000 in Aklan).

Specific objectives:

1. Mitigate climate change,
2. Insure water supply,
3. Conserve biodiversity,
4. Establish agroforestry,
5. Provide livelihood opportunity,
6. Sustain supply of forest-based materials, and
7. Production of alternative sources of fuel

1.3.3 GPP target areas to be planted and Actual Result/ Output

1. Critical watersheds, PAs, protection forest and open lands,
2. Agroforestry and Community-Based Forest Management areas,
3. Urban parks, Green Campuses, Camps and Subdivisions
4. Mangrove and Coastal areas

The tree planting activities of PESCP in tight partnership with the DENR, ASU and other partners' planters (reflected in App. 5) started in Sep-Dec 2007. As regards the target, 50,000 seedlings as mentioned were to be out planted in critical watersheds, PAs and open lands from September-December 2007. During seedling production, the 50,000 were raised in five nurseries for the GPP. However, during the tree planting activities, based from the result (reflected by App. 5), in Calabanog, Pandan, out of 10,000 seedlings to be out planted, only 2,750 could be planted. However, 1,300 were delivered to DENR Aklan for tree planting in Panyakan watershed in Tangalan, Aklan. In Idio, Sebaste, out of 10,000 seedlings to be out planted, only 2,850 seedlings were planted. In San Juan, Libertad, out of 10,000 seedlings planned, only 1,390 seedlings were planted. On the other hand, 1,311 were delivered to Aklan for tree planting activities in San Jose, Ibajay and Malay in celebration of "Pista ng Gubat". In Alojipan, Culasi, out of 10,000 seedlings to be out planted, only 3,754 seedlings were planted. In Aklan (Castillo), out of 10,000 seedlings planned in the identified site, only 6,598 seedlings were planted, and in the Antique area a total of 10,744 seedlings. The remaining 29,256 seedlings will be planted starting in July 2008.

During the out planting activities, we came across factors affecting adversely the planting of tree seedlings:

1. Numbers of partners' planters are insufficient to conduct the planting in one go.
2. Some seedlings in the nurseries are below the size needed for planting out.
3. Identified planting sites are far away from the nurseries.

Remedying suggestions/ recommendations:

Based on the experience from the tree planting activities mentioned above, the following advice should be heeded:

1. Seedlings must be hauled from nurseries to the planting site in time;
2. Enough partners' planters should be recruited;
3. Additional labour necessitates more labourers.

Care and maintenance:

Seedlings in the nurseries will be pruned (leaf and root) to control the growth of seedlings prior to out planting in July 2008.

1.4 Conservation Management

Wildlife Rehabilitation Accomplishment Report

By Enrique D. Sanchez Jr., DVM, Wildlife Veterinarian, PESCP

With contributions from N. Bagac, M. Melchor, E. Geronimo,
J. Jamangal, B. Tacud & L. Macero

General

After more than seven years under the care of PESCP's wildlife rehabilitation facility soft releases the first release of a female Dulungan, representing a critically endangered species, took place. It was patterned after the many releases of its distant relative, the Tarictic. The rehabilitation and release is one of the pillars of the project (see: 13th Annual Report, PESCP, unpublished; Technical Adviser's Report, sect. 1.2, this 14th Ann. Rep.). PESCP's previous releases upon rescue and rehabilitation were all executed under the aegis of a MOA forged with the DENR.

Changeable Hawk-eagle, light form, during rehabilitation. Foto courtesy Anonymus.

With the establishment of dipole antennas equipped with data encoders in three different sites around the NWPP PA, survival prospects of birds 'softly' released back into the wild can now be monitored more consistently.

This year saw the successful release of multiple species twice. Aside from the two hornbill species mentioned above were a Grass Owl, a Mabitang (= Panay Monitor Lizard), and a Frigate Bird that had been recaptured to extend its acclimation/ rehabilitation in the facility in Maga-aba. The 2nd batch comprised a Colasisi, a Changeable Hawk-eagle (pictured), a Spotted Dove and 23 White-eared Brown-doves. Serum samples of doves and extra sera of previously released hornbills stored are screened for NCD virus antibodies to detect current and previous infections, using HI test (Hem-agglutination-Inhibition) at the government run laboratory (PAHEC – Phil. Animal Health Center) in Quezon City. - The release of the eagles admitted would not have been possible without the re-erection of the big flight cage that had been ravaged by a typhoon in Dec. 06. The support of the Bird Protection Committee (Pres. Prof. Dr. E. Schneider) is gratefully acknowledged.

Changeable Hawk-eagle short of being released from big, re-erected flight cage for large raptors to exercise sustained power flight. Foto by author.

Lastly, as the project had become well known for its conservation work in terms of rescue, rehabilitation and release, the office was the first to be informed about the capture of an adult male Dugong (*Dugong dugon,* see below Dugong narrative report sent to DENR-CENRO Culasi). Later on it facilitated the release by reducing stress to a minimum during the release procedure.

A month before the end of this year, the first individual of the critically endangered Visayan spotted deer (*Cervus alfredi*) was admitted to the facility in Mag-aba (pictured). The poor animal was limping on a front leg injured by a snare, with the donor being ignorant of the existing wildlife law. Fortunately PESCP's Educator J.Venus, FR R. Alejandro and the rest of the WEO team were on patrol in the forest of Calinog, Iloilo, crossing the area of the CPMR down to Bugasong, Antique, when they got hold of the animal in the Municipality of Lawaan, Antique.

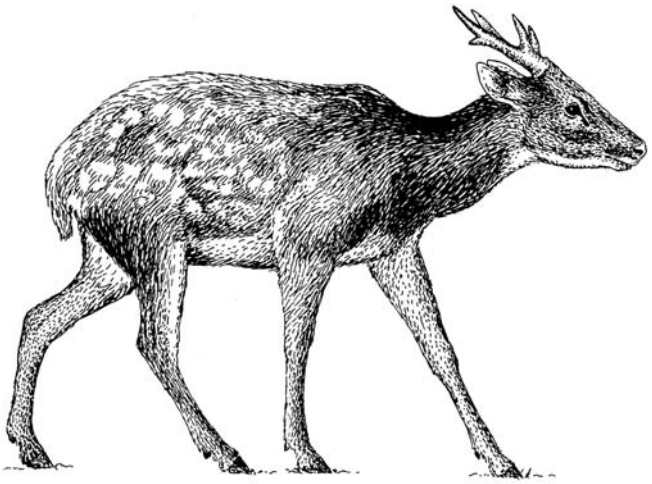
Diet, wound treatment and feeding behaviour of the Spotted Deer:

Foliage and Grasses are given twice or thrice a day as needed, may comprise the following as identified by local name:

Foliage: Bugos
Lagase
Agboy
Niyog-niyog
Mulberry tree
Ipil-ipil leaf
Sandramay
Nito

Grasses: Carabao grass, Tubo-tubo grass, Settaria grass, Arrow root (Oraro)

Feeding behaviour observed:
Aside from the food items listed bark of the offered foliage was eaten as well. The amount of foliage and grass consumed in the night was twice as high as that eaten in the day. The tameness of the animal observed disappeared during day time though it approached the caretaker whenever food was offered.



Spotted Deer male. Courtesy Helga Schulze.

Wound management and handling:
A juvenile female with a weight of 10-15 kg could be restrained by one or two persons when performing a minor treatment such as wound dressing and medication.

Wound spray is applied after cleaning the affected area with warm water mixed with drops of tincture of Iodine. An antibiotic and anti-inflammatory agent are then administered via IM in the fleshy area of the animal's rump or thigh.

Narrative Report on Dugong Admission

Philippine Association for Conservation and Development (PhilConserve)

Philippine Endemic Species Conservation Project (PESCP)

of the Frankfurt Zoological Society, Germany,
Ruhr University Bochum, Germany,
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PESCP: Official Partner of the DENR through MOA

Pandan, 14 September, 2007

Narrative report: Accidentally caught adult Dugong (*Dugong dugon*) in NW Panay

The Pandananons call the dugong "duyong". The first recorded sighting around Brgy Duyong, Pandan, Antique, since ca. 20 years was on 6 September 2003, when an approximately one month old calf was washed ashore along the beach of Brgy. Duyong.

The name of the barangay was derived from the name of the animal

Now, less than four years later, an approximately adult male specimen was accidentally caught by a net utilizing the "Otosiami " method of fishing, reported by members of Patria – Duyong Fishermen's Cooperative together with the members of the Duyong Barangay Council leaders which was represented by their Brgy. Chairman.

The said adult animal was released on the same day that it was captured, on April 04 2007. This happened in the presence of the members of the LGU's (Pandan) Fishermen's Cooperative (Patria-Duyong), an NGO's (PhilConserve, with the implementer PESCP), concerned citizens, the owner of nearby Phaidon Beach Resort and the people of Brgy. Duyong. Photos taken are to be credited to Harald Fuchs.

PESCP DVM and Management

Dugong photographed upon immediate release.
Courtesy H. Fuchs.

A further accomplished Task**:**

The big flight and training cage, destroyed by the typhoon in December 2006 last year was redesigned, improved and re-erected from scratch. The funding was made available by the Bird Protection Committee thanks to the perspicacity of its President Prof. Dr. E. Schneider. Erection was finished in June 2007. The raptor that had undergone flight training was a changeable hawk eagle with ring # 24304 of the Institute for Avian Research, 'Vogelwarte Helgoland, Wilhelmshaven (see: Wildlife Accomplishment Report, 13th Ann. Report).

Other Assignments

As a Veterinary Consultant for PESCP's EU-UNDP funded reforestation and livelihood program ,counter parting the baseline CoFoPa, facilitated by PESCP's office, I was elected as Treasurer of the Board of Directors of the new NGO "PhilConserve". In a later assembly I was elected Vice President when the President had tendered his resignation.

