STUDY OF BIRD POPULATION OCCUPATION (ARDEIDAE FAMILY) AT PERTAMINA HULU MAHAKAM PLATFORM AREA, MAHAKAM DELTA

STUDI TENTANG OKUPASI POPULASI BURUNG (FAMILI ARDEIDAE) DI AREA PERON PERTAMINA HULU MAHAKAM, DELTA MAHAKAM

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ABSTRAK

Peningkatan populasi burung famili Ardeidae yang tidak terkendali di wilayah pesisir Delta Mahakam di dalam area konsesi Pertamina Hulu Mahakam, merupakan salah satu permasalahan yang terkait dengan degradasi hutan mangrove. Hal ini karena kelompok burung ini tidak memiliki tempat yang memadai untuk bertengger atau beristirahat di malam hari. Hasil penelitian menunjukkan bahwa kondisi Peron yang sepi pada siang hari dan hangat pada malam hari menyebabkan kelompok burung dari family Ardeidae mengokupasi Peron tersebut. Sebagaimana direkomendasikan dalam penelitian sebelumnya diperlukan pemulihan habitat secara integral dengan penanaman vegetasi mangrove di wilayah tersebut. Selain pada wilayah mangrove alami yang ada perