



Survey the Seabird in Jakarta Bay



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Background

Indonesia is a maritime nation composed of more than 17,000 islands and marine areas represent almost two-thirds of its total territory. Thus, over 3 million square kilometers are habitats for seabirds and other marine life. Seabirds in Indonesian waters, especially in Java Sea have been studied only a little, even though the increase research about seabirds in East Asia has led to expanded (see for review de Corte 1989, van Balen 1991, Bish op 1992, Erftemeijer 1992, de Jong 2011, Poole et al, 2011). Several authors on seabirds data in Java Sea: Cadee 1985, Noni 2012, Tirtaningtyas 2014, Tirtaningtyas and Hennicke 2015. Cadee (1985) observed only small numbers of seabirds in the Java Sea, their numbers decreasing with distance from the coast. The absence of regular monitoring is because there is no institution which leads or coordinates such work, and there are no regular activities to identify and collect data .

Information of the seabird flyway in Indonesia very important to be known, Indonesia has become one of the East Asian Australasian Flyway and as a current location of wintering areas for foraging and roosting for seabirds. Burung Laut Indonesia (Seabirds Indonesia), has become one of bird conservation community in Indonesia since 2009, conduct research on the occurrence of seabirds in Indonesia. Table 1. show that there are 22 species of seabirds from 62 seabirds passing and/or breeding in Indonesia (35%) can be found in Jakarta Bay during the study from 2011 until 2016. Every year, Seabirds Indonesia always get new information about the occurrence of seabirds and with this background we would like to continue our monitoring in 2017 as a one of the seabirds flyways.

Methodology

Data collected with the transect method by Tasker et al. (1984), observer identified the species, numbers of individual of each species and behavior as a continuous 180° forward scan concurrent with 300 m wide strip transect in the ship with the modifications noted encounter sea birds that fly more than 300 m. If there is an interesting seabirds, like Aleutian Tern or petrels we tried to stay a bit longer to identified. Especially in Christmas Island Frigatebirds, because they stay in stationary lift net (known as *bagan* or *sero*, traps know as *bubu*) we counted all the birds in *sero*.

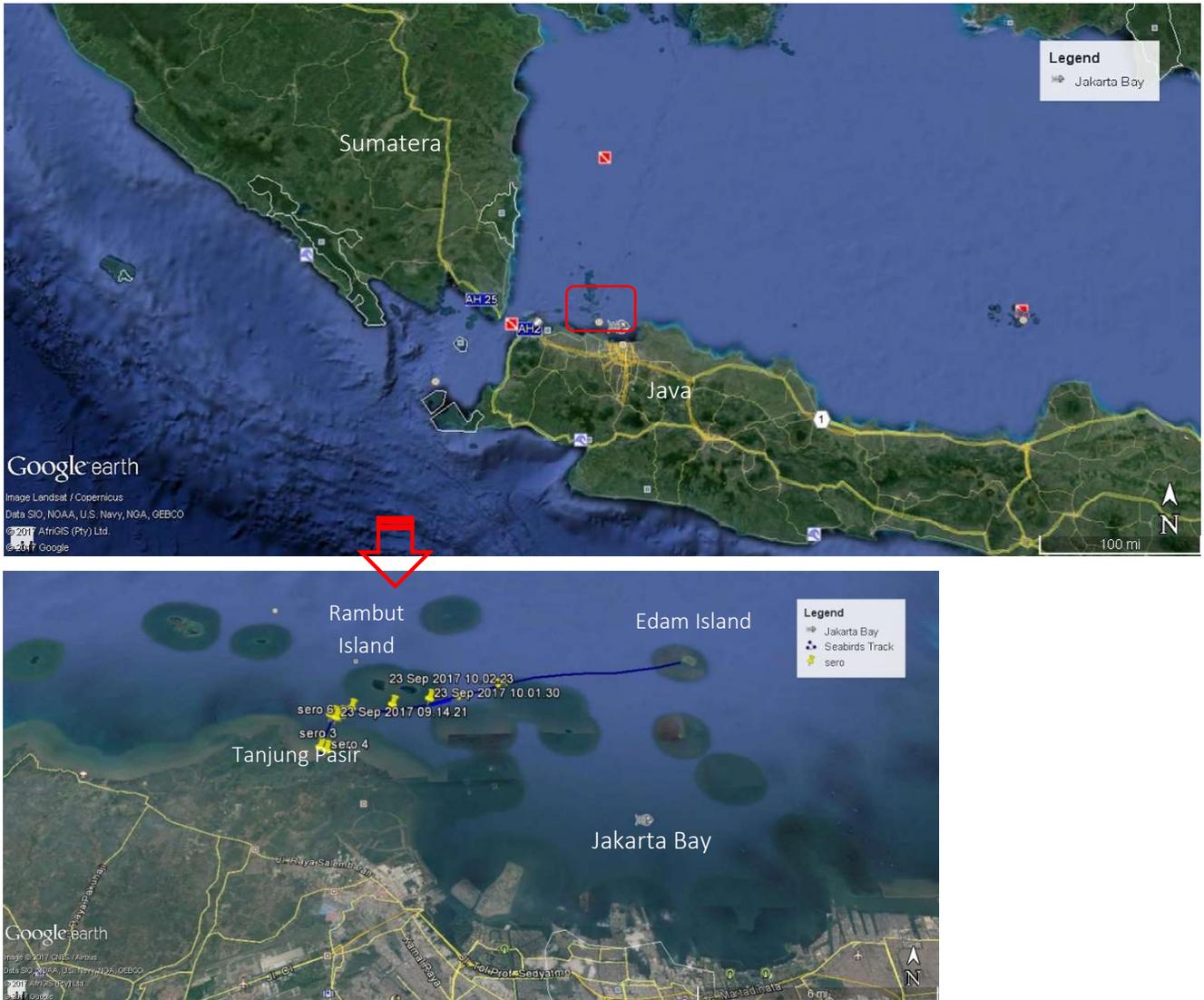
We did the interview with the fishermen about the threats of the seabirds. The questions of interview about are they know the Christmas Frigatebirds?, are they often seabird by catch in their net fish?, where they live?.

