Current status of the seabird colony on Suanggi Island, Banda Sea

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Ringkasan. Pulau Suanggi dikunjungi bulan Juli 2008 dan Desember 2009 sebagai bagian kegiatan survei koloni burung laut *Pelecaniform* yang masih tersisa di Indonesia, semuanya berlokasi di Laut Banda dan Flores. Koloni-koloni *Pelecaniformes* saat ini memainkan peran penting di Asia Tenggara karena di banyak lokasi jenis-jenis angsa dan cikalang ini sudah menghilang. Sekitar 3500 burung Angsabatu Kakimerah *Sula sula* teramati termasuk 500 pasang sedang berbiak selama kurun waktu kedua kunjungan lapangan tersebut, dan ini mengindikasikan bahwa di Suanggi mungkin tidak ada musim berbiak yang jelas bagi spesies ini. Sekitar 300 burung Angsabatu Coklat *S. leucogaster* dan 400 ekor burung Cikalang Besar *Fregata minor* teramati sedang bertengger di pulau itu. Para nelayan dari kepulauan Banda telah mengunjungi Suanggi selama beberapa dekade dan sudah mengganti sebagian vegetasi asli (*Pisonia* dan pohon-pohon *Ficus*) dan menjadikannya perkebunan kelapa, jeruk, pisang, ketimun dan singkong. Angsabatu Kakimerah dan Cikalang Besar berbiak di pohon tapi bukan pohon kelapa sehingga pengrusakan habitat ini telah mengurangi habitat berbiaknya. Namun demikian foto-foto yang ada menunjukkan bahwa pengrusakan habitat tidak berlangsung setelah setelah 1981 (de Korte 1984). Koloni burung Angsabatu Kakimerah nampaknya stabil sekarang dan sepertinya toleran terhadap tingkat gangguan tertentu oleh masyarakat lokal yang masih mengunjungi pulau itu. Direkomenasikan agar pulau itu mendapatkan status perlindungan resmi sebagai Suaka Margasatwa, dan wisata alam oleh organisasi-organisasi setempat diijinkan jika terkontrol dan dampaknya terbatas.

Introduction

Of the many islands in the Banda and Flores Seas, only six are known to support breeding colonies of Pelecaniform seabirds, which are probably the only remaining colonies in Indonesia (de Korte & Silvius 1994, Fig. 1). Suanggi (3°18'S, 127°28'E) is one of the smallest (20 ha; 107 m asl) of the Banda Islands, a volcanic archipelago comprising twelve small islands, with one active volcano. Having no fresh water source, Suanggi is uninhabited, and 22 km from the nearest village in the Banda Island group. It is characterised by steep cliffs and a bowl-shaped plateau (the old crater) with forest (Plate 1). 'Suanggi' means 'ghost' in local language and possibly the occurrence of the large seabirds has contributed to this name. Locally it is also called Pulau Manukan, which means a smaller version of Pulau Manuk (bird island), situated 112 km southeast of the Banda islands. In the past Red-footed Boobies *Sula sula*, Brown Boobies *Sula Leucogaster*, Great Frigatebirds *Fregata minor*, Red-tailed Tropicbirds *Phaeton*

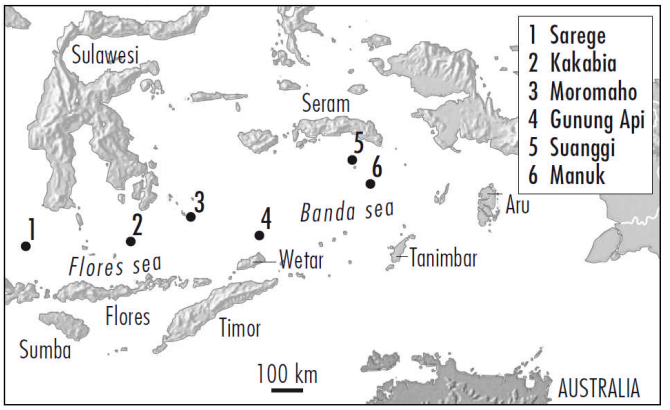

Figure 1. Location of Suanggi Island and five other islands supporting Pelecaniform seabird colonies in the Banda and Flores seas, Indonesia (after de Korte 1991).

rubricauda and Brown Noddies *Anous stolidus* had been reported breeding on Suanggi (de Korte 1984).

When de Korte (1984) visited Suanggi on 25-27 July 1981, he described a grim prospect for the future of this island as a seabird colony. Several species that were previously known to visit the island were not observed in 1981. The fringing reef and underwater slopes of the island support rich fishing grounds, intensely used by local fishermen. They used the island to rest and to dry their fish, and had been building semi-permanent houses and growing plantations on the crest of the old inactive volcano, replacing the original *Pisonia* and *Ficus* trees with coconut palms, citrus fruit trees, bananas, cucumber and cassave. This destruction of habitat reduced the breeding opportunities for Red-footed Boobies and Great Frigatebirds, which nest in trees, but not in palm trees. Fishermen also collected eggs and birds, but this was not an important livelihood activity. Introduced rats, cats and chicken roamed the island.

de Korte (1984) counted 300-400 breeding pairs of Red-footed Boobies, two breeding pairs, as well as 100-200 roosting individuals, of Brown Boobies, and 100-200 roosting Great Frigatebirds. Twelve years later, during October 1993, Monk (1993) visited the island and counted only 150 nests of Red-footed Boobies, and, like de Korte (1984), warned that continuing disturbance would lead to disappearance of the colony (Monk *et al.* 1997: 818-820).

Plate 1. Suanggi Island, showing steep slopes rising to a bowl shaped crater plateau.

Recent surveys

I visited Suanggi on 16 and 17 July 2008, and on 19 December 2009, as part of a survey to investigate the status of Pelecaniform seabird colonies in Indonesia. Large numbers of birds gradually arrived at the island around sunset on 16 July, and dispersed from the island shortly after sunrise on the following morning, while smaller numbers were present throughout the day. Of an estimated total of 4,000-5,000 seabirds (16-17 July), c. 3,500 were Red-footed Boobies (mostly non-breeding) of which 5-15% were brown morph birds with a white tail and pale head (Plate 2). In the Banda Sea, white-tailed brown morphs are common in all colonies, and they interbreed with the normal white morph (de Korte 1984; pers. obs.) (Plate 3). This brown morph is also common in the Indian Ocean and in Australian waters (Hennicke 2009). In addition 300-500 Great Frigatebirds and 200-400 Brown Boobies were observed roosting, but not breeding, on the island.

I counted the number of active nests (i.e. with an egg, chick, or fledgling waiting for parents) of Red-footed Boobies (Plate 4) that were visible from the lighthouse, which was the highest point of the island. Extrapolating from these counts to the entire area of suitable nesting habitat I estimated 350-500 active nests of this species in July 2008 and 400-600 in December 2009. Nests were observed only on the crests and the plateau, not on the steep cliffs. During both

Plate 2. Brown morph Red-footed Booby nesting on Suanggi, July 2008.

Plate 3. White morph Red-footed Booby nesting on Suanggi, July 1981.

visits eggs and chicks of all stages were present in the nests, as well as many fledglings around the island. As this estimate is in the same order of magnitude as that of de Korte for 1981, I conclude that the breeding population has recovered over the 15 years since Monk's visit, or that it remained relatively stable during the 1980s and 1990s.

Red-footed Boobies are flexible in the timing of breeding, and adjust to local circumstances (Nelson 2005). They have a long breeding period of seven to nine months, with flexible chick growth and flexible transition to independence

(Nelson 1978, 2005; Guo *et al.* 2010). The timing of breeding of this species varies between islands within the Banda Sea (de Jong unpubl. data), and the above observations indicate that they breed year-round on Suanggi.

Brown Boobies possibly ceased breeding after 1981, but still roost on Suanggi in similar numbers as those seen in 1981. The Great Frigatebirds and Brown Boobies roosting on Suanggi most likely derived from breeding populations on the larger islands of Manuk and Gunung Api, which still have considerable numbers of breeding pairs of these species (de Jong, unpubl. data). Similarly many of the Red-footed Boobies roosting on Suanggi probably bred on the other islands. At daybreak the majority of boobies and frigatebirds dispersed from Suanggi over the surrounding waters and were observed from the coasts of the other Banda islands and even from the south coast of Seram (pers. obs.). No Lesser Frigatebirds *Fregata ariel* were observed, despite their being the most abundant frigatebird species in Indonesia, even roosting on North and West Seram islets (at least 500-1,000 birds, pers. obs.), within 1 day's flying range.

Other birds observed on Suanggi and its fringing reefs were several species of terns, including a Black Noddy *A. minutus*, Pacific Reef Egrets *Egretta sacra*, white eyes *(Zosterops* sp), Collared Kingfishers *Halcyon chloris* and an Osprey *Pandion haliaetus.* A group of 11 cormorants (*Phalacrocorax* sp) also visited the island, but were chased off with vigour by Great Frigatebirds. Around 10 Orange-footed Scrubfowl *Megapodius reinwardt* were also seen, with several nesting mounds.

Contrary to expectations the population of Red-footed Boobies seems to be recovering from an apparent reduction during the 1980s and/or 1990s. The plantation appeared neglected, the semi-permanent houses had disappeared and comparison of photographs (between 1981 and 2008) shows that further habitat destruction did not take place (de Korte, pers. comm.). The island was still being visited by local fishermen, who exploited the plantation and took eggs occasionally (pers. obs.). I did not observe rats, feral cats or domestic chickens, but as rats rarely disappear from islands where they are introduced, they are likely to still be present. Cats might not have survived dry periods on this small island, which has no fresh water source. Possibly local fishermen do not need to stay on the island anymore after replacing their traditional sailing vessels with faster engine boats. However, this change of boat-type in the region has also increased the area of fishing grounds accessible, and the reefs around Suanggi are now probably more regularly visited by fishermen from Seram and other

Plate 4. Juvenile Red-footed Booby resting on the lighthouse at Suanggi.

islands than when sailing boats alone plied the seas.

Conservation of seabird colonies in Indonesia: Suanggi in perspective

The remaining Pelecaniform seabird colonies in eastern Indonesia are of increasing importance, as numbers of all Pelecaniform species worldwide have declined sharply (Nelson 2005). Few data are available for Pelecaniform populations surrounding Southeast Asia, but apart from the well-protected colonies in Australia (including Christmas Island), negative trends are expected for most areas (de Korte & Meltofte 1997). For Southeast Asia, the colonies in eastern Indonesia play a key role, as colonies have been wiped out by persecution and habitat destruction in Malaysia and western Indonesia (de Korte 1989, 1991; Wells 1991). Apart from the eastern Indonesian colonies only a few colonies remain in the South China Sea, and in the Sulu Sea, which are also threatened and have declining numbers of breeding birds (Cao *et al.* 2005; Jensen 2007).

The anthropogenic factors described here for Suanggi (destruction of breeding habitat, uncontrolled collection of eggs and birds, and presence of introduced rats and cats) are threatening all of the remaining six colonies of Pelecaniform seabirds in Indonesia. I visited the islands of Manuk, Gunung Api and Moromaho in 2009 (de Jong in prep.). The colonies on Manuk, formerly the largest in Indonesia, suffered from increasing activities by fishermen up to the 1990s, with regular collection of large numbers of eggs (de Korte 1991; de Korte & Silvius 1994; K. Heij, unpubl. data). Manuk is infested with large numbers of rats (pers. obs.), and the numbers of breeding birds have been declining since the 1960s. Since 1981 Manuk has been designated a wildlife reserve (Suaka Margasatwa), but it is a typical 'paper park', as local nature management officials from the forest department (BKSDA) have never visited this remote island and there are no plans for real management, judging from my interviews with staff and their reactions to the information I provided.

Gunung Api (104 km north of Wetar) has been a strict nature reserve (Cagar Alam) since 1937, and is the only colony not infested by rats (up to 2009). The numbers of breeding seabirds on this island have been increasing ever since 1938, when Hoogerwerf made a detailed study of the colonies (Bemmel & Hoogerwerf 1940; de Korte 1991). It is now the island with the largest numbers of breeding Pelecaniformes in Indonesia. The main reason for the increasing numbers of breeding Pelecaniform birds on Gunung Api may be an increase in the amount of vegetation available for nesting since volcanic activity declined after 1938. Both Manuk and Gunung Api are recognized by BirdLife International as Important Bird Areas (IBA 215 and 225), but this has not resulted in monitoring or management plans so far. Moromaho now lies within the Wakatobi National Park, which has an active management program. However, this is a marine park and the status of the island itself and the seabird colony in the mangroves is unclear (Purwanto and Santiadji, pers. comm., 2009).

de Korte proposed wildlife reserve status for Suanggi (de Korte 1984, 1989, 1991; de Korte & Silvius 1994), but this proposal was never implemented. It is important to realise that there are no alternative breeding sites for these populations, as human habitation of islands in Southeast Asia is likely to increase. Considering the importance of these colonies in the future, I strongly endorse the proposal to give protected status to Suanggi. If further habitat destruction is stopped, this island can be preserved as an important breeding colony for seabirds. A monitoring programme should be developed for this island, to monitor the effect of human disturbance in the future. The colonies in the Banda Sea have probably been exploited by humans for centuries, and the birds are very timid and easily disturbed. However since this colony of Red-footed Boobies appears to tolerate some disturbance by humans, small scale guided nature tourism to the island could be considered by local organizations.

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