

PHILIPPINE
COCKATOO
CONSERVATION
PROGRAMME



In-Situ
Conservation Project

Technical Progress Report September – December 2011



By



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With contributions from Peter Widmann and Sabine Schoppe
Puerto Princesa City, Palawan, Philippines
May 2012

TECHNICAL PROGRESS REPORT

COUNTRY: PHILIPPINES

PROJECT TITLE: PHILIPPINE COCKATOO CONSERVATION PROGRAMME

In-situ Conservation Project

PROJECT DURATION: September - December 2011

PROJECT SITE: Palawan, Philippines

PROJECT COOPERATORS:

**Department of Environment and Natural Resources (DENR)
Municipal Government of Narra, Palawan, Philippines
Municipal Government of Dumarán, Palawan, Philippines
Municipal Government of Rizal, Palawan, Philippines
Municipal Government of Balabac, Philippines
Municipal Government of Patnanungan, Quezon, Philippines
Municipal Government of Polillo, Quezon, Philippines
Bgy. Culasian Government, Rizal, Palawan, Philippines
Bgy. Burdeos Government, Polillo, Quezon, Philippines
Bgy. Pandanan Government, Balabac, Palawan, Philippines
Local Protected Area Management Committees (LPAMC)
Sagip Katala Movement-Narra Chapter, Inc. (SKM-NC, Inc)
Palawan Council for Sustainable Development Staff (PCSDS)
Jewelmer Corporation Inc.
Polillo Islands Biodiversity Conservation Foundation, Inc.
Concerned agencies and authorities**

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EXECUTIVE SUMMARY

Output 1: Conservation of cockatoo population on Pandanan and Bugsuk Islands, Balabac

1. At the Malinsuno roosting site, the highest roost count ever from the area was documented in September with 106 individuals of Philippine cockatoos. Some were observed with leg bands.
2. The first observation of Philippine cockatoos feeding on young shoots of *Avicennia* sp. was noted in a rock islet in Arananan area.
3. Two cockatoo nest trees were repaired to make them rain-proof.
4. Wardens patrols resulted in identification of new residents and transients on the island and the documentation of illegally cut trees near an existing cockatoo nest trees.
5. Survey was conducted in Sebaring Dos to confirm reported sightings of cockatoos. Based on interviews, around 110 individuals were sighted in two areas. *Sonneratia alba* dominated in two areas which were rapidly assessed during the visit. The species is a known nest and food providing tree for the cockatoo.
6. Monitoring in Bugsuk area continues to be challenge for the project without a reliable guide.

Output 2: Re-introduction of Philippine cockatoos into parts of the historical range

7. The proposal submitted to the Save our Species (SOS) was considered and revisions were completed. Announcement of acceptance will be early in 2012.

Output 3: Conservation of cockatoo population on Rasa Island Wildlife Sanctuary (RIWS), Narra continued

8. At the traditional roost site, the highest count within the period was 265 individuals in September. In October a flock of 200 cockatoos were observed leaving the roosting site as early as 5am.
9. On mainland Narra, the highest count was observed in October with 38 individuals in Marcelo area. We also observed wild cockatoos visiting the KIEBC area and interacting with the five captive cockatoos.
10. Wardens completed the replacement of iron sheets on nest trees for prevention of predators and installation of six temperature loggers in selected nest holes. Newly identified nests were characterized however not completed yet.
11. Two wardens participated in the Training on Para-legal Remedies and Seminar on Environmental Laws, Policies and Regulations organized by the DENR in October.
12. The 22nd regular PAMB meeting was held on 5th October 2011. Highlights were the approval of the financial and work plan for 2012 presented by the KFI for RIWS.
13. The municipal financial assistance for 2012 wardening scheme on Rasa Island Wildlife Sanctuary has been approved.
14. We had completed repair and repainting of the birdwatch tower in Rasa Island
15. Around 100 kids and adults were reached through creative games like hungry bird, story-telling and puzzles during the Malatgao fun day in October.
16. The Community Tree Planting highlighted c @ã • Á ^ ^ æ| q • Á Ú æ| æ^ Á Ø^ • c ã q
Three coastal barangays participated and nearly a thousand native trees were planted in areas frequented by the cockatoos foraging on mainland Narra. We monitored these trees and 90% are surviving. Another highlight was the use of the Katala as icon by the Department of Education during the opening parade.

17. The one million pesos originally committed by Sen. Zubiri for Rasa did not materialize due to his sudden resignation in the Senate. We hope to find other support system from the government.

Output 4: Conservation of cockatoo population on Dumarán Island, Dumarán continued

18. We installed three artificial nest boxes using local materials and with new designs.
19. At the traditional roosting site, the highest count was 25 in September. We also verified cockatoo sightings in mangrove areas. We also found several colonies of bats that may be sharing habitat of the cockatoos and possibly even competing for some resources.
20. The LPAMC Regular Meeting was conducted in October. Highlight of the discussion was the establishment of a critical habitat to connect two existing cockatoo reserves. This critical habitat corridor will ensure the integrity of important remnant cockatoo habitats and the watershed itself. KFI submitted proposal for this purpose to the Philippine Tropical Forest Conservation Foundation.
21. Wardens helped in the confiscation of illegally cut trees in October; however, no case was filed due to amicable settlement facilitated by officials.
22. In the nursery, we maintain a total of 2,578 seedlings of seven different species and ca. 15 more unidentified trees known to be food for the Palawan hornbill.
23. Flashing of a hornbill nest was completed and a colony of nesting Rufous-night heron was confirmed.
24. The municipality of Dumarán through the leadership of Mayor Pablico released its financial assistance for the reproduction of information materials intended for Dumarán audience.
25. Chester Zoo approved the proposal for the repair of the KEEC roofing. Completion of the project will be in the next reporting period.

Output 5: Conservation of cockatoo population in Culasian Managed Resource Protected Area (CMRPA), Rizal continued

26. Cockatoo sightings within our area are getting scarcer. Only four were sighted within the period. We shall intensify our monitoring of the known nest tree in neighboring barangay, Bgy. Ransang.
27. Illegal activities are still rampant in the area and action is still insufficient. What continue to increase is only the threats on the lives of our wardens.
28. Literacy classes for wardens resumed in October. This is greatly appreciated by wardens.

