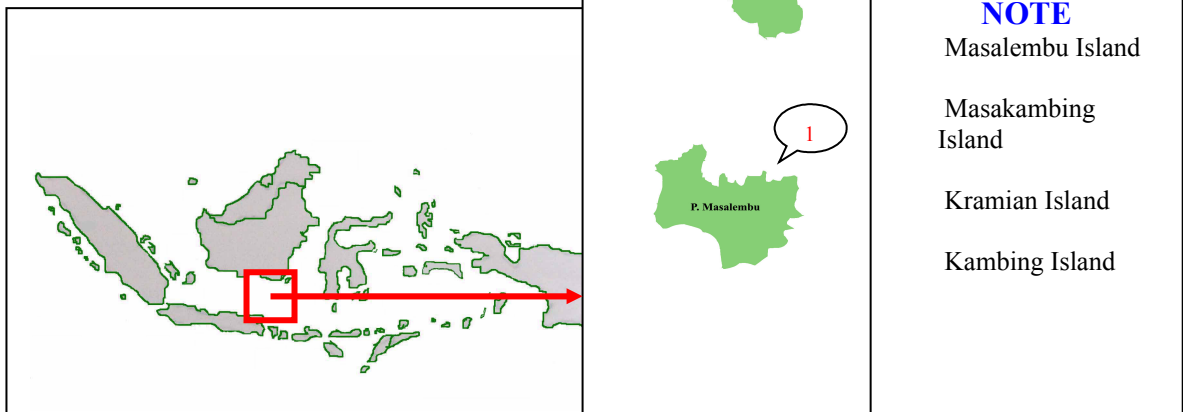


Lesser Sulphur Crested Cockatoo, *abbotti* Subspecies on MASAKAMBING ISLAND, EAST JAVA, INDONESIA

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The Lesser Sulphur-crested Cockatoo of the *abbotti* subspecies is a beautiful bird, which is endemic only to Masakambing Island, East Java, Indonesia. There are four islands in the group: Masalembu, Masakambing, Kramian, and Kambing, but the cockatoo is now found in the wild only on tiny [5 km²] Masakambing Island, having been extirpated from the others or possibly having never existed on Kramian. A new study was designed to gain information into the status and habits of this cockatoo. Fieldwork collaboration between Konservasi Kakatua Indonesia and Indonesian Parrot Project found only 10 remaining cockatoos in 2008 and 8 individuals in 2009; three (apparently mated) pairs and two juvenile males (as determined by eye color).