Visitors at Mag-aba Rescue Facility**:**

Febuary 17, 2007: Julius Barsubia, a criminology student of the Northwestern Visayas Colleges under Dean Dennis Ibutande to conduct "dactyloscopy " (fingerprints in one of the Philippine Macaques) that unfortunately did not materialise, the fingers had been lost in a snare.

May 11,12 ,20,21,2007 ARD TV TEAM from Germany led by E. Meyer.

Visitors at Bulanao Rescue Facility

February 26, 2007: Students of Libertad National High School – Libertad, Antique

1. Daisy M. Saracanlao	3rd year
2. Charmear E. Maglantay	2nd year
3. Edwin T. Surilla	2nd year
4. Ma. Kristel Mae Nicopior	1st year
5. Mart Dexter A. Artucilla	Grade 4 Central School
6. Generimei C. Chavez	1st year
7. Blas Estocado	1st year
8. Rodila Peñaflor	1st year
9. Mea V. Constantino	2nd year
10. Cecille Chavez	College
11. Donnalyn Umapas	College
12. Sunie Ann Bagac	1st year

September 15, 2007: Students of Garcia College of Technology - Kalibo, Aklan:

1. Ms. Cherry Mae Teodosio – Adviser
2. Kristian Eplerain Bermejo – Editor in Chief
3. Edrian Ramos – Feature Editor
4. Mark Cantong – Literacy Editor
5. Judy Mae Bacera – Staff Writer
6. Grecel Masancay – Staff Writer

June 22, 2007: Thomas Edward Marler

Editor's note: For technical reasons the list of wildlife individuals admitted to and/ or still kept at either of PESCP's rescue facilities could not be accommodated in the section Appendices below. This list contains, aside from the species mentioned in the wildlife report above Water Monitor Lizard, Panay Monitor Lizard, Brahminy Kite, Serpent-eagle, Chinese Goshawk, Cinnamon Bittern, Cattle Egret, Blue-naped Red-billed Parrot, and for the first time Spotted Deer (2 ind.) and Visayan Warty Pig. Animals unsuitable for release were sent to DENR PAWD Region VI, Iloilo City, where they were received by PAWD Deputy Director Damasio Fuentes.

1.5 Conservation Research

1.5.1 Advances of the Herpetofaunal Investigations on Panay

By Maren Gaulke and Arnold D. Demegillo

This past year's herpetofaunal investigations focused on the "Mabitang Telemetry Project". Having started in mid 2006, the project continued throughout 2007. We had a change in our roster of co-workers: for health reasons, the work of Narciso Paulino was taken over by his son Reyel Paulino in June 2007, following a thorough training in telemetry by his father, Gersom Operiano, and Arnold Demegillo. Narciso Paulino still supports the project whenever his expertise is needed.

In the meantime, altogether six *Varanus mabitang* were equipped with transmitters (Table 1), the maximum number planned for this part of the research research.

Table 1. Date of capture, measurements and sex of the six *Varanus mabitang* (T1-T6) equipped with transmitters.

	Capture date	Total length	Snout-vent-length	Sex
T1	June 25, 2006	95 cm	38 cm	?
T2	August 22, 2006	175 cm	70 cm	male
T3	September 10, 2006	92 cm	34 cm	?
T4	May 10, 2007	167.5 cm	68 cm	male
T5	May 11, 2007	166.5 cm	67 cm	male
T6	May 17, 2007	139 cm	54 cm	female

Unfortunately we lost T1 and T2. In the beginning of June 2007, the remains of T1 were discovered in the feces of a python. Both, the implanted transponder and the transmitter were still functioning after passing the snake. This tragic finding enhances our knowledge on the natural predators of *V. mabitang*.

The signal of T2 could not be received any more since April 2007. Various possibilities may be responsible none of which we can reject: the transmitter is defect, the animal left the area and resides now in a very far away place, or the animal was killed by hunters and its transmitter destroyed.

Because T1 was monitored via telemetry for almost one year before its death, and T2 for seven months before its disappearance, the recorded data give a very detailed picture on their activity areas, preferred resting trees and the like. These data will be published after the project ends, along with the data of the other individuals studied.

The semi adult T3 was already recaptured twice, the first time after three months together with T1, the other semiadult, and the second time after nine months. It is necessary to check the fitting of the transmitter in the relatively fast growing small animals regularly, to avoid constrictions at their tails, where the transmitters are fixed. During the second recapture of T3 the fixing needed to be redone by PESCP veterinarian, Dr. E. Sanchez. At the same time we could record growth data. The behavior of T1 and especially T3 (after two recaptures already) shows clearly that these animals are not being influenced in their natural home range choice

by our activities. They stayed in exactly the same areas as before after being released back. This fact is a big relief to us, because we could not be sure whether we might interfere with the animals' well-being or not.

In January 2007, Prof. Melba Ragaas, a botany professor from Aklan State University, was invited to visit our field camp together with four of her students. The students were introduced to telemetric investigations and other conservation related works. At the same time Prof. Ragaas promised to help us in the identification of some of the scientifically still unidentified food plants.

In June 2007, Cynthia Dolino, a zoologist from Dumaguete City, Negros Oriental, visited the project for the second time already. She is doing an inventory of the amphibian fauna within the telemetry research area, including voice recordings.

Some interesting findings include a specimen of the colubrid snake *Hologerrhum dermali*. Being a Panay endemic, the species was known so far from only two specimens, the holotype (Mt. Madja-as), and an individual from Sibaliw, in the West of the NW Panay Peninsula. The third specimen was found killed by man not far from the telemetry research area.

A new gecko (*Luperosaurus corfieldi*)**,** yet another Panay endemite among the gecko family.

Courtesey M. Gaulke.

In 2007 finally the description of a new gecko (*Luperosaurus corfieldi*) species discovered at Sibaliw a few years ago was published (GAULKE et al. 2007, **App. 6**, pictured above; see also colour plate in 9th Ann. Report, PESCP) and a contribution on the diet of *V. mabitang* (GAULKE et al. 2007; see **App. 7**).

Yet another new publication sprang from the herpetofaunal studies on NW Panay. A new species of frog (*Platymantis. paengi*) from the peninsula was described by SILER et al. (2007; see **App. 8**), thus adding still another form to the ever growing list of Panay endemites. In the meantime, since the first sighting, we could spot this species in various areas on the peninsula as well as in the telemetry research area

1.5.2 The destructive Impact of the Marine Toad (Cane Toad, 'Hawaiian Frog', *Bufo marinus*), an alien Species from South America

Alien species, also called 'invasors' when successfully established in their new home, have wrought havoc to many biota worldwide. Next to habitat destruction the invasion by alien species has been recognised as the most important cause of species extinction. The adverse effect of the invasor may be often quite indirect in that it interferes with vital mutualisms like, e. g., indispensable pollinator plant interactions (Traveset & Richardson 2006, Trends Ecol. Evol. 21: 208-216). In the Philippines, the Marine Toad (pictured) was introduced from the neotropics on Negros in 1932 to control insects affecting the sugar cane industry and has subsequently got out of control by invading other islands and is impacting the soil fauna to an unknown degree as in many other parts of the world. To assess this impact **Manuela Esslinger** and thereafter **David Bellhoff** began looking at the diet of Marine Toads in the coastal area of Mag-aba and the higher elevations around Malumpati including the foot hills of Mt. Mab-o (≤150m asl), respectively. Whereas toads are relatively small around Mag-aba (<250 g) those further inland attain sizes of 250-600 g as in their native haunts. As a consequence the prey animals of the smaller toads are correspondingly small (ants, termites, beetles, grasshoppers, small larvae and other arthropods) whilst those of the larger toads include scorpions, mantids, phasmids, harvestmen, whipscorpions (Uropygi), large millipedes and juvenile blind snakes (*Typhlops castanotus, Rhamphotyphlops braminus*). The whipscorpions, in one case five in one toad, all belong to one species (*Minbosius manilanus*, see **App. 9**), known so far only from Luzon, and are the first of their kind for Panay. A number of taxa, like one scorpion from among three species of scorpions, the whipscorpion and the two blind snake juveniles have only been found in the stomachs of the toads. Accordingly the toads must be regarded a 'living museum' through the help of which the soil fauna was more completely mirrored than by our nightly collecting activities (three men: D. Bellhoff and two field assistants).

Adult Marine Toad on Panay Island. Courtesy Maren Gaulke, 'An illustrated Guide to the Amphibians and Reptiles of Panay'.

The difference in prey composition between the small and coastal area toads and the large and higher elevation toads was such that the latter encompassed virtually the diet of the former. They proved to be more generalists as would be expected from their larger size and their parochial feeding habits well known before. To quantify this difference in diet composition the Shannon-Wiener-Index H of species biodiversity was computed. This was first done for the smaller vs. larger toads from one, i. e. the inland collecting area, and secondly for the smaller toads residing in the coastal areas. The Shannon-Wiener-Index takes into account the relative proportions of prey taxa found, often narrowing them down to the genus or family level only, and their absolute numbers. For example, the index (actually its 'information content') is greater if from among 100 prey species each one is represented by one individual

instead of one species from among the 100 scoring 90 and all others only one. Accordingly one obtains for the smaller-sized toads from the inland areas

$H_{<250g} = 1.09$

and for the larger toads of the same habitat

$H_{>250g} = 2.01$,

thereby dividing up the total number of toads (n=37) about equally. A bootstrap analysis (for which we thank N. Bissantz and D. Ziggel, Faculty of Mathematics, Ruhr-Universität Bochum) shows the larger toads to feed on a more diverse fauna (n=263 items) of prey animals than do the smaller toads (n=213 items); the difference between the H values is statistically significant ($p << 0.01$).