Location

The location of the observation between Tanjung Pasir and Edam Island (Damar Island) which is part of Jakarta Bay. The distance between two areas is 20 km.

Jakarta Bay covers an area of about 490 km² and is composed of waters of the strait between Java and Sumatra, as well as input from several coastal rivers. The nutrient condition in Jakarta Bay is dynamic , due to the influence of the surrounding environment, including natural factors but also the waste derived from various activities around the region, including port, residential, industrial, and recreational activities, which enters these waters. The bay is affected by runoff from 13 rivers. The depth of Jakarta Bay is <30 m, and the bottom consists of terrestrial mud, coral sand, rubble, and coralline algae.

Edam Island or Damar Island also called as the island of Monkey is one of the islands which is located by thousand Thousand Islands. Administratively this island is included in the Thousand Islands district of DKI Jakarta province. On this island stands up a lighthouse called Vast Licht, as high as 65 meters. This lighthouse, according to historical records, was built in 1879 with a height of 52 meters by permission of King ZM Willem II



Picture 1 The maps of Jakarta Bay and route of ship during data collection

Result and Discussion

We identified 11 seabirds species with the numbers of individuals around 727, with the highest of individuals from Little Black Cormorant (Table 1). The interested birds species are Aleutian Tern and Swinhoe’s Storm Petrel. These birds are really difficult to see and identified because the Aleutian Tern was very similar with the Common Tern. And the Swinhoe’s Storm Petrel because they flight fast and very close to the water.

September is a migration time, we were happy to get the three of Frigatebirds and some seabirds species. They used Indonesian waters to find the food, for frigatebirds and cormorant they used trees in Pulau Rambut (around 5 kilometer from Tanjung Pasir) to sleep and for terns they used fish traps (*sero, bagan apung*) for roosting.

Survey and monitoring start around 9 am to 4 pm. The observation location starts from Tanjung Pasir wherer the frigatebirds perched on sero made by fishermen. At this location we found three species of Frigatebirds roosting and did the social activities. Another seabirds, the Cormorant perched together with Frigatebirds. Other seabird species were found in Jakarta bay with a distance between 3-10 km from the nearest island (Tanjung Pasir and Edam Island). They passed the ship or perched in organic or an organic garbage.

There were six birds protected by Indonesia Law (Peraturan Pemerintah No. 7 Tahun 1999), the status of Critically Endangered by IUCN for Christmas Frigatebird, and the status of Near Threatened by IUCN for Swinhoe’s Storm Petrel. This information important for the next conservation seabirds in Indonesia.

Interviewed to the some fishermen. The first interviewer with his staffs were taking a break near Edam Island, and we had an interview while they were resting. This fishermen comes from Jakarta but has width fishing area with nets at Jakarta Bay. From the results, they told that they knew the seabirds near Tanjung Pasir, but they never caught them or baited in their fish nets. But another species, the cormorant death in their nets. Another fishermen is specifically looking for crabs and often went to small islands to look for crabs. From the results of this interview also found that he often sees the seabirds and never see if the seabirds was caught in fishing net. He also already understands that some sea birds are protected by the government including the frigatebirds.

Table 1 The species and numbers of seabirds in Jakarta Bay

| No | Spesies | | Numbers | Status | |
|----|------------------------|-----------------------------------|------------|--------|---------------|
| | English name | Latin Name | | IUCN | Indonesia Law |
| 1 | Little Frigatebird | <i>Fregata ariel</i> | 3 | LC | - |
| 2 | Christmas Frigatebird | <i>Fregata andrewsi</i> | 63 | CR | No. 7/1999 |
| 3 | Great Frigatebird | <i>Fregata minor</i> | 1 | LC | - |
| 4 | Aleutian Tern | <i>Sterna aleutica</i> | 9 | LC | No. 7/1999 |
| 5 | Lesser Crested Tern | <i>Sterna bengalensis</i> | 6 | LC | No. 7/1999 |
| 6 | Common Tern | <i>Sterna hirundo</i> | 39 | LC | No. 7/1999 |
| 7 | Swift Tern | <i>Sterna bergii</i> | 34 | LC | No. 7/1999 |
| 8 | Little Tern | <i>Sterna albifrons</i> | 10 | LC | No. 7/1999 |
| 9 | Unidentified sterna | - | 5 | - | - |
| 10 | Little Black Cormorant | <i>Phalacrocorax sulcirostris</i> | 554 | LC | - |
| 11 | Little Cormorant | <i>Phalacrocorax niger</i> | 5 | LC | - |
| 12 | Swinhoe’s Storm Petrel | <i>Oceanodroma monorhis</i> | 3 | NT | - |
| | | | | | |
| | Grand Total | | 732 | | |

Attachment:



Pic 1 Seabirds Indonesia Team



Pic 2 Interviewed with the fishermen
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Pic 3 Edam Island
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Pic 4 Frigatebirds flock roosting in sero
©FN Tirtaningtyas



Pic 5 Great Frigatebird
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Pic 6 Christmas Frigatebird
©Nanang KH



Pic 7 Lesser Frigatebird
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Pic 8 Aleutian Tern
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Pic 9 Common Tern
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Pic 10 Swift tern (left) and Little- Black Cormorant
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