PHILIPPINE COCKATOO CONSERVATION PROGRAMME

Technical Progress Report

May - August 2016

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Katala Foundation, Inc.

Puerto Princesa, Palawan, Philippines

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EXECUTIVE SUMMARY

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

- By mid of May, 25 birds were banded and fledged, another one fledged before it could be banded.
- Numbers of birds counted on the roosting site increased towards the end of the breeding season. Highest numbers were reached in July with 220 individuals.
- Food supply was scarce due to the dry conditions until end of April, whereas May and June were very wet, resulting in a rapid increase in food supply.
- Wardens continued planting Horseradish Trees around the warden's station, with 52 cuttings alone in June.
- From July 16-20 a survey on Bugsuk Island was conducted which is under the management of Jewelmer Corporation. Only six birds were sleeping there at the time of our visit at the known roost site. Three nest trees were characterized, one showed clear signs of poaching, as indicated in left behind climbing supplies.

Objective 2: Conservation of cockatoo population on Rasa Island, Narra

- Despite the very dry conditions, 41 cockatoo pairs attempted breeding in 2016. Fifteen nest trees belonged to various coastal forest tree species, whereas 26 were *Sonneratia* within the mangrove belt.
- A total of 70 eggs were laid, of which 17 did not hatch. At least nine of these were infertile and removed by wardens after they started to rot.
- Thirty-nine hatchlings fledged successfully, whereas 14 hatchlings died from starvation, predation, or mite infestation. Underweight hatchlings were given supplementary feeding before being returned to the nests. Two nestlings were initially handfed at the warden's camp and shortly after brought to KI for more intensive treatment.
- A total of 782 monitoring visits, including climbs, have been conducted by six wildlife wardens in the 2016 breeding season. Two new cockatoo nest trees were discovered.
- Of the 26 DNA-sexed feather samples collected from Rasa, eleven were from females, three from males and the remaining could not be determined. Testing for PBFD is ongoing.
- The counts of the traditional roosting site on Rasa is declining further. In August a very low count of only 74 birds was reached, but at the same time numbers of birds on the mainland, is at an all-time high.
- All counts in this reporting period were exclusively done on the traditional roost site. 90 birds were observed roosting on the mainland, but this count could not be synchronized with the one from the traditional roost site.
- The highest cumulative daily numbers of cockatoos recorded foraging on the mainland were observed in this reporting period since inception of the project. In May and in August, 144 and 149 birds respectively were counted.
- Eight permanent biodiversity monitoring stations were established in the coastal areas of Rasa as an initiative of the DENR. Terrestrial BMS have yet to be done.

- Planting of food-providing trees in the lot purchased by KFI continued with 90 Parina *Ailanthus triphysa* planted in August, and direct-seeding of Horseradish Trees. Additional 150 Parina were planted as alley trees within the wider foraging area of the cockatoos.
- Conservation education with the 4P's group (rural poor) continued, involving four barangays (villages) adjacent to Rasa, as in the previous reporting periods. On July 28, 220 students of elementary and high schools in Malatgao received conservation-related lectures with focus on Philippine Cockatoo.
- On June 24, the annual Katala Festival took place in Narra, again with support from members of the Wild Bird Club of the Philippines. A total of 2,520 participants was registered in the said event. LGU Narra and the DENR through the PASu were lead partners in the event.
- With support from the Wildlife Reserves Singapore Group we initiated a Citizen's Science project for stakeholders in Narra. While most activities are based in Katala Institute, one component involves bringing local residents to Rasa Island Wildlife Sanctuary.
- The reporting period marked another fieldwork phase of the biodiversity services and values study on Rasa Island. The team leader of the project visited Rasa on July 5. The team involved one national and two local universities.

Objective 3: Conservation of cockatoo population on Dumaran Island, Dumaran

- By May, additional two eggs were reported, bringing the total count to eleven eggs.
- Problems of food shortage caused by the El Nino event already reported earlier, continued within the reporting period. Three more hatchlings died, possibly because of starvation, the extreme heat or a combination, despite efforts of wardens to handfeed hatchlings on the nest.
- It was then decided to remove the remaining five hatchlings from the nests in the second week of May. They were handfed until their condition was stable again, and three days later transferred to Katala Institute in Narra through a transport permit.
- Number of roosting cockatoos increased markedly in June with a maximum of 20 birds recorded. This is very likely due to birds returning from their nest sites to the roost.
- Throughout June, two of the released birds were observed foraging with the wild flock, particularly also *Sonneratia alba* in mangroves nearby the roost sites.
- By the third week of June, the construction of a pre-release aviary commenced in the Katala Environmental Education Center on Dumaran to accommodate birds for release which were rescued earlier in the year from Dumaran and other sites.
- The prefabricated and painted aviary panels were transported to the warden's campsite within the Omoi Cockatoo Reserve and the aviary was set up there.
- The five birds rescued from Dumaran, one bird rescued from the Iwahig project site, and one confiscated subadult male from Puerto Princesa were transferred to the pre-release aviary in Omoi Cockatoo Reserve, Dumaran on August 30 with transport permit.
- Feeding was done mostly from the outside, except for bulky items, i.e. whole branches with fruits attached. Birds were regularly monitored regarding health status and weight.
- Wardens did not observe any illegal activities while patrolling in the cockatoo reserves within the reporting period.

- On June 18 and 19, the annual Kalabukay (Cockatoo) Festival was held in the Municipality of Dumaran, which reached 111 participants, despite the rainy conditions. This was the first time the festival was done on mainland Dumaran.
- By end of May, with almost one month delay, the rainy season finally set in, and planting within the critical habitat commenced. By end of May 780 seedlings were planted. Within June, 1,582 seedlings were planted by wardens, and 445 wildlings newly collected for propagation in the nursery. With 1,801 and 1,939 wildlings respectively, in July and August the numbers of collections exceeded the number of seedlings planted (1,678 and 767 respectively).

Objective 4: Education and research at the Katala Institute

- Throughout July the rescued birds intended for release in Dumaran were weaned off the handfeeding formula and increasingly exposed to natural food items.
- Environmental enrichment for cockatoos is further developed and readily accepted by all cockatoos.
- During the Katala Festival from June 24 to 26, KI was formally opened for the public. Ribbon cutting was led by Municipal Mayor Lucy Demaala. About 80 participants from various agencies and schools in Narra attended the affair.
- With support from the Wildlife Reserves Singapore Group, a module on pond dipping was developed and tested with KFI staff and teachers from the Palawan State University.