Similarly we tested whether the toads from two habitats, namely bushland vs. secondary forest of the coastal collecting sites around Mag-aba, differed in the diversity of their prey faunas (Esslinger's database). These toads weighed less than 250g throughout. The species diversities obtained are

$H_{bushland} = 0.76$

and

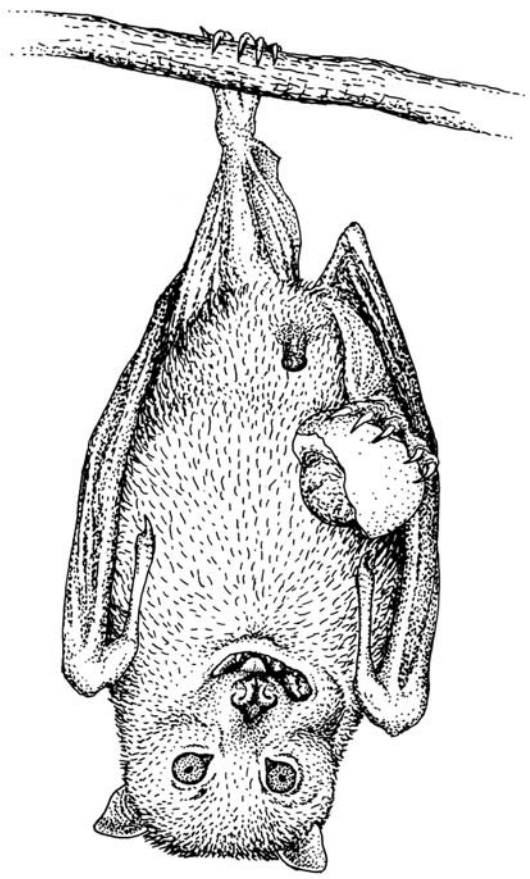
$H_{secondary\ forest} = 1.41$,

with he difference again yielding statistical significance similar (though not strictly comparable to Bellhoff's bootstrap test because of lack of access to the original data) to the level obtained for the size difference within a habitat mentioned above. The lower diversity among the bushland prey falls in line with the much lower structural complexity of this habitat. - Since the coastal secondary forest sampled was structurally similar to the inland forest sampled by Bellhoff and the size of the toads was best comparable to his smaller size cohort of <250g, the H values of 1.41 (sec. forest) and 1.09 (similar inland forest) compare reasonably well and give added weight to the idea that the smaller toads display less variety in their diet; this was shown above for two size classes within one habitat, which is admittedly more telling.

This preliminary field work suggests that the impact of the Marine Toad on the native soil fauna must be considerable both in terms of the species diversity eaten as well as the numbers of individuals. This impact must be quantified in the next round of field work and methods of control must be contemplated. It may be added that already the tadpole stage of this invasor is harmful to the living tadpoles of syntopic native anurans.

1.5.3 The hormonal and behavioural Response to Man in endangered Flying Fox Species in two Roost Areas under different Threat

In the Philippines, several of the flying fox species are severely endangered by man's activities. Among these species the Golden-crowned Flying Fox (*Acerodon jubatus*) takes prominence. Its numbers have plummeted from hundreds of thousands a century ago to a couple of thousands at present. On Boracay Island it is co-roosting with the Philippine Giant Flying Fox (*Pteropus vampyrus*) and much fewer of the small Common Island Flying Fox (*P. pumilus*) (pictured) in six alternatingly used roost sites in the north. Ongoing construction works of developers that aim at increasing hotel capacities on this already overcrowded island spurred me to set up a research project. Its main goal was to find out to what extent these potential man-made disturbances were further imperiling the foxes in their roosts whose numbers have dropped over recent years still further; the proportion of the Golden-crowned had gone down to a low of 12% out of 2040 foxes in 2003 (11th Report, PESCP, unpublished). Back in 1996 its numbers had still stood at 50% according to a census by PESCP personnel (Luft & Meier 1999. J. on Environment, Energy and Minerals, II, 28-32).



Common Island Flying Fox, rare among the roosting foxes on Boracay, feeding on a Dangkalan fruit (*Calophyllum inophyllum*). Courtesy Helga Schulze

To assess the potential threat from the construction activities mentioned a colony impacted by man and another one left by itself were to be compared in regard of levels of stress. To this end the colonies on Boracay Island and in Mambukal, north Negros, respectively, were looked at. The former colony was encumbered by little human activity at the time of study, whilst the Mambukal colony experienced a large variation of human activities from a nearby resort. Unfortunately the fecal samples collected from the Boracay bats were all destroyed by a fire in the resort of 'Baling Hai', and thereafter the researcher P. van der Aa had no opportunity to replace them with new ones. Therefore the relationship between measures of stress as judged from fecal analysis (see below) had to be confined to the Mambukal colony alone which very fact leaves much to be desired.

While flying foxes were out foraging concentrations of glucocorticoid metabolites (GCM) in their feces indicative of stress experienced during day time were measured

(**App. 10**). Stress-related as well as other types of behaviour, environmental conditions and human activities were measured. Accordingly the flying foxes have habituated to the presence of humans: There were neither overall differences in behaviours between both study sites, nor during days with disturbance and days without disturbance. Neither bat behaviour nor human activities were reflected by measured GCM levels. However, GCM was lower in the center of the colony than in the periphery, thus corroborating the well established fact that animals surrounded by others 'feel safer'. Furthermore, human disturbance promoted behavioural factors like `uneasiness' and affected levels of '`body care' and yawning. And the assumption of disturbance having no or little effect must be tempered 1) by the lack of an inter-colony comparison that would be most telling; and 2) by the results being marred by three bat species increasing noise in the measurement of GCM above the level to be expected when instead restricting this measurement to only one species at a time. If disturbance has no or little effect on flying fox stress levels, ecotourism would be a good solution to preserve the habitat of endangered flying foxes. Unfortunately, the jury is still out on answering this question reliably.

1.6. Basic Research

1.6.1 The Avoidance of Spider Webs by Spider Prey Animals

Over the last two years we came across a mortality factor for flying animals up to the size of a small bird or bat that had gone unnoticed so far. Spider webs of a certain strength and placed among forest understorey and canopy of all sorts have been found to be fatal not only for the typical flying insect prey of orb web spiders but also to small birds of the size of a sunbird (*Nectarinia* sp.), flowerpecker (*Dicaeum* sp.), Philippine Bulbul (*Hypsipetes philippinus*) and small kingfishers (*Ceyx* sp.) (pers. comm. by B. Tacud, E. Sanchez, pers. obs.). This unprecedented array of observations spurred us to look into the problem of how potential spider prey animals possibly avoid the often fatal web. While the work with birds is still ongoing the study of insects has gone some way that warrants reporting. In this endeavour webs of the

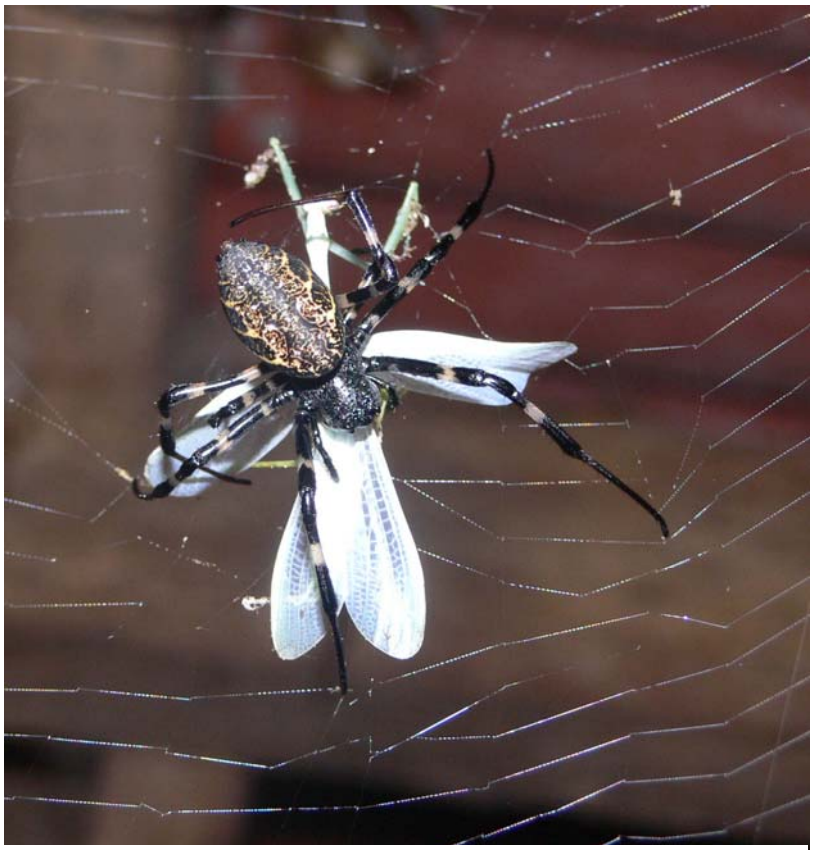


Fig. 1. Adult *Nephilengys* female eating a preying mantis on its web. Foto courtesy H. Krehenwinkel.

widespread nephilid genera *Nephila* sp. and the smaller *Nephilengys* sp. came have come to be at centre stage (Fig. 1).

Beneath the floor of Station Sibaliw a sizeable population of a wasp *Parischnogaster* sp. (Hymenoptera, Vespidae, Stenogastrinae) has become established for some years already. The wasps are part time cleptoparasites foraging on prey remains in spider webs. They are doing this by cautiously hovering in front of the web, thus avoiding blundering into it. Even so non-foraging wasps in flight are liable to fall prey to the owner of the web which led to the question whether the web does not only serve as a source of food but also poses a threat, and whether the wasps are capable of avoiding it.