NOTE

- Masalembu Island
- Masakambing Island
- Kramian Island
- Kambing Island

Population and Nests

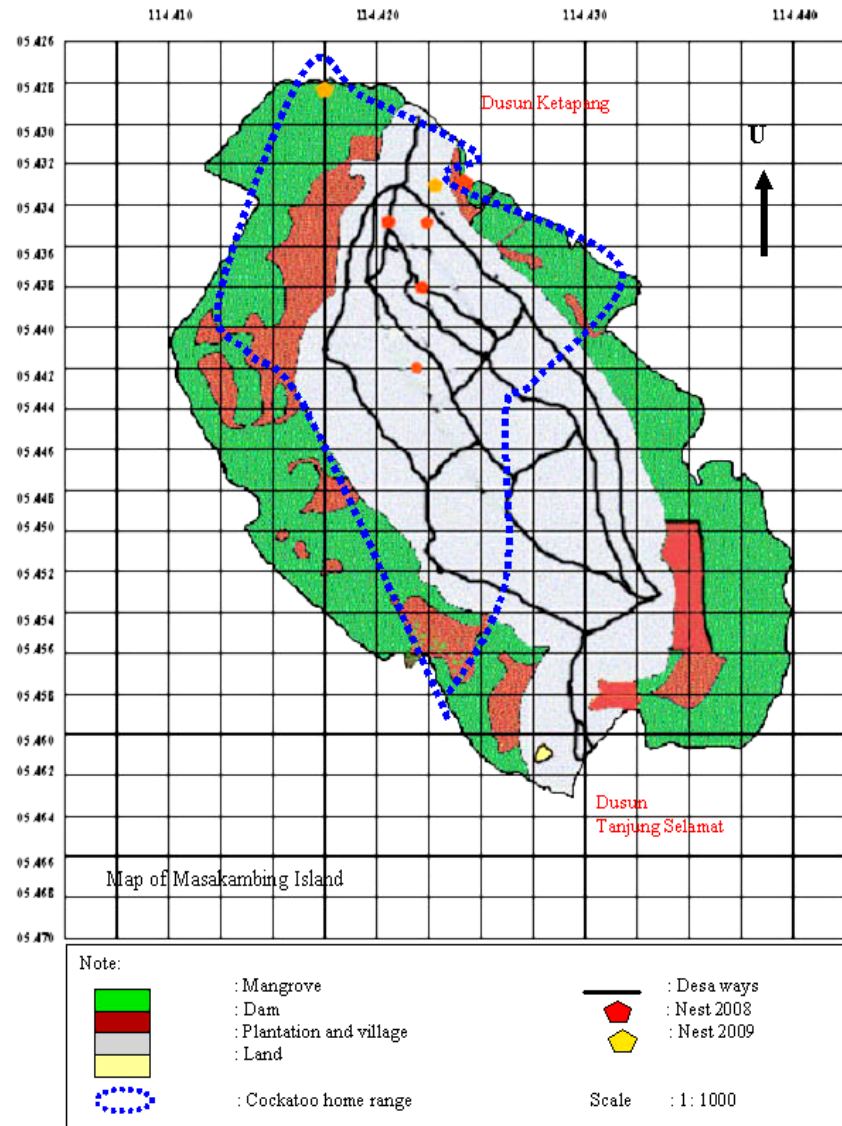
The Masalembu Archipelago is the sole remaining location of *Cacatua sulphurea abbotti*, in the world. The bird still be found only on Masakambing Island, can this bird still be found. Based on local community information, it was last seen on Masalembu Island in 1987. Exploration in 1985-1989, with the trapping or killing of hundreds of cockatoos, this is one reason cockatoo has become extinct in this Island. Cahyadin (1994) explained that staff from remote oil exploration sites, and visitors who came to this Island took back cockatoos as souvenir; local villagers shot them for sport or as “pests” to their crops. Our research found 10 individuals in 2008 and 8 individuals in 2009 – that is, are: three male, three female and two juvenile (male) making them the most threatened cockatoo in the wild and one of the world’s rarest birds. The last previous census in 1999 (Setiawan, 2001), found only 5 individuals, implying some growth in the population. However, even if true, this population increase is very small, for over a decade. Note that Masakambing Island is so small, that a census of virtually the entire island can be performed, suggestion that these population figures are representative.

The density of cockatoos population in Masakambing of $\pm 5 \text{ km}^2$, means that is 1,6 individuals per km^2 . In comparison, the population density of cockatoo (the nominate race of *C. sulphurea sulphurea*) in Rawa Aopa Watumohai National Park (RAWNP) is only 0,13 individuals per km^2 (Nandika, 2005: 33). While the population *density* of cockatoos in Masakambing is higher than that in RAWNP, the total population which we documented in RAWNP is greater at 37 individuals; furthermore RAWNP has a much larger area (long transect

about 282,44 km²) only a fraction of which was surveyed, explaining its lower apparent density. Clearly, the *abbotti* race is even rarer than the *sulphurea* subspecies.

The “Masakambing Cockatoo” commonly flies in a group, comprised of 2 – 5 individuals each group. They are concentrated in north-central part of the island, in Ketapang Village (see MAP). Cockatoos, were never found in Tanjung Selamat Village (south section) of Masakambing, except during foraging flights. Also in Tanjung Selamat Village, there is a paucity of large trees such as (to use the local names): sukun (*Artocarpus comunis*), and kapuk also called randu (*Ceiba petandra*), which are favored by the cockatoos for nesting and food items.

Cockatoo make nesthole using a chink in the trunk or branch or a pre-existent nest hole made by other birds. The table indicates Five trees were used for nestholes (See Table): sukun *Artocarpus comunis*, Kapuk *Ceiba Petandra*, Kelapa *Cocos nucifera*, Asem *Tamarindus indica*, and Api-api *Avicennia sp.* Cockatoos were observed making nestholes before the onset of the breeding season. We measured inactive nestholes and identified characteristics of cockatoos nest: Hole is made from dead, broken or mouldy or snag trees; Height of tree 8-25 m; diameter 28-105 cm; nest hole are in branch or stem in 6-15 m from land; nestholes were globular or oval with a diameter of about 12- 23 cm; depth of nestholes were about 68 cm and their bases were filled with wood chips and leaf scale to a height of 10 cm.



Map of Masakambing Island. Mangrove on the periphery is green shaded. Yellow and red circles indicate cockatoo nests (2008 - 2009). Grey shaded areas represent settlements and gardens. The blue dotted area indicates their home range. Dark brown shaded areas represent a dam. The small yellow shaded area in the south is land used for football.