Output 6: Support for Polillo Islands Parrot Project

29. No activity was conducted in Polillo within the period.

Output 7: Katala Institute for Ecology and Biodiversity Conservation

30. Silver, the aggressive male cockatoo attacked and wounded its partner, Blue. The formerq • Á , ã } * • Á , ^ | ^ Á & | ã]] ^ á É Á X ã [| ^ c Á { ^ æ} , @ã | ^ Á measure since it also attacked its partner Brazil in May.
31. Both public and breeding aviary were repaired and repainted within the period. Both sections are nicely vegetated with natural trees and fruits and fresh foliage are offered daily to birds. Water basins are also provided.

- 32. In 2011, a total of 15 hatchlings of *C. amboinensis*, 8 infertile eggs of *C. dentata*, and 5 infertile eggs of *S. leytensis* were produced. A total of 6 *C. amboinensis* had been turned over to KIEBC.
- 33. We reached a conclusion that keeping the *S. leytensis* is unlikely to succeed in breeding. KFI Board upon consultation of experts agreed that individual enclosures must be provided for females to avoid the aggression of the males.
- 34. KFI enrolled the *S. leytensis* lasts of their kind . P ^ |] Á } [, Á + Á æc Á c @ ^ Á á [} æc ã [} Á] | (www.betterplace.org). This has gained much support from individuals mostly from Germany.
- 35. In 2011, we dispatched at total of 2,292 seedlings in support to tree planting activities of local partners e.g. schools and barangays.

Output 8: Cockatoo advocacy

- 36. We confirmed cockatoo sightings in the Western Command after reports from Col. Asuncion. Photo documentation of the birds was taken.
- 37. In partnership with the Palawan Council for Sustainable Development Staff, KFI and PCCP provided the leg bands/rings for birds that were duly registered. This is in parrots, Hill myna, Philippine cockatoo and some exotic parrots.

Other highlights

- 38. Peter and Indira presented a poster during the 2011 International Congress for Conservation Biology (ICCB) held in Auckland, New Zealand on 5-9 December 2011.
- 39. J-Kris, our Education Officer successfully represented the PCCP during the 8th Birdfest in Dumaguete City where he gathered support from kids and adults alike.
- 40. A keeper assistant was hired on probation basis to help the work in KIEBC through the funds raised in the Adopt an Animal Program.
- 41. Our project vehicle needs to be sold and a new vehicle purchased in order to save dramatically increased maintenance costs.

ACKNOWLEDGMENTS

We are grateful to the Loro Parque Fundación (LPF), Tenerife, Spain for incessantly supporting the Philippine Cockatoo Conservation Program and to the Partner Donors: North of England Zoological Society/Zoological Gardens Chester (NEZS), Zoologische Gesellschaft für Arten- und Populationsschutz (ZGAP, incl. Fonds für Bedrohte Papageien and Strunden-Papageien-Stiftung), Conservation des Espèces et des Populations Animales (CEPA), ZooParc de Beauval and Conservation Association (Association Beauval Conservation et Recherche) for their trust and generous support. Particular thanks to Wolfgang Kiessling, President LPF, Dr David Waugh, Director LPF, Dr. Roger Wilkinson, Head of Conservation and Science, North of England Zoological Society (NEZS)/Zoological Gardens Chester, Roland Wirth, President ZGAP, Dr. Jean-Marc Lernoald, President CEPA, Eric Ruivo, and Marc Boussekey, European Coordinator of the PCCP and Secretary CEPA and for facilitating the flow of funds, communication and support from Europe.

The PCCP is indebted to the real players of the project: the wardens and volunteers from Narra, Dumarán, Rizal, Pandanan and Polillo for their dedication, hard work and commitment. Without them, the project would not have reaped the good harvests.

To the honorable Mayor of Narra, Atty. Clarito D. Demaala Jr., Madame Lucy Demaala, and members of the municipal council and officials. Special gratitude goes to PAMB members, Narra for their vigilance and ready attention on Rasa. We are grateful for the support of the new administrations in Dumarán and Rizal through the honorable mayors Medwin Pablico and Atty. Tivilyc We would like to thank the support of Dumarán MPDO Agnes Padul and all Dumareños. We also thank the barangay officials of Culasian, Candawaga and Ransang, Rizal for their cooperation. Special gratitude goes to Mayor Shuaib J. Astami of Balabac and his council, former Barangay Captain Nestor Gabinete and Bgy. Captain Violeta Gabinete of Bgy. Pandanan, Balabac for their assistance and cooperation. We thank as well all the barangay council members, Kgd. Edjal Karaan and family and all families of wildlife wardens from Pandanan. Great thanks to Burdeos Municipality in Polillo through the leadership of Mayor Gil Establecida and Vice Mayor Melissa Encomienda. We are grateful to Patnanungan Mayor Danteo Eusebio and Vice Mayor Bautista Resonabe, We thank also Bgy. Captains of Anibawan and Patnanungan Norte.

We are grateful to the DENR personnel: CENRO Narra/PASU-RIWS Fernando Tactay, Deputy PASu Emmanuel Alfaro, EMS Mercy Almorfe; CENRO Wilfredo Angeles of Roxas, CENRO Quezon Florencio Diaz and PAWS Chief and PASu Clarissa Pador and likewise to CENRO Jose Elmer Reyes of Real, Quezon Province. Equally, we thank PENRO Juan dela Cruz, Ate Precy, Ate Doray, and Vivian of PENRO Office. Special thanks to Anson Tagtag, Josefina de Leon, Angie Mendoza, Teng Lota, Dr. Manila, and Dir. Theresa Mundita Lim from the Protected Areas and Wildlife Bureau, and to the DENR Region IV-B Executive Director Marcial C. Amaro, Jr., DENR Region IV-A Executive Director Nilo B. Tamoria and For. Arnulfo Hernandez of PAWSCZ Region IV-A, Mary June Maypa of PAWD Region IV-B, Mr. Sixto E. Tolentino, Jr of EMB, Region IV-B, RTD Arnulfo Hernandez, and CENRO For. Miliarette Panaligan of Real, For. Keith Bitao and his staff.