To answer these questions **H. Krehenwinkel** attached webs of *Nephilengys* sp. spiders that abound in the station to rectangular loops of wire each that were vertically placed, i.e. in their natural orientation, in front of the nest of a colony of wasp females; the elongate mud nests are dangling on a thin thread from the ceiling of an over hanging building, as in our case, or cave. The flights of single wasps returning to their nest were scored. In doing so the flight path of the wasp when approaching a web was recorded and thereby assigned to few categories. For the sake of simplicity these flight paths were lumped, thus yielding the categories 'web avoidance' and 'bumping into web'; the latter behaviour resulted rarely in the wasp being entangled, usually it broke free to either side of the web. Various designs of web presentation aiming at elucidating the perceptual mechanism of web avoidance were used as follows:

1. *Nephilengys* web beneath wall of station, i. e. bright environment and thin threads difficult to see
2. *Nephila pilipes* web dto., but strong and easy to see web
3. *Nephilengys* web 3 m away from station wall underneath floor, i. e. dark environment and thin threads difficult to see
4. Artificial web made from perlon fishing line beneath wall of station, i. e. bright environment and easy to see threads that are thicker than any of the spider threads used
5., 6. Control experiments with web-free, i. e. empty wire frames hung at the positions listed under 1. through 4. above:

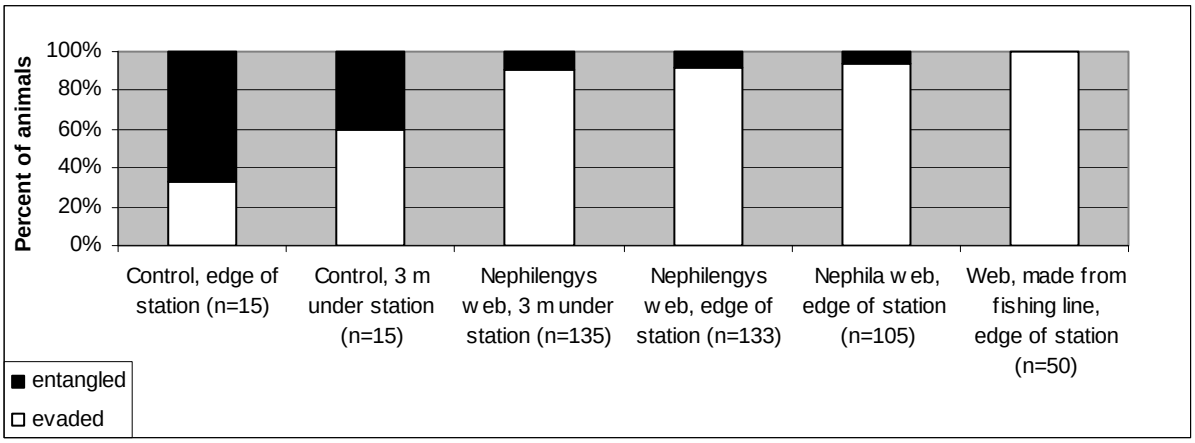


Fig. 2. Percentage of wasps that avoided the web at a distance or bumped into it under six different conditions of illumination and diameter of the web's threads. Courtesy H. Krehenwinkel.

As can be seen in Fig. 2 the wasps avoided the web with increasing visibility due to ambient light becoming brighter from underneath the station to the edge (conditions 1. vs. 2.), and as threads of the web are getting thicker (conditions 2. vs. 3. vs. 4.). There was no wasp at all that bumped into the highly visible artificial web. Taken together the evasions from any web are strongly different (high statistical significance, binomial test 2-tailed) from both control conditions with no web (conditions 5., 6.; $p < 0.0062$ throughout) when the wasps flew either through the empty wire frame or passed it on either side regardless of the two light conditions applied.. Accordingly results are consistent with the assumption that the wasps evade the web visually since evasion increased both with increasing ambient light and the inherent visibility of the web. From this it follows that the spider webs tested are of little significance as mortality factor in a wasp's life.

The great abundance of *Nephilengys* spiders in and around Station Sibaliw made **M. Gronwald** look closely into the ability of a common pierid butterfly (*Eurema* sp., Fig. 3) to avoid webs of *Nephilengys* (probably *N. malabarensis*, H. Krehenwinkel pers. comm. 2007).

Gronwald conducted two types of experiment. One, in which a freshly captured butterfly was released into an elongate arena, i. e. a tunnel shaped box (95 x 30 x 30 cm) covered with blue, translucent, yet non-transparent plastic foil. The narrow ends were either open and surrounded by a bamboo frame snugly fitting into the opening, or, occluded by a spider web hung over another, same-sized bamboo frame.
Through an opening in the middle of the arena the butterfly was inserted in a small transparent perspex box that was opened after a few seconds when the animal had come to rest.

Fig. 3. *Eurema* butterfly drinking from a flower of a Mousetail plant. Foto courtesy M. Gronwald.

When released the butterfly was free to chose for escape either of the two bright openings. The web was affixed to each opening equally often From among 268 animals thus tested 210 escaped from the arena through the free opening thus avoiding the spider web at the other end which is highly significant ($p < 0.001$, binomial test, 2-tailed). That it was the web that oriented the butterfly in its escape was ascertained by a control experiment in which both sides were devoid of a spider web, and here the animal chose the two openings about equally often ($n=135$, $p = 0.390$, binomial test, 2-tailed). This demonstrates that *Eurema* is able to avoid a spider web on sight alone.

In a second experiment in a more natural setting Gronwald scored the visits of *Eurema* to a a much visited, alien food plant (*Stachytarpheta* sp., Verbenaceae) with blue flowers on a long shoot, vernacularly called 'Mousetail'. Access to the focal Mousetail was blocked on opposite sides by two equally large webs of *Nephilengys* attached on same-sized bamboo frames as those used in the arena experiment mentioned above at a height of 95 cm above ground in a fern field (Fig. 4). The other two sides permitting access had same-sized bamboo frames without a web, with equal space between all four frames left unblocked

Fig. 4. The bamboo frames with *Nephilengys* spider webs juxtaposited on opposite sides of and with equal distance from a Mousetail, with the web-free control frames (of different shading) on the other two sides. The observer sat left of the setup. Foto courtesy M. Gronwald.

In a nutshell, the observations demonstrated clearly that also in this more natural setup *Eurema* displayed a remarkable ability to avoid bumping into the spider web ($n=46$, $p < 0.001$, binomial test, 2-tailed). In this avoidance *Eurema* uses either of two response patterns. It either starts veering to the side on which it then passes the web from a distance of ca 10 cm while retaining its height above ground, thus detouring the web; often the flowers that had initially attracted the butterfly are then visited. Or, the animal reverses its flight sharply within a distance of <5 cm from the web, thus leaving the plot with the food plant irrevocably. This last-ditch effort in avoiding the web apparently inhibits any motivation to feed during the next seconds. Detouring the web, however, seems to be the more common strategy of web avoidance ($n=42$, $p = 0.044$, binomial test, 2-tailed). By contrast, *Eurema* when approaching the focal plant on one of the two web-free control sides with empty frames never backed off or veered sideways, thus indicating that it was the webs on the other two, experimental sides that made it avoid the obstacle. The long distance at which the avoidance was initiated indicates that the response was visually guided rather than through olfactory or mechanical stimuli possibly emanating from the web. This result falls thus in line with the one reported above in a less natural setting. This is the first demonstration of a butterfly visually avoiding a spider web, a faculty already known for other potential spider prey animals with acute eyesight like hoverflies and (other) pollinating insects like bees, wasps, certain flies and beetles (Foelix 1996, Biology of Spiders. 2nd edition. Oxford Univ. Press, Oxford).

Taken together the results suggest that potential prey of two insect groups can avoid the rather difficult-to-see web of a spider that displays no ornaments (technically also called stabilimenta) that have been shown to attract insects by virtue of their UV reflectance (refs. in

Alcock 2005, Animal Behavior. An Evolutionary Approach. Sinauer Associates, Sunderland, MA, USA).

1.6.2 The Homing Performance of the Philippine Bent-toed Gecko (*Cyrtodactylus philippinicus*) and its possible underlying magnetic Orientation

The Philippine Bent-toed Gecko is widespread across Luzon and the W Visayan Islands (Gaulke 2007, Illustrated Guidto the Amphibians and Reptiles of Panay, PESCP, unpublished, 2nd edition). Following up on experiments of A. Siegert in 2005 (12th Report, 2006, p. 67 seq.) **Carina Marek** displaced more geckos away from their home in and around the Station Sibaliw to release trees 100 and 150 m away. From the enlarged sample of geckos thus monitored 39.6% (n=53) returned back home, thus underscoring their homing ability. (The earlier percentage from a smaller sample of 22 animals was similarly 36%). With the help of a bootstrap analysis the return rate was shown to differ significantly from a random dispersal around the release site (courtesy N. Bissantz and D. Ziggel). This remarkable performance indicative of a true homing ability, however, must be critically looked upon in the light of homing experiments on domestic pigeons, the prime species for experiments on animal navigation; conceivably, the geckos could have returned home because of a special topography of the release site in relation to their accustomed home range because of, e. g., the ease of negotiating the tangle of plants and rocks along a trail leading to the station.

Adult Philippine Bent-toed Gecko, PESCP's Station Sibaliw. Foto courtesy S. Luft (PESCP)

For this reason **Claudia Krause** expanded the homing experiments with new animals in 2007 by using a new release site shifted 60° West from the old one. Whilst the data are still being worked out while this report is being written if can be safely stated that 46.2% of the 13 geckos released also returned back home from the new release site, thereby rendering the idea of a biased-topography unlikely; the result falls well in line with the one obtained at the old release site with about 40% returners (see above).

