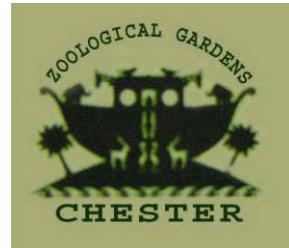
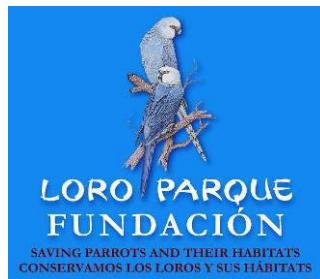




In-Situ
Conservation Project
Phase VI

Technical Progress Report

June - August 2007



By



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Puerto Princesa City, Palawan, Philippines
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TECHNICAL PROGRESS REPORT

COUNTRY: **PHILIPPINES**

PROJECT TITLE: **PHILIPPINE COCKATOO CONSERVATION PROGRAM**
In-situ Conservation Project Phase VI

PROJECT DURATION: June – August 2007

PROJECT SITE: Palawan, Philippines

PROJECT COOPERATORS:

Department of Environment and Natural Resources (DENR)
Municipal Government of Narra, Palawan, Philippines
Municipal Government of Dumaran, Palawan, Philippines
Municipal Government of Rizal, Palawan, Philippines
Culasian Barangay Government, Rizal, Palawan, Philippines
Local Protected Area Management Committees (LPAMC)
Sagip Kataala Movement-Narra Chapter, Inc. (SKM-NC, Inc)
Sagip Kataala Movement-Dumaran Chapter (SKM-DC)
Palawan Council for Sustainable Development (PCSD)
Polillo Islands Biodiversity Conservation Foundation, Inc.
Concerned agencies and authorities

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EXECUTIVE SUMMARY

Output 1: Conservation of cockatoo population on Rasa Island, Narra continued

1. Fifteen more hatchlings were banded in June to complete this year's breeding season. In total 34 hatchlings successfully fledged. The good weather conditions provided sufficient food supply for this year's brood.
2. Two more nest trees were flashed with iron sheets in the middle of the season and behavior of birds was observed and documented to ensure that hatchlings are continuously fed after installation of sheets.
3. Three nests were attacked by mites but were immediately treated. Hatchlings were removed from nesthole, treated and kept away from humans until stable for return to its nest. Intensive monitoring of adult birds was done when treated hatchlings were returned.
4. The breeding season assessment meeting was successfully conducted and problems and concerns were discussed in detail i.e. nest status, monitoring schemes.
5. Search for potential nest trees continues as well as nests of other threatened wildlife sharing the habitat of the cockatoos e.g. Blue-headed racquet tail.
6. Wardens observe the increasing population of monitor lizards on the island which pose major threat to cockatoo hatchlings. PASu Alfaro proposed to secure permits for translocation of monitors to the mainland.
7. Recruitment of additional volunteer wardens especially climbers will be done to cope with the increasing number of nest trees and to extend assistance in other project sites like Dumaran during breeding season.
8. No expansion of claimed areas was observed.
9. The newly-elected mayor of Narra presided the PAMB regular meeting on August 6, 2007. A special PAMB meeting was convened two weeks after to solely discuss on the establishment and management of the Integrated Protected Area Fund (IPAF) for Rasa.
10. Conservation education campaigns through focus group discussions and field exposure earned support from tribal community members, Narra residents and tourists visiting Rasa.

Output 2: Conservation of cockatoo population on Dumaran Island, Dumaran continued

11. Nest tree characterization has been completed. In total nine nest trees were identified.
12. Cockatoos were observed foraging in kaingin areas where sorghum and rice are grown.
13. Three potential nest trees were verified in mangrove areas in Bgy. Poblacion.
14. Wardens monitored four nest trees of Hill myna, five nest trees of Blue-naped parrots, three hornbill nest trees and four Blue-headed racquet-tail nest trees.
15. Official complaint, IS 1121, was filed against the reported case on illegal cutting near the protected area in Omoi.
16. A chainsaw operation was apprehended and confiscated chainsaw is at the custody of the MENRO.

17. The recent illegal activities on Dumaran engaged KFI in tricky discussions with local authorities over the issue of illegal harvesting of forest trees in the guise of local development.
18. The 4th Kalabukay Festival was colored with many fun activities including the search for Ms. Kalabukay, KCC and wardens' night, environmental lectures, puppet shows, and kite flying contest. Schoolchildren participated in environmental quiz bee, on the spot poster making contest and essay writing.

Output 3: Conservation of cockatoo population in Culasian Managed Resource Protected Area, Rizal continued

19. No cockatoos were observed breeding inside the protected area. The only nest tree in Ransang is continuously monitored to ensure breeding success in the next breeding season.
20. Two individuals of cockatoos are a common sight in CMRPA but no nest tree and roost site had been found. These birds were reported to forage in mangrove areas in Culasian.
21. One hundred thirty one occupied nests of target species (Blue-naped parrot, Palawan hornbill, and Hill myna) had been identified and characterized.
22. Latest monitoring recorded a total of 228 hatchlings of target species successfully fledged this year.
23. A new mayor was elected in Rizal and was introduced to the project during the regular LPAMC meeting.
24. KFI assisted in the documentary footage on illegal beetle trade in southern Palawan by a national TV network.

Output 4: Research on conservation-related topics on biology of Philippine cockatoo conducted

25. Sufficient food supply due to adequate rainfall on Rasa coupled with intensive monitoring and patrol by wardens made a successful breeding season this year with 34 fledglings in total.
26. Out of 50 nest trees identified, *Sonneratia alba* is the most commonly used species. Hence, search for potential nest trees are concentrated on the mangrove areas in Rasa.
27. In July, the maximum numbers counted at the traditional roost site on Rasa peaked at 180 individuals. This is the highest number recorded since the onset of the project.
28. Birds were observed flying in batches towards the mainland coasts and coming back to the island in batches as well. This provides an opportunity for re-counting individuals.
29. Mainland counts in July recorded 112 in Borbon station; however the highest count on the mainland since start of the project was in August with 131 from the same area. This monitoring station is closest to the island.
30. The traditional roost site on Rasa needs to be monitored and guarded from disturbance especially during the peak of sea cucumber collection.
31. At the traditional roost site in Dumaran, individual counts have recovered well with highest maximum count of 30 individuals in one single day. Again, this is the highest

count in Dumaran, since the start of the project there. In August the lowest count was 15.

32. Search for potential nest and roost sites in Dumaran are focused on mangrove areas since lowland forest areas are continuously depleted by illegal activities. The same is done in Rizal, southern Palawan.
33. In Polillo, artificial nest boxes are prepared for installation while potential trees were selected.
34. Floral inventories in Dumaran and Rizal will commence in 2008 after discussions with a new forester from Western Philippines University (WPU) are finalized. A reconnaissance survey in Dumaran will be done in October.
35. Collected wildlings and seeds of food-providing trees for Palawan hornbill are germinated in nurseries in Dumaran and Narra. Seeds were collected from beneath the nest trees of hornbills during the breeding season.
36. The reflection workshop on the implementation of the Philippine Cockatoo Translocation Project (PCTP) was successfully conducted in July with all project partners in attendance. The opportunity was instrumental particularly at providing strategies to improve and manage better relations and partnerships among partners from multi-sectoral organizations with different interests and priorities. A complete proceeding is attached as annex to this report.
37. Recommendations include among others re-assessment of resort islands as translocation sites, human imprinted cockatoos should not be used for translocation projects, developing a more comprehensive management plan, etc.
38. A population survey the critically endangered Philippine Forest Turtle *Siebenrockiella leytensis* was conducted in Omoi, Dumaran. This is in collaboration with the Philippine Freshwater Turtles Conservation Project (PFTCP) and WPU.

Output 5: Katala Institute for Ecology and Biodiversity Conservation (KIEBC) further developed

39. Both Environmental Compliance Certificate and building plans and permits were secured within the reporting period.
40. Landscaping was again delayed due to unfavorable weather conditions and unavailability of municipal equipment.
41. The turtle caretaker's house was finished and solar panels were installed. A caretaker was also hired under PFTCP funds.
42. In July, the large outdoor enclosure with meandering pool system and a terrestrial area for softshell turtles were completed as well as the improved enclosures for hard-shelled turtles.
43. On June, 51 freshwater turtles of four species (40 *Siebenrockiella leytensis*, 7 *Cuora amboinensis*, 3 *Cyclemys dentata*, and 1 *Dogania subplana*) were transferred from the Palawan Wildlife Rescue and Conservation Center to KIEBC. Training on pond turtle management was given to DENR and PCCP wardens, and interested visitors.
44. On August, 10 additional *Cyclemys dentata* were turned-over to KIEBC by residents from Puerto Princesa City. All were quarantined in KIEBC.

45. The ex-translocated cockatoos are kept at KIEBC for educational and probably for captive breeding purposes. The former pre-release aviary was increased in height by one meter and now used as temporary aviary for the birds.
46. Birds are fed four times daily with a combination of fresh fruits, sunflower seeds and natural food items. Health is monitored regularly. One bird died despite immediate treatment given by vets from PWRCC.
47. KFI is currently developing a proposal for funding a larger outdoor enclosure for the cockatoos at the center.
48. Additional funding for the Philippine Forest Turtle *Siebenrockiella leyteensis* through the Turtle Conservation Fund (TCF) was granted to KFI for long term population surveys of the species.

Other highlights

49. Two feature documentaries on illegal beetle trading were produced by GMA Network (national network) with involvement of KFI.
50. KFI in cooperation with PCSDS will organize the CITES Enforcement Training conducted by TRAFFIC Southeast Asia on Nov. 7-9, 2007.

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ACRONYMS

CAFGU	Civilian Arm Forces Geographic Unit
CE	Conservation Education
CENRO	Community Environment and Natural Resources Office(r)
CEPA	Conservation des Espèces et Des Populations Animales
CEPF	Critical Ecosystems Partnership Fund
CMRPA	Culasian Managed Resource Protected Area
DENR	Department of Environment and Natural Resources
IUCN	International Union for the Conservation of Nature and Natural Resources
KEEC	Katala Environmental Education Center
KFI	Katala Foundation, Inc.
KIEBC	Katala Institute for Ecology and Biodiversity Conservation
LGU	Local Government Unit
LPAMC	Local Protected Area and Management Committee
LPF	Loro Parque Fundación
MENRO	Municipal Environment and Natural Resources Officer/Office
MOA	Memorandum of Agreement
PA	Protected Area
PAMB	Protected Area Management Board
PAWB	Protected Areas and Wildlife Bureau
PASu	Protected Area Superintendent
PCCP	Philippine Cockatoo Conservation Program
PCSD(S)	Palawan Council for Sustainable Development (Staff)
PCTP	Philippine Cockatoo Translocation Project
PENRO	Provincial Environment and Natural Resources Office
PESP	Polillo Ecology Stewardship Project
PFTCP	Philippine Freshwater Turtle Conservation Program
PNP	Philippine National Police
PWRCC	Palawan Wildlife Rescue and Conservation Center
RA 9147	Republic Act 9147 otherwise known as the Wildlife Protection Act
RIWS	Rasa Island Wildlife Sanctuary
SDENRO	Special Deputy Environment and Natural Resources Officer
SEP	Strategic Environmental Plan of Palawan
SKM	Sagip Katala Movement
SPAPI	Southern Palawan Anti-Poaching Initiative
TWG	Technical Working Group
WPU	Western Philippines University
ZGAP	Zoologische Gesellschaft für Arten- und Populationsschutz

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INTRODUCTION

The Philippine cockatoo *Cacatua haematuropygia*

The Philippine Cockatoo or red-vented cockatoo *Cacatua haematuropygia* is restricted to lowland forest areas and mangroves in the Philippines. Formerly, it could be found all over the archipelago (Dickinson *et al.* 1991;). Only in the last decades a rapid decline set in, which brought the species to the brink of extinction (e.g. Boussekey 2000a; Lambert 1994). The reasons for the decline of the populations are (e.g.; Collar *et al.*, 1999; Lambert 1994; Widmann *et al.* 2001):

- Habitat destruction, particularly in respect of nesting and food providing trees.
- Persecution as crop pest.
- Poaching for pet trade.
- Potential diseases caused by the introduction of captive birds in the range of wild populations.
- Tropical storms and typhoons

Habitat destruction and poaching are the most important factors threatening the Philippine cockatoo.

Rasa Island, our main project site, presently is the area with the worldwide highest natural density of Philippine cockatoo with at least 128 birds on 8.3 km².

Dumaran Island in northern Palawan holds likely the second-most important cockatoo population in the Palawan Faunal Region, after Rasa. Its mangroves are widely intact, but the lowland forests are heavily degraded.

Culasian in Rizal is one of the main source areas for the illegal wildlife trade in the Philippines. It is outstanding for its still high density of other cavity nesters like hill myna *Gracula religiosa* or blue-naped parrots *Tanygnathus lucionensis* which is brought by the abundance of 'manggis' *Koompassia excelsa*, the tallest tree in tropical Asia. Cockatoos are present in low numbers.

Patnanungan Island, Polillo group of islands in Quezon harbors the only known Philippine cockatoo population in the Luzon faunal region.

Aside from Palawan and Polillo, cockatoos have recently (within the last eight years) reliably only being sighted in Samar and in different locations in the Sulu Archipelago (Fig.1).

Objective of the Philippine Cockatoo Conservation Program

Conservation and restoration of the most viable subpopulations of the Philippine cockatoo and their habitats, including associated flora and fauna under involvement of all key stakeholders, resulting in a down-listing of the species from 'Critical' to 'Endangered' within the next six years.

Program Strategy

The general program strategies are:

- Community-based management of local resources in the framework of Philippine law;
- Capacity-building for local decision-makers to ensure sustainability of the conservation efforts; and,
- Ecosystemic conservation approach with the Philippine cockatoo as flagship species.

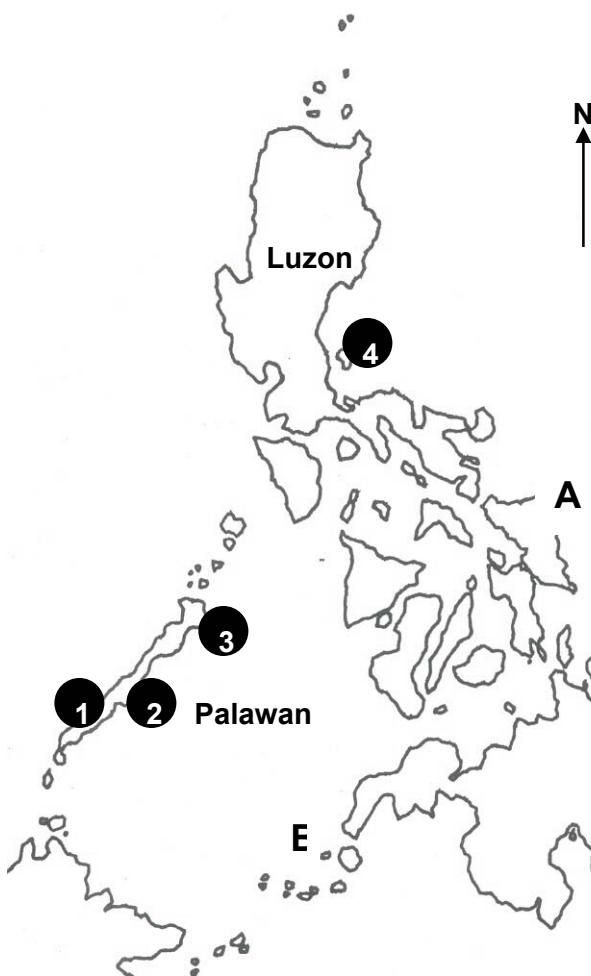


Fig. 1. Map of the Philippines indicating sites of the Philippine Cockatoo Conservation Program for comprehensive nest protection: 1. Culasian Managed Resource Protected Area (proposed), Rizal; 2. Rasa Island, Narra; 3. Omoi and Manambaling Cockatoo Reserves, Dumaran; 4. Patnanungan Island, Polillo group of islands, Quezon. Recent sightings of cockatoos: A) eastern Samar, B) Sulu archipelago.