Our deepest gratitude goes to Hon. Juan Miguel Zubiri, President of KFI, for his unrelenting support and financial assistance; to Erwin and Debbie van den Beukel for their generosity, assistance and precious time. We also give thanks to the new Governor Abraham Mitra Reyes and Vice Governor Femmes Reyes.

We also are grateful to Dr. Jens-Ove Heckel, Director of Zoo Landau in der Pfalz, the Stadtholding Landau in der Pfalz and Freizeitbad La Ola for helping us realize the Carbon Sequestration Initiative.

We express gratitude to Marion J. Packer Trust for their generosity.

We also thank the local government of Bgy. Antipuluan for their support. Thanks also to the SKM officers and members. Likewise to the indigenous peoples of Pandanan for their partnership especially to ~~Ó @ã ^ ~ c æã } Á P æ{ ^ á [rapá MaGara Calasagón and Peping Ading.~~ • ^
Peping Ading. Thanks to Bugsok Brgy. Captain Pastor Alfaro and all those who helped us in our visits in Bugsok. We appreciate the assistance of Melinda de Luna from Jewelmer Corporation and Atty. Gasgonia of ERPR.

Thanks to the Western Philippines University (WPU) and Dr. G. Rebono and Salvador %Dong+ Guion from Palawan Wildlife Rescue and Conservation Center (PWRCC) for our collaboration. We express gratitude to Rev. Fr. Roberto Ebisa, SVD and Mike Pasigabong for their generous help and assistance especially for our Manila concerns.

Special thanks to PCSDS particularly to OIC Director Romeo Dorado, J. Pontillas, Atty. A. Villena, G. Cadigal, A. Marcaida, B. Catain and E. Roxas.

Thanks to Liza Dans, Edgar, Jeremy and Andeth for their work in Polillo Islands and to Polillo Islands Biodiversity Conservation Inc (PIBCFI) and the Philippine Biodiversity Conservation Foundation Inc. (PBCFI) staff. We are grateful to our Polillo local partners in Burdeos and Patnanungan: Hon. Bantucan, MENRO designate Estefani, MENRO designate Aguilar, MFARMC Chair Al Avenilla, Alejandro Gomez and Family, Talisayon Family, Nathan Rutaquio, Edgar Abaño and family, Jeremy Reyes and family. Thanks to Burdeos Bantay Kalikasan Brigade, MFARMC, Burdeos Bantay Dagat, Danny Lasa, Solomon Diasanta, and Ate Nerry & Kuya Kidong,

We also give special thanks to PBCFI through W. Oliver and E. Gatumbato for our collaboration for the Polillo Project.

Our gratitude to J-Kris Gaño (JKCG), Rene Antonio (RA), Jewilyn Soquerata (JS), Mike Plazos (MP), Angles Guion (AG), Liza Dans (LD), Diverlie Acosta (DA), Ronelito Esuma (RE), Edgar Jose (EJ) and assistant keepers Arthur D. Asuque Jr., Loreto Alisto and Mario Batac for their services and assistance provided to the project. We also thank Marina Hisona, Glesselle Batin and PFTCP volunteers for their time and kind assistance. We are equally grateful to KFI board especially Vice President Peter Widmann and Secretary-Treasurer Dr. Sabine Schoppe.

To all visiting tourists, foreign and local, for the generous donations given to the project.

ACRONYMS

CE	Conservation Education
CENRO	Community Environment and Natural Resources Office(r)
CEPA	Conservation des Espèces et Des Populations Animales
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.
KP	Kingfisher Park
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
MMPL	Mt. Mantalingahan Protected Landscape
MOA	Memorandum of Agreement
MMT	Multi-partite Monitoring Team
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)
PENRO	Provincial Environment and Natural Resources Office
PFTCP	Philippine Freshwater Turtle Conservation Program
PNP	Philippine National Police
PSU	Palawan State University
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
WPU	Western Philippines University
ZGAP	Zoologische Gesellschaft für Arten- und Populationsschutz

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- Figure 8.** (A) This old *Pagatpat* tree was reportedly attacked by visiting cockatoos during its fruiting season in August 2011. (B1,B2) Wardens measuring DBH of flowering *Sonneratia* stands in Sebaring Dos.
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- Figure 21.** In November, Indira visited the area again and took these shots of the cockatoos on a tree.
- Figure 22.** Peter and Indira Widmann presentated a poster on habitat restoration efforts of PCCP during the ICCB Congress in Auckland, New Zealand in December 2011.
- Figure 23.** J-Kris, our new Education Officer succeeded being the lone representative of the KFI during the 8th Birdfest in Dumaguete City in September 2011.
- Figure 24.** KFI President Miguel Zubiri discussed with DYSP in Puerto the programs of the KFI (above). The KFI Board and PCCP staff met in Puerto Princesa in November. Afterwhich, Pres. Zubiri visited the PENRO office to meet with collaborators.

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.

Since almost twelve years Katala Foundation Inc. (KFI) implements the PCCP in the Philippines. Comprehensive conservation projects are currently undertaken in four sites in Palawan (Fig. 1): Rasa Island (Narra), Dumarán Island (Dumarán), Culasian (Rizal), and most recently Pandanan and Bugsuk Islands (Balabac). The three former sites contain by now protected areas declared on municipal levels, specifically demarcated to include the remnant cockatoo populations. The latter site is predominantly owned by Jewelmor Corporation, with which KFI has a Memorandum of Agreement for the conservation of the species.

We estimate that a maximum of 1,245 Philippine cockatoos exist in the wild (assuming few populations have been overlooked in recent surveys of historical locations, and an estimated 400 individuals survive in the Sulus, for which only incomplete information is available). The minimum number of wild Philippine cockatoos is estimated to be 450 individuals.

The single-most important Philippine cockatoo population on Rasa is secured under] ! ^ • ã á ^ } c ã æ | Á] ! [& | æ { æ c ã [} Á æ • Á % Ü æ • æ Á Q • | æ ñ á Á Y ã | á addition to local legislations. Pandanan, the latest site, holds possibly the second-most important population with at least 62 individuals. One additional site is in the Polillo group of islands in the Luzon Faunal Region, the only known location in the Luzon Faunal Region.

