



## Philippine Cockatoo Conservation Program Description of Project Sites

### **Rasa Island, Narra, Palawan**

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

The island is the pilot site of the program since 1998. Key component of this project site is the wardening scheme which involves patrolling and protection of the birds during and outside the breeding season. This scheme has proven to be efficient. It has more than doubled the population of cockatoos on the island over six years (presently ca. 200 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.

More so, 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 2007), considering the small size of Rasa. Note worthy among the 104 recorded bird species are grey imperial pigeon *Ducula pickeringii* and Mantanani scops-owl *Otus mantananensis*. Marine life around Rasa is also diverse with at least three marine turtle species and dugong *Dugong dugon* recorded.



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

All natural terrestrial ecosystems in Dumarán are tree-dominated. On Dumarán 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.

Species inventories from the municipality are still incomplete and systematic surveys just started recently. The only ornithological collection on Dumarán Island was conducted in 1921 (Dickinson *et al.* 1991). No historic accounts are available for other taxa. Ornithological surveys conducted by Katala Foundation so far yielded 108 species from the island. A prominent species of conservation concern is the Philippine cockatoo, which can be found with a possibly viable population in the mangroves and forest remnants of Dumarán 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*.

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

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

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

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

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

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

CMRPA ranges from sea level to about 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.

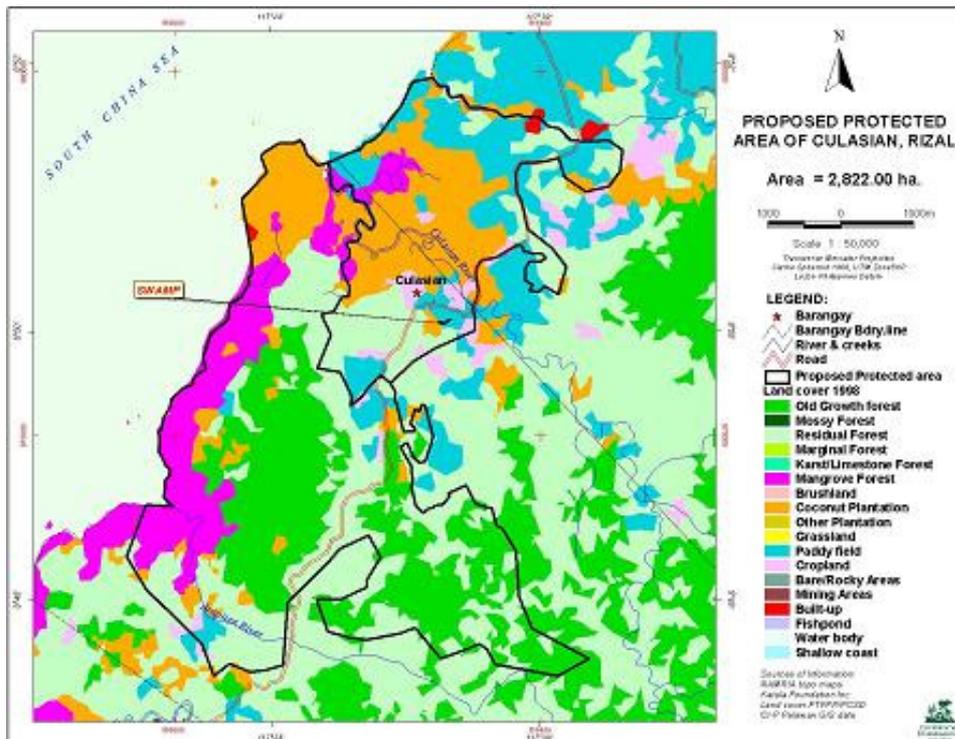
Two permanent rivers mark the periphery of CMRPA: Culasian River in the north and Arapitan River in the south. Smaller ephemeral creeks and stagnant water bodies can be found inside the area.

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

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

Level areas are dominated by permanent cultivation, mostly irrigated and rain-fed rice paddies, permanent cultivation like coconut and pastures. Patches of shrub- and grassland exist particularly along the National Highway. Shifting cultivation is also most common along the roads, but can frequently be found isolated in forested areas, often on steep slopes. Emergent "Manggis" and "Apitong", isolated in cultivated areas, indicate nest sites of parrots or hill mynas which are 'owned' by a poacher, and therefore were not cut during the area was cultivated.

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



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

### **Patnanungan, Polillo group of islands, Quezon**

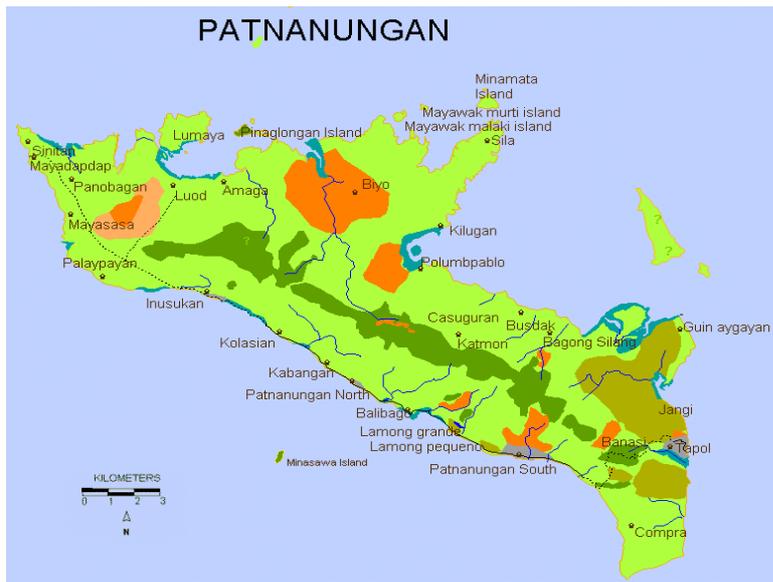
The Polillo group of islands in Quezon is possibly the last area containing a population of the critically endangered Philippine cockatoo *Cacatua haematuropygia*, or 'Kalangay' as known locally, in the Luzon faunal region (Gonzalez 1997, Collar et al. 1999, Widmann 2001).

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

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

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

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



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

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