Furthermore, the old experiments toward illuminating a potential perception of the earth magnetic field during homing were improved upon. Whereas the old study arena that was positioned close to the previous release tree contained ferromagnetic elements a new one with

the same dimensions made from aluminium was deployed by Claudia's fresh approach, retaining the previously used magnets for the distortion of the natural magnetic field. Moreover, it was ascertained that both the arena at the new release site and the site itself came to lie outside a magnetic anomaly that had complicated testing conditions at the old release site and arena. The comparison between the trials with the natural magnetic field and the manipulated, distorted field at the new site is still being worked out while these lines are being written.

1.6.3 First Observations on the Breeding Biology of the Elegant Tit

To understand organismal adaptations to tropical conditions it has proven fruitful to compare tropical species to their closest relatives in temperate regions (Stutchbury & Morton 2001. Behavioral Ecology of Tropical Birds. Academic Press, London) that very often are the ancestors in a lineage of interest as in the following case. In view of the veritable flood of papers on the temperate tit species, foremost the Great Tit (*Parus major*), it seemed rewarding to look at a Philippine representative of this family of passerines.

The Elegant Tit (*Parus elegans*) is one of three tit species endemic to the Philippines and it is more widely distributed than its two congeners. Despite of its wide occurrence little was known about its biology prior to our study around Station Sibaliw. On Panay the species lives in both primary and second growth forest. All four nests were found in the dry season. They were situated underground beneath an overhanging rock. This nesting site seems to be typical of the species, leastways on Panay, since 50 nest boxes with two entrance sizes hung up in the study area were ignored throughout for a number of years. Incubation was done solely by the female in one more closely observed nest, and the male did not feed the female. The nest and the eggs were documented photographically. Both parents fed the young with some preponderance of the female (**App. 11**). Insects, their larvae and spiders dominated in the diet fed to the nestlings (for details see App. 11).

Elegant Tit male bringing a tettigoniid grasshopper to its nest underground. © J. Villanueva/ PESCP

It is noteworthy that predators like a Water Monitor Lizard near the nest were not mobbed. This observation is not easy to understand functionally. However, there may be a parallel in the Great Tit that sheds light on this puzzling silence. A predator with powerful cognitive abilities like a cat (*Felis catus*) when being encountered close to a tit's nest is not mobbed at, probably to avoid disclosing the nest to the predator. This idea receives support from playback experiments with mobbing choruses that

elicit mobbing in Great Tit parents at some good distance from their nests rather than close to these (Zimmermann & Curio 1988, Anim. Behav. 36: 926-932). Needless to say that this idea holds true only if the monitor mentioned avails of cognitive powers comparable to this sophisticated carnivore.

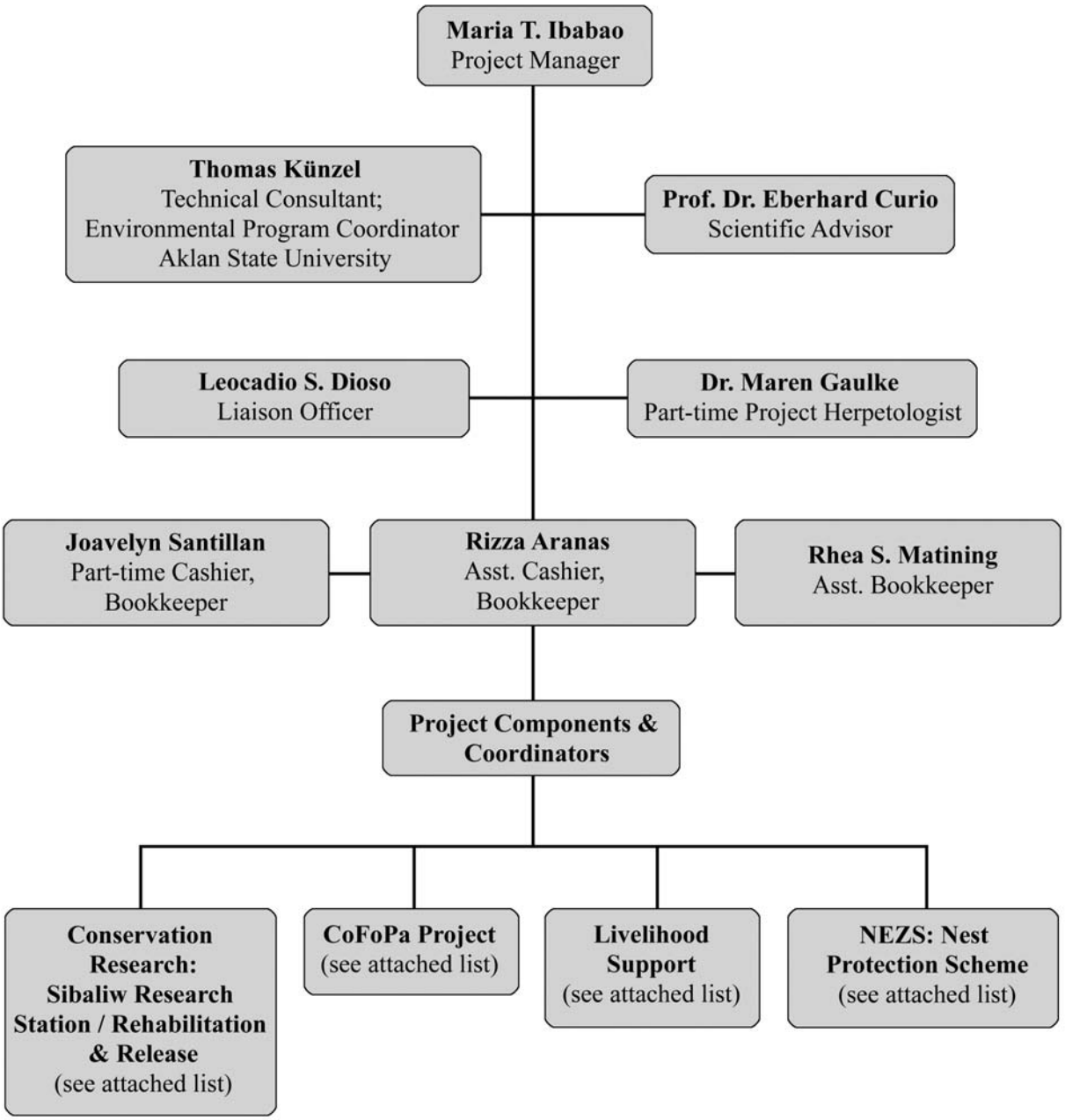
The Elegant Tit differs in its breeding biology from congeners living in temperate regions such as, e. g., the Yellow-bellied Tit (*Parus venustulus*), the Coal Tit (*P. ater*), its closest relatives, or the Great Tit (*P. major*), all inhabiting the continental palaearctic region. The differences can functionally be best understood in terms of climate and predation.

Appendices

App. 1:	PESCP	Organigram and Staff of PESCP. Status End 2007
App. 2:	Alli & Curio	Visitors of Research Station "Sibaliw"
App. 3:	Alabado,Lestino, Venus, Ibabao, Kuenzel, & Curio	PESCP's Protection Program for the last substantial sized Population of the Hornbill Dulungan (*Aceros waldeni*). *Final Report to the North of England Zoological Society and Stiftung Artenschutz (2007)*
App. 4:	Alabado,Lestino, Venus, Ibabao, Kuenzel, & Curio	Summary of Dulungan Nest Holes occupied in 2007 and Report on the Presence of other Wildlife
App. 5:	Espiritu & Galuego	Actual Result/ Output of Seedling Production and Tree Planting Activities in the Green Philippines Program
App. 6:	Gaulke, Roesler & Brown (2007)	A new Species of *Luperosaurus* (Squamata: Gekkonidae) from Panay Island, Philippines, with Comments on the taxonomic Status of *Luperosaurus cumingii* (Gray, 1845). Copeia 2007: 413-425
App. 7:	Gaulke, Altenbach, Demegillo & Struck (2007)	On the Diet of *Varanus mabitang*. Mertensiella 16: 228-239
App. 8:	Siler, Linkem, Diesmos & Alcala (2007)	A new Species of *Platymantis* (Amphibia: Anura: Ranidae) from Panay Island, Philippines. Herpetologica 63: 351-364
App. 9:	Haupt (2007)	The Whipscorpion *Minbosius manilanus* (C. L. Koch 1843) on Panay Island (Philippines). Senckenbergiana biologica 87: 135-136
App. 10:	van der Aa, Lorica & Komdeur (2006)	The hormonal and behavioral Response to the Presence and Activities of Humans in three co-roosting Flying Fox Species (*Acerodon jubatus, Pteropus vampyrus* and *P. hypomelanus*) in Boracay and Mambukal in the Philippines. Acta Zoologica Sinica 52: 827-837
App. 11:	Villanueva, Slade & Curio (2006)	The first Observations of the Breeding Biology of the Elegant Tit *Parus elegans* in the Philippines. Ökol. Vögel/ Ecol. Birds 28: 31-46

App. 1: PESCP **Organigram and Staff of PESCP. Status End 2007**

Updated Organizational Structure and Staff of Philippine Endemic Species Conservation Project (PESCP)



PESCP Staff

CONSERVATION RESEARCH

Sibaliw Research Station:

- Marlo Alli – full time (from 1 Aug 07)
- Leobert Macero – full time (till 31 July 07)
- Benjamin Tacud Jr.- full time
- Junmar Jamangal – part time
- Edward Geronimo – part time
- Felimon Geronimo – part time

Researchers (Germany) – part time
Dr. Maren Gaulke, Project Herpetologist
Prof. Dr. E. Curio, Scientific Adviser