Other highlights:

- Breeding of Spot-throated Flameback *Dinopium everetti* was for the first time documented for this species. Two birds successfully fledged on Dumaran.

Results and Progress

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

Research on conservation-related aspects of cockatoo biology on Pandanan and Bugsuk continued, with focus on factors influencing breeding success and foraging ecology

Breeding

Although impacted by continuing drought, by end of April most of the nestlings were approaching fledgling stage or fledged already. By mid of May, 25 birds were banded and fledged, another one fledged before it could be banded. By the end of the same month, newly fledged birds were still fed by their parents in the vicinity of the nests. One hatchling from nest 29 fell to the ground, was rescued by a local from the area and turned over to KFI. Since it had no injuries, it was returned to the nest, were it was accepted by the parents and later fledged successfully.

Average clutch size per breeding pair in this breeding season was 2.8, considerably higher than presently in Rasa, and more resembling the latter in the beginning of conservation efforts there, when the population was increasing dramatically.

Roosting

Numbers of birds counted on the roosting site increased towards the end of the breeding season. Highest numbers were reached in July with 220 individuals, slightly less than in the previous year. A reason for the slight decline could be the effects of the severe El Niño towards the end of 2015 and early 2016. The first birds from this year's breeding season started to show up already by end of May, as indicated by one band on both legs, which was tried out in 2016 for the first time.

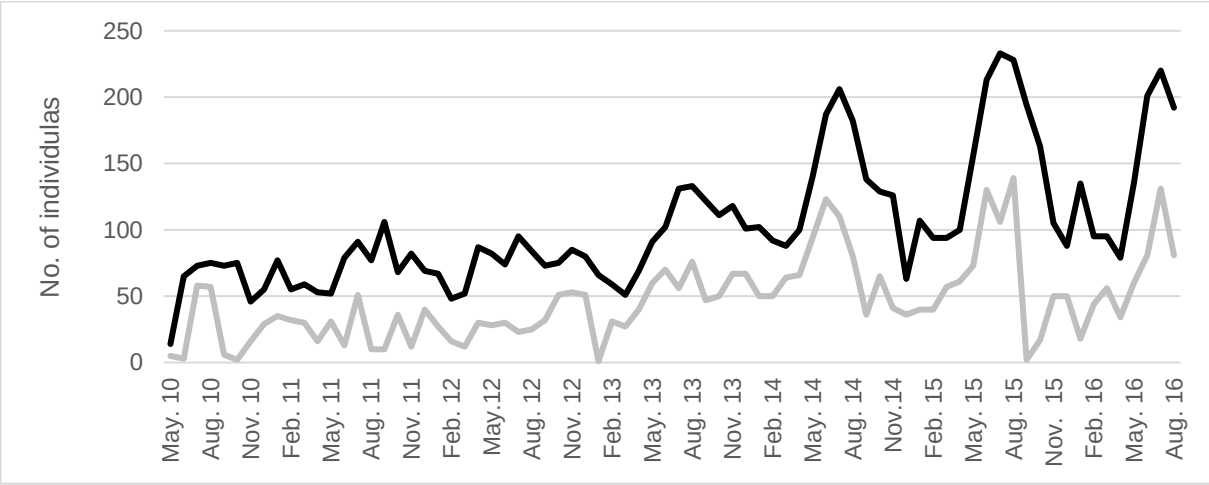

Figure 1. Minimum and maximum numbers of cockatoos roosting on Malinsuno, Balabac, by month

Foraging

Food supply was scarce due to the dry conditions until end of April. May on the other hand was surprisingly wet with 241 mm recorded on Pandanan alone, and June extremely wet with 381 mm. Although this had an almost immediate effect on food availability, it is not known what effect these very wet conditions had on the post-fledgling survival of this year's offspring. By mid of June already nine out of ten food-providing tree species were bearing

fruits. On June 16, a flock of 24 birds including juveniles were feeding on fruits of *Sonneratia alba* on northern Pandanan. On June 14, seven cockatoos were feeding on fruits of the same species in mangroves on the southern tip of Palawan.

Warden scheme continued

Wardens continued planting Horseradish Trees around the warden's station, with 52 cuttings alone in June. It turned out that the ones planted the year before using the same method were already bearing fruits and were frequented by cockatoos. On the other hand, the plants propagated from seeds showed stunted growth.

Patrolling results of the island were regularly reported to the respective management bodies.

Figure 2 Planting of Horseradish Trees works best with large stem cutting (left); Horseradish fruit with signs of cockatoos feeding (right; Photos: R. Antonio)

Survey on Bugsuk

From July 16-20 there was a precious occasion to conduct a survey on Bugsuk Island which is under the management of Jewelmer which runs a pearl farm in the area. Main objective was to conduct a population study of the Balabac Mouse-Deer *Tragulus nigricans*, but we took the opportunity to visit cockatoo nest trees and assess their status on the island.

A roost site exists near the company's headquarters and we receive reports from visitors to the island occasionally. Only six birds were sleeping there at the time of our visit. Three nest trees were characterized, one showed clear signs of poaching, as indicated by climbing supplies left behind.

Although not focusing on other taxa we recorded initially 53 birds (Annex 1), 10 mammals, six reptiles and two amphibian species on the island. The island is remarkable for the high density of Saltwater Crocodiles *Crocodylus porosus*.

Figure 3. Large-tailed nightjar (left) and cockatoo nest on Bugsuk Island (right; Photo: P. Widmann)

Conservation education

During our visit to Bugsuk, we took the opportunity to give a short presentation to the present staff of Jewelmer about the Philippine Cockatoo, and particularly about the importance of Pandanan and Bugsuk for its survival.

Constraints and measures taken

- Application of two color bands per tarsus to allow for individual identification of birds was not possible, since this caused injury to the birds. Surplus rings were removed and superficial wounds were treated and healed well. Color coding is tried for clutches for each individual year, instead of each individual.
- Monitoring in May and June was hampered by very strong rainfalls.
- Security situation in Balabac has deteriorated in such a way that field work involving foreigners (Peter) can only be conducted with armed escorts. This hamper results considerably due to disturbance.