Deliverables

Objective 1: Conservation of cockatoo population on Rasa Island, Narra continued

- Continue wardening scheme.
- Assist and capacitate Protected Areas Management Board in the management of the Philippine Cockatoo and Rasa Island Wildlife Sanctuary.
- Conduct conservation education for stakeholders.
- Lobby for protection of Rasa Wildlife Sanctuary under congressional proclamation.
- Assist in ongoing livelihood projects.

Objective 2: Conservation of cockatoo population on Dumaran Island, Dumaran continued

- Continue wardening scheme.
- Assist and capacitate Local Protected Areas Management Committee in the management of the Philippine cockatoo, as well as Omoi and Manambaling Cockatoo Reserve.
- Conduct conservation education for stakeholders.
- Assist in ongoing livelihood projects and municipal reforestation projects.
- Lobby for declaration as “Critical Habitat” (under RA 9147) for the two protected areas, nest sites, buffer zones and corridors in Dumaran.

Objective 3: Conservation of cockatoo population in Culasian Managed Resource Protected Area, Rizal continued

- Continue wardening scheme.
- Assist and capacitate local Protected Areas Management Committee in the management of the Philippine cockatoo and Culasian Managed Resource Protected Area.
- Conduct conservation education for stakeholders.
- Provide alternative livelihood for key-stakeholders of the protected area.
- Support integration in NIPAS through CI.

Objective 4: Research on conservation-related topics on biology of Philippine cockatoo conducted

- Systematically collect information on breeding, feeding biology and population dynamics of Philippine cockatoo.
- Further develop mechanisms for translocation of Philippine cockatoos and implement, if need arises.
- Assist wardening scheme in Patnanungan in cooperation with the Polillo Ecology Stewardship Project.
- Continue floristic assessments of Rasa and Dumaran.
- Continue experimental habitat restoration in Dumaran and monitoring of existing plots in Rasa and Dumaran.
- Conduct survey in Calamianes in cooperation with FFI.
- Continue faunal inventories in protected areas of Rizal and Dumaran.

Objective 5: Katala Institute for Ecology and Biodiversity Conservation further developed

- Continue development of quarantine area to accommodate rescued cockatoos from Rasa.
- Continue landscaping with native species propagated in the Katala nursery.
- Continue submitting proposals to other potential donors.

Description of Project Sites

Rasa Island, Narra, Palawan

Rasa is a small coral island of 8.34 km² area situated in the Sulu Sea, just offshore of the Municipality of Narra, Palawan, Philippines (Fig. 2). About 1.75 km² are covered with coastal forest, mangrove (5.60 km²), cultivated areas (predominantly coconut; 0.39 km²), 0.60 km² are barren or sparsely vegetated sand and coral outcrops.

The island is the pilot site of the program since 1998. Key component of this project site is the wardening scheme which involves patrolling and protection of the birds during and outside the breeding season. This scheme has proven to be efficient. It has more than doubled the population of cockatoos on the island over six years (presently ca. 180 birds).

Rasa Island probably holds the highest population density of Philippine cockatoo that remains in the wild. The world population of Philippine cockatoo was estimated to range between 1,000 to 4,000 individuals (Lambert, 1994). More recent estimates put the number of cockatoos remaining in the wild between 870 and 2,300 (Widmann, 2001). About 70 to 75% of this population is probably found in Palawan (Boussekey, 2000b). This makes Rasa a high priority area for the protection of this species.

Moreso, not only Philippine cockatoos live on the island, but a variety of other species, with an unusual high percentage of globally threatened and near-threatened taxa (IUCN 2006), considering the small size of Rasa. Note worthy among the 104 recorded bird species are grey imperial pigeon *Ducula pickeringii* and Mantanani scops-owl *Otus mantananensis*. Marine life around Rasa is also diverse with at least three marine turtle species and dugong *Dugong dugon* recorded.

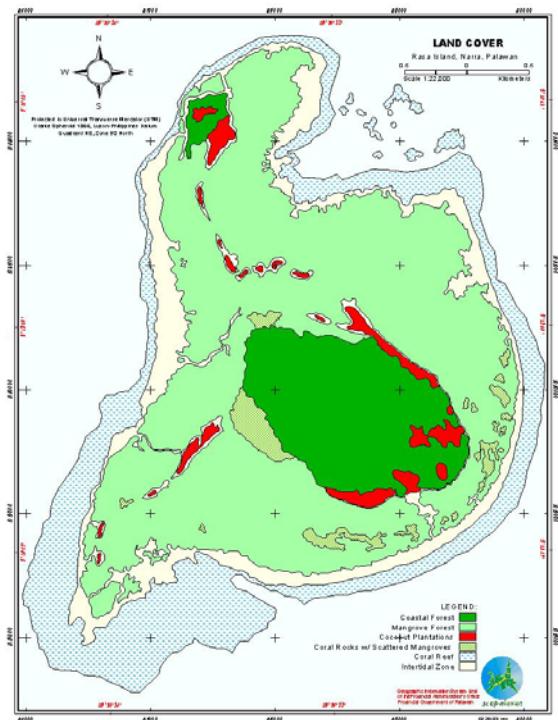


Fig. 2. Vegetation and land-use of Rasa Island, Palawan, Philippines.

Dumaran Island, Dumaran, Palawan

Dumaran is situated in north-eastern Palawan between $10^{\circ}22'$ and $10^{\circ}41'N$ and $119^{\circ}28'$ and $119^{\circ}55'E$. Nine Barangays are situated on Palawan mainland, seven on western Dumaran Island. The island is situated in the Sulu sea and separated by a ca. 7 km wide channel from the mainland.

The terrain on the island is rolling with the highest elevation being only 120m a.s.l. No permanent river systems exist. No lentic waterbodies exist in the municipality.

Dumaran is part of the Laurasian Shelf of northern Palawan (Heaney 1986). The bedrock consists mainly of ultrabasic metamorphites with interspersed limestone possibly of Tertiary origin. Most common soil types are silty clay loams and clay loams in the higher situation and beach sand and hydrosols in the coastal areas, based on estimates of sea levels (Gascoyne et. al. 1979). Dumaran Island is a typical landbridge island (Widmann, 1998) which was connected several times with mainland Palawan during the Pleistocene glaciations.

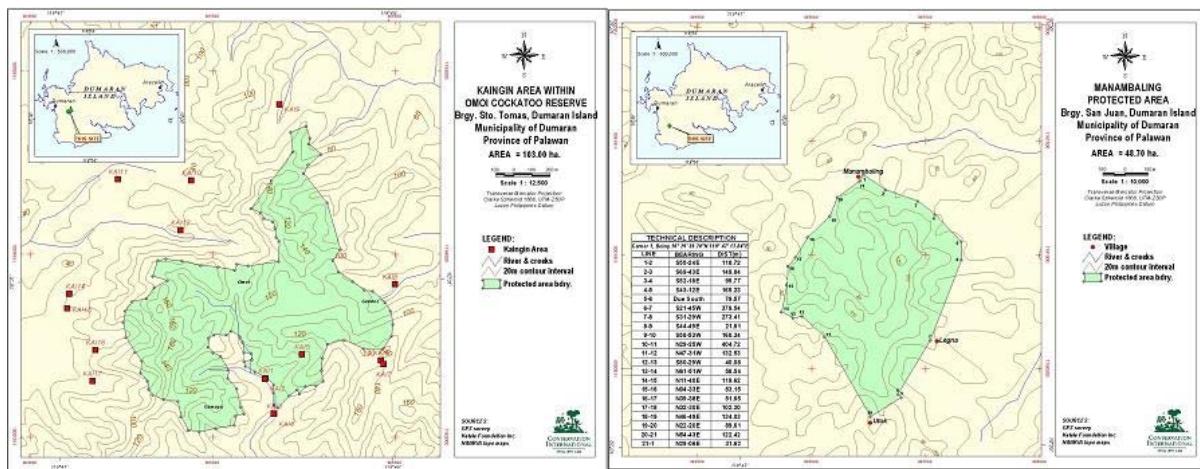


Fig. 3. Omoi Cockatoo Reserve (left) and Manambaling Cockatoo Reserve (right) cover the last forest patches on Dumaran Island.

All natural terrestrial ecosystems in Dumaran are tree-dominated. On Dumaran Island only few small and isolated forest patches remain, none of them larger than 103 ha. The most abundant formation is evergreen and semi-evergreen lowland forest with Ipil *Intsia bijuga*, Amugis *Koordersiodenron pinnatum* being emergent tree species of commercial value.

Species inventories from the municipality are still incomplete and systematic surveys just started recently. The only ornithological collection on Dumaran Island was conducted in 1921 (Dickinson et al. 1991). No historic accounts are available for other taxa. Ornithological surveys conducted by Katala Foundation so far yielded 108 species from the island. A prominent species of conservation concern is the Philippine cockatoo, which can be found with a possibly viable population in the mangroves and forest remnants of Dumaran Island, but apparently not anymore on the mainland. The last remaining forest patches are therefore of global conservation concern. This notion is supported by the recent records of other globally threatened species, particularly the Philippine forest turtle *Siebenrockiella leyteensis*.

Other species of conservation concern are Palawan hornbill *Anthracoceros marchei*, Blue-headed racquet-tail *Prioniturus platenae* and Palawan pencil-tailed tree-mouse *Chiropodomys calamianensis*. A yet unidentified shrew species has been caught in one of the last forest patches.

Main forms of land use nowadays is upland and slash-and-burn agriculture ('kaingin'), which is still widespread on the island and affects more and more forested areas on steeper slopes on the mainland. Larger parts of the island are covered by grass-and shrub land and dense stands of bamboo as consequence of this practice. Due to lack of water, irrigation systems and level areas, lowland rice cultivation is very restricted. Permanent forms of cultivation are coconut and cashew plantations. Forest and grass fires are common, particularly during the dry season. Fire is not only used to clear areas for cultivation, but also to further growth of fresh grass for pastures. There is a severe shortage of timber and firewood and consequently illegal logging is widespread.

PCCP currently manages three areas on the island: Omoi and Manambaling Cockatoo Reserves (Fig.3) and the traditional roosting site in Lagan.

Culasian Managed Resource Protected Area (CMRPA), Rizal, Palawan

The PA is located in the southern portion of Palawan Island in the municipality of Rizal. It is situated in the coastal plain facing the South China Sea, between the coordinates 8°52' to 8°47' N and 117°27' to 117°31' E. The PA comprises 1,954 has. with an additional 300 ha. included if the proposal for the protection of a nearby wetland will be approved.

Detailed geological maps for the area are unavailable. General information of the area is derived from the Geological map of the Philippines (Bureau of Mines 1981). Underlying rocks mainly consist of Oligocene, Miocene and Pliocene marine clastics with single limestone reefs of probably the same age. Coves, mangrove flats and estuaries are characterized by Pleistocene alluvial, fluvial and beach deposits, as well as raised coral reefs. Predominating soil types in the area are Sibul clay and Tagburos clay (Anon. s.a.). The former is mostly restricted to the coastal plains and derived from limestone. It is black and plastic, becoming compact when drying up. Tagburos clay is typical in rolling to hilly terrain. It is dark brown and rich in organic matter. The fine texture of this kind of soil prevents water percolation and results in extensive surface run-off during extended periods of precipitation.

CMRPA ranges from sea level to about 140 m a.s.l. south of Culasian proper. The terrain is flat in the narrow coastal area, and rolling to moderately steep in the remaining portions. The two largest forest areas persist north of the highway near Tagbalogo on an isolated moderately steep hill reaching 120 m a.s.l. and a highly fragmented rolling forest area south of the highway from ca. 20 to 140 m a.s.l. near Darapiton, Malutoc, Balingasag and Tuburon.

Two permanent rivers mark the periphery of CMRPA: Culasian River in the north and Arapitan River in the south. Smaller ephemeral creeks and stagnant water bodies can be found inside the area.

The major terrestrial ecosystem in the proposed PA is lowland dipterocarp forest. Unlike most forests in Palawan, canopy heights are very high, often thirty to forty meters, with "apitong" *Dipterocarpus grandiflorus*, "manggis" *Koompassia excelsa* being the most conspicuous emergent tree species. Other emergents are for example *Dipterocarpus gracilis*, *Dipterocarpus hasselti*, *Intsia bijuga* and *Koordersiodendron pinnatum*.

Due to security reasons the floral composition of the mangrove area could not be assessed, but *Rhizophora* spp. and *Sonneratia* spp. seem to be common. Narrow tidal flats are exposed during low tide, particularly in the estuaries of the two larger rivers.

Level areas are dominated by permanent cultivation, mostly irrigated and rainfed rice paddies, permanent cultivation like coconut and pastures. Patches of shrub- and grassland exist particularly along the National Highway. Shifting cultivation is also most common along the roads, but can frequently be found isolated in forested areas, often on steep slopes.

Emergent “manggis” and “apitong”, isolated in cultivated areas, indicate nest sites of parrots or hill mynas which are ‘owned’ by a poacher, and therefore were not cut during the area was cultivated.

To date, 133 bird species have been recorded within the proposed CMRPA. Among these are six globally threatened and six near-threatened species (IUCN 2006). Of outstanding conservation concern are particularly the larger tree cavity nesters, like Palawan hornbill *Anthracoceros marchei*, all three parrot species of Palawan, Philippine cockatoo *Cacatua haematuropygia*, Blue-naped parrot *Tanygnathus lucionensis* and Blue-headed racquet-tail *Prioniturus platenae*.

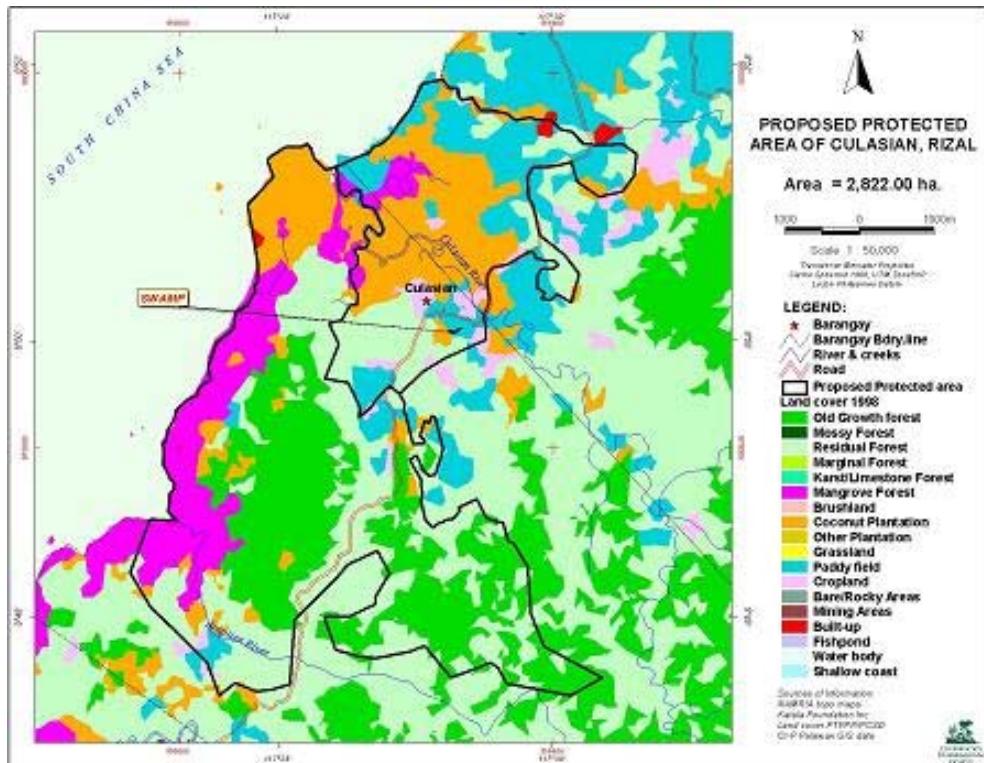


Fig. 4. Vegetation, land use and boundaries of Culasian Managed Resource Protected Area, Rizal, Palawan.

Patnanungan, Polillo group of islands, Quezon

The Polillo group of islands in Quezon is possibly the last area containing a population of the critically endangered Philippine cockatoo *Cacatua haematuropygia*, or ‘Kalangay’ as known locally, in the Luzon faunal region (Gonzalez 1997, Collar et al. 1999, Widmann 2001).

Patnanungan Island is mainly covered with secondary vegetation often interspersed with coconuts. The narrow coastal plains in the south and the more extensive ones in the north are transformed into irrigated rice paddies whenever permanent water-flows could be tapped. Higher terrain was transformed into coconut plantations and exceptionally into grassland, due to repeated burning.

Forests, particularly in the northern and central portion of the island, are frequently transformed into slash-and-burn fields. The small diameter classes of cut trees indicate that rotational periods might be shorter than fifteen years. Principal crops planted are corn, cassava, banana and papaya.

Mangrove exists in protected coves in the north, with representatives of the genera *Bruiguiera*, *Rhizophora*, *Sonneratia*, *Avicennia*, *Ceriops*, *Nypa fruticans*, *Heritiera littoralis*, among others.

Cockatoos persist in very low numbers. No recent observation contained more than two birds at a time. Habitat is seriously degraded and lack of nest trees might be a limiting factor. Poaching for the pet trade is still ongoing, due to insufficient law enforcement, particularly in remote areas.

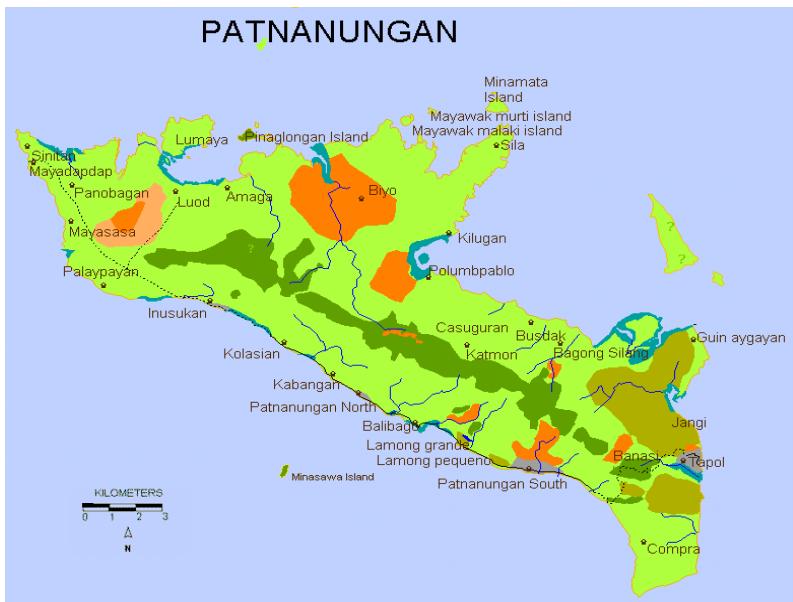


Fig. 5. Vegetation and land use of Patnanungan Island (Hampson et al., 2002). Light green: coconut, dark green: forest, blue: mangrove, orange: ricefield, light orange: cornfield, olive: grassland, grey: settlement

Methodologies

The Philippine Cockatoo Conservation Program (PCCP) employs an ecosystemic and community-based approach to biodiversity conservation using the Philippine cockatoo as its flagship species. The main components of the program are nest protection or wardening schemes; scientific researches on feeding, biology and ecology of the Philippine cockatoo and other threatened species; identification, protection and management of key conservation sites; conservation education; habitat restoration; and capacity building. Researches on the Philippine cockatoo include distributional surveys, rescue of individual birds, translocation assessments, and conservation breeding for later re-introduction.

Information on the biology and ecology of the cockatoo is gathered through direct observation. On Rasa, movements of the cockatoos can be best observed from a boat, from beaches or coral outcrops. Very dense vegetation on the island considerably hampers visibility on transect walks or point counts. On Dumaran, Rizal and Patnanungan, movements are observed through wardens monitoring and patrols at protected areas and roost sites.

Monitoring of the population trend on Rasa and Dumaran is done through counting individuals at a traditional roost site. A traditional roost site is situated in a mangrove area on

Rasa and can be observed from a boat while in Dumaran a privately-owned coconut plantation serves as the roost site bordering close to a mangrove area. Counts are conducted monthly either before sunset on Rasa and daily on Dumaran. Exceptionally, counts are also conducted during dawn before birds leave the roost site. Whenever possible, counts on Rasa are conducted under similar weather and light conditions. No roosting sites are known from Culasian and Patnanungan.

The core component in all project sites is the wardening scheme, employing former poachers as wildlife wardens. Wardens inspect and verify existing and potential nest trees starting end of September. During the breeding season, the nest trees are under permanent surveillance. Trees are climbed and nest holes controlled every ten days during that time. For safety reasons, dead or damaged trees are not climbed. Nest trees are characterized through species identification, tree height, diameter at breast height (DBH), height of nest hole, exposition of nest hole, diameter of hole, diameter at base and depth of cavity. The geographic location of each nest tree is taken with the help of a GPS and marked in a map.

Presence or absence and condition of adult birds, eggs, nestlings or nest predators are noted. Nestlings are weighed with Pesola spring balances/and or electronic balance and banded with aluminum rings bearing the inscription of the Department of Environment and Natural Resources (DENR), the year and number (e.g. DENR 2006-06).

Volunteers are detailed in monitoring stations at the mainland coasts of Narra within and outside the breeding season. These volunteers record all sightings of cockatoos and other significant wildlife in the area of assignment. Radio telemetry was employed in 2006 to gather data on dispersal and mortality of fledglings from Narra.

Surveys in unknown areas are based on historical sources or recent information. To initially narrow down the searches, non-formal interviews with key informants (poachers, other forest users, barangay officials, school teachers) are conducted. Surveys aim to identify remnant cockatoo populations or areas which are suitable for translocation.

Herbarium collections are made of key plants in cockatoo habitats, particularly food-providing plants, nest and roost trees. The physical structures of cockatoo breeding habitats are characterized through forest profiles. Phenological information on fruiting and flowering of food-providing trees are systematically collected on Rasa.

Restoration of mangrove is conducted on Rasa through transplanting of nursery-grown trees. Experimental restoration of lowland forest habitat is done in on Dumaran. Particularly nest- and food-providing plants for cockatoos are systematically tested for their suitability for reforestation. MS Access and excel programs are used for analysis.

Composition of remaining bird communities in project and survey sites is assessed using MacKinnon-Lists and, occasionally, mist-netting. Composition of mammal, reptile and amphibian communities in project sites is assessed through direct observations, mist- and harp-netting, live-trapping (Sherman type and locally-made cage type) and pitfall trapping.

To identify potential cooperators for the projects, livelihood needs, and capacities, stakeholder and SWOT analyses are employed. Participatory planning is done through goal-oriented project planning methodology. Alternative livelihood is provided for key-stakeholders of the cockatoo and the PAs, based on the needs assessments.

Conservation education activities employ the PRIDE approach which uses marketing methodologies to galvanize community support for conservation. The approach conducts pre and post project surveys to assess changes in levels of knowledge, awareness and behavior among target audience by using control groups. Survey Pro is used for analysis on changes

over time. Proven marketing vehicles like billboards, posters, fact sheets, puppet shows, school and community visits, festivals and media participation are used to deliver relevant and compelling conservation messages.

Relevant trainings and seminars are conducted to help capacitate local partners in conservation. Cross visits to Rasa and other project sites are encouraged to facilitate exchange of experiences, lessons learned and good practices to boost morale of local partners and reinforce knowledge.

Please refer to each output for particular methodologies used in achieving results.

RESULTS AND PROGRESS

Output 1: Conservation of cockatoo population on Rasa Island, Narra continued

Wardening scheme

Towards the end of May, one nest tree was flashed with iron sheets to avert predation by monitors while similar measure was made to the newly discovered nest tree in June. Intensive observation of the said nest trees suggested that parent cockatoos were not disturbed by the installed structure and continued to feed their hatchlings till they had fledged.

Five banding schedules were done within the month of June to complete this breeding season (Output 4).

There were three nests attacked by mites in this breeding season. Immediately, wardens removed hatchlings from nest holes, treated them at camp, observed while nest hole was cleaned and treated. After birds were stable and cavities were free from mites, hatchlings were returned and observed meticulously for parent cockatoos to feed on. Successfully all mite-infested hatchlings were attended by adult birds and fledged.

All 50 identified nest trees had been assessed and characterized (Annex 1).

Breeding season assessment with wildlife wardens was completed in August after all hatchlings had completely fledged. Everybody opined that this year was a good breeding season. There was sufficient food supply from Rasa. The nest monitoring scheme of wardens was effective to cover more nest trees in a day considering the increase of nest trees this season. It is also noteworthy that there was no problem with claimants this breeding season. Some of those who were hesitant to log in before were cooperating in this season with the

wardens on duty. This is perhaps due to wardens interaction through focus discussions with fellow tribal community members. Each nest tree was thoroughly discussed of its status. Other issues/concerns discussed during the assessment meeting were:

- Flooded nests – no remedy can be thought of as the tree is rotten and dangerous to climb;
- Clarification of terms used by wardens in regards to rotten or infertile eggs;
- Missing eggs – whether to take out infertile eggs or not. As practiced in the previous years, rotten or infertile eggs were taken out of nest hole since the smell attracts more predators that might endanger the remaining clutch;
- Difficulty/scarcity of nest of Blue-headed racquet-tails on Rasa;
- Increasing number of monitor lizards on Rasa – PASu Alfaro proposed to secure permits for possible translocation of monitor lizards away from Rasa;
- Possible disturbance of gleaners at roost site especially in the evening and early morning – intensive monitoring will be done and coordination with Municipal's Bantay Dagat team is done; and
- Fuel and water supply on Rasa – a bigger water container shall be secured for the next breeding season. As to fuel, price hike affected the budget.

Further recommendations include continuation of locating potential nest trees and flashing them the earliest possible time before the next breeding season. Also, all wardens must be trained to do monthly roost counts. Recruitment of new warden volunteers

was suggested in order to cover the increasing number of identified nest trees and to be able to extend assistance to other project sites i.e. Dumaran during breeding season without compromising the schedules in Rasa. There was a move as well for a Refresher's Course for wardens on data sheet recording, monitoring methodologies, use of equipment, pertinent laws, first aid and other concerns.

Meanwhile, no expansion of claimed areas was observed within reporting period.

Sixteen Rufus night-herons fledglings were as well monitored by wardens from a colony of 26 nests.

One to two wardens were tasked to take care of the ex-translocated cockatoos kept at Katala Institute for Ecology and Biodiversity Conservation (KIEBC) since May. Regular work involves feeding cockatoos, cleaning of aviary, aviary enhancement with natural foliage. One cockatoo was found dead even after treatment. Please refer to Output 5 on KIEBC for more details.

Wardens and other KFI volunteers were occupied as well with the continuing program of works at the KIEBC. Temporary fencing of the entire center premises is almost completed using *boho*. Live trees were used to support the *boho* fence and Bangkal *Nauclea orientalis* were planted along fence and boundaries of the center. Collection of drift woods from Rasa for turtle shelter inside the enclosures were done by wardens in compliance to the permit issued by CENRO. Further improvements of turtle enclosures were completed. Likewise, wardens helped in solar panel installations at the caretaker's house and the initial works and excavation for the pond establishment. Please refer to Output 5.

Aside from KIEBC works, wardens participated in the installation of mooring

buoys at the designated marine protected area at the southwest part of Rasa. This was done in cooperation with the Panacan Marine Protected Area Management Board and other cooperating agencies.

S. Diaz attended the UNDP-SGP evaluation meeting conducted in Puerto Princesa City to share experiences on the success of involvement of local people in conservation. The KFI-organized Sagip Katala Movement (SKM) was a recipient of a UNDP-SGP funding in 2003-2005.

Future work planned for wardens outside breeding season include among others the repainting of the birdwatch tower and finishing the board walk.

Capacity building of the Protected Area Management Board (PAMB) of the Rasa Island Wildlife Sanctuary (RIWS)

The 2nd regular meeting of the PAMB was conducted on 6 August 2007. This was the first PAMB meeting presided by the newly elected mayor of Narra, Atty. Clarito D. Demaala, Jr. (husband of former mayor). Meeting primarily introduced the new mayor to the conservation work at Rasa and the extensive support afforded by the local government unit (LGU) to the project that is instrumental in its success. Atty. Demaala committed his full support to meet expected outputs for Rasa. Other matters taken were:

- Drafting of a resolution/ordinance to plant Malunggay *Moringa oleifera* (food for Katala) at Rasa and coastal areas in mainland Narra to help provide food for the cockatoos particularly during dry months.
- LGU's continuing support for the completion of the KIEBC. The presiding officer offered to give 1000 pieces of seedlings to be

planted in Rasa Island and KIEBC area.

- Tourism development plan for Rasa: Municipal Tourism Officer was instructed to extend tourism-related opportunities for Rasa.

A Plaque of Appreciation was presented by KFI to the former Mayor Lucena D. Demaala for her unrelenting support and assistance for the Rasa Conservation Project.