Photographer (Malaysia) – part time
Prof. Dr. Kay Fletcher

Volunteers (Germany) – part time

- David Bellhoff
- Sabrina Henkel
- Henrik Krehenwinkel
- Claudia Krause

Volunteers (Philippines) – part time
Niño Espinas from Philippine Science High School - Main Campus,
Department of Science and Technology, Diliman, Quezon City

Rehabilitation and Release of Wildlife (see also PESCP Staff above)

- Enrique Sanchez, DVM – part time
- Macario Melchor – part time
- Nestor Bagac – full time

Community Work & Nest Protection Scheme (NEZS; 'GEO protects the rainforest') of PESCP:

- Richard Lestino – full time
  (Wildlife Educator)

Community Conservationists:

- Nelson Esto
- Alfredo Onao
- Keneth Dalumpines, Dalagsaan, Libacao, Aklan
- Sonny Esto – part time, Oyang, Libacao, Aklan
- John Inggo – part time, Manica, Libacao, Aklan
- Romeo Agustin, Igpatuyaw, Sebaste, Antique
- Rolly Fernando, Abiera, Sebaste, Antique
- Isidro Montales, Paningayan, Culasi, Antique

- Alexander Alabado –full time
  (Wildlife Educator)

Community Conservationists:

- Vicente Filaro – part time, Alojipan, Culasi, Antique
- Arnaldo Nabas – part time, Osorio, Culasi, Antique
- Nelson Anos – part time, Flores, Culasi, Antique
- Joman Manga – part time, Alegre, Sebaste, Antique
- Alberto Mangga – part time, Alegre, Sebaste, Antique

- Julius Venus – full time
  (Wildlife Educator)

Community Conservationists:

- Carillo Agudes – part time, Sitio Caningag, Manica, Libacao, Aklan
- Noel Agudes – part time, Sitio Aytabag, Manica, Libacao, Aklan
- Charlie Esto, Sitio Nulwan, Tapaz, Capiz
- Dante Nabalde, Ma. Cristina, Madalag, Aklan
- Rey Dalumpines, Aglunok, Calinog, Iloilo
- Jessie Bagac, Usman, Malinao, Aklan
- Armelito " Bong" Ebon – part time, Guia, Pandan, Antique

Law Enforcement and Field Research:

- Arnold Demegillo – part time
  Coordinator of 'Mabitang Telemetry Project' under aegis of BIOPAT supervised by Dr. Maren Gaulke

- Maria T. Ibabao, full time, Project Manager from 1 June 07, Forest Ranger Coordinator, from 15 Sep 06 – present
- Thomas Kuenzel, Technical Consultant and ASU Environmental Program Coordinator
- Leocadio Dioso, Liaison Officer

PESCP Forest Rangers (full time unless otherwise)

1. Democrito Fernando
2. Raymund Alejandro
3. Faustino Guillermo
4. Armelito Ebon
5. Cerwin Ibanes
6. Francisco Nabong, Jr.
7. GualbertoTamboong
8. Joven Dujali
9. Carlito Mateo
10. Joserey Tenorio
11. Robert Nepumoceno
12. Juman Mangga
13. Maria Theresa C. Ibabao - Chief FR
14. Jose Matinong

BIOPAT Project

- Reyel Paulino – part time
- Gersom Operiano – part time

CoFoPa Project – "Community–based Maintenance and Restoration of Forest in Central Panay Mountain Range and Protected Area of NW Panay Peninsula", till 31 Jan 07

Project Management Staff:

Thomas Künzel – Project Supervisor
Prof. Rogelio Felizardo – Project Manager – ASU
Ms. Ethel Lachica - Bookkeeper — 25 Peso Multi Purpose Cooperative
Forester John R. Espiritu – Forester
Sonny Eupre E. Galuego – Asst. Forester
Henry Dungganon – Upland Agriculturist, Livelihood Coordinator
Dr. Enrique Sanchez, DVM – Veterinarian Consultant
Richard Lestino – Wildlife Educator

Liaison Officers:
Sugar Doroteo – Alojipan, Culasi, Antique
Alonie de la Torre – Idio, Sebaste, Antique
Arnold Demegillo - Sitio Calabanog, Idiacacan, Pandan
Maria T. Ibabao – Sitio San Juan, San Roque, Libertad (see also above: Forest Rangers)

Nursery Caretakers:
Edwin Filaro – Alojipan, Culasi, Antique
Roberto Ronquillo – Idio, Sebaste, Antique
Julito Dioso – Sitio Calabanog, Idiacacan, Pandan
Estelito Unlayao – Sitio San Juan, San Roque, Libertad
Alfonso Nabor – Castillo, Makato, Aklan

SUPPORT STAFF – Based in Barangays Cubay and Bulanao, Libertad
Porters – all part time

- Planto Absalon
- Ventura Matanga
- Antonio Geronimo Jr.
- Rexil Geronimo
- Ben Pabay
- Jerry Roldan
- Aldren Magbanua
- Silvestre Ebon
- Rene Saluta
- Moises Bagac
- Felicito Villamor
- Edmar Cabarlis
- Rico Bulan
- Benjie Geronimo
- Niño Geronimo
- Tiborsio Bernabe

- Alfonso Absalon
- Warren Geronimo
- Victor Bernal
- Pablito Diaz
- George de Guzman
- Marcelo Jamangal
- Ernesto Fernandez
- Ramon Samulde
- Alan Absalon

App. 2: Alli & Curio Visitors of Research Station “Sibaliw”

Visitors of Research Station 'Sibaliw'
January to December 2007

Name/Affiliation	Duration of Stay	Reason for Visit
Dr. Enrique Sanchez PESCP Veterinarian	January 14	Released of birds
Markus Gronwald PESCP	February 13 – April 9	Research volunteer
Elizabeth Schuth PESCP	February 28 – April 11	Research volunteer
Katrin Korczyk PESCP	February 6 – May 8	Research volunteer
W.K. Fletcher	March 7–18	Volunteer photography
Raymund Alejandro PESCP Forest Ranger	April 1–3	Conduct foot patrol
Edel Malabja PESCP Forest Ranger	April 1–3	Conduct foot patrol
Dr. Enrique Sanchez PESCP Veterinarian	May 1 –2	Sample collection of to-be-released hornbills
Uli Schram PESCP	May 12–14	Filming of Project by German TV
Christian Mayrhofer PESCP	May 12–14	Filming of Project by German TV
Joven Dujali PESCP Forest Ranger	June 18–21	Conduct monitoring
Armelito B. Ebon Jr. PESCP Forest Ranger	June 18–21	Conduct monitoring
Cerwen Ibanes PESCP Forest Ranger	June 18–21	Conduct monitoring
Gualberto Tamboong PESCP Forest Ranger	June 18–21	Conduct monitoring
Vincent Funtinilla Part-time Technician	June 30	Installation of telemetry antenna
Jeser D. Lopez Part-time Technician	June 30	Installation of telemetry antenna
Louis Fenequito Part-time Technician	June 30	Installation of telemetry antenna
Jaime M. Mangalindan Jr. Forest Crew	August 17	Collecting of *Macaranga* and rattan species
Raymund Alejandro PESCP Forest Ranger	August 22–25	Conduct monitoring
Joven Dujali PESCP Forest Ranger	August 22–25	Conduct monitoring
Armelito B. Ebon Jr. PESCP Forest Ranger	August 22–25	Conduct monitoring

Faustino Guillermo PESCP Forest Ranger	August 22–25	Conduct monitoring
Cerwen Ibanez PESCP Forest Ranger	August 22–25	Conduct monitoring
Frances Nabong PESCP Forest Ranger	August 22–25	Conduct monitoring
Joeserey Tenorio PESCP Forest Ranger	August 22–25	Conduct monitoring
Fredeito Tenorio Caretaker, Telemetry	August 23	Meet research assistant and inspect telemetry antenna
12 Haulers	August 26	Hauling of coco lumber for repair of station wall and floor
Remy B. Jamangal Electrician	September 30 – October 1	Repair solar battery and inspect solar panel
Claudia Krause PESCP	September 23 – December 11	Research volunteer
Henrik Krehenwinkel PESCP	October 4 – December 3	Research volunteer
Carlito Mateo PESCP Forest Ranger	October 15–16	Construct stationary trap nr. birds cages
Junifer Ebon	October 15–16	dto.
Raymund Alejandro PESCP Forest Ranger	October 18–20	Conduct foot operation in Prasna Area to Buruanga River
Joven Dujali PESCP Forest Ranger	October 18–20	Conduct monitoring in Prasna Area to Buruanga River
Cerwen Ibanez PESCP Forest Ranger	October 18–20	Conduct monitoring in Prasna Area to Buruanga River
Carlito Mateo PESCP Forest Ranger	October 18–20	Conduct monitoring in Prasna Area to Buruanga River
Robert Nepomuceno PESCP Forest Ranger	October 18–20	Conduct monitoring in Prasna Area to Buruanga River
Frances Nabong PESCP Forest Ranger	October 18–20	Conduct monitoring in Prasna Area to Buruanga River
Gualberto Tamboong PESCP Forest Ranger	October 18–20	Conduct monitoring in Prasna Area to Buruanga River
5 Students and 2 advisers of Garcia College of Technology School magazine	October 24–26	Get materials for an article about NW Panay for the school magazine
Ann Marie Hartmann PESCP	November 16–18	Visit station

App. 3:	**Alabado,Lestino, Venus, Ibabao, Kuenzel & Curio**	**PESCP's Protection Program for the last substantial sized Population of the Hornbill Dulungan (*Aceros waldeni*). *Final Report to the North of England Zoological Society and Stiftung Artenschutz (2007)***

PESCP's Protection Program for the last substantial sized Population of the Hornbill Dulungan (*Aceros waldeni)*

Final Report

to the

North of England Zoological Society and Stiftung Artenschutz (2007)

by

Alabado, A., Lestino, R., Venus, J., Ibabao, M., Kuenzel, T. and Curio, E.