With the four project sites in Palawan and one in Luzon, it is estimated that between one- to two-third of the remaining wild population is currently covered in PCCP projects. Cockatoo populations are stable or increasing in all sites and improved legal conservation could be achieved (e.g. through creation of cockatoo reserves). However, law enforcement by state agencies remains weak and pressure on these areas is rather increasing (migrant influx to Palawan, mining, planned large-scale establishment of bio-fuel plantations). Warden schemes remain the single-most important tool to assure the short-term survival and recovery of the species, whereas lobbying, conservation education, habitat restoration and reintroduction, as well as provision of alternative livelihood options are important for the long-term improvement of the frame conditions for cockatoo conservation in the Philippines.

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-| ã • c ã } * Á [~ Á c @^ Á •] ^ & ã ^ • Áthrough{ Á ± Ô! ã c reversing its population decline and under consideration of the precautionary principle.

Program Strategy

The main strategy of the programme is to conserve *in-situ* the most important subpopulations of the Philippine cockatoo through adopting participative methods.

The general program strategies are:

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

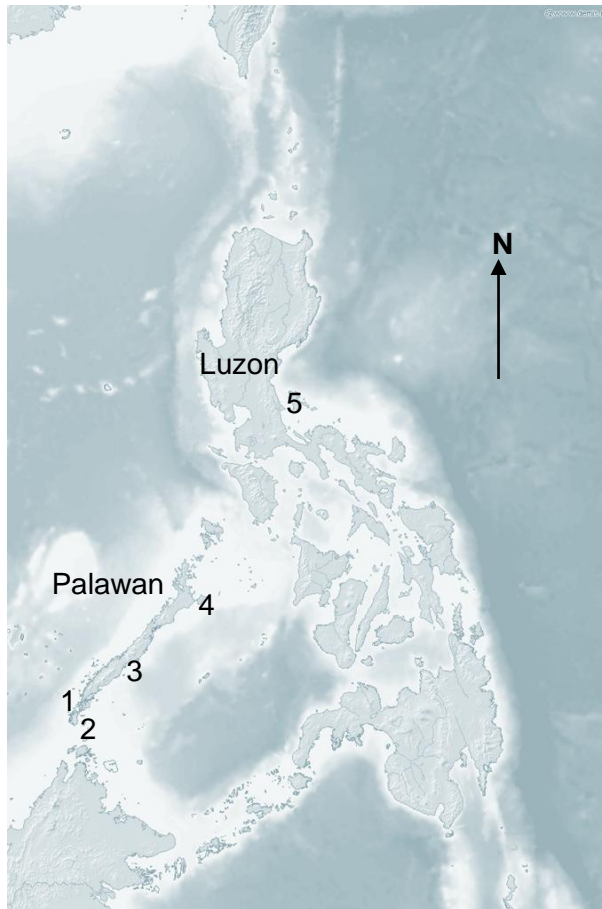


Figure 1. Map of the Philippines indicating sites of the Philippine Cockatoo Conservation Program: 1. Culasian Managed Resource Protected Area, Rizal; 2. Pandanan, Balabac; 3. Rasa Island, Narra; 4. Omoi and Manambaling Cockatoo Reserves, Dumaran; 5. Patnanungan Island, Polillo group of Islands, Quezon.

Deliverables

Objective 1: Conservation of cockatoo population on Pandanan and Bugsuk Island, Balabac

- ◁ Warden scheme on Pandanan Island continued and extended to Bugsuk Island.
- ◁ Survey cockatoo population and habitat assessment on Bugsuk Island conducted and monitoring on Pandanan continued.
- ◁ Networking with local stakeholders, particularly with Jewelmer Corporation, the largest private landowner, continued.
- ◁ Conservation education on Pandanan Island continued and extended to adjacent mainland and Bugsuk Island.
- ◁ Small livelihood projects for key-stakeholders continued.

Objective 2: Re-introduction of Philippine cockatoos into parts of the historical range

- ◁ Assessment of potential translocation sites and potential remnant populations within the historical range continued using the quantitative tool developed during the re-introduction workshop.
- ◁ Workshops for a comprehensive Philippine Cockatoo Conservation Action and Management Plan conducted and results for re-introduction procedures incorporated.
- ◁ Translocation site preparation commenced, e.g. through conservation education, habitat restoration, improvement of legal frame conditions, once a suitable site is identified.
- ◁ Protocols for hand-raising of orphaned chicks with minimal exposure to humans and related facilities further improved.

Objective 3: Conservation of cockatoo population on Rasa Island, Narra

- ◁ Warden scheme continued.
- ◁ Members of the Local Protected Areas Management Committee capacitated in the management of the Philippine Cockatoo and Rasa Island Wildlife Sanctuary and meetings facilitated.
- ◁ Conservation education for stakeholders, particularly in mainland areas which are regularly frequented by cockatoos continued.
- ◁ Experimental habitat restoration on mainland initiated.
- ◁ Planting of food plants on mainland continued to offset damages on agricultural crops caused by cockatoos.
- ◁ Research on conservation-related aspects of cockatoo biology on Rasa continued, with focus on factors influencing breeding success and foraging ecology.

Objective 4: Conservation of cockatoo population on Dumaran Island, Dumaran

- ◁ Warden scheme continued.
- ◁ Incoming members of Local Protected Areas Management Committee assisted and capacitated in the management of the Philippine cockatoo, as well as Omoi and Manambaling Cockatoo Reserve.
- ◁ Buffer zone restoration around existing cockatoo reserves continued.
- ◁ Effectiveness of previous conservation education evaluated.
- ◁ Local government assisted in land use planning, particularly in respect to demarcation of extensive *Jatropha* plantations.

Objective 5: Conservation of cockatoo population in Culasian Managed Resource Protected Area, Rizal

- ◁ Warden scheme continued.
- ◁ Members of Local Protected Areas Management Committee capacitated in the management of the Philippine cockatoo and Culasian Managed Resource Protected Area and Culasian headwaters within the Mt. Mantalingahan Protected Landscape and meetings facilitated.
- ◁ Alternative funding sources for PA management further secured.