Objective 2: Conservation of cockatoo population on Rasa Island, Narra

Research on conservation-related aspects of cockatoo biology on Rasa continued, with focus on factors influencing breeding success and foraging ecology

<u>Breeding</u>

Despite the very dry conditions, 41 cockatoo pairs attempted breeding in 2016. Fifteen nest trees belonged to various coastal forest tree species, whereas 26 were *Sonneratia* within the mangrove belt. As birds enter into breeding age, the trend of breeding pairs is still upwards. A total of 92 potential nest trees are recorded from Rasa, and although some of these can no longer be used, it appears that availability of nest sites is not yet a limiting factor.

As in previous years, there is a trend to lower productivity per breeding pair, possibly as a response to density-dependent effects on the island, including food supply. Whereas in the early years of conservation we recorded routinely clutches with three, and occasionally even four eggs, in 2016, 29 pairs produced two eggs, whereas 12 pairs produced only one.

A total of 70 eggs were laid, of which 17 did not hatch. At least nine of these were infertile and removed by wardens after they started to rot. The remaining disappeared, either because they were removed by the parents or were predated.

Thirty-nine hatchlings fledged successfully, whereas 14 hatchlings died from starvation, predation, or mite infestation. It is not known if extreme temperatures play a role in the

survival of the chicks, but this hopefully will be clarified once the information from the data loggers installed inside some of the nest chambers become available. Underweight hatchlings were given supplementary feeding before being returned to the nests. Two nestlings were initially handfed at the warden's camp and shortly after brought to KI for more intensive treatment. One was returned to the nest after it became stable, and was accepted by the parents. Three rescued birds showed signs of bites, possibly by rats. A total of 782 monitoring visits, including climbs, have been conducted by six wildlife wardens in the 2016 breeding season. Two new cockatoo nest trees were discovered, one of which is Taluto *Pterocymbium tinctorium*, a coastal forest species. This represents only the second record for this species to be utilized as nest tree.

Breeding records of other noteworthy bird species include White-bellied Sea-eagle *Haliaeetus leucogaster,* Great-billed Heron *Ardea sumatrana* and Mantanani Scops-owl *Otus mantananensis.*

During the reporting period also one single individual of Blue-naped Parrot *Tanyganthus lucionensis* and Hill Myna *Gracula religiosa.* None of these species has ever bred on Rasa, and the two birds are probably escapees.

Of the 26 DNA-sexed feather samples collected from Rasa, eleven were from females, three from males and the remaining could not be determined. Testing for PBFD is ongoing.

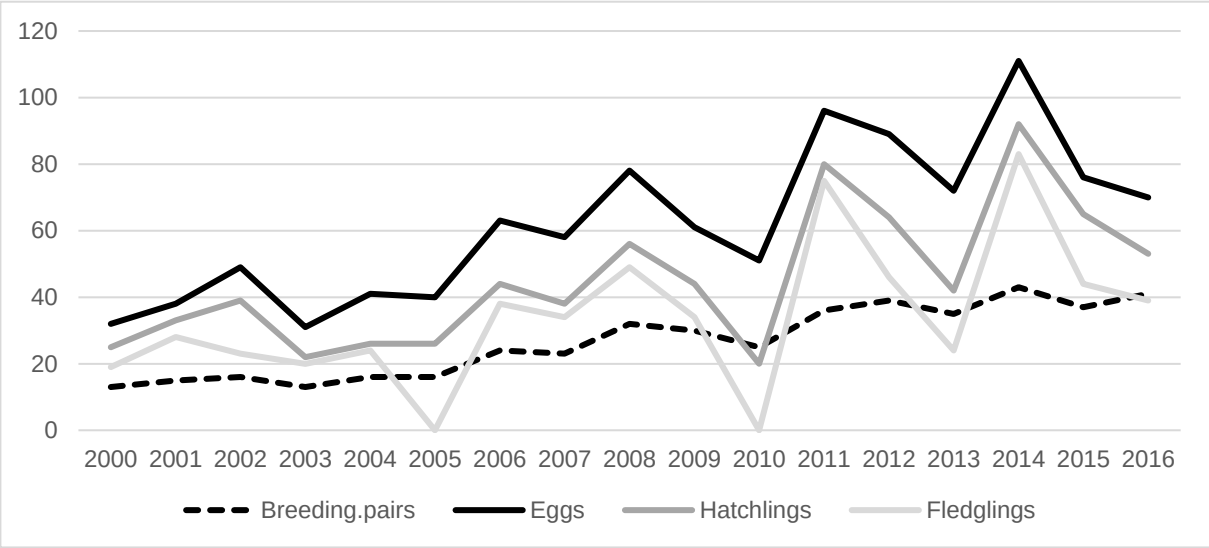

Figure 4. Total numbers of breeding pairs, eggs produced, hatchlings and fledglings from 2000 to 2016 on Rasa Island

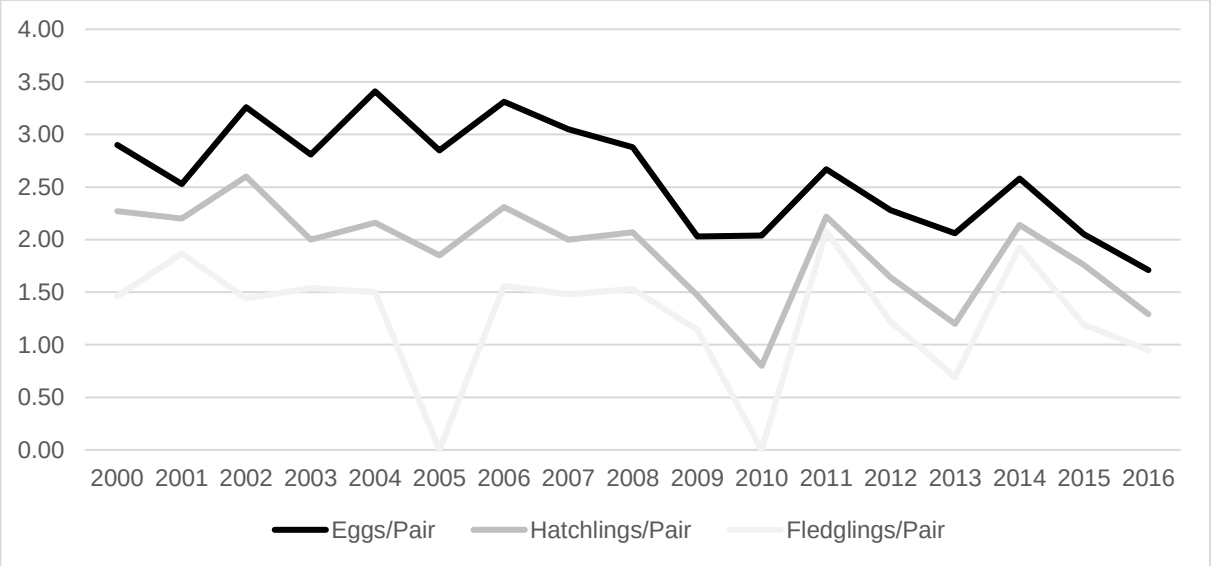

Figure 5. Eggs, hatchlings and fledglings per breeding pair from 2000 to 2016 on Rasa Island

Figure 6. Banded hatchlings on Rasa (left); very dry conditions during banding reflected in the parched understory of the coastal forest (right; Photos: KFI)

Roosting

The counts at the traditional roosting site on Rasa is declining further. In August a very low count of only 74 birds was reached, but at the same time numbers of birds on the mainland, is at an all-time high (see next paragraph). The latter certainly includes birds roosting there, since they are returning to Rasa very early in the morning. However, there is still no established roost site on the mainland, which makes synchronized counts at the moment not possible. It should also be noted that as in previous breeding seasons the breeding pair and up to five non-breeders per nest stay at the respective nest sites and do not join communal roosts. All counts in this reporting period were exclusively done on the traditional roost site. 90 birds were observed roosting on the mainland, but this count could not be synchronized with the one from the traditional roost site.

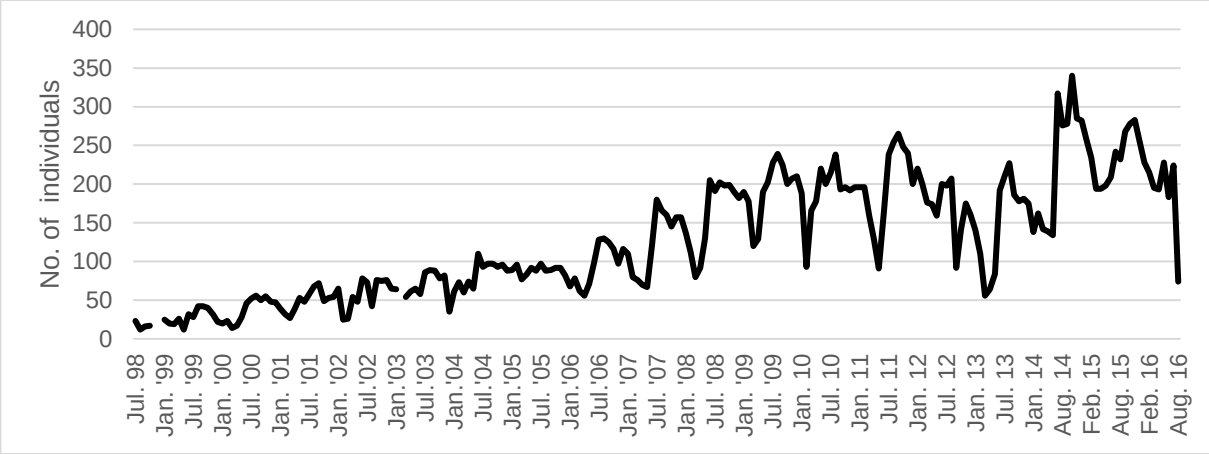

Figure 7. Numbers of cockatoos on simultaneous counts in traditional and transient roost sites in Rasa and adjacent mainland.

Foraging

The highest cumulative daily numbers of cockatoos recorded foraging on the mainland were observed in this reporting period since inception of the project. In May and in August, 144 and 149 birds respectively were counted. A reason for these high numbers on the mainland could be the food scarcity on the island. Non-breeding birds also roost increasingly on the mainland, and some can be seen returning very early in the morning to the island.

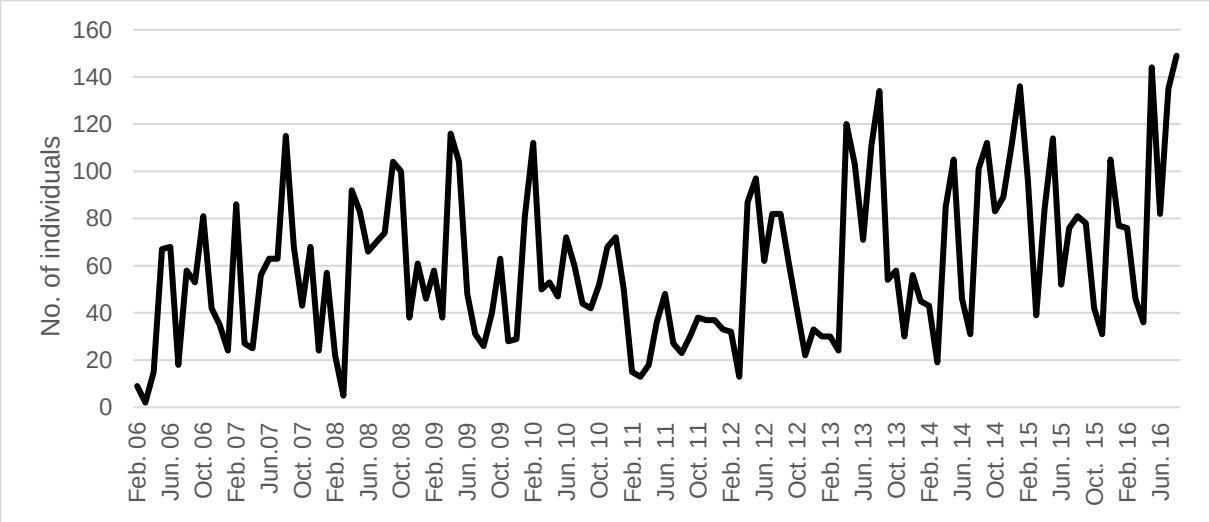

Figure 8. Highest cumulative daily number for each month of cockatoos transferring from Rasa to mainland

Figure 9. Cockatoos transferring from Rasa to mainland (Photo: B. de Laender)

Warden and mainland volunteer scheme continued

Main occupation of wardens in this reporting period was related to the cockatoo breeding season. Phenological surveys and weather observations have been continued. Twenty terracotta basins were regularly refilled to take off the edge of the water shortage for the birds.

Eight permanent biodiversity monitoring stations were established in the coastal areas of Rasa as an initiative of the DENR. The terrestrial BMS have yet to be installed officially by DENR. All coconut claims were monitored and no signs of expansion have been observed.

Mainland volunteers continued monitoring cockatoo movements of cockatoos in cultivated areas opposite of Rasa Island and permanently monitored the phenology of planted Horseradish Trees. Fruits were available throughout the breeding season, however in June restricted to one single foraging area. Planting of food-providing trees in the lot purchased by KFI continued with 90 Parina *Ailanthus triphysa* planted in August, and direct-seeding of Horseradish Trees. Additional 150 Parina were planted as alley trees within the wider foraging area of the cockatoos.

Conservation education activities for stakeholders

Conservation education with the 4P's beneficiaries continued, involving four barangays (villages) adjacent to Rasa, as in the previous reporting periods. On July 28, 220 students of elementary and high schools in Malatgao received conservation-related lectures with focus on Philippine Cockatoo. Difference between pre- and post-exposure surveys ranged between 2 and 49 percentage points, indicating that in some aspects knowledge was very high and not much improvement could be attained, but in the more detailed questions of cockatoo conservation and ecology there is still potential for improvement.

On June 24, the annual Katala Festival took place in Narra, again with support from members of the Wild Bird Club of the Philippines. The activities of the festival included

lectures, bird guiding, face painting, origami to reach out and educate others about the Philippine Cockatoo and other wildlife. Activities ran simultaneously - origami and face painting in the gym and birdwatching in the environs of the town proper. Lectures for teachers were conducted at the Women's Center and quiz bee for elementary school participants at the Lagoon. The festival proper started very early in the morning by witnessing the crossing of the Katala from Rasa Island to the mainland in Panacan, Narra. A day full of fun ending with a Zumba for all those who participated in the festival, and a total of 2,520 participants was registered in the said event. The festival was a joint effort of LGU Narra, DENR through the PASu and KFI.

Figure 10. Birdwatching with pupils (left) and face-painting station during the Katala Festival (right; Photos: KFI)

With support from the Wildlife Reserves Singapore Group we initiated a Citizen's Science project for stakeholders in Narra. While most activities are based in Katala Institute, one component involves bringing local residents to Rasa Island Wildlife Sanctuary, since it turned out that most people in Narra know the cockatoo well, but only few had ever visited the protected area. Two basic itineraries for Rasa Island were prepared which take into account time of the day (since foraging cockatoos can only be observed in the morning; roosting is in the evening), and depending on weather and tides (roost site can only be visited in clear weather conditions, visit of interior of Rasa only possible during high tide). The package consists of three components: orientation and cockatoo observation from Palawan mainland, boat trip to Rasa (tidal flat, coral reef, seagrass bed and mangroves, cockatoo roost site), and Rasa interior (wildlife warden's camp, birdwatch tower, coastal forest). The package was tested with two external groups from Manila, and implemented with students from two schools in Narra, comprising so far 28 participants. The visit of coastal areas opposite of Rasa was combined with a birdwatching exposure and was attended by 69 students so far.

Figure 11. Cockatoo watching for students in Narra (left); local officials visiting warden's campsite on rasa Island (right; Photos: KFI)

Advocacy in respect to impacts and perpetrations in cockatoo habitats continued

The reporting period marked another fieldwork phase of the biodiversity services and values study on Rasa Island. The team leader of the project visited Rasa on July 5. The team involved two local and one national universities.

As part of this study economically important mollusks and echinoderms were surveyed, as well as reef condition. Biomass of fishes was estimated in reef areas around Rasa. Similar studies were already conducted in 2010 by the same researcher, so that certain aspects could be compared. Very drastic were the results for the coral reef assessment. While hard coral cover increased by 74% from 2010 to 2015, it decreased by 60% within one year to 2016 due to the El Niño Phenomenon! This result reflects the condition in the rest of Palawan. Density of commercially important invertebrates and fish biomass was generally low, with some marked exceptions which showed signs of recovery.

Visitors to Rasa Island numbered 81 in the first quarter of the year coming from ten countries and contributing modestly to the income of the protected area. Most visitors however stay on the mainland opposite of Rasa, since this usually allows for closer cockatoo observations. However, no visitor statistics are available from this site and no income is generated from these visits.

Constraints and measures taken

- A number of natural nest cavities have deepened and will need restoration after the breeding season. Metal flashing needs to be installed on some nest trees.
- Marine resources remain under stress due to unsustainable levels of exploitation and effects of climate change. Patrolling and law enforcement needs to be stepped up, particularly involving DENR's Blue Guards.
- There was a recent public hearing for the coal plant in Narra but in another barangay ca. 20km away from Rasa. Our local supporters both students and community members were there to attend and have their voices heard during the said gathering. This is the same company who proposed the construction near Rasa Island.

Objective 3: Conservation of cockatoo population on Dumaran Island, Dumaran

Research on conservation-related aspects of cockatoo biology on Dumaran continued, with focus on factors influencing breeding success and foraging ecology

Breeding

By May, additional two eggs were reported, bringing the total count to eleven eggs. Problems of food shortage caused by the El Nino event already reported earlier, continued within the reporting period. Three more hatchlings died, possibly because of starvation, the extreme heat or a combination, despite efforts of wardens to handfeed hatchlings on the nest. One hatchling which was found dead however had a full crop.