On 22 August, a special PAMB meeting was convened to discuss on the Integrated Protected Area Fund (IPAF) for Rasa as requested by the board. Priscilla Adriano from PENRO and Mary June Maypa from DENR-MIMAROPA Region were resource speakers for the said meeting. The former discussed on the procedures for establishing IPAF in a PA. The IPAF's sharing mechanism is 75%-25% out of total income which could be derived from entrance fees, donations and the like. PAs in the Philippines requested that the 75% be deposited in the locality for easy access. This proposal however is pending the amendment of the Special Provisions in the General Appropriations Act (GAA). Moreso, there is a suspension of the revised guidelines on the establishment and management of the IPAF per DENR Department Administrative Order according to Ms. Maypa. For these reason and the fact that there is no IPAF yet established for Rasa, the PAMB and the LGU of Narra can initiate in institutionalizing fees for Rasa i.e. environmental fee, entrance fees. However, all must be supported by local legislations and resolutions.

Conservation Education

A lecture/exposure was conducted for teachers from the Palawan State University (PSU) – Narra campus. KFI Narra based staff lectured on the PCCP efforts and biodiversity conservation and brought teachers and some visitors

inside a forest patch on Rasa Island for exposure.

The Philippine cockatoo was the highlight of the Narra Municipality's entry to the float contest during the opening of Baragatan 2007. While several information materials were distributed to Palaweños during the festivity. Baragatan is a yearly province-wide festival in Puerto Princesa City.

Alternative Livelihood

The Agricultural Farming Project for SKM members has 28 recipient members on its 5th cycle of rice production already. The total revolving funds for the agri project is now 65,409.20PhP (ca. 1038 Euro).

Ecotourism

From June to August, 13 tourists from South Africa, Manila, USA and Czech Republic visited Rasa. All had commendable remarks on the conservation efforts done in the island.

Constraints and measures taken

- Flashing new nest trees at the peak of the breeding season was carefully planned so not to disturb on-going breeding attempts. These nest trees stand isolated from other trees which made installation possible. Iron sheets were pre-fabricated in the mainland to significantly reduce time spent during installation. This lessens the stress on birds. Equally important are the intensive observation, monitoring and documentation of birds occupying the said trees in order to ascertain that hatchlings were continuously fed and taken cared of by adult cockatoos.
- Immediate treatment of both hatchlings and nests with mites is mandatory. Hatchlings were treated with anti-parasitic shampoo and nests were first

treated with a local plant "Terabaho" which ex-poachers used to repel mites and other parasites. Then the anti-parasitic shampoo was also used to clean the nest to ensure that no more mites are in. While on treatment, nestlings at campsite were isolated from people and its weight and health monitored daily. When returned, it is vital that wardens observe daily and document behavior of adult birds. One nestling was not fed after six hours upon return so wardens hoisted down the hatchling and fed it with baby food then returned to the nest hole. After an hour, parent cockatoos were in the nest hole feeding the hatchling.

- Focus group discussions (FGD) must continue among stakeholders i.e. gleaners, tribal community members to keep their support. In particular, those gleaners in the proximity of the roost site especially that right after the breeding season is also the peak of sea cucumber collection. Through FGDs by wardens, differences between tribal community members are narrowed and support is won for conservation in Rasa e.g. voluntarily logging in when in Rasa during breeding season.
- Search for potential nest trees is on-going and once identified, flashing with iron sheets will immediately be done in order not to disturb birds during breeding season and for birds to get used with it.
- Recruitment of volunteer wardens will be done particularly climbers so work is maximized during breeding season especially that more nest trees are identified.

This would also help in extending assistance to Dumaran during its breeding season as only one of the wardens there can climb.

Output 2. Conservation of cockatoo population on Dumaran Island, Dumaran continued

Wardening scheme

Nest tree characterization has been completed (Annex 1). In total, nine nest trees of Philippine cockatoos, four nest trees of Hill myna, five Blue-naped parrot nest trees, three hornbill nest trees and four Blue-headed racquet tail nests were measured. Most of the trees were identified by local names only.

In recent patrols and monitoring around kaingin areas, cockatoos were observed foraging on sorghum in Bgy. San Juan.

Three potential cockatoo nest trees were identified in mangrove areas in Bgy. Poblacion.

The reported case on illegal cutting against Ludovico Baguero was officially filed on 25th July at the Araceli Municipal Trial Court by Mr. Wilfredo Magura of CENRO-Roxas supported by the PCCP wardens (IS No. 1121).

A chainsaw operation near the PA was caught in July and necessary documents are compiled by Municipal Environment and Natural Resources Office (MENRO) for filing the official complaint. Meanwhile, the chainsaw was confiscated and is now at the custody of the said office. The lumber approximately 349.3 board feet of *Ipil Intsia bijuga* was allegedly intended for the construction of a Day Care Center project in Sto. Tomas.

Underbrushing and weeding in the experimental plots, demonstration farm and nursery area were conducted by wardens. Tree planting was also done in July along riverbank in Omoi and at the boundary of the PA in Omoi.

A stranded green turtle *Chelonia mydas* was released back to the waters after wardens helped owner of fishpond in Bgy. San Juan.

Meanwhile, wardens showed off their singing and dancing prowess in their live performances during the Wardens' Night in celebration of the 4th Kalabukay Festival in June.

Please refer to Output 4 in Jan-May progress report for breeding season results.

Monthly warden's accomplishment reports and data were submitted and acknowledged by DENR offices. Reports are available in e-copies.

Conservation education

4th Kalabukay Festival

Another year of fun and learning has passed. It's the 4th year of merriment since the municipality of Dumaran enacted the joint celebration of the Kalabukay Festival and the municipal's founding anniversary.

On 14-18 June 2007, ball games and several environment-related activities gathered Dumaraños both from mainland and island Dumaran at the Municipal grounds.

The opening parade and ceremonies were graced by newly elected municipal officials and invited guests from the provincial office. Among the popular activities that assemble the kids and adults alike were puppet shows, face painting, and mascot appearances.

Two evening affairs were organized by KFI. On the 17th June, KCC members and wardens alternately performed and entertained several spectators with their musical variety of songs and dances. Both performances were applauded with awe and admiration. On the 18th was the yearly search for Ms. Kalabukay, a beauty and talent pageant of young Dumaraños. Six barangays participated

in different contested categories such as wildlife attires, best in talent, creative attire, etc. The winner represented the municipality in the province-wide search during the Baragatan 2007 Festivity.



Fig. 6. PCCP wardens danced their moves during the Kalabukay Festival 2007. ©SSchoppe

Day activities were filled with environmental lectures and games, puppet shows, mascot appearances and kite flying contest. Elementary pupils from few barangays participated in the quiz bee and on the spot poster making contest while high school students joined the essay writing contest. The theme carried on for these activities was "Share a place to live".



Fig. 7. Ms. Kalabukay 2007 represented Dumaran in the Baragatan Festival in Puerto Princesa City. ©SSchoppe

It was rewarding to have heard from the mayor of Dumaran how grateful he and his municipality are for all the conservation efforts initiated by KFI. Mayor Aurello said in his speech during the closing ceremonies, "I will continue supporting the Project and I encourage the people of Dumaran to do the same since the conservation efforts of KFI are for the good of the development of our municipality. I see Dumaran being more developed and with intact natural resources in the near future; something every Dumaraño can be proud of."

This year's Kalabukay Festival was more than ever a joint undertaking of the Municipality, the KFI-organized youth group KCC and KFI.

Alternative livelihood projects and municipal reforestation projects

The vegetable gardening project had two harvests within the reporting period which added less than a thousand to their reported income. Ten kinds of

vegetables are now grown in the demo farm.



Fig. 8. The demo farm run and operated by Dumaran wardens is growing vegetables and rootcrops. ©SSchoppe

The nursery as of August 2007 has a total of 2,855 seedlings from 18 different species. Seedlings sales amounted to PhP600.00 while most are planted along river banks in Omoi and at buffer areas of the PA or are used for tree planting activities.

The latest report submitted by the municipality on their Watershed Rehabilitation and Reforestation Project suggests a poorly maintained and neglected initiative. Expenses are not commensurate to performance i.e. survival of seedlings and maintenance.

Constraints and measures taken

- The continuing slash-and-burn "kaingin" practice in Dumaran presents an enduring threat to the wardens on duty. This is particularly disturbing when local offices concerned e.g. MENRO are not capable and committed of enacting laws and legislations or awaits mayor's endorsement or approval before taking action. In most cases if not all, lack of political will drags complaints to slumber. Filing official complaints in proper authorities may be an initial move but does not deter any further forest destruction.

This is simply because cases are taking time to move while cooperating agencies lag behind to support. The thought of capacitating local law enforcers and decision makers through trainings might serve short term objectives but does not seem to be adequate to sustain vigilance and action against such illegal activities.

- Another crucial issue is on illegal harvesting of trees for the use of government projects. Some individuals are allegedly contracted to cut trees to supply the demand for the construction of school buildings and other development projects of the municipality. In the guise of local development and public performance, local government finds it difficult to comprehend that their means do not justify the ends.
- Festival preparations need to be done way ahead of actual schedule. Despite all efforts from KFI to help prepare the local unit, shortcomings and stressful days were experienced but in general were managed appropriately. Such stresses could have been avoided if preparations were resolute. It is encouraged that wider and constant follow up among participating barangays be done in the next celebrations to engage more active participants in the activities.
- The municipal-initiated watershed project is likely a failure. It is seen not as a priority by the municipality.
- More capacity building measures have to take place in Dumaran involving all local partners. Trainings may not be sufficient in the effort to reverse existing Lack

of competence. This is also because the living conditions in Dumaran are harsher than in the other two project sites. Perhaps cross visits and more hands on capacity-building measures could be done but might not be realized within project framework.

- Conservation education activities must be pursued concurrent to capacity-building.

Output 3. Conservation of cockatoo population in Culasian Managed Resource Protected Area (CMRPA), Rizal continued

Wardening scheme

No cockatoos had been breeding inside the CMRPA still; however, two individuals are commonly sighted in Tagbalugo area. The birds were reportedly sighted foraging in the mangrove areas of Culasian. Upon verification, no cockatoos were observed as well as no nest tree could be found in the mangrove area. The only nest tree in the neighboring barangay of Ransang is closely monitored by the volunteer and the chieftain in the area.

One hundred thirty one (131) occupied nests of target species (Blue-naped parrot, Palawan hornbill, and Hill myna) had been identified, mapped, and characterized according to occupants (species, breeding success) and their biophysical features. This excludes nest trees which are outside the protected area and are regularly monitored by wardens.

Latest monitoring recorded 117 total fledglings from Tagbalugo area while 111 from Balukanad area.

Outside the CMRPA, 5 nest trees of Hill myna yielded 11 fledglings and 48 fledglings from 20 Blue-naped parrots nests.

Death threats for wardens still are encountered particularly for the Tagbalugo group who were identified to be with the operatives during the confiscation of the illegally cut high valued trees from CMRPA.

So far, no major problems were encountered within the period apart from cases of malaria by wardens and heavy rains during typhoon. Wardens after breeding season were occupied in maintaining the demo farm, nursery, and their small scale grocery stores.

Capacity building for Local Protected Area Management Committee (LPAMC) for the management of CMRPA

LPMAC regular meeting was conducted on 17 July 2007 with the newly elected mayor presiding. Mayor Claire Degillo (wife of former mayor) was introduced to the project in Rizal along with newly-elected municipal council members who were represented during the meeting. Results and achievement of the Southern Palawan Anti-Poaching Initiative (SPAPI) was presented. Funding from CEPF for the said project has terminated in June 2007; however, KFI through the PCCP pursues the initiative until 2008.

The MOA which was under review was as well taken during the meeting. The deliberation between the committees on environment and appropriations and the executive chair for the requested municipal appropriation intended for the project is in progress.

Illegal Wildlife Trade

Validation of the reported wildlife trade operations in Campong-olay, Rizal resulted in no wildlife kept in the stock house at this time. A new stock house was identified in the same barangay yet upon visit no wildlife was observed. In Punta Baja, it was learned that a new stock house is now maintained by a relative of an identified trader. Informants

said that allegedly his last shipment was done in mid of June while the KFI Field Officer was out for an expedition in Mt. Mantalingahan, southern Palawan. This was reportedly 300 heads of birds mostly Hill myna.

Two reports on rampant illegal wildlife trading in Balabac included cockatoos, Balabac mouse deer, and marine turtles reached KFI.

Recent confiscation was on illegal trading of beetles in Bataraza and Balabac. Both traders involved are from Rizal. Rizal also is one of the many sources for the said trading. Latest reports from Rizal also indicate a sudden demand for anteater (pangolin). They are now collected in Rizal and exported via Bataraza to Malaysia and further to China.

SPAPI Officer R. Cruz assisted a national television network, GMA, in its documentation of the illegal trade of "uwang" the local name of the beetle.

The KFI initiatives on abating illegal wildlife trade through the SPAPI had spurred local authorities to seriously regard the problem. PCSDS communicated with KFI on providing them copies of researches and related materials on the issue in aid of legislation/policy making purposes. This is a welcome opportunity to strengthen local capacities in curbing illegal wildlife trade.



Fig. 9. Some of the beetle species commonly traded. ©RCruz

Conservation education

With the termination of the CEPF-funded SPAPI, 23 school visits and 31 community visits and focus group discussions were conducted reaching ca. 3000 pupils from elementary and high schools in target site and adjacent areas. While groups reached in the FGDs covered farmers, tribal and religious organizations and churches, barangay health workers, community leaders, military and local decision makers.

The second post project survey in June was completed. Generally, results suggested lower percentage points increase compared to the first post project survey conducted in 2006; however, these results indicated significant percentage points increase relative to the pre-project survey in 2005. CE activities were implemented intensively from June 2005 to June 2006 and continued in moderation onwards.

Meanwhile, efforts to declare a wetland area in the neighboring barangay of Candawaga has not yet been finalized due to the busy schedules of the officials for the upcoming barangay elections in October 2007.

Alternative livelihood

The small grocery stores run by the wardens had twice purchased goods from its revolving capital funds. Income from store has allowed them to start a native chicken raising project with 10 hens and 2 brood cocks. Hopefully by December a first batch could be sold in time for the Christmas market.

The demonstration farm with rows of endemic trees planted is well growing.

Support integration in NIPAS

In support to the Mt. Mantalingahan Range Protected Landscape initiated by Conservation International (CI) – Palawan, R. Cruz represented KFI during its field expedition to the mountain range

on June – July 2007. Findings revealed new records of different species.

Constraints and measures taken

- The low observation counts of cockatoos inside the CMRPA and its vicinities might be a function of the drastic decline of its population due to massive poaching for the pet trade in the past recent years. Remnant cockatoos are suspected to be non-breeders (either because of sex ratio or age). Monitoring efforts to search for nest trees and roost sites are persistent yet yield not much exciting results.
- To prevent any untoward incidents between violators and wardens, the latter monitor in groups or buddy system.
- Apparently, monitoring wildlife traders is harder after various threats while informants are getting scarce.
- Cooperation on illegal trade studies with the Sulu-Sulawesi seascape project of CI based in Balabac might be an opportunity to help restrain the problem of wildlife trade in southern Palawan.
- The LPAMC requires more backstopping scientifically in particular for the newly-elected municipal officials who sit as members of the committee.
- CE activities proved to be effective in heightening awareness and knowledge however has to be sustained through regular interactive approaches until target audience retain and converts knowledge to positive attitudes and behavior towards the environment. This process obviously takes long but

is imperative in every conservation project.