Objective 6: Support for Polillo Islands Parrot Project

- ◁ Warden scheme for Philippine cockatoo and other parrot species continued.
- ◁ Conservation education for threatened parrot species within the archipelago continued.
- ◁ Location for locally protected parrot reserve identified and promoted with stakeholders.

Objective 7: Katala Institute for Ecology and Biodiversity Conservation

- ◁ Captive management of Philippine cockatoo and other highly threatened species continued through employment and training of zookeepers and volunteers.
- ◁ Establishment of a training centre initiated.
- ◁ Quarantine area to accommodate rescued cockatoos and/or cockatoos destined for translocation improved.
- ◁ Landscaping with native species propagated in the Katala nursery continued and trail system initiated.
- ◁ Proposal submission to other potential donors continued.

Objective 8: Cockatoo Advocacy

- ◁ Palawan Council for Sustainable Development and other law-enforcing bodies assisted in formulation and implementation of regulations pertaining wildlife and natural resource management.
- ◁ Land use planning in project municipalities assisted.
- ◁ Conservation education campaigns conducted in Iwahig Penal Colony and buffer zone of Puerto Princesa Underground River National Park.
- ◁ Promotional video for the Philippine cockatoo conservation Programme produced and disseminated.

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. In February 2006, the island became a Wildlife Sanctuary through Presidential Proclamation 1000 and since a Protected Area Management Board is functioning as management body for Rasa Island Wildlife Sanctuary (RIWS). In 2008, RIWS was chosen as Top 13 Bird Watching Sites in the Philippines by the Department of Tourism.

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 ten years (presently ca. 289 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.

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 2010), 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*.

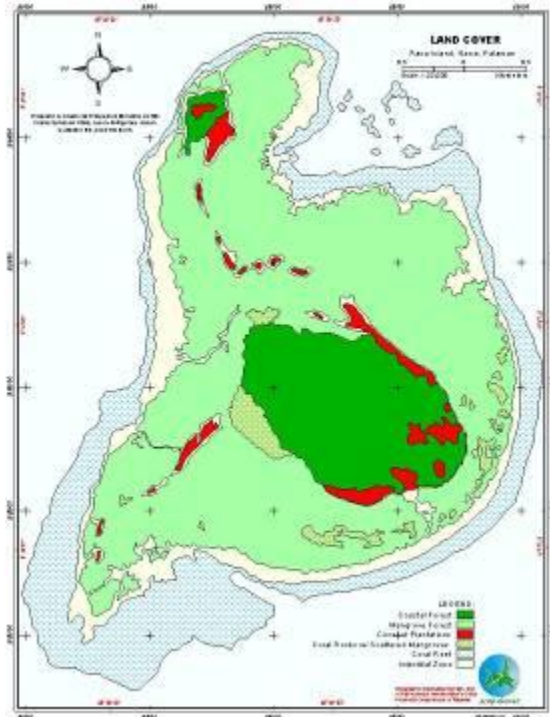


Figure 2. Vegetation and land-use of Rasa Island, Palawan, Philippines.

Dumaran Island, Dumaran, Palawan

Dumaran is situated in north-[^] æ• c ^ ! } Á Ú æ| æ, æ} Á à ^ c , ^ ^ } Á F € » G G q Á æ} á Á F F J » Í Í ne B ā n g a y ā 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.

PCCP currently manages three areas on the island: Omoi and Manambaling Cockatoo Reserves (Fig.3) and the traditional roosting site in Lagan. A Local Protected Area Management Committee (LPAMC) functions as its management body.

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 *Koordersiodendron pinnatum* being emergent tree species of commercial value.

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 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 leytensis*.

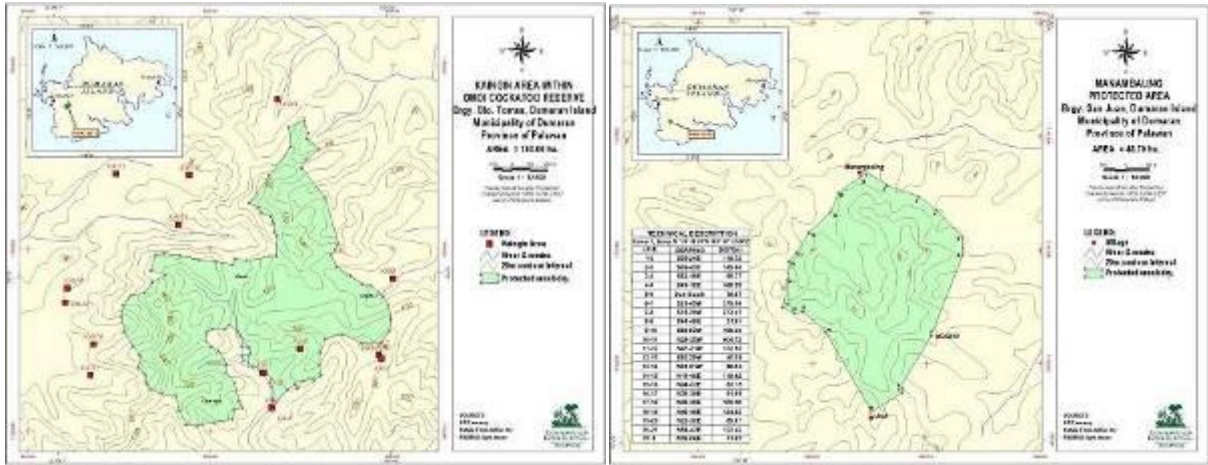


Figure 3. Omoi Cockatoo Reserve (left) and Manambaling Cockatoo Reserve (right) cover the last forest patches on Dumaran Island.

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.

Habitat degradation and destruction, rather than poaching, remain the biggest challenges for cockatoo conservation in Dumaran. In the current phase ca. five hectares of secondary forest and grassland were purchased with support of the Stadtholding Landau in the course of a carbon-mitigation project. These areas have been rehabilitated and integrated in the buffer zone of the Omoi Cockatoo Reserve.