It was then decided to remove the remaining five hatchlings from the nests in the second week of May. They were handfed until their condition was stable again, and three days later transferred to Katala Institute in Narra were they were raised with reduced contact to humans for later release. Transport permit was issued by DENR. Nests were still monitored after removal of hatchlings. Adult cockatoos were still observed in the vicinity of nests in June. Two nests featured showed freshly cut twigs in early June, but no replacement clutches were observed.

Roosting

Number of roosting cockatoos increased markedly in June with a maximum of 20 birds recorded. This is very likely due to birds returning from their nest sites to the roost. Maximum and minimum numbers of birds continue fluctuating from day to day. Also the three previously released birds are not staying in roost site, but sleep in the vicinity.

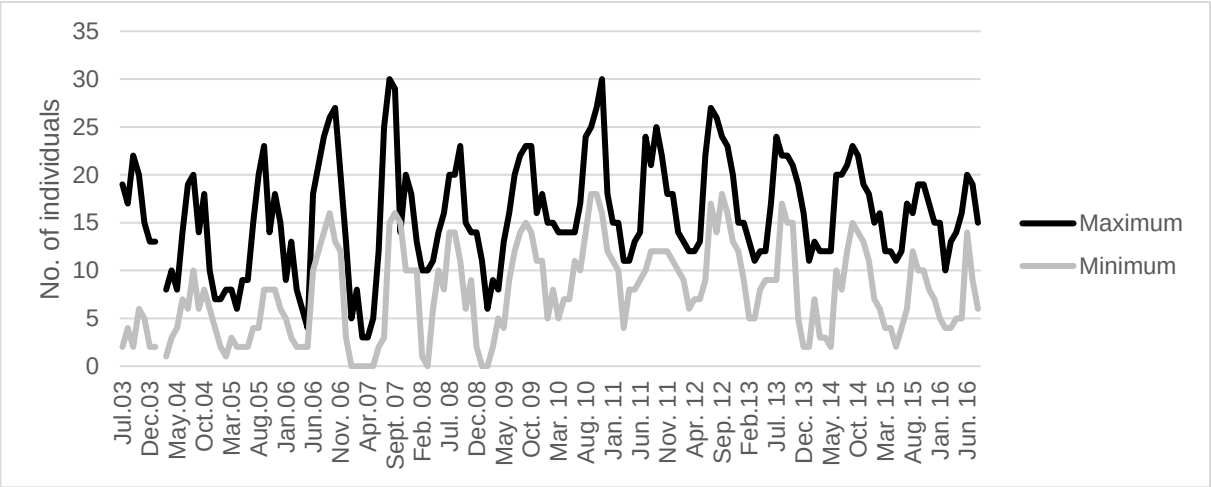

Figure 12. Minimum and maximum numbers of cockatoos counted on the traditional roost site in Lagan, Dumaran per month

Translocated cockatoos

One of the three birds released earlier was frequently seen close to human settlements. This was enforced by being fed either on purpose or accidentally when domestic chickens were give feeds. Local people were asked to assist in the efforts by refraining from feeding cockatoos and actively scaring them away, if they approach too closely to houses. Throughout June, two of the released birds were observed foraging with the wild flock, particularly also *Sonneratia alba* in mangroves nearby the roost sites. Most of the times they returned to the roost site with other birds at around 5 p.m., but then separated from them for

sleeping in trees nearby. In July one released bird was reported from the neighbouring municipality of Araceli, feeding on wild fruits in the area, including *Pterocarpus indicus*.

By the third week of June, the construction of a pre-release aviary commenced in the Katala Environmental Education Center on Dumaran to accommodate birds for release which were rescued earlier in the year from Dumaran and other sites. The prefabricated and painted aviary panels were transported to the warden's campsite within the Omoi Cockatoo Reserve. This will allow the regular maintenance of birds, once they are brought to the release site. By end of July an elevated platform was constructed and panels were installed on top of it. A double door was installed to allow for easy and safe access. A roof of palm thatch will provide partial shade and protection against rain. The walkway and the feeding area was covered with bamboo mats and plastic sheets to reduce visibility of caretakers to the birds. The aviary is located on a hill side within existing vegetation, but allowing the birds a modest view over the forest area.

Four feeding stations in the vicinity of the aviary were installed, which will be provided with naturally occurring food items, and which should prevent premature dispersal of the birds. Additionally, an isolation cage and a rope and pulley system were installed. The latter will serve for anti-predator training with a plywood model of a White-bellied Sea-eagle.

Figure 13. Front view (left) and inside view of pre-release aviary (right; Photos: KFI)

Figure 14. Fake White-bellied Sea-eagle ready to be launched for anti-predator training (left); installation of palm thatch on aviary top (right; Photos: S. Diaz)

Figure 15. Unloading of cockatoo boxes in Dumaran pier (left); transportation of boxes to Omoi Cockatoo Reserve (right; Photos: J. Nunez)

Figure 16. Release of birds from transport boxes (left) natural food items offered (right; Photos: KFI)

Figure 17. Installing of camera traps in perimeter (left); cockatoos perched under partial roof (right; Photos: KFI)

Figure 18. Feeding on fruits of Lusong-lusong (left); controlled feeding and water containers (right; Photos: KFI)

The five birds rescued from Dumaran, one bird rescued from the Iwahig project site, and one confiscated subadult male from Puerto Princesa were transferred to the pre-release aviary in Omoi Cockatoo Reserve, Dumaran on August 30 with transport permits issued by DENR.

Wardens were permanently collecting natural food items in the vicinity of the release site. Feeding was done mostly from the outside, except for bulky items, i.e. whole branches with fruits attached. Birds were regularly monitored regarding health status and weight. Three camera traps were installed in the immediate vicinity of the pre-release aviary to check for potential predators.

Protocols for the release and monitoring of birds inside the aviary, including emergency measures, were discussed with wardens. Blood samples were again taken from all birds. A balance was installed inside the aviary, in the hope that weight monitoring could be done remotely. However, not all cockatoos were confident enough to perch on the balance so that birds still need to be captured at least once a week to be weighed.

Warden scheme continued

Wardens did not observe any illegal activities while patrolling in the cockatoo reserves within the reporting period. The Biodiversity Monitoring System is now an established routine of wardens' patrolling. All three parrot species are regularly recorded. A highlight was a visual observation of four Palawan Bearded Pigs *Sus ahoenobarbus* during the June patrol.

Conservation Education

On June 18 and 19, the annual Kalabukay (Cockatoo) Festival was held in the Municipality of Dumaran. It was decided by local officials that in this year the festivities should be held on the mainland, which created some challenges for the organization for this event for KFI. Nevertheless a booth was established exhibiting educational materials, and a Katala Fun Day with games and lectures was organized, which reached 111 participants, despite the rainy conditions. The quiz bee among adults mostly members of the 4Ps beneficiaries was held successfully and with great audience.

On August 1, Mike conducted a lecture on wildlife conservation and wildlife laws in front of 37 students of Araceli Western High School.

Buffer zone restoration around existing cockatoo reserves and creation of forest corridor connecting the two existing cockatoo reserves continued

By end of May, with almost one month delay, the rainy season finally set in, and planting within the critical habitat commenced. By beginning of the reporting period, 13,551 tree seedlings were available in the tree nursery, comprising more than 40 species. By end of May 780 seedlings were planted. Within June, 1,582 seedlings were planted by wardens, and 445 wildlings newly collected for propagation in the nursery. With 1,801 and 1,939 wildlings respectively, in July and August the numbers of collections exceeded the number of seedlings planted (1,678 and 767 respectively). An additional 510 trees were planted by collaborators of the Critical Habitat project in June. Inventory of bagged seedlings by end of the reporting period was 12,929. Growth performance of 425 planted trees (height and DBH) during the last rainy season was measured in August in four sites within the corridor and buffer zone.

Constraints and measures taken

- Construction of pre-release aviary was hampered by rain. Part of the soil foundation was washed out on the hillside and needed to be fixed. Process took longer than expected.

Objective 4: Education and research at the Katala Institute

Captive management of Philippine Cockatoo and other highly threatened species continued through employment and training of zookeepers and volunteers

Two birds were rescued from nests on Rasa on May 13. One hatchling recovered well and was brought back to the same nest on May 18, where it was immediatelly accepted by the parents. The other bird however, was already very emaciated when rescued, it showed very weak feeding response throughout, and died on May 20.

Throughout July the rescued birds intended for release in Dumaran were weaned off the handfeeding formula and increasingly exposed to natural food items. By end of July the birds were completely weaned, although begging in front of the keeper continued.

Environmental enrichment for cockatoos is further developed and readily accepted by all cockatoos. Although these measures visibly increase the wellbeing of the birds, preparation of the measures keeps the bird keeper busy for much longer than the birds.

Figure 19. Handfeeding of birds intended for release on Dumaran (left); cockatoo dismantling food enrichment in seconds (right; Photos: N. Cegalerba)

Educational trail, enclosures and visitors facilities upgraded

During the Katala Festival from June 24 to 26, KI was formally opened for the public. Ribbon was cut by the Municipal Mayor Lucy Demaala. Activities included short presentation in the pavilion, guided tour through the compound and tree planting. About 80 participants from various agencies and schools in Narra attended the affair.

Dr. Sonja Luz from the Wildlife Reserves Singapore Group visited KI on August 7. KFI received support from this organization for several infrastructure projects within the compound, including a fieldhouse for the PCCP.

Figure 20. Introduction to the KI in pavilion (left); tree planting of food-providing trees for cockatoos (right; Photos: P. Widmann)

Figure 21. Guided tour for smaller groups near cockatoo garden and aviary (left) and native tree nursery (right; Photos: P. Widmann)

In June a vermiculture facility was constructed near the vegetable garden. Two culverts were constructed along the loop trail within the reporting period. Trash cans for biodegradable and non-biodegradable litter were built from recycled material and installed along the loop trail.

With support from the Wildlife Reserves Singapore Group, a module on pond dipping was developed and tested with KFI staff and teachers from the Palawan State University. Since taxa on higher level of freshwater invertebrates are similar or identical to those in the Philippines, it is possible to use ready-made ID-charts for higher taxa identification. It turned out that wetlands in KI are very diverse; representatives of major taxa are present in one or more species, for example cnidarians, rotifers, bugs, beetles, dragon- and damselflies, mosquitos and midges, spiders, freshwater crabs, cladocerans, ostracods, copepods, mollusks, as well as fish and amphibians. Particularly dragon- and damselflies are present in at least six species.

Figure 22. Pond dipping in KI (left); portrait of dragon fly nymph under stereo microscope (right; Photos: KFI)

Constraints and measures taken

- People enter the back part of KI without coordination with the keepers to cut grass for their cattle. The perimeter fence needs to be finalized as soon as possible.

Other highlights

Other reported wildlife within the reporting period

Blue-naped Parrots *Tanygnathus lucionensis* IUCN: Near threatened

Fifteen fledged successfully from eight nests on Dumaran Island. Two hatchlings which fell from the nest on Pandanan were successfully returned to their nest hole.

Blue-headed Racquet-tail *Prioniturus platenae* IUCN: Vulnerable

Fourteen birds fledged successfully from five nests on Dumaran Island.

Palawan Hornbill *Anthracoceros marchei* IUCN: Vulnerable

Four fledged successfully from two nests on Dumaran Island.

Spot-throated Flameback *Dinopium everetti*; IUCN: Near threatened

Breeding was for the first time documented for this species. Two birds successful fledged on Dumaran.

Balabac Mouse Deer *Tragulus nigricans* IUCN: Endangered

Encouraging numbers were found during nocturnal surveys on Bugsuk Island.

Palawan Bearded Pig *Sus aheonobarbus* IUCN: Vulnerable

The species was caught on camera trap only after few nights of exposure on Bugsuk Island.

Figure 23. Palawan Bearded Pig caught on camera trap on Bugsuk Island (Photo: KFI)

Conferences and workshops attended

- On June 8, Indira and Peter attended a workshop to initiate a recovery plan for the critically endangered Sulu Hornbill. Proposed the severe security issues of the location can be managed, KFI would assume a leading role in conservation education for the species. The venue was the compound of Biodiversity Management Bureau in Quezon City.
- On June 19, staff of KFI attended the 24th anniversary of the SEP Law, the unique law governing conservation and sustainable development in Palawan in the Provincial Capitol. A photo exhibit showcasing the various species conservation projects of KFI was put up in the foyer of the venue.
- From June 26 to 29, Anna attended a workshop in Manila Capacity Development on Social Marketing and Partnership Development facilitated by Rare.
- On July 8 a meeting was attended with tourism specialists from the Legend Hotel group. It was discussed how to integrate Rasa Island and Katala Institute in their tour packages.
- July 13-17, Fred and Angelo participated in a mangrove reforestation course in Panay, courtesy of the Zoological Society of London.
- On July 22, Indira and Peter met with the newly appointed DENR Secretary G. Lopez. We previously prepared a policy brief on the urgent need to review existing land use classification in Palawan, based on our experience of misclassification of coastal

forest as permanent cropland on Rasa Island and similar examples in Iwahig Prison and Penal Farm.