Output 4. Research on conservation-related topics on biology of Philippine cockatoo conducted

Systematic collection of data on breeding and feeding biology and population dynamics of Philippine cockatoo continued

Rasa

A total of 50 nest trees were monitored during this year's breeding season. Twenty-three were occupied and five new nest trees were identified and characterized. We had a total of 58 eggs, 16 of which were infertile, four were predated, and 34 hatchlings successfully banded (Tab. 1) and fledged.

The success of this breeding season is attributed more to the suitable weather conditions; hence, fruits were available throughout. Wardens observed that monitoring of nest holes in the early stages were too frequent and might have affected the incubation of some eggs.

Four nests were attacked by mites but were immediately treated while

hatchlings were as well treated and intensively observed and monitored.

Out of 50 identified nest trees, *Sonneratia alba* (31) is the most commonly used species followed by Bogo *Garuga floribunda* (13). More nest trees could potentially be found in the thick mangrove areas of Rasa.

At the traditional roost site, a dramatic increase of individuals roosting is evident (Fig. 10). In July numbers peaked at 180 individuals during a late afternoon count. Individuals were observed hiding in mangrove canopies in the interior part of the roost site making counting more difficult. Two to three roost trees are being used alternately by cockatoos depending on weather conditions. In early morning counts, birds were observed leaving the roost site in batches towards the mainland coasts of Narra. This is an opportunity as well to re-count individuals. Most batches were observed going back to Rasa between 7-10am while others were observed in the afternoon. This could be observed at the birdwatch tower right after an early morning stay at the roost site.

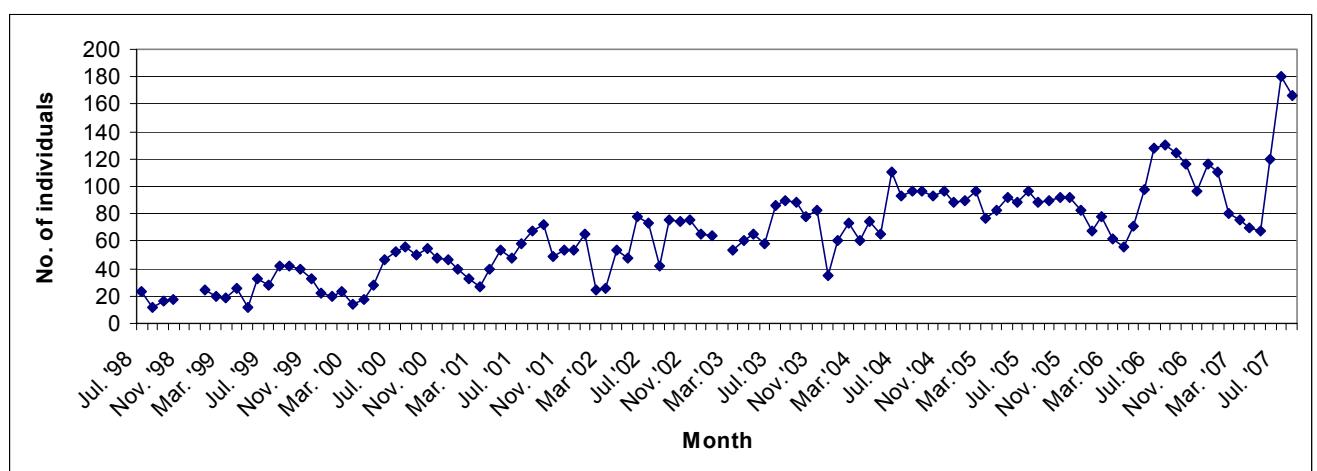


Table 1. Data on recently-banded Philippine cockatoos at Rasa Island, Narra, Palawan, June 2007

NESTING TREE NO. & NAME	NO. OF HATCHLING BANDED	RING NO./COLOR	DATE OF RINGING	MEASUREMENT (cm)					WEIGHT (grams)	EYE COLOR	TIME OF RINGING	REMARKS
				WING	HALF WING SPAN	TARSUS LEG	TAIL	TOTAL LENGTH				
# 38	2	DENR 0038-07 DENR 0039-07	June 02, 2007	15.4 15.3	40.50 (WS) 40.10 (WS)	1.4 1.3	4.5 4.2	25.5 23.2	328 333	- Brownish - Brownish	08:33- 09:20	-almost full of food on crop -few food on crop
# 23	1	DENR 0040-07	June 07, 2007	17.0	25.0	1.2	5.9	26.0	349	- Brownish		-healthy, few food on crop
# 28	2	DENR 0041-07 DENR 0042-07	June 07, 2007	17.1 15.6	25.3 23.5	1.5 1.3	6.0 4.6	25.8 25.6	325 290	- Brownish - Brownish		-healthy, few food on crop -healthy, few food on crop
# 47	1	DENR 0043-07	June 11, 2007	14.5	49.20 (WS)	1.4	3.2	22.4	311	- Brownish	Brought to camp due to mites	-Nesthole treated on 06/10, hatchling was ringed and treated at camp on 06/11, fed with cerelac
# 21	3	DENR 0044-07 DENR 0045-07 DENR 0046-07	June 11, 2007	17.5 17.4 10.8	57.50 (WS) 56.30 (WS) 39.50 (WS)	1.7 1.7 1.4	6.3 5.2 None	28.3 26.3 17.6	252 256 194	- Brownish -Black - Brownish	Brought to camp due to mites	-Nesthole treated on 06/10, hatchling was ringed and treated at camp on 06/11, fed with cerelac
# 16	2	DENR 0048-07 DENR 0049-07	June 16, 2007	18.7 15.3	61.00 (WS) 52.50 (WS)	1.4 1.3	8.5 3.5	29.8 24.5	400 305	- Brownish - Brownish	09:05- 09:46	-both healthy and with few food on crop. Few mites found inside nesthole. Nesthole cleaned and cured before the birds were returned.
# 37	2	DENR 0050-07 DENR 0051-07	June 16, 2007	15.0 11.4	51.00 (WS) 34.00 (WS)	1.3 1.3	4.0 None	24.0 20.0	270 275	-Black - Brownish	10:25- 10:59	-with food on crop -with food on crop
# 50	2	DENR 0052-07 DENR 0053-07	June 21, 2007	17.5 15.5	55.00 (WS) 53.00 (WS)	1.4 1.3	4.4 4.0	27.0 24.5	325 305	- Brownish - Brownish	08:00- 08:26	-healthy and with few food on crop -healthy and with few food on crops

The cockatoo daily counts in the mainland monitoring stations (Fig. 11) manifest the above mentioned increase. The highest count hit 131 individuals in Borbon area in August. This station is the closest to Rasa. This route is used normally by birds before they hop from one monitoring station to another in the mainland.

Informed residents alert mainland volunteers when birds are observed in their vicinities.

Highest counts ever at mainland monitoring stations were recorded in August. Mainland volunteers counted 96, 40, 58, 35, and 5 individuals in Marcelo, Hacienda, Bugtong, Casidsid and Malinao, respectively.

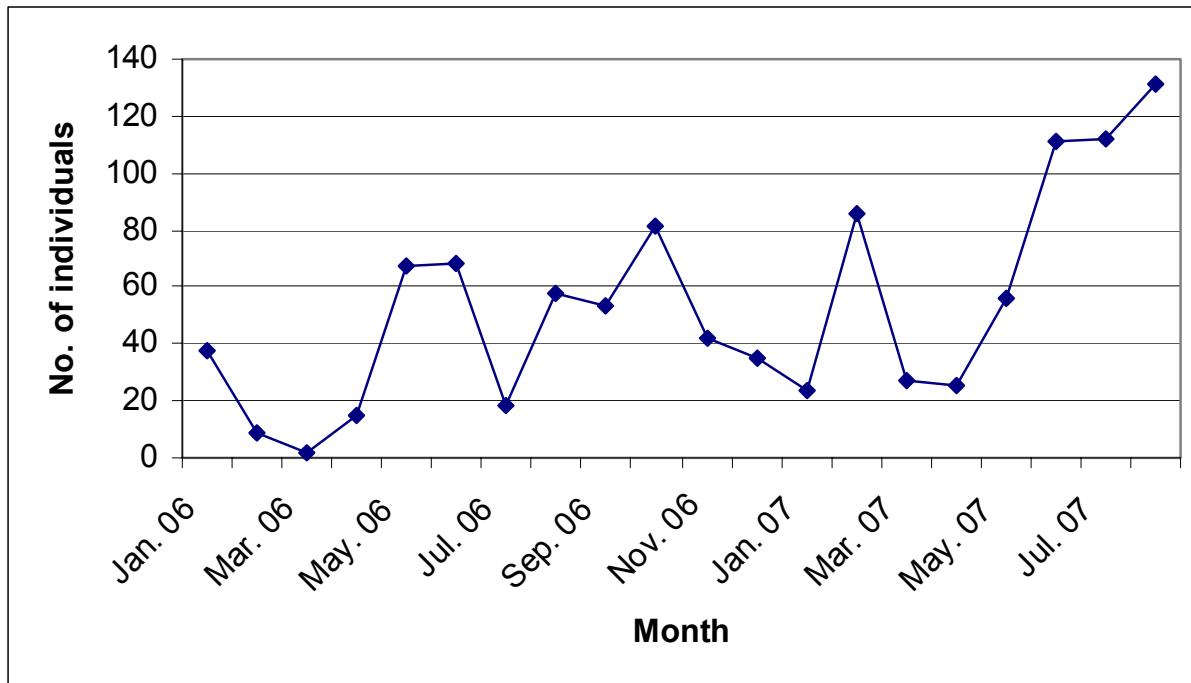


Fig. 11. Maximum numbers of Philippine cockatoos counted on the mainland opposite Rasa Island on a single day.

Dumaran

Seven banded hatchlings successfully fledged this year. The most commonly used nest tree species is locally known as Luwas-luwas (cf. *Dysoxylum* sp.).

Cockatoos were sighted near KFI Field House/KEEC in three consecutive days in July. Others were observed feeding on sorghum (cereal) planted in a kaingin area. Many reported sightings were validated from kaingin areas where cereals are grown, favorites of the bird. While two parent birds were still observed roosting in the nest tree in Manambaling Reserve.

Daily counts at the traditional roost site in Lagan has fully recovered as expected despite the zero counts early this year. In August the lowest count was 15 with the highest count of 30 ever recorded, the highest since start of the project in Dumaran (Fig. 12). SDENRO Sy observed young and parent cockatoos together roosting in his coconut plantation.

In Bohol, simultaneous counts revealed no roosting birds probably due to human disturbance.

The search for possible nest and roost sites are now focused on mangrove

areas considering the diminishing lowland forests in Dumaran Island. Three potential nests had been verified; all of which are *Sonneratia* and hopefully more

mangrove nest trees would be discovered.

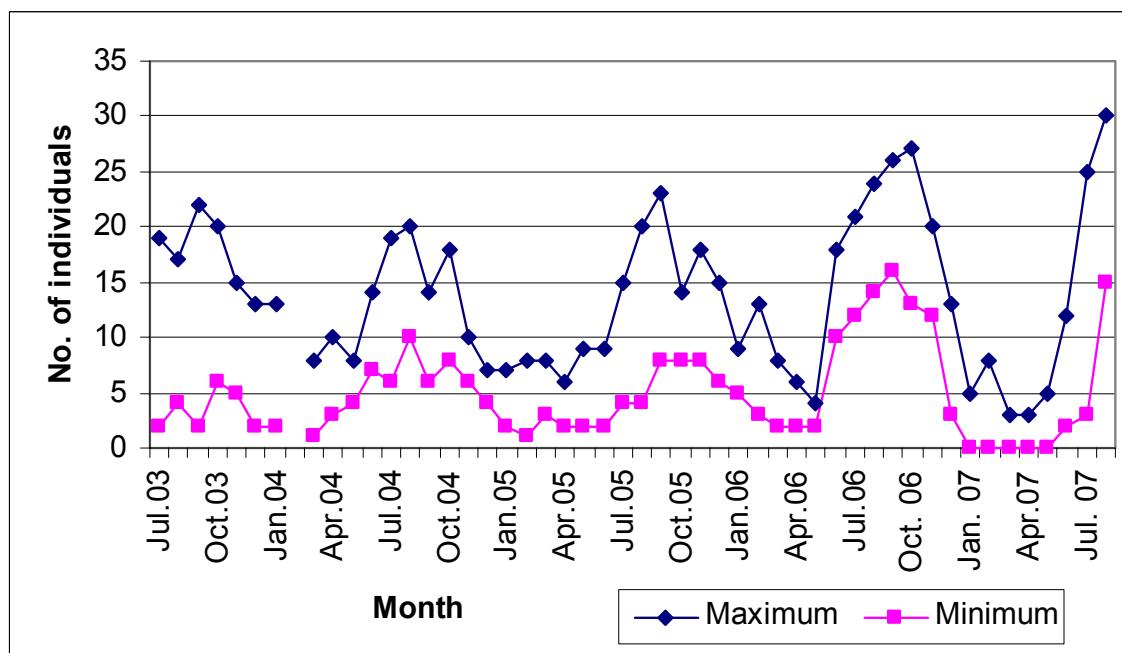


Fig. 12. Monthly maximum and minimum numbers of Philippine cockatoos counted at the traditional roost site in So. Lagan, Dumaran.

Rizal

No roosting site was observed, but mangrove areas between Culasian and Panalingaan were monitored by wardens as per reports. Mangrove areas though in Rizal are highly threatened by tan barking.

Technical cooperation with Polillo Ecology Stewardship Project (PESP) in Polillo continued

During a Patnanungan field visit of PIBCFI manager and staff, and L. Dans the PIBCFI project was presented to the LGU. The presentation was highlighted by the Philippine Cockatoo Monitoring updates.

In preparation for the installation of artificial nest boxes, potential trees were selected in three different areas.

Establishment is scheduled for September.

Education campaigns

As part of the IEC campaign conducted by PIBCFI, the projected is preparing for a paralegal training of Polillo warden Edgar Abano, Bantay Gubat, Brgy. Police, and municipal employees to be conducted in October.

Comprehensive floral inventories in Rasa and Dumaran and phenological research continued

Discussions with the new forester from WPU have commenced to pursue the works initiated by Ms. Sopsop on the floral inventories of project sites. Studies will start in 2008 while a reconnaissance survey is planned in October in Dumaran with the new forester.

Systematic testing of propagation and performance of cockatoo-relevant plant species for habitat restoration in Rasa and Dumaran continued

Raising of seedlings and collection of wildlings of Palawan hornbill food-providing trees is on-going and germination studies have commenced.