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

The Protected Area (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» Í G q Á c [Á Ì » I ï q Þ Á æ} È Á The PA comprises 2,822 Hectares.» H F q

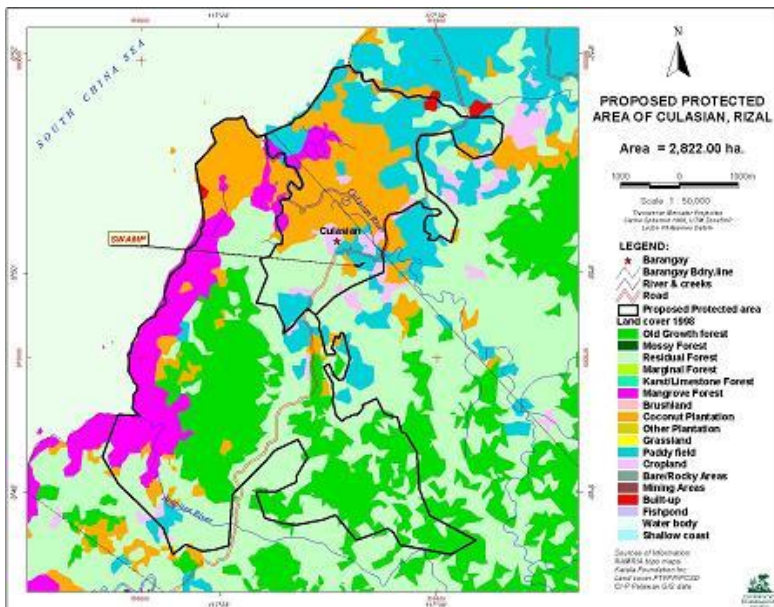


Figure 4. Vegetation, land use and boundaries of Culasian Managed Resource Protected Area, Rizal, Palawan.

CMRPA ranges from sea level to about 140ma.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 Tagbalugo on an isolated moderately steep hill reaching 120ma.s.l. and a highly fragmented rolling forest area south of the highway from ca. 20 to 140ma.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 PA is lowland dipterocarp forest. Unlike most forests in Palawan, canopy heights are very high, often reaching 40m. *Dipterocarpus grandiflorus* is the most conspicuous emergent tree species. Particularly in Rizal is the only location in the Philippines where *Koompassia excelsa*, the tallest tree species in Asia, can be found. Other emergent trees are for example *Dipterocarpus gracilis*, *Dipterocarpus hasselti*, *Intsia bijuga* and *Koordersiodendron pinnatum*.

Level areas are dominated by permanent cultivation. Shifting cultivation is also most common along the roads, but can frequently be found isolated in forested areas, often on steep slopes. Emergent Manggis are also isolated in cultivated areas, indicate nest sites of parrots or hill mynas during the area was cultivated. The PA holds the highest known density of the near-threatened Blue-naped parrot in the country, and is likely of global importance for this species. Since habitat is very suitable and poaching is reduced significantly, reasons for the stagnant population could be over-aged breeding pairs or competition with other tree-cavity breeders (particularly Blue-naped parrots).

To date, 133 bird species are recorded within the CMRPA. Of outstanding conservation concern (IUCN 2010) 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*. The cockatoo population in Culasian remains stable, but on a very low level.

Pandanan Island, Balabac

Pandanan Island in Bgy. Pandanan belongs to the north easternmost municipality of Balabac in Palawan (Fig. 5). Coastal forests are dense and stock on flat limestone originating from elevated coral reefs. Large trees in the coastal forest are mostly deciduous and widely spaced due to water stress during the dry season. The understory is

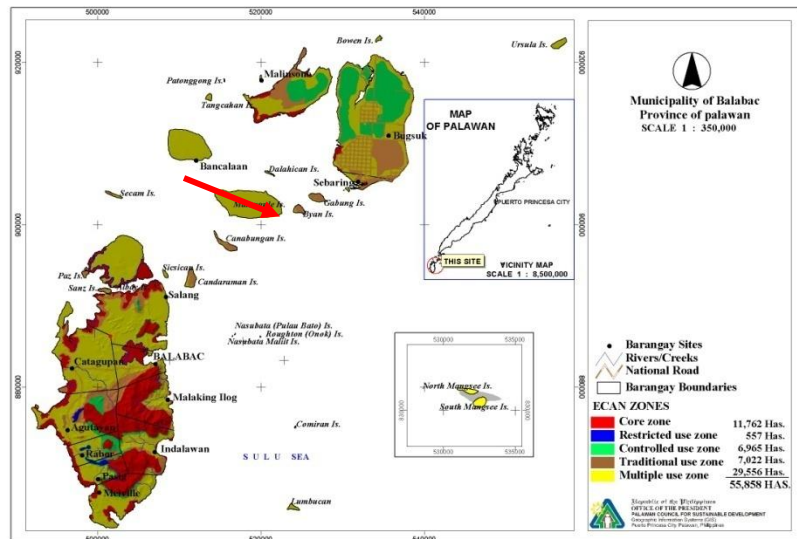


Figure 5. Location map of Pandanan Island indicated in red arrow (PCSDS).

very dense with abundant vines. Emergent trees comprise the genera *Dipterocarpus*, and *Ficus*. A narrow rim of beach forest with *Erythrina*, *Calophyllum* and *Barringtonia* is present. The dense coastal forest cover is as well protected because the large portion of the island is privately-owned and entries are monitored by private guards. Coconuts are the major crop grown in the coastal areas and shifting cultivation including lowland rice, corn, and root crops inside forested areas are common land use forms. Extensive mangroves are thriving.

So far, 47 bird species have been recorded in and around Bgy. Pandanan, but inventories are still ongoing. Among these are six globally threatened and six near-threatened species (IUCN 2010). 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*, and other conservation relevant species like Grey imperial pigeons *Ducula pickeringii* and Mantanani scops-owl *Otus mantananensis* (Widmann *et al.* 2008).

The implementation of the warden scheme recruiting cockatoo poachers resulted in significant increases of the cockatoo population in the first two years of project implementation, comparable to those of the early stages on Rasa Island. In recent surveys, roosting site is at a coconut plantation in Malinsuno Island just across Pandanan Island. Highest number of cockatoo observed was 80 in October 2010.

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*, [! Á ± S æ | æ } * æ ^ q Á æ • Á locally, in the Luzon faunal region (Gonzalez 1997, Collar *et al.* 1999, Widmann 2001).