Table of Plant List used by *Cacatua sulphurea abbotti*

No	Local Name	Scientific Name	Cockatoo's used	Part Eaten
1	Kelapa	<i>Cocos nucifera</i>	Food & Nesthole	Fruit
2	Sukun	<i>Artocarpus comunis</i>	Food & Nesthole	Male flowers
3	Kapuk randu	<i>Ceiba petandra</i>	Food & Nesthole	Flowers
4	Asem	<i>Tamarindus indica</i>	Food & Nesthole	Fruit & flowers
5	Kedondong	<i>Spondias piñata</i>	Food	Fruit & flowers
6	Belimbing	<i>Averhoa bilimbi</i>	Food	Fruit & flowers
7	Galompe	<i>Lagerstroemia sp</i>	Food	Flowers
8	Lontar	<i>Borassus sundaica</i>	Food	Male flowers
9	Rumbia	<i>Metroxylon sp</i>	Food	Flowers
10	Kelor	<i>Moringa oleifera</i>	Food	Fruit
11	Duluk duluk	<i>Lumnitzera racemosa & L. littorea</i>	Food	Flowers

12	Tanjang	<i>Bruguiera gymnorrhiza</i>	Food	Fruit
13	Pidada	<i>Sonneratia alba</i> & <i>S. caseolaris</i>	Food	Fruit
14	Api-api	<i>Avicennia sp</i>	Nesthole	-

Interactions with another animals

We founded several interactions between cockatoo and other animals in this research, such as predation and competition. Predating activity was seen from; white-bellied fish eagle (elang laut perut putih, *Haliaeetus leucogaster*); rufous bellied eagle (elang perut karat, *Hieraaetus kienerii*); black winged kite (elang tikus, *Elanus caeruleus*); black kite (elang paria, *Milvus migrans*) and spotted kestrel (alap-alap sapi, *Falco moluccensis*). Other predators are lizard (such as the monitor lizard biawak, *Varanus salvator*) which eat the eggs or cockatoo chick. The lizards often live in thebasem tree *Tamarindus indica*; the cockatoo eats the fruit of asem and often perches there, thereby sometimes bringing the two into close contact.

Competitive interactions occur between cockatoo and another bird: pink headed imperial pigeon (pergam katanjar, *Ducula rosacea*) and black napped oriole (kepodang kuduk hitam, *Oriolus chinensis*). Although they may eat some of the same fruit, they appear to be competitors but not predators, to the cockatoo. They can eat together in same tree (kapuk) without exerting aggressive behavior.

Threat

The major threats to the cockatoos population are ongoing trapping for the bird trade and habitat destruction, such as cutting of coconut palms for their wood.

Initial Conservation Efforts

Making New Village Regulation (“Peraturan Desa”)

In order to provide a legal basis for the conservation of this cockatoo, Konservasi Kakatua Indonesia and Indonesian Parrot Project initiated the drafting and passage of Peraturan Desa No. 1 Tahun 2009 (Village Regulation #1, 2009) which details a number of measures to conserve the cockatoo on Masakambing. These, included making it illegal to trap, own, or transport a cockatoo; initial measures to reduce habitat destruction, and the hiring of the former Village Head to monitor active nests and gather information on breeding ecology; and to protect them from trappers. The document was signed on May 14th 2009 with 50 community representative present, including the Head of the Village, the village discussion group, the village community of Masakambing at large, and significantly, the Chief of Police, along with representatives of KKI – IPP as facilitator.

School visits (Conservation Awareness Pride Program - CAP)

Classroom instruction aimed at stimulating conservation of the Masakambing Cockatoo included: drawing by the children of cockatoos in a coloring book written by KKI – IPP; use of PowerPoint, presentations and videos, also made by us; production of pertinent t-shirts, posters, and notebook stickers and also birdwatching expeditions. These interactions are designed to increase Pride in their unique and rare bird, but also to appreciate the threats to it. Since Masakambing is a small village (total population: 1400), we should be able to reach virtually the entire adult and child population. We will encourage children to return home and discuss these activities with their parents. Thus far, we have visited 8 schools on Masakambing and Masalembu island.

As a means of objective, quantifiable evaluation, Pre-and Post-Program questionnaires have been designed and completed by 40 students in Junior High School on Masakambing, using the forms previously developed and used extensively by us in Java and the Moluccas. The results clearly demonstrate that that the students are responsive to the issues listed above; that their attitudes towards parrots as intelligent, sentient creatures are amenable to change; and that they are eager to express their interest through active participation.

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