Fig. 13. Seeds of food providing trees for Palawan hornbill are germinated at the nursery. ©SSchoppe

For Rasa, a resolution enjoining all Narranians to plant Malunggay and other food and nest-providing trees along mainland coastal barangays is pending at the PAMB.

Develop mechanisms for translocation of Philippine cockatoos and implement, if need arises

The Reflection Workshop on the implementation of the Philippine Cockatoo Translocation Project (PCTP) was successfully conducted on 12 July 2007 with all project partners in attendance.

Seven key components of the PCTP were covered in thorough deliberations. These discussions were instrumental in identifying gaps during the implementation process and unveiled options and clearer strategies to foster and better manage partnerships of multi-sectoral organizations e.g. government

agencies, private and non-government organizations.



Fig. 14. Participants of PCTP reflection workshop.

Consequently, several recommendations were reached which include among others:

- No translocation of tamed or human-imprinted cockatoos or if so establish appropriate measure to determine the degree of human imprinting that could be suitable for translocation/reintroduction;
- Re-assessing viability and suitability of island resorts as translocation/reintroduction sites. Small islands without human settlements may rather be a priority for site selection.
- Developing a comprehensive management plan that details all stages of the project implementation i.e. social preparations, all protocols in place, exit strategies, to minimize problems arising and to prepare for emergency cases;
- Developing a MOA that clearly stipulates all functions, budget, expected roles and responsibilities of each party involved to thresh out conflicting priorities.

- Explore/consider releasing adult wild birds to relocation/translocation sites.

Proceedings of the said workshop (Annex 2) outlines all above recommendations. Documentation of discussions per component is available on request by e-copy.

Continue faunal inventories in protected areas of Rizal and Dumaran

A population survey of the critically endangered Philippine Forest Turtle *Siebenrockiella leyteensis* was conducted for four consecutive weeks in Omoi at the boundary of the Protected Area near the Wildlife Wardens garden and nursery area. The study site covered about 300 m². Almost 80% of the sampling area was covered by *Schizostachyum lumampao* (Bamboo), in addition there were some Fig *Ficus* spp., Banaba, and Narra *Intsia bijuga* trees. The site is heavily affected by human interventions such as logging and slash and burn farming practices. The survey intended to estimate the current population of the species in the area as reference for future surveys on population trend of the species. It was interesting to note that despite human disturbance and habitat alteration *S. leyteensis* still inhabits the area. A total of 35 individuals were captured during the four-week survey. Based on interview with local residents turtles are not locally collected, neither for local consumption nor for trade. Besides the Philippine Forest Turtle, the Southeast Asian Box Turtle *Cuora*

amboinensis, and the Asian Leaf Turtle *Cyclemys dentata* were also encountered in the study area (Table 2). Other herps collected with the pitfall traps established to collect turtles were also recorded and compared with previous listing of herps in two other sites in the municipality of Dumaran (Lagan an Ilian).



Fig. 15. Dumaran wardens helped in establishing pitfall traps and drift fences during the turtle survey.

Constraints and measures taken

- Egg losses and other related issues on the breeding season were discussed in previous reports. The monitoring of eggs though was observed to be frequent that it might have caused disturbance during the incubation period. Hence, monitoring schedules are adjusted for the next breeding season.

Table 2: Herps found in a degraded forest patch in Omoi in 2007 and those found in previous surveys in two other sites in Dumaran

Species	Omoi	Lagan	Ilian
Turtles			
<i>Siebenrockiella leytensis</i>	x		
<i>Cyclemys dentata</i>	x		x
<i>Cuora amboinensis</i>	x		x
Lizards			
<i>Bronchocela cristatella</i>	x		
<i>Draco palawanensis</i>			x
<i>Emoia atrocostata</i>		x	x
<i>Gehyra mutilata</i>			x
<i>Gekko gecko</i>	x	x	x
<i>Gekko palawanensis</i>			x
<i>Hemidactylus frenatus</i>		x	x
<i>Mabuya multifasciata</i>	x		
Unid. Skink	x		
<i>Varanus salvator</i>	x	x	x
Crocodiles			
<i>Crocodylus porosus</i>		x	
Snakes			
<i>Boiga dendrophila</i>		x	
<i>Chrysopelea paradisi</i>			x
<i>Dendrelaphis sp.</i>		x	
<i>Rhabophis chrysagra</i>			x
cf. <i>Sibynophis bivittatus</i>	x		
Amphibians			
<i>Bufo philippinus</i>	x	x	x
<i>Chaperina fusca</i>	x		
<i>Megophrys ligayae</i>	x		
<i>Occidozyga laevis</i>	x		
<i>Rana sanguinea</i>	x		x
<i>Staurois natator</i>			x

- The move to intensify monitoring particularly during gleaning season (for sea cucumbers and other marine products) along roosting site on Rasa will be taken up at the next PAMB meeting for immediate action. Cockatoos are observed very sensitive to changes and disturbances even to strong winds affecting the roost site.
- The Bohol roost site may not be ideal due to the proximity to human disturbance. More so, data had been erratic on this site; hence, search for other possible roost sites is on-going.
- The single active nest tree in Ransang, Rizal will be continuously monitored to ensure successful fledglings in the next breeding season. Coordination among locals had been so far positive.
- Artificial nest boxes might be installed in the next reporting period to prepare for the 2008 breeding season. This is seen as an alternative for cockatoos amidst limiting nest trees.
- The reflection workshop was fruitful particularly in understanding multi-sectoral partnerships in translocation or similar projects. It is deemed necessary to be able to assist private partners in managing the change that will take place if they engage in translocation/re-introduction projects. This is very important as the engagement of any private stakeholder, whose main interest is its business survival, and perhaps environmental protection, conservation or preservation are only secondary or even tertiary concerns. As Ten Knots puts it, “the Katalas became a reputational risk from us being an environmentally correct resort when guests started asking if these birds were our pets.”
- The private partner has to be able to link the goals of conservation with their over-all organizational goals, their strategy, their branding, their position on global issues, their corporate values, and their bottom-line (which ultimately is profit).
- Sessions with all partners should define terms and functions for each party to recognize the commonalities but more importantly the differences in perspectives and priorities that these partners will bring into the project. While the translocation project is a meeting point, there are several possible points of agreement or similarities, and other points of disagreements or uniqueness of these two types of players.
- Assessment of other translocation sites outside of Palawan must be pursued in particular assessing the areas within historical range for its suitability for translocation project.
- Improve facilities in the KIEBC to ensure better conditions for rescued birds thereby reducing human interactions and tameness.
- The faunal survey in Dumaran was in collaboration with the Philippine Freshwater Turtles Conservation Project (PFTCP) funded by Shellshock and the WPU-initiated project on *S. leyteensis*.

Output 5. Katala Institute for Ecology and Biodiversity Conservation further developed

During the reporting period the Environmental Compliance Certificate for KIEBC was received and then posted at the bulletin board of the Municipality of Narra and two signboards were hung at the entrance of the project site. Furthermore all building plans and permits were secured from the municipality.

The landscaping of the entire two hectare area had again been delayed due to weather conditions and availability of municipal equipment e.g. backhoe, and trucks. During the entire reporting period the backhoe could only work two days in which a pond was excavated and some other area backfilled. This work is now continued by sole manpower. Trees were planted along the boundary of the property. To protect the area especially from cattle that feeds on the newly planted material, the entire area was fenced with bamboo sticks.



Fig. 16. The portion of the Center that accommodates the pond has been excavated. ©SSchoppe

Philippine Freshwater Turtle Conservation Project (PFTCP)

The construction of the turtle caretaker's house was finished. The caretaker house serves at the same time as administrative building for KIEBC. In July the last of the large outdoor enclosure

was finished. It comprises a large meandering pool system and a terrestrial area for softshell turtles. Enclosures for the hard-shelled turtles have a cemented pond, a meandering muddy ditch, lots of vegetation, and a sleeping area with sandy-loamy substrate covered with leaf litter.

On 28 June 2007, 51 freshwater turtles of four species (40 *Siebenrockiella leyteensis*, 7 *Cuora amboinensis*, 3 *Cyclemys dentata*, and 1 *Dogania subplana*) were transferred from the Palawan Wildlife Rescue and Conservation Center to KIEBC. Upon arrival at the turtle quarantine and breeding facilities of KIEBC, training was conducted for DENR and KFI staff, KFI wildlife wardens, caretakers and interested visitors on species identification, morphology, individual notching and coding system, and basic captive care. After one month quarantine and tick and nematode treatment all turtles were released to the outdoor enclosures on 26 July 2007. On 15 and 19 of August a total of four *S. leyteensis* eggs were found in the "sub-adult" enclosure; a clear evidence for the maturity of the females. The four eggs that had been found were all laid in the mud; one was even floating in the water. Within a couple of days three eggs were preyed upon by turtles hence the last one was fenced. But the fact that the eggs were laid in water-soaked mud did not give much hope that the eggs of this clutch would ever hatch. So far the species has never been successfully hatched in captivity.

On 31 August 2007, ten additional *Cyclemys dentata* were turned-over to KIEBC by residents from Puerto Princesa City. All individuals were immediately weighed, measured, sexed, treated and then released in groups of three in the small quarantine compartments.

Feeding follows a specific schedule (Table 3). Omnivorous species are fed with soft fruits (banana and papaya), vegetables (mainly water spinach), and fish. The carnivorous softshell turtle is fed with fish. Other food items such as freshwater gastropods are given every

now and then to *S. leytenensis*. Only *S. leytenensis* is able to crack the shell of gastropods.

Table 3: Food and feeding schedule

	<i>S. leytenensis</i>	<i>C. amboinensis</i>	<i>C. dentata</i>	<i>D. subplana</i>
Monday	Soft fruits	Soft fruits	Soft fruits	Fish
Tuesday	Vegetable	Vegetable	Vegetable	Fish
Wednesday	nothing	nothing	nothing	nothing
Thursday	Fish	Fish	Fish	Fish
Friday	Soft fruits	Soft fruits	Soft fruits	nothing
Saturday	Vegetable	Vegetable	Vegetable	Fish
Sunday	nothing	nothing	nothing	nothing

In collaboration with the Western Philippines University and their ongoing project on *S. leytenensis*, surveys to estimate the population size of three *S. leytenensis* populations were conducted. They revealed various levels of threats to the habitat and the species itself. Field data from the surveys are currently being analyzed and compared. The information is expected to suffice in identifying one or more potential soft-release sites or in identifying the need for further surveys.

As far as Environmental Information Campaigns for the Philippine Freshwater Turtle Project are concerned, the following activities were conducted.

- canvassed prices for education materials, such as brochures,

postcards, T-shirts, calendars and the like; and

- Drafted education materials on species identification and threats;

Information Education Campaigns will be intensively conducted from September to December 2007. IEC will cover the communities of the various barangays in Narra as well as municipalities where population surveys on *S. leytenensis* were conducted such as Puerto Princesa City, Roxas, Dumaran and Taytay. Schedule for IEC activities for the rest of the year was drafted (Tab. 4).

Project progress details can be read at www.eaza.net/turtle/projects.html.

Table 4: Draft schedule of IEC activities.

Date	Activities
Aug. 29 to Sept 17, 2007	Preparation of IEC materials (Power Point presentation and presentation on Manila paper for those Barangays which do not have electricity). Letters to Bgy Captains, Mayors, and Head of schools. Inquire class schedule and schedule of Barangay sessions to accommodate IEC.
Sept 17-18, 2007	Cross visit of Biodiversity Management Students of WPU-PPC. Turtle identification, morphology, individual marking system, nutrition and maintenance
Sept 24-Oct 2, 2007	Start the first IEC in maybe just three Barangays in Narra including Bgy Antipuluhun where KIEBC is located.
Oct 3-5, 2007	Ecology week at WPU-PPC: Presentation informing about objective of KIEBC and the Freshwater Turtle Conservation Project. Lecture on Palawan's freshwater turtles, identification, and threats. Display live specimens.
Oct 6-31, 2007	Target IEC activities in all 22 Barangays in Narra should be accomplished.
Nov 1-10, 2007	Get permission from Bgy Captains, Municipal Mayors and School heads for conduct IEC in their respective Barangays, Municipalities, and Schools. Schedule activity in schools and Barangay session halls of target areas in Puerto Princesa City, Roxas, Dumaran, and Taytay.
Nov 11-14, 2007	Preparation for incoming IEC outside Narra
Nov 15-Nov 30	Target IEC activities in all sites outside Narra should be accomplished.
Dec 5-10, 2007	If possible join Radio program in Narra and Puerto Princesa City. Informing the listeners about KIEBC and the Freshwater Turtle Project

Philippine Cockatoo

With the termination of the Philippine Cockatoo Translocation Project in Lagen Island on 15 May 2007 the remaining five cockatoos were returned to Narra where they will be kept for educational and captive breeding purposes at KIEBC. They are currently kept in the former pre-release aviary that was increased in height by 1m. The aviary is isolated from the activities in the turtle quarantine and breeding area by a bamboo wall. Birds are fed four times daily with a combination of fresh fruits, sunflower seeds and forest fruits. The composition of the diet in terms of nutrients is currently analyzed to identify whether all dietary requirements of the species are met. The birds are healthy and easily adapted to live in captivity, one individual however died on 21 June 2007. Immediately when

the bird had shown signs of weakness it was isolated from the others and treated by the veterinarian from PWRCC for assumed Coccidiosis. The bird did however not react to the treatment. Faecal analysis and necropsy did not reveal the cause of death, hence tissues samples were sent for histopathological examination to PAWB on 25 June 2007. The results confirmed the early diagnosis of Coccidiosis.

KFI is currently elaborating a proposal for funding of a larger outdoor aviary. The current aviary meets the purposes for quarantine conditions but is too small for permanent keeping of the birds.

Warden, M. Beleg, who was trained in zookeeping is detailed as full time caretaker of the birds meanwhile.



Fig. 16. The pre-release aviary used in the translocation project now serves as the temporary enclosure for the ex-translocated birds. ©SSchoppe

Potential donors

KFI was granted additional funding for the conservation of the critical endangered Philippine Forest Turtle *Siebenrockiella leytensis* through the Turtle Conservation Fund (TCF). The actual cash will come from European Association of Zoos and Aquaria (EAZA) Shellshock Campaign where TCF is partially based. The money is intended for long term population surveys of the species.

Constraints and measures taken

- Maintenance and care of captive animals especially of freshwater turtles are labor-intensive. Currently one of the Rasa wildlife wardens is permanently assigned at KIEBC for the care of the birds, and we have hired one permanent caretaker for the turtles. In addition, two volunteers assist the turtle caretaker in the daily work at the center and in conducting IEC.

Sustaining these volunteers for a longer period constitutes a financial problem.

- In case we are not able to come up with acceptable nesting areas for the Philippine Forest Turtle, we have to consider incubating eggs. For that we would need an incubator.
- The solar panels do not generate enough energy to operate a desktop computer which complicates the office work (report writing, IEC material development) of the caretakers who have to commute 20 min to KFI office.
- In cases of any emergency at KIEBC that requires veterinary expertise like the problem with the cockatoo, vets from PWRCC are immediately consulted. Site visit was conducted by Dr. Joanne Justo who facilitated the treatment of the bird. Instructions are relayed to the staff in charge through cellphone.

Other highlights

On 25 June in commemoration of the PCSDS anniversary, KFI received a plaque of recognition for the successful collaboration between PCSDS and KFI on abating illegal wildlife trade in Palawan. Recognition was also awarded to R. Cruz, KFI Field Officer for Rizal, Palawan for his similar efforts.

Papers submitted for publication to relevant journals, relevant reports and media mileage

A paper on conservation education initiatives in Rizal will be submitted for presentation to the Environmental Education Network of the Philippines (EENP) during its annual conference in October.

Two feature documentaries on illegal beetle trading were produced by GMA

Network (national network) with involvement of KFI. Rommel Cruz, Field Officer in Rizal who leads the Southern Palawan Anti-Poaching Initiative (SPAPI) was interviewed in both documentaries: I-witness with title "Uwang Trade" shown on June 18 and Imbestigador "UWANG" shown on July 28 and repeated on Sept. 9. This can be accessed through youtube: www.youtube.com/i-witness/uwangtrade.

In early August, an article in the Philippine Inquirer entitled 'Spectacular Wildlife Finds in Mt. Mantalingahan, Palawan, Philippines' present the results of CI-Palawan survey which was joined by KFI staff.

Other remarkable bird records

Watercock *Gallicrex cinerea*

In ricefield, Sto. Tomas, Dumaran, 2 individuals, July 17, 2007.

Around 40 bird species were observed in the vicinity of the KIEBC. Noteworthy are:

Great billed heron *Ardea sumatrana*

In swamp area NE of KIEBC, 1-2 individuals foraging, observed with fish in the bill, June-July 2007

Chinese egret *Egretta eulophotes*

1 individual observed foraging, 12 Sept, 2007

Relevant seminars, meetings and workshops organized and attended

- Turtle Pond Management Training, KIEBC, Narra, June 28, 2007
- UNDP-SGP Evaluation Meeting, Badjao Inn, Puerto Princesa City, June
- Mt. Mantalingahan Expedition, southern Palawan, June 15 – July 1, 2007.

Equipment Status

The roof of the KEEC and KFI Field Center in Dumaran was repaired due to

heavy rains. Lumber was also treated from termites.

The car underwent comprehensive check up and repair.

Solar panels and jetmatic pump were installed at the caretaker's house, quarantine section of the Center in Narra.

Four second hand binoculars were received as donation from the RSPB, UK.

Implications for further work

The excellent breeding records and population development in Rasa and Dumaran are not mirrored in the third project site on Palawan in Rizal. Reasons for lacking breeding attempts have been discussed earlier. Still there is reason for reserved optimism. Cockatoo observations seem to increase in the protected area, and in some distance to the PA a cockatoo breeding attempt was recorded, although it failed.

Experience from Dumaran and Polillo have shown that in the early phases of project implementation it may take some time until conservation efforts 'catch on'. This may be true for the Rizal site as well and therefore it may be too early to abandon the site.

Another reason to retain the area in the PCCP is the high-quality habitat, particularly the large number of nest trees which is reflected by the high density of other cavity-breeders in the PA, which probably is unparalleled in the Philippines. This makes the area a potentially suitable site for translocation, if we can manage to control illegal activities, particularly poaching for the pet trade.

Results of the reflection workshop on the implementation of the Philippine cockatoo translocation imply re-orientation in many respects to improve future cockatoo translocation attempts.

Planned targets and activities for the next reporting period.

Output 1

- Monitoring and routine patrolling of Rasa and mainland coasts by wardens and volunteers;
- Search for potential nest trees continued;
- Conservation education continued i.e. activation of NYOFEC members, FGDs;
- Capacity building activities for wardens e.g. refresher's course
- Draft for declaration of Rasa under congress proclamation continued.

Output

- Routine patrolling and monitoring at cockatoo reserves and vicinities by wardens continued;
- Search for potential nest trees continued;
- Capacity building measures outlined and implementation commenced;
- Conservation education continued e.g. KEEC services enhanced;
- Enrichment planting in experimental plot continued.

Output 3

- Nest and roost monitoring continued;
- Search for potential nest trees and roost sites continued;
- Livelihood monitoring continued;
- Conservation education continued.

Output 4

- Continued monitoring of cockatoo population and its habitats in all project sites and preparations for the next breeding season;
- Monitoring of plant phenology and compilation of report on the floral inventory of Rasa;
- Reconnaissance survey in preparation for the floral inventory in Dumaran;
- Installation of artificial nest boxes in Patnanungan, Polillo;
- Conservation education activities and capacity building for wardens in Polillo continued;
- Coordinate with cooperating authorities on the development of a comprehensive management plan for the translocation of Philippine cockatoo; and
- Conduct herps survey in Rizal.

Output 5

- Continuation of landscaping as long as weather conditions allow; and
- Fund raising efforts continued.

Others

- CITES Enforcement Training conducted by TRAFFIC Southeast Asia, PCSDS and KFI from Nov. 7-9, 2007.
- Proposal for Lake Atong faunal inventory, Narra, Palawan is submitted to Nagao for funding

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- www.eaza.net/turtle/projects.html

Worksheet June-August 2007

KEY PROJECT ACTIVITIES	DATE	INVOLVED PERSON(S)
Coordination with EMS-CENRO for the organization of MMT for KIEBC.	June 01, 2007	JMT
Meeting with PENRO, Puerto re: MMT of KIEBC. Submission Shellshock Report May. Communication with PAWB re PCTP workshop. Interview enumerators for post-project survey Rizal	June 01, 2007	SS
CE activities preparation; encode Dumaran reports	June 01, 2007	GB
Lay out / printing of program for the festival	June 03/05 2007	GB
Renew Bay and River License in MARINA re: Abukay Boat	June 04, 2007	GB
Repair field house roof	June 05, 2007	MP
Meeting with PENRO and CENRO Narra in PPC re MMT for KIEBC	June 06, 2007	SS
Verify reported trapped "pawikan" in Lagan	June 06, 2007	MP
Check in Omoi confiscated timber by MENRO and wardens	June 07, 2007	MP, wardens
Monthly tax remittance for May 2007	June 07, 2007	GB
Purchase supplies for festival	June 07, 2007	GB, SS
Facilitate enhancement works of KIEBC area	June 07-13, 2007	SHD
Post Project Survey in Quezon, Palawan	June 07-08, 2007	JMT, RMC
Follow-up of MOA at LGU, Rizal, Palawan	June 08, 2007	RMC, JMT
Continue encoding Dumaran reports	June 09-10, 2007	GB
Assistance in the installation of solar panels at KIEBC	June 10, 2007	SHD
Ringing of cockatoo hatchlings at Rasa	June 11, 2007	SHD
Travel to Dumaran re: preparation for the festival	June 11-18, 2007	GB
Preparation for Kalabukay Festival and Dumaran Trip	June 11-14, 2007	JMT, D. Villaruz
Consolidation of reports	June 12, 2007	SHD
Assistance in the medical treatment of cockatoo at KIEBC	June 13, 2007	SHD, RMC
Practice with KCC re: puppet show and dance number for Wardens and KCC night	June 13-14, 2007	GB, KCC
Assistance and guide to GMA 7 I-witness team for documentary segment "UWANG"	June 14, 2007	RMC
Attendance to Mt. Mantalingahan survey discussion	June 14, 2007	RMC
Facilitate and coordinate medical treatment of birds at aviary, KIEBC	June 14-19, 2007	SHD
RIWS wardens meeting	June 15, 2007	SHD
Participation to 4 th Kalabukay Festival: Parade, Mascot appearance, Puppet Show, Face painting, Environmental Games and lecture, Essay Writing contest, on the Spot Drawing contest, Quiz bee, Kite Flying Contest, Search for Miss Kalabukay, KCC and Wardens night	June 15-18, 2007	SS, JMT, MP, FC, GB, KCC and Wardens
Joined Mt. Mantalingahan Survey	June 15-28, 2007	RMC
Ringing of cockatoo hatchlings at Rasa	June 16 & 21, 2007	SHD
Facilitate enhancement of KIEBC area	June 19-30, 2007	SHD
Get fecal and necropsy report from PWRCC	June 21, 2007	SS
Facilitation for DOLE certification; Sent letter to RED and PAWB re: necropsy of Olive	June 21-22, 2007	GB
Assistance to MAO on information materials and display to Baragatan 2007	June 22, 2007	JMT
Preparation for turtle transfer at KIEBC; contract signing with turtle caretaker; tissue sampling of Green and sent to PAWB	June 22-27, 2007	SS, MC, GB

KEY PROJECT ACTIVITIES	DATE	INVOLVED PERSON(S)
Attend awarding ceremony at PCSDS and receive awards for Rommel Cruz and KFI for successful collaboration re: wildlife trade; PTPR Jan-May 2007 preparation	June 25, 2007	SS
Processing of Building Permit for KIEBC	June 25-26, 2007	SHD
Demo farm work schedule and nursery maintenance	June 26, 2007	MP, wardens
Transport turtles from PPC to KIEBC. Facilitate inspection by PENRO. Conduct training on turtle species identification, morphology and captive care incl. application of dewormer	June 28, 2007	SS
Facilitated turtle transfer at KIEBC; attendance to turtle identification and coding workshop	June 28, 2007	SS, SHD, JMT, RMC, MC, wardens
Final instructions for turtle caretaker. Acquisition of additional construction materials. Improvement of facilities and signages	June 29, 2007	SS, MC
Communication with Field staff in Dumaran re: assistance to the survey of UP-MSI	June 29, 2007	GB
Submitted monthly data to concerned offices	June 29, 2007	JMT
Follow-up on cases filed re: timber poaching & wildlife trading in Rizal	June 29, 2007	RMC
RIWS wardens meeting	June 30, 2007	SHD, JMT
Preparation of monthly Shellshock report. PCTR report	June 30, 2007	SS
SPAPI wardens meeting; Inventory of Livelihood Store in Rizal, Palawan	July 01, 2007	JMT
Facilitate enhancement of KIEBC area	July 01-09, 2007	SHD
Attended turn-over ceremony to newly elected officials of LGU Narra, Palawan	July 02, 2007	SHD, JMT, RMC
Work on translocation expenditures	July 02, 2007	GB
Submission of Shellshock June report. Preparation of May PCTP report.	July 02, 2007	SS
Preparation of IEC materials for turtles	July 02, 2007	MC
Consolidation of reports	July 02-10, 2007	SHD
Verify reported chainsaw operation	July 03, 2007	MP, wardens
Monthly tax remittance re: June 2007. Pick up CD's at Plong re: translocation footage. Purchase supplies for RTD	July 03, 2007	GB
Prepare and sending copy of case affidavit to PCSD	July 03, 2007	RMC
Monthly report writing	July 03-14, 2007	SHD, JMT
Follow up rainfall data from PAG-ASA	July 05, 2007	GB
Verification of chainsaw operation in Candez area	July 05, 2007	MP, MENRO, wardens
Processing of building permit for KIEBC, Narra	July 05, 2007	SHD, RMC
Re-installation of tourism tarpaulin at posting area	July 06, 2007	SHD
Check reported "pawikan" turtle at E. Rodriguez fishpond	July 06, 2007	MP, wardens
Assistance in deworming turtles at KIEBC	July 07, 2006	RMC, JMT
Measurement of confiscated lumber, Dumaran	July 07, 2007	Wardens
Plugging at Radio Natin, Narra re: "Palawan Turtle Conservation Project"	July 07, 2007	MC
Reconnaissance related to wildlife trading in Aborlan; Updating of Wildlife Trade List	July 09, 2007	JMT, RMC
Nest tree characterization	July 09, 2007	MP, wardens
Prepare materials needed for RTD, PCTP	July 09-10, 2007	GB
Consolidation of 2007 SPAPI report	July 10-11, 2007	RMC
Travel to Manila; Immigration; DENR Reg. 1V-B; Preparation of RTD workshop	July 11, 2007	SS, SHD, IDLW

KEY PROJECT ACTIVITIES	DATE	INVOLVED PERSON(S)
Participation in the evaluation workshop of Philippine Cockatoo Translocation Project	July 11-13, 2007	SHD, SS, IDLW
Acquisition of ACD i-card and materials for project site.	July 13, 2007	SS
Office purchases, repair of Sony VHS	July 13, 2007	IDLW
SKM 8 th Remittance Report	July 13, 2007	JMT
Preparation coordination for LPAMC Rizal Meeting	July 14-16, 2007	JMT, RMC
Facilitate enhancement at KIEBC area	July 14-17, 2007	SHD
Facilitate 4 th LPAMC Meeting, Rizal, Palawan	July 17, 2007	IDLW, JMT, RMC
SPAPI wardens meeting	July 17, 2007	IDLW, JMT, RMC
KIEBC site visit	July 18, 2007	IDLW
Cockatoo roosting count	July 18, 2007	IDLW and KFI staff
Breeding Season 2007 Pre-assessment meeting	July 18, 2007	IDLW, KFI staff and wardens
Meeting with CENRO-Narra	July 18, 2007	IDLW
Work on Dumaran reports	July 18-20, 2007	GB
Meeting on SPAPI Final Technical & Financial Reports	July 20-21, 2007	IDLW, JMT
Under brushing and clearing in the experimental plot and tree planting with wardens.	July 19-20, 2007	MP, wardens
Submission of PTPR Jan-May 2007	July 23, 2007	IDLW
Wardens meeting	July 23, 2007	MP, wardens
Assistance to GMA 7 Imbestigador team visit to Rasa and documentary segment on Beetle trade	July 23-25, 2007	SHD, JMT, RMC,
Finalized plaque for Mayor Demaala	July 24, 2007	GB
Nest tree characterization	July 24, 2007	MP, wardens
Analysis of SPAPI Post Project Survey result	July 24-27, 2007	JMT
Filing of case against Mr. Manocsol in Araceli Trial Court	July 25, 2007	Mr. Magura, MP, wardens
Consolidation of 2007 SPAPI report	July 25-31, 2007	RMC
Turtle release from Quarantine to big enclosures	July 26, 2007	SHD, JMT, RMC
Follow up on illegal cases in Dumaran	July 28, 2007	GB
Nest tree characterization	July 28-29, 2007	MP, wardens
Submission of visitors list to Tourism Office, Narra, Pal.	July 30, 2007	JMT
Secured Building Permit for KIEBC	July 30, 2007	SHD, JMT
Contributed in the preparation of SPAPI terminal report	July 30, 2007	JMT, RMC
Consolidation of reports	July 30-31, 2007	SHD
Participation in the culmination activity of Nutrition Month	July 31, 2007	JMT
Monitor growth of trees in experimental plot	July 31, 2007	MP, wardens
Distribution of reports	July 31-Aug 3, 2007	GB
Cockatoo Roosting Count	July 31, 2007	RMC
PTPR Jan-May Preparation	June-July 2007	IDLW
Meeting with Prof. Pacete re: reactivation of NYOFEC	Aug. 01, 2007	RMC
Narra wardens and volunteers meeting	Aug. 01, 2007	SHD
Visit/orientation of mainland volunteers on turtles at KIEBC	Aug. 01, 2007	DA
Facilitate enhancement of KIEBC area	Aug. 01-05, 2007	SHD
Follow of re-printing of brochure at Futuristic re: Save the Katala and Hunted and trapped	Aug. 02, 2007	GB
Coordinates PAMB 6 th Regular Meeting	Aug. 02, 2007	JMT, RMC
Assistance to MFARMC in the presentation of Panacan Fish Sanctuary	Aug. 02, 2007	JMT
Verification of timber for Day Care Center in Sto. Tomas	Aug. 02, 2007	MP, SWEO Derecho, MENRO
Distribution of Jan-May 2007 Technical Progress Report	Aug. 03, 2007	JMT
Follow-up of CWR map at CI and cases filed by PCSDS	Aug. 03, 2007	RMC
Finances. PAMB presentation. Meeting with RMC. Drivers license renewal. Follow up Veterinary consultancy KIEBC	Aug. 03, 2007	SS
Inventory of equipment and materials at KIEBC, Narra	Aug. 04, 2007	JMT, RMC