Patnanungan Island (Fig. 6) is mostly covered by scattered fragments of logged primary lowland evergreen forest and patches of secondary growth forest. About 95 species of birds were recorded from Patnanungan Island, of which 18 species are endemic to the Philippines and three are restricted to Greater Luzon. (Gonzales, 2007).

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.

Cockatoos persist in very low numbers. Habitat is seriously degraded and lack of nest trees might be a limiting factor. Due to the relative proximity to Manila as potential market, illegal logging and wildlife trade remain rampant in the area. Poaching for the pet trade is still ongoing, due to insufficient law enforcement, particularly in remote areas.



Figure 6. Map of the Polillo Islands, Philippines indicating the major islands and settlements, a global priority site for biodiversity conservation (adopted from Hampson *et al.*, 2003).

Methodologies

The Philippine Cockatoo Conservation Programme (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 Dumarán, Rizal and Polillo, movements are observed through wardens monitoring and patrols at protected areas and roost sites.

Monitoring of the population trend on Rasa, Dumarán and Pandanan in Balabac 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 Dumarán a privately-owned coconut plantation serves as the roost site bordering close to a mangrove area. On Balabac, at least two roosting sites are presently monitored; one in Malinsuno Island and the other on Pandanan Island. Counts are conducted monthly either before sunset on Rasa and Balabac islands and daily on Dumarán. 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, and 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 number and year (e.g. DENR 11-0001).

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.

Surveys to find remnant cockatoo populations 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, and 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 and Dumarán.

Restoration of mangrove is conducted on Rasa through transplanting of nursery-grown trees. Experimental restoration of lowland forest habitat is done in Dumarán. 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 Pandanan and Bugsuk Islands, Balabac

Nest protection and wardening scheme

Around 55 cockatoos were documented by wardens and Field Officer RAntonio, feeding on young shoots of *Avicennia* sp. while others were perching on a Bago tree in a rock islet in Arananan area. This is remarkable since until then we knew only of one mangrove species, *Sonneratia alba*, consumed by the bird.

In October, we repaired two cockatoo nest trees to make them rain-proof. After draining, wood slabs were fit to cover the entry of rain.

Wardensq patrol resulted in the identification of new families established in Manas area. We were suspicious of the timing of their arrival; most of them from mainland Palawan and one was allegedly engaged in poaching; hence, together with local enforcement officers we had cautioned them to observe the protection regulations and asked them to immediately register at the barangay hall.

We monitored illegal cutting of six highly-valued trees in close proximity to existing cockatoo nest tree. This was reportedly sanctioned by former barangay captain Gabinete who allegedly will use the lumber for school building. It was known that chainsaw owner was not aware of the area and proper coordination was not done. The activity was suspended.

Wardens dismantled snare intended for monitor lizard found during patrol.

Malunggay planting was initiated by wardens and volunteers in October. This was done near the roosting site in Malinsuno.

Roost site monitoring

At the Malinsuno roosting site, we observed the highest count ever from the area with 106 birds (Fig. 7) on 16th September 2011 during the morning roost count. Two flocks were sighted with 75 and 31 birds respectively. Most birds were observed feasting on *Sonneratia* fruits. Some young birds with leg bands were noted together with the flock. Two days before and after the 16th Sept, roost counts were no less than 80 birds on Malinsuno.

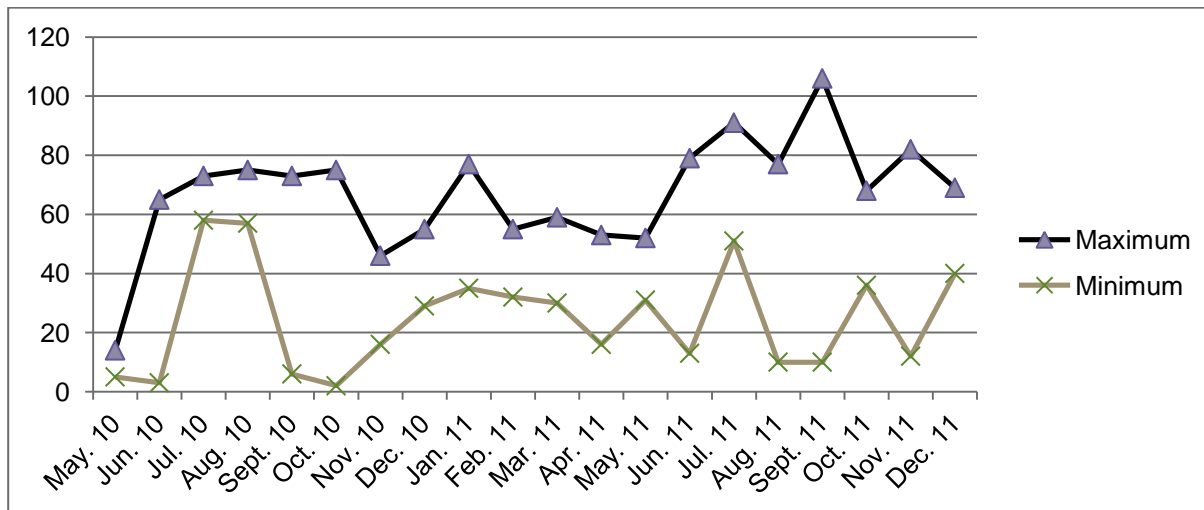


Figure 7. Maximum and minimum monthly numbers of cockatoos counted in the new roosting site in Malinsuno Island, Brgy. Pandanan, Palawan.

While in Manas, nine birds were observed only passing through the area. Interviews were done within the area of Tagbinuang but no roost site had been confirmed instead ca. 30 cockatoos used the area on their way to Loccapo Forest.

We sent wardens in October to check; they reported ca. 60 cockatoo sightings in Sebaring Dos, as follow up to our visit earlier. In total 110 cockatoos were sighted in three flocks in Sebaring Dos in early morning and late afternoon in Lawrensana property based from reports of a volunteer. The said property is situated near the community, ca. 5m away from the main road. Adjacent vegetation type is mangrove forest, dominated by *Sonneratia* tree where birds were noted feeding on. Flight pattern was towards northeast of Bugsuk Island, probably in a coconut plantation. On succeeding days, numbers plummeted to four to ten daily. One local was said to have been trying to shot birds using air gun.

Rapid assessment of the mangrove area in Sebaring Dos was conducted. Two 20x20m plots were established:

Plot 1: Sebaring Dos (Outer part)

GPS: N 08°11.362' E117°17.260'

Site description: Plot 1 is reportedly the feeding area of around 80-90 cockatoos which were noted during the first sighting. The area is near the community of Ú æ| æq , æ} Á c i ã à ^ Early EcotÁ | ^ æ• c Á young *Rhizophora* sp. was noted during the assessment. Five Blue-headed racquet-tails were noted perching. Dominant trees were *Sonneratia alba* with few stands of *Rhizophora* sp. No trees had holes. Average height of *Sonneratia* was 20m with the average DBH of 30cm.

Plot 2: Sebaring Dos (Inner part)

GPS: N 08°11.250' E117°17.622'

Site Description: Plot 2 was situated in the interior part of the estuary (sandy to muddy bottom); most of the trees were at flowering stage. Dominant species was *Sonneratia alba* with average height of 9m and average DBH of 10cm.

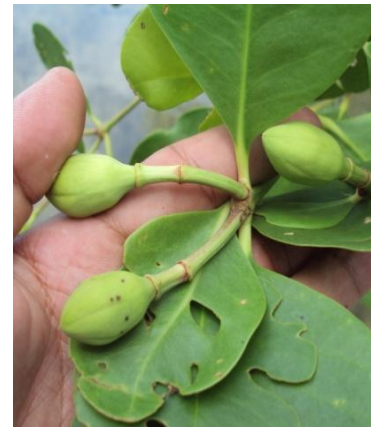


Figure 8. (A) This old *Sonneratia* tree was reportedly visited by cockatoos during its fruiting season in August 2011. (B1,B2) Wardens measuring DBH of flowering *Sonneratia* stands in Sebaring Dos.

Constraints and measures taken

- § Isolated cases of mangrove cutting in particular *Ceriops tagal* species were recorded by wardens. These were mostly for house construction. Similarly, we found snares to trap monitor lizards with its meat used to trap wild boar; however, these cases are mostly for own consumption.
- § Monitoring in Bugsuk continues to be a challenge. Poaching can happen anytime. We hope discussions with the Jewelmer Corporation on options for monitoring will realize soon. This also would cover cases of illegal cutting of trees.

Output 2: Re-introduction of Philippine cockatoos into parts of the historical range

The proposal for funding the first phase of the Reintroduction of the Philippine cockatoo submitted to the Save our Species (SOS), under the IUCN, GEF and World Bank was considered and revisions were completed. Announcement of acceptance will be early in 2012.

Output 3: Conservation of cockatoo population on Rasa Island Wildlife Sanctuary (RIWS), Narra continued

Wardening scheme

Wardens completed priority activities to include replacement of iron sheets on nest trees for predator prevention and installation of six temperature loggers in selected nest holes. Newly identified nests were characterized however not completed yet.

Improvements in KIEBC occupied the time of the wardens e.g. landscaping of porcupine enclosure, aviary repair and repainting, nursery enhancement.

Two wardens participated in the Training on Para-legal Remedies and Seminar on Environmental Laws, Policies and Regulations organized by the DENR in October. ADeig, wildlife warden along with SHDiaz shared their experiences in RIWS during the training.

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

The 22nd regular PAMB meeting was held on 5th October 2011. PCSDS District Manager Virginia Catain presided the meeting. Highlights of the meeting were:

- ◁ *Approval of the financial and workplan for 2012;*
- ◁ *Deputation orders for wildlife wardens; and the*
- ◁ *Community Tree Planting in celebration of the Palay Festival.*

The municipal financial assistance for 2012 wardening scheme on Rasa Island Wildlife Sanctuary was approved.

Conservation education and eco-tourism

We had completed repair and repainting of the birdwatch tower on Rasa Island (Fig. 9). This was financed together with PAMB through the income collected from conservation fees. Wardens were also able to construct a bamboo walk inside mangrove area to aide visitors especially during lowest low tide.



Figure 9. The left side picture shows the platform before it was repainted and the middle photo shows the same platform after removing rust and repainting was completed. The tower is ready for visiting guests and birders. ©KFI

Visitors within the period were diverse ranging from birding groups to institutions. Guests from Canada were very impressed with *Antipuluan guide* information - not just about cockatoos but about the entire local system mountains and sea that sustain the birds. Excellent

In October, we conducted Katala Fun Day in Malatgao during its fiesta celebration (Fig. 10). Field Administrative Officer, JSoquerata spearheaded the fun activity. Around 100 kids and adults were reached through creative games like hungry bird, story-telling and puzzles . all relating to the plight of the Philippine cockatoo.

the conduct of the Community Tree Planting in October. Three coastal barangays of Antipuluan, Panacan 1 and Panacan 2 raved the Sunday heat to plant nearly a thousand endemic food-providing trees for the cockatoo (Fig. 12). Each barangay was awarded with basic gardening tools for monitoring the planted trees since this was the commitment made by each barangay. These three barangays are frequent hosts of visiting cockatoos from Rasa that forage on Malunggay fruits.

Our monitoring resulted in 90% survival of the trees. We had given out seedlings to the barangays that requested more. Bgy.

Antipuluan meanwhile established a barangay nursery and two other organizations in Narra were helped in nursery establishment through the help of our Field Coordinator, SHDiaz.



Figure 10. The Katala Fun day in Malatgao drew excitement amongst residents with the creativity of our new officer, JSoquerata. ©KFI

During the opening parade of the festivities, the Department of Education used the Katala as their icon where participating members were dressed like the bird and performed during the street dancing. The municipality as well was proud using the cockatoo in its streamer

for the week-long festivities as shown in the last picture in Figure 11.

Katala fun activities were conducted at the main park after the parade. This was joined by adults and kids alike.

Figure 11. Snapshots during the festival parade where a participating organization used the Katala as icon. The official banner of the municipality featured the Katala as well. ©KFI