The forest of the Central Panay Mountain Range (CPMR) is the last stronghold of the Writhed-billed Hornbill or Dulungan (*Aceros waldeni*) – endemic in the Western Visayas, and probably the world's second most threatened hornbill species – with a breeding population of a substantial size (whether its population size is still viable is yet another question). In 1996, PESCP started its program in the area of the five municipalities around the NW Panay Peninsula protecting the forest and its wildlife, and to help the people in upland Barangays to realise a precautionary, sustainable economic development. Up to the present PESCP expanded this program into the CPMR to become active in 35 barangays and/or sitios of 12 municipalities in all four provinces (Antique, Aklan, Capiz, Iloilo) of Panay Island, Western Visayas.

Until the end of 2001, before PESCP started its protection Program for the Dulungans, the situation of the Dulungan population was described in the book "Threatened Bird of Asia" (2001) of BirdLife International as follows:
"This hornbill must now be regarded as one of the rarest and most precariously placed of all Philippine bird species, with remnant populations only on Panay (highest recent record: 25 – 30) and Negros (highest recent record: four.) … The most recent estimate, based on extrapolation from fieldwork to all remaining forest areas on the Islands, is 60 – 80 pairs."

Therefore, *Aceros waldeni* is regarded as critically endangered by the IUCN.

A first assessment executed by PESCP in 2002 revealed an annual minimum loss of at least 50 % of Dulungan broods due to poaching.

PESCP received the first funding for its Dulungan protection program from the German NGO "GEO Protects the Rainforest" (20, 000 US$) in 2002, and the same amount again in 2003.

In 2004 the funding came partly from the North of England Zoological Society (NEZS) and its co-sponsor WVHF and Niehoff Vaihinger, Germany, in addition mainly from the Frankfurt Zoological Society (FZS), and in 2005 again partly from the NEZS and Stiftung Artenschutz, and collectively (near to 35,000 US$) from two US-based organisations, the National Geographic Society Conservation Trust and the Sea World and Busch Gardens. Also in 2005 backbone funding came from the FZS, enabling PESCP to further capitalise on the other contributions mentioned.

In 2006 and 2007 the funding again came partly from the NEZS and its co-sponsor mentioined, in addition to the major portion from"GEO Protects the Rainforest" and the backbone funding from the FZS.

From 2002, the first year of PESCP's program protecting the Dulungan, up to 2006, there has been a steady increase of the number of nest holes occupied by Dulungans as the became discovered by PESCP and included in our protection program. The funds of the above mentioned sponsoring organisations enabled PESCP to protect

in 2002 a total of 31 nest holes
in 2003 a total of 64 nest holes (+ 106 % compared to 2002)
in 2004 a total of 115 nest holes (+ 80 % compared to 2003)
in 2005 a total of 349 nest holes (+ 203 % compared to 2004)
in 2006 a total of 502 nest holes (+ 44 % compared to 2005)
in 2007 a total of 768 nest holes (+ 53 % compared to 2006)

occupied by Dulungans.

This enormous increase of 860 % from the 80 pairs mentioned in the literature before PESCP started its intervention to 768 active nest holes in 2007 can be credited to the very effective nest protection scheme PESCP has applied since 2002, but it indicates also that the former assessment of the occurrence of the Dulungan on Panay had been incomplete.

To avoid overestimating the Dulungan population in the forests of the CPMR we point to the following caveats:

(1) The total number of nest holes reported through our 6 teams executing the Dulungan nest hole surveys in 2007 was 853 but we assume conservatively, based on our experience, that 10% were occupied by the Tarictic Hornbill (*Penelopides panini*) and mistaken for Dulungan resulting holes resulting in a total of only 768 Dulungan holes in 2007.
(2) We further assume conservatively a protection failure of 5%, meaning 38 nest holes have been poached in spite of our protection effort.
(3) For the remaining 730 nest holes we assume a 15% loss (of the whole clutch from natural causes [Kemp 1995, in "The hornbills", mentions 10% for smaller savannah hornbill species]).
(4) We are assuming that from the remaining 620 nest holes at least 1 chick fledged successfully resulting in a total of ≥620 juvenile Dulungans strengthening the wild population in the area in 2007 (clutch size after Kemp assumed to be 2 for the genus *Aceros* though Kauth et al. [1998, J. Ornithol. 139: 475-483] found actually three *waldeni* young twice).
(5) Out of these 620 successfully fledged Dulungans another 75 % (given in Kemp for cooperatively breeding groups) might die due to natural mortality between fledging and maturity, which might be reached after three years (conservative estimate; see also Kemp 1995 in "The hornbills").

Given these assumptions, out of our 768 Dulungan nest holes a total of only 155 (1 bird from every5 broods) birds will become mature adults.

The substantial protection success described here was only possible through the implementation of our double strategy scheme of community-based and "owner" (= hunter)-

based nest hole protection where we made use of a protection network existing of conservation concerned PESCP's community based co-workers (3 Wildlife Educators, 17 Community Conservationists, 14 Forest Rangers, 164 nest hole "owners" (former hunters, 14 Tanods = community police, + others) on the one hand, and where on the other hand this network of conservation workers is supported/flanked by livelihoods planned and implemented together with the communities living in and around the forests where the Dulungan can be found.

Our scheme for the protection of the Dulungan Hornbill in the forests of the CPMR has, of course, also its very substantial, though unmeasured positive effects on the protection of other wildlife, especially on the only other

hornbill species on Panay, the Visayan Tarictic (*Penelopides panini*) being much less threatened than the Dulungan and occurring still in good numbers in both the forests of the NW Panay Peninsula and the CPMR. But also the critically endangered Visayan Spotted Deer (*Cervus alfredi),* which has its probably last viable population in the forests of the CPMR, enjoy protection through our activities focused on the Dulungan (App…..).

Assuming that the total area in the CPMR suitable for breeding of the Dulungan to be at least 1.2 times the size of the area already covered by our protection program we estimate that the total breeding population of the Dulungan in the CPMR amounts to ca. 900 – 1,000 breeding pairs, which we still regard as a conservative minimum estimate.

To secure what PESCP achieved during the past seven years the Dulungan protection program must be continued. The program has been already evaluated in 2006 through the NEZS with the conclusion that it will very probably lead to the sustainable conservation of the Dulungan population in the CPMR. For our Dulungan nest hole survey during the upcoming breeding season (May/June) 2008 PESCP is again looking for volunteers to join our survey activities giving us again an independent opinion about our Dulungan protection activities.

In **App. 4** the number of Dulungan nests and their distribution across the provinces of Panay and the staff involved is being detailed as is the encouraging co-occurrence of two other wildlife species, the Spotted Deer and the Mabitang (Panay Monitor Lizard).

App. 4: Alabado,Lestino, Venus, Ibabao, Kuenzel & Curio **Summary of Dulungan Nest Holes occupied in 2007 and Report on the Presence of other Wildlife**

Summary of Dulungan Nest Holes occupied in 2007 and Report on the Presence of other Wildlife

PROVINCE OF ANTIQUE

Municipality of Sebaste

Barangay	Covered Sitios	Community Conserva-tionist	Total No. Nest War-dens	Total No. Dulun-gan Nest Holes	Presence of Spotted Deer	Presence of Mabitan g (Monito r)	Educator assigned
Alegre		Bobbet Mangga	39	232	Yes	yes	A. Alabado
Poblacion	Igpatuyao	Jerry Calawod Danilo Balindes Joseph Jonelas	8	48	yes	yes	R. Lestino
Abiera	Maslog	Rolly Fernando	7	24	yes	yes	R. Lestino
Part of Abiera	Boundary area of Alegre & Abiera	Bobbet Mangga	1	6	yes	yes	A. Alabado

Municipality of Culasi

Paningayan	Igpako timbaban	Isidro Montales	17	96	yes	yes	R. Alabado
Simbula				40	yes	yes	A. Alabado
Osorio	Mt. Bayabas	Arnaldo Nabas	1	2	yes	yes	A. Alabado
Alojipan		Vicente Filaro	1	1	yes	yes	A. Alabado
Magsaysay		Rey Estolloso	1	1	yes	yes	A. Alabado

Municipality of Pandan

Maadios		Rogelio Paulino	4	51	yes	yes	J. Venus

PROVINCE OF AKLAN

Municipality of Libacao

Dalagsaan	Karungan Kamandag	Nelson Esto	15	81	yes	yes	R. Lestino
Taraw			2	15	yes	yes	J. Venus
Manika	Caningag	Loreto Agudes	8	16	yes	yes	J. Venus
Oyang	Maybalanak Agbatwan Naigo	Sonny Esto	11	68	yes	yes	R. Lestino

Municipality of Madalag

Ma. Cristina		Dante Nabalde	10	96	yes	yes	J. Venus

Municipality of Ibajay

Yawan		Jimmy Antoy	10	45	yes	yes	J. Venus

PROVINCE OF ILOILO

Municipality of Calinog

Aglonok		Rey Dalumpines	8	31	yes	no	J. Venus

Total

16 Barangays		17 Community Conserva-tionists	143 Nest War-dens	853 total # of Dulungan Nests

App. 5: Espiritu & Galuego — **Actual Result/ Output of Seedling Production and Tree Planting Activities in the Green Philippines Program**

Actual Result/Output of Seedling Production and Tree Planting Activities in the GPP

PROJECT SITE: CALABANOG IDIACACAN, PANDAN, ANTIQUE

NAME OF SEEDLINGS	TOTAL NO. OF SEEDLINGS RAISED	TOTAL NO. OF SEEDLINGS PLANTED	NO. OF MORTALITY	SEEDLINGS REMAINING IN THE NURSERY	
				PLANTABLE SIZE	SIZE NOT PLANTABLE
1. Dungon	300	100	50	-	150
2. Bakan	550	150	65	235	-
3. Toog	660	150	45	365	-
4. Igmen	470	100	40	330	-
5. Bolog	300	-	35	265	-
6. Gogo	400	100	15	285	-
7. Salong	300	100	50	150	-
8. Narra	1,880	500	75	505	-
9. Molave	600	300	35	265	-
10. Guisok	1,700	600	150	-	850
11. Magibolo	370	100	70	180	-
12. Kamagong	310	-	50	260	-
13. Bagutadhan	756	300	35	421	-
14. Oyaoy	590	200	50	140	-
15. Badlan	250	50	45	155	-
16. Acacia	500	-	30	470	-
17. Kulanos	280	-	60	220	-
Subtotal				4,246	1,000
TOTAL	10,216	2,750	920	5,246	

Partners' Planters: DENR, PESCP, LGU Barangay Idiacacan, Pandan National Vocational High School students and teachers

Note: 1,300 were delivered to DENR Kalibo Aklan for GPP tree planting:

NAME OF SEEDLINGS	NO. OF SEEDLINGS DELIVERED
1. Bakan	100
2. Toog	100
3. Narra	800
4. Guisok	100
5. Oyaoy	200
TOTAL	1,300

PROJECT SITE: IDIO, SEBASTE, ANTIQUE

NAME OF SEEDLINGS	TOTAL NO. OF SEEDLINGS RAISED	TOTAL NO. OF SEEDLINGS PLANTED	NO OF MORTALITY	SEEDLINGS REMAINING IN THE NURSERY	
				PLANTABLE SIZE	SIZE NOT PLANTABLE
1. Kulanos	220	-	80	140	-

2. Narra	1,771	1,725	-	46	-
3. Oyaoy	370	125	170	75	-
4. Toog	400	295	45	60	-
5. Kamagong	1,070	100	170	800	-
6. Mabolo	330	-	290	40	-
7. Gogo	488	-	48	-	440
8. Ughayan	125	75	20	30	-
9. Bakan	600	225	250	125	-
10. Laua-an	400	-	111	289	-
11. Duhat	200	-	100	100	-
12. Kansilai	102	-	52	50	-
13. Molave	250	100	112	38	-
14. Dungon	700	-	249	451	-
15. Salong	185	-	86	-	99
16. Bagutadhan	470	-	81	389	-
17. Magibolo	489	-	131	358	-
18. Bolog	278	-	77	-	201
19. Igmen	480	205	89	186	-
20. Baguilomboi	87	-	16	71	-
Subtotal				3,305	740
TOTAL	9,093	2,850	2,198	4,045	

Partners' Planters: DENR, PESCP, LGU Idio, Sebaste High School students and teachers

PROJECT SITE: SAN JUAN/ SAN ROQUE, LIBERTAD, ANTIQUE

NAME OF SEEDLINGS	TOTAL NO. OF SEEDLINGS RAISED	TOTAL NO. OF SEEDLINGS PLANTED	NO. OF MORTALITY	SEEDLINGS REMAINING IN THE NURSERY	
				PLANTABLE SIZE	SIZE NOT PLANTABLE
1. Badlan	1,043	20	101	639	-
2. Dungon	1,853	140	303	1,280	-
3. Narra	2,369	820	141	988	-
4. Kamagong	1,397	-	205	1,024	-
5. Igmen	1,108	-	-	-	1,108
6. Kalumpit	200	-	-	-	200
7. Dangkalan	320	-	-	-	320
8. Molave	582	280	121	181	-
9. Guisok	470	-	252	218	-
10. Bagutadhan	280	100	28	89	-
11. Toog	180	-	-	70	-
12. Tul-ay	4	-	-	4	-
13. Antipolo	11	-	-	11	-
14. Oyaoy	145	30	-	78	-
15. Laua-an	58	-	13	45	-
16. Batwan	279	-	100	-	179
Subtotal				4,627	1,807
TOTAL	10,399	1,390	1,264	6,434	

Partners' Planters: DENR, PESCP, LGU San Juan/ San Roque, Libertad National Vocational School students (Citizen Army Training-1 Cadets & Cadettes and College Officers)

Note: 1,000 seedlings were delivered to DENR Kalibo Aklan for GPP.
311 seedlings were delivered to MENRO Malay for tree planting in celebration of "Pista ng Gubat":

NAME OF SEEDLINGS	NO. OF SEEDLINGS DELIVERED TO DENR KALIBO
1. Badlan	135
2. Dungon	180
3. Narra	370
4. Kamagong	168
5. Toog	110
6. Oyaoy	37
TOTAL	1,000

NAME OF SEEDLINGS	NO. OF SEEDLINGS DELIVERED TO MENRO of MALAY
1. Badlan	148
2. Dungon	50
3. Narra	50
4. Bagutadhan	63
TOTAL	311

PROJECT SITE: ALOJIPAN, CULASI, ANTIQUE

NAME OF SEEDLINGS	TOTAL NO. OF SEEDLINGS RAISED	TOTAL NO. OF SEEDLINGS PLANTED	NO OF MORTALITY	SEEDLINGS REMAINING IN THE NURSERY	
				PLANTABLE SIZE	SIZE NOT PLANTABLE
1. Dungon	428	-	52	-	376
2. Bakan	1,422	1,066	-	356	-
3. Toog	600	300	55	245	-
4. Igmen	700	140	159	401	-
5. Tul-ay	651	-	175	476	-
6. Bagilomboi	675	-	416	259	-
7. Tapuyay	1,200	-	779	421	-
8. Salong	490	-	392	98	-
9. Narra	1,450	974	108	368	-
10. Molave	377	140	136	101	-
11. Oyaoy	443	361	11	-	71
12. Amugis	600	335	205	60	-
13. Banilad	121	-	-	121	-
14. Tag-osip	500	438	62	-	-
15. Bayoko	165	-	113	52	-
16. Pili	250	-	49	**201**	**-**
Subtotal				**3,159**	**447**
TOTAL	10,072	3,754	2,712	3,606	

Partners' Planters: DENR, PESCP, LGU Alojipan, Northern Antique Vocational

School (NAVS) students and teachers, Alojipan Community People.

PROJECT SITE: ASU-CASTILLO, CASTILLO, MAKATO, AKLAN

NAME OF SEEDLINGS	TOTAL NO. OF SEEDLINGS RAISED	TOTAL NO. OF SEEDLINGS PLANTED	NO OF MORTALITY	SEEDLINGS REMAINING IN THE NURSERY	
				PLANTABLE SIZE	SIZE NOT PLANTABLE
1. Malanangka	598	549	30	19	-
2. Mt. Agoho	1,570	245	25	-	1,300
3. Kubi	303	277	10	16	-
4. Antipolo	736	711	15	10	-
5. Narra	1,669	450	20	-	1,199
6. Putian	257	197	60	-	-
7. Dangula	22	22	-	-	-
8. Kaningag	60	50	10	-	-
9. Tabaw	118	68	50	-	-
10. Gogo	141	91	50	-	-
11. Gatasan	47	47	-	-	-
12. Sowa-sowa	35	32	3	-	-
13. Palawan Cherry	5	5	-	-	-
14. Dangkalan	48	35	10	3	-
15. Dagabdab	254	70	60	124	-
16. Bakan	5	5	-	-	-
17. Malakadios	63	43	20	-	-
18. Ngiyaw	159	97	-	62	-
19. Badlan	2	2	-	-	-
20. Banilad/Batino	822	675	-	147	-
21. Batikuling	1,310	160	30	1,120	-
22. Molave	1	1	-	-	-
23. Alibotbotan	14	14	-	-	-
24. Salong	2	2	-	-	-
25. Akleng Parang	57	57	-	-	-
26. Balinghasai	40	40	-	-	-
27. Kamagong	30	30	-	-	-
28. Maeasbas	274	206	50	18	-
29. Oyaoy	26	-	-	26	-
30. Batwan	39	39	-	-	-
31. Alupag	50	40	10	-	-
32. Guisok	871	-	205	-	666
33. Ughayan	24	24	-	-	-
34. Unknown sp.	412	312	100	-	-
Subtotal				1,545	3,165
TOTAL	10,064	4,596	758	4,710	

Partners' Planters: DENR, PESCP, LGU (Castillo, Tina, Dumga), Calimbajan-Tina National High School (CTNHS) students and teachers, Philippine National Police of Makato, ASU students of National Service Training Program (NSTP).

Note: In addition to 4,596 planted seedlings, 1,000 seedlings were planted in Panyakan Watershed, 1,300 seedlings in San Jose Ibajay, and 311 seedlings in Malay ('Pista ng Gubat'). In Aklan, the total number of seedlings planted was 7,207.

SUMMARY:

PROJECT SITE	TOTAL NO. OF SEEDLINGS RAISED	TOTAL NO. OF SEEDLINGS PLANTED	MORTALITY	REMAINING SEEDLINGS IN NURSERY	
				SIZE PLANTABLE	SIZE NOT YET PLANTABLE
CALABANOG	10,216	2,750	920	4,246	1,000
IDIO	9,093	2,850	2,198	3,305	740
SAN JUAN	10,399	1,390	1,264	4,627	1,807
ALOJIPAN	10,072	3,754	2,712	3,159	447
CASTILLO & other sites in Aklan as mentioned above	10,064	7,207	758	1,545	3,165
				16,882	7,159
TOTAL	49,844	17,951	7,852	24,041	

Note: From the Calabanog Nursery, 1,300 seedlings were delivered to DENR Kalibo for GPP tree planting in Aklan.
From the San Juan Nursery, 1,311 seedlings were delivered to DENR Kalibo and MENRO Malay for tree planting in Aklan.