KEY PROJECT ACTIVITIES	DATE	INVOLVED PERSON(S)
Consolidation of 2007 SPAPI report	Aug. 04-06, 2007	RMC
Approval of grant for KFI's project <i>S. leytensis</i> by Turtle Conservation Fund (TCF)	Aug. 4, 2007	SS
Conceptualization of NYOFEC activation activities	Aug. 05, 2007	RMC, JMT
Preparation for PAMB meeting	Aug. 05, 2007	SS
Facilitate PAMB 6 th Regular Meeting, Narra	Aug. 06, 2007	SS, JMT, RMC
Check Dumaran wardens reports	Aug. 06, 2007	GB
KFI staff meeting	Aug. 06, 2007	SS, SHD, JMT, RMC
KIEBC assessment. Interview volunteer caretakers. Shellshock July report preparation.	Aug. 06, 2007	SS
Shellshock July report submission	Aug. 07, 2007	SS
Rizal trip	Aug. 07-12, 2007	RMC
Inventory of seedlings in the nursery	Aug. 08, 2007	MP, wardens
SPAPI wardens meeting	Aug. 08, 2007	RMC
Finances	Aug. 08, 2007	SS
Facilitate backhoe operation and back filling at KIEBC	Aug. 08-10, 2007	SHD
Tax remittance; Fire and burglary insurance at Malayan; Deliver pictures to Futuristic for Seeds of Life Brochure	Aug. 09, 2007	GB
Inventory of equipment and materials in Rizal. Visit to Demo Farm Project, Rizal	Aug. 09, 2007	RMC
TCF grant agreement. Seed of life brochure. Finances. Contract with new turtle caretaker	Aug. 09, 2007	SS
Purchase medicines for Rizal & insurance payments	Aug. 10, 2007	GB
Reconnaissance survey of cockatoo sightings in Culasian Mangrove Area, Rizal	Aug. 10, 2007	RMC
Wildlings collection of Kalaw food-providing trees	Aug. 10, 2007	MP, wardens
Collection of new GPS reading of CWR	Aug. 10, 2007	RMC
Distribution of Technical Progress Report to concerned offices in Rizal and follow up of MOA status	Aug. 10, 2007	RMC
Assistance and guiding of visitors	Aug. 10-12, 2007	SHD
Validation of reports on wildlife trade operations in Campong-ulay, Rizal	Aug. 11-13, 2007	RMC
Follow up rainfall data from PAG-ASA	Aug. 13, 2007	GB
Writing of reports	Aug. 13-18, 2007	JMT
Deposit money for Polillo	Aug. 14, 2007	GB
Follow-up of filed cases through PCSD	Aug. 14, 2007	RMC
Preparation of documents for case filing	Aug. 14, 2007	MP, wardens
Work on Dumaran reports	Aug. 14-18, 2007	GB
Assistance and guiding of visitors	Aug. 15-16, 2007	SHD
Narra wardens meeting	Aug. 16, 2007	SHD
Facilitate enhancement of KEIBC area	Aug. 17-22, 2007	SHD
Check liquidations and disbursement of salaries	Aug. 19, 2007	GB
Consolidation of telemetry data	Aug. 19, 2007	JMT
Consolidation of SPAPI reports	Aug. 20-30, 2007	RMC
Coordination and preparation for Special PAMB Meeting	Aug. 21, 2007	JMT
Facilitate Special PAMB Meeting	Aug. 22, 2007	SHD, JMT, RMC
Assistance and guide to PSU teachers at Rasa	Aug. 23, 2007	SHD
Nest characterization of nest # 48, 49, & 50	Aug. 23-24, 2007	SHD
Pick up rainfall data for Puerto in PAGASA	Aug. 24, 2007	GB
Interview new KIEBC volunteer, Meeting WPU PPC re turtle training for students at KIEBC; Set appointment with WPU Aborlan Forester re floral inventory of project sites. Preparation Bird Festival Cebu	Aug. 24, 2007	SS

KEY PROJECT ACTIVITIES	DATE	INVOLVED PERSON(S)
Laying of mooring buoys at Rasa	Aug. 25, 2007	SHD
Transcription of the minutes of Special PAMB Meeting	Aug. 26-27, 2007	JMT
Facilitate volunteer joining turtle caretaker in KIEBC	Aug. 27, 2007	SS
Scheduling of turtle IEC activities in Schools and Session Halls of Narra Barangays for September.	Aug. 27-31, 2007	DA
Physical arrangement in Narra Office	Aug. 28, 2007	SHD, JMT, RMC
Meeting with WPU PPC re. student exposure trip in Sept. and Ecology Week in October. Checking of accomplishment reports. Finances	Aug. 28, 2007	SS
Coordination and preparation for Breeding Season Assessment 2007	Aug. 28-30, 2007	JMT
Drafting of Budget Appropriation Proposal for RIWS. Finalization of SPAPI financial report and template. Inventory of equipment and materials in Abukay Boat.	Aug. 29, 2007	JMT, SS, IDLW
Meeting with Aqua Palawan re rainforestation farming at Lake Manguao and assistances of SHD. Checking of accomplishment reports. Philippine Cockatoo Studbook report.	Aug. 29, 2007	SS
Nest characterization of nest # 47	Aug. 29, 2007	SHD
Inventory of equipment and materials in Narra Office. Consolidation of wildlife dictionary.	Aug. 30, 2007	JMT
Finances. Preparation for breeding season assessment in Narra. Travel arrangements for Bird Festival Cebu.	Aug. 30, 2007	SS
School lectures in Grade 5 and 6, Dumaran	Aug. 30-31, 2007	FC
Cockatoo roosting count	Aug. 30, 2007	SHD
Breeding Season 2007 Assessment Meeting	Aug. 31, 2007	SS, KF staff, wardens & volunteers
KFI staff meeting	Aug. 31, 2007	SS, SHD, JMT, RC
Finalization and submission of SPAPI Reports	Aug. 31, 2007	IDLW
PTPR Jun-Sept preparation	July-Aug. 2007	IDLW
Monitoring and data gathering on cockatoo and other wildlife at Rasa Island, Narra and Dumaran Island	June-Aug. 2007	SHD, MP, PCCP wardens
KEEC library operations and maintenance	June-Aug. 2007	FC, MP
Monitoring and patrolling at Rasa Island and mainland coasts of Narra	June-Aug. 2007	Volunteers, wardens
Administrative and operational functions of the office	June-Aug. 2007	IDLW, SS, GB, JT
Field operations and project management	June-Aug. 2007	SS, IDLW

Annex 1. Characteristics of nesting trees of Philippine Cockatoo on Rasa Island and Dumaran Island, Palawan, Philippines.

RASA ISLAND

No	Scientific name	Local name	Tree Cir. (cm)	Tree Hgt. (m) *	Nest hgt (m)	Hole Ent. (cm)	Orient. of hole	Hole Depth (cm)	Bot diam. (cm)	Location of hole *
1	<i>Pometia pinnata</i>	Malugai	246	25 ±	13.4	10	NE	54.2	32.2	Cut
2	<i>Garuga floribunda</i>	Bogo	375	30 ±	13.2	14.3	SW	146.4	22.2	Live branch
3	<i>Garuga floribunda</i>	Bogo	480	35 ±	17.9	24.5	NE	183.5	41.4	Dried branch
4	<i>Pometia pinnata</i>	Malugai	330	20	19 ±	-	SE			Dead branch
5	<i>Garuga floribunda</i>	Bogo	394	38 ±	22.8	29	SE	124	20.5	Live branch
6	<i>Garuga floribunda</i>	Bogo	418	41.9	17.6	26	NE	91.5	30	Live branch
7	<i>Garuga floribunda</i>	Bogo	412	44.2	13.2	18	NW	87	22	Live branch
8	<i>Sonneratia alba</i>	Pagatpat	394.3	20 ±	12.8	14.7	NE	87.5	42	Live trunk
9	<i>Sonneratia alba</i>	Pagatpat	318.5	18 ±	14.7	22.6	NE	27	28	Live branch
10	<i>Sonneratia alba</i>	Pagatpat	324	18	12	23.8	S	87.3	50	Live branch
11	<i>Garuga floribunda</i>	Bogo		25	17.7	13	NW	49.5	20	Flooded nest branch
12	<i>Garuga floribunda</i>	Bogo	472	28	21.6	16.5	SE	136	23	Live branch
13	<i>Garuga floribunda</i>	Bogo	297	20	10.2	23	NE	67.5	22.5	Dead tree
14	<i>Sonneratia alba</i>	Pagatpat	229.5	22	12.9	10	S	68	14	Dried branch
15	<i>Sonneratia alba</i>	Pagatpat	336	24	10.2		SW	Nest hole cut		
16	<i>Sonneratia alba</i>	Pagatpat	308		11.7	37	SW	107	42	Dried branch
17	<i>Sonneratia alba</i>	Pagatpat	294	18	13.4	18 ±	W	60 ±	20 ±	Dried branch
18	<i>Garuga floribunda</i>	Bogo	306.5	25	14.4	22	NW	36	36	Live branch
19	<i>Pometia pinnata</i>	Malugai	416	14.8	13.1	10.5	NE	27	45	Tree fallen
20	<i>Garuga floribunda</i>	Bogo	122 dbh	51.3	17.5	9	due east	36.5	13	Dried cut branch
21	<i>Sonneratia alba</i>	Pagatpat	157 dbh	14	13	6	North	80	7	Dried cut branch
22	<i>Sonneratia alba</i>	Pagatpat	152 dbh	26	12.6	20	N 20° W	56	23	Live trunk
23	<i>Sonneratia alba</i>	Pagatpat	94	24.1	16.4	11	S 24° E	98	25	Live trunk
24	<i>Sonneratia alba</i>	Pagatpat	109	24.2	16	12	N 42° E	92	22	Live trunk

No	Scientific name	Local name	Tree Cir. (cm)	Tree Hgt. (m) *	Nest hgt (m)	Hole Ent. (cm)	Orient. of hole	Hole Depth (cm)	Bot diam. (cm)	Location of hole *
25	<i>Sonneratia alba</i>	Pagatpat	92	28.1	16.4	9	N 25° E	68	30	Cut
26	<i>Sterculia</i> sp.	Gindaon	92	33.1	20.3	-	N 40° W	-	-	Live trunk
27	<i>Garuga floribunda</i>	Bogo	132	41.1	27.6	28	SE	83	35	Dried cut branch
28	<i>Sonneratia alba</i>	Pagatpat	78	26.3	16.6	9.5	S 45° E	40	22	Live branch
29	<i>Sonneratia alba</i>	Pagatpat	100.4	25.8	17.7	17	S 80° W	83	27	Live branch
30	<i>Sonneratia alba</i>	Pagatpat	131	24.5	19.5	9.5	S 75° W	36	22	Dead standing tree
31	<i>Garuga floribunda</i>	Bogo	121	38.8	23		S 15° W			Live trunk
32	<i>Sonneratia alba</i>	Pagatpat	127	25.5	17.2	15	S 65° W	103	26	Live branch
33	<i>Sonneratia alba</i>	Pagatpat	80	23.4	15.6		N 40° W			
34	<i>Sonneratia alba</i>	Pagatpat	134	24.6	16.4		N 50° W			
35	<i>Sonneratia alba</i>	Pagatpat	96	26.4	17.4		N 40° E			
36	<i>Sonneratia alba</i>	Pagatpat	183	25.2	15.3	23	S 23° E	88	30	Trunk
37	<i>Sonneratia alba</i>	Pagatpat	114	20.2	13.6	20	N 80° E	60	24	Live branch
38	<i>Sonneratia alba</i>	Pagatpat	169	21.3	18.1	25	N 15° W	97	29	-do-
39	<i>Sonneratia alba</i>	Pagatpat	134	19.1	12.3	12	N 10° E	64	24	-do-
40	<i>Sonneratia alba</i>	Pagatpat	129	20.1	20.1	28	N 40° W	94	28	-do-
41	<i>Garuga floribunda</i>	Bogo	98	35.3	24.1	10	N 35° E	81	27	-do-
42	<i>Pterocymbium taluto</i>	Taluto	76	34.3	24.4	17	N 15° E	75	47	Trunk
43	<i>Sonneratia alba</i>	Pagatpat	142	18.3	11.8	37	S 28° W	75	37	Trunk
44	<i>Sonneratia alba</i>	Pagatpat	100	26.6	11.13		S 45° W			
45	<i>Sonneratia alba</i>	Pagatpat	114	28.5	11.15		S 10° E			
46	<i>Sonneratia alba</i>	Pagatpat	144	29.4	14.3		N 20° E			
47	<i>Sonneratia alba</i>	Pagatpat	96	26.4	17.4		N 70° E			
48	<i>Sonneratia alba</i>	Pagatpat	103	26	13		N 15° E			
49	<i>Pterocymbium taluto</i>	Taluto	83	29	24		S 55° E			
50	<i>Sonneratia alba</i>	Pagatpat	90	20	16		S 35° E			

DUMARAN									
No	Scientific name	Local name	DBH (cm)	Tree Hgt. (m) *	Nest hgt (m)	Hole Ent. (cm)	Hole Depth (cm)	Bot diam. (cm)	Location of hole *
1	cf. <i>Dysoxylum</i> sp.	Luwas-luwas	85	25.8	14.3	16.5	110	17	Live branch
2	cf. <i>Dysoxylum</i> sp.	Luwas-luwas	127	32.6	19.4	16	54	12.4	Live branch
3	cf. <i>Dysoxylum</i> sp.	Luwas-luwas	65	23.	17	10			Fell
4	cf. <i>Dysoxylum</i> sp.	Luwas-luwas	124	34.2	26	18	71	13	Live branch
5		Panapoan	235	45	31	13.9			Dead tree
6	cf. <i>Dysoxylum</i> sp.	Luwas-luwas	76	21	15.8	24	44	32	Live trunk
7		Kamanglit	134	42	18	20	68	20	Live trunk
8	cf. <i>Dysoxylum</i> sp.	Luwas-luwas	115	26	19.1	17	79	22	Live branch
9		Olandeg	179	24.3	18.6	14	68	12.3	Live trunk