- On July 26 Peter participated in a consultation workshop on climate resilient communities for the setting of Puerto Princesa funded by USAID and held in the Puerto Princesa City Hall.
- A Wildlife Forensics and Taxidermy Workshop organized by the DENR and conducted from August 16-19 in PWRCC was attended by Josh.
- On August 24 Indira and Peter were invited to present the programs of KFI in front of the Environmental Committee of the Provincial Board of Palawan. The members appreciated the long-term commitment and work of the foundation, and particularly the regular submission of progress reports.

Figure 24. Photo exhibit in Provincial Capitol (Photo: P. Widmann)

Personnel and equipment status

- The old service boat in Pandanan was overhauled. Outriggers were replaced and engine was repaired.
- Minor repairs have been undertaken in the field houses on Pandanan and Dumaran.

Annexes

Annex 1 **Birds of Bugsuk July 2016**

FAMILY	ENGLISH NAME	SCIENTIFIC NAME	STATUS	CONS. STATUS
Megapodiidae	Philippine Megapode	*Megapodius cumingii*	R	
Ardeidae	Rufous Night Heron	*Nycticorax caledonicus*	R	
Ardeidae	Eastern Cattle Egret	*Bubulcus coromandus*	R,M	
Ardeidae	Intermediate Egret	*Egretta intermedia*	M	
Ardeidae	Little Egret	*Egretta garzetta*	R,M	
Accipitridae	White-bellied Sea Eagle	*Haliaetus leucogaster*	R	
Columbidae	Nicobar Pigeon	*Caloenas nicobarica*	R	NT
Columbidae	Common Emerald Dove	*Chalcophaps indica*	R	
Columbidae	Zebra Dove	*Geopelia striata*	R	
Columbidae	Pink-necked Green Pigeon	*Treron vernans*	R	
Columbidae	Green Imperial Pigeon	*Ducula aenea*	R	
Cacatuidae	**Philippine Cockatoo**	*Cacatua haematuropygia*	E	CR
Psittacidae	**Blue-headed Racket-tail**	*Prioniturus platenae*	E	VU
Psittacidae	Blue-naped Parrot	*Tanygnathus lucionensis*	NE	NT
Cuculidae	Greater Coucal	*Centropus sinensis*	R	
Cuculidae	Asian Koel	*Eudynamys scolopaceus*	R	
Cuculidae	Plaintive Cuckoo	*Cacomantis merulinus*	R	
Cuculidae	Rusty-breasted Cuckoo	*Cacomantis sepulcralis*	R	
Strigidae	**Palawan Scops Owl**	*Otus fuliginosus*	E	NT
Strigidae	Spotted Wood Owl	*Strix seloputo*	R	
Caprimulgidae	Large-tailed Nightjar	*Caprimulgus macrurus*	R	
Alcedinidae	Stork-billed Kingfisher	*Pelargopsis capensis*	R	
Alcedinidae	Collared Kingfisher	*Todiramphus chloris*	R	
Alcedinidae	Oriental Dwarf Kingfisher	*Ceyx erithaca*	R	
Bucerotidae	**Palawan Hornbill**	*Anthracoceros marchei*	E	VU
Picidae	**Spot-throated Flameback**	*Dinopium everetti*	E	NT
Picidae	Great Slaty Woodpecker	*Mulleripicus pulverulentus*	R	VU
Pittidae	Hooded Pitta	*Pitta sordida*	R	
Artamidae	White-breasted Woodswallow	*Artamus leucorynchus*	R	
Aegithinidae	Common Iora	*Aegithina tiphia*	R	
Campephagidae	Pied Triller	*Lalage nigra*	R	
Oriolidae	Black-naped Oriole	*Oriolus chinensis*	R	
Dicruridae	Ashy Drongo	*Dicrurus leucophaeus*	R,M	
Dicruridae	Hair-crested Drongo	*Dicrurus hottentottus*	R	
Rhipiduridae	**Philippine Pied Fantail**	*Rhipidura nigritorquis*	E	
Corvidae	Slender-billed Crow	*Corvus enca*	R	
Paridae	**Palawan Tit**	*Periparus amabilis*	E	NT
Pycnonotidae	**Ashy-fronted Bulbul**	*Pycnonotus cinereifrons*	E	
Pycnonotidae	**Palawan Bulbul**	*Alophoixus frater*	E	
Hirundinidae	Pacific Swallow	*Hirundo tahitica*	R	
Cisticolidae	Rufous-tailed Tailorbird	*Orthotomus sericeus*	R	
Timaliidae	Pin-striped Tit-Babbler	*Macronus gularis*	R	
Sturnidae	Asian Glossy Starling	*Aplonis panayensis*	R	
Sturnidae	Common Hill Myna	*Gracula religiosa*	R	

Muscicapidae	**White-vented Shama**	*Copsychus niger*	E	
Muscicapidae	**Palawan Blue Flycatcher**	*Cyornis lemprieri*	E	NT
Chloropseidae	**Yellow-throated Leafbird**	*Chloropsis palawanensis*	E	
Dicaeidae	**Palawan Flowerpecker**	*Prionochilus plateni*	E	
Dicaeidae	**Striped Flowerpecker**	*Dicaeum aeruginosum*	E	
Dicaeidae	**Pygmy Flowerpecker**	*Dicaeum pygmaeum*	E	
Nectariniidae	Olive-backed Sunbird	*Cinnyris jugularis*	R	
Nectariniidae	**Lovely Sunbird**	*Aethopyga shelleyi*	E	
Motacillidae	Paddyfield Pipit	*Anthus rufulus*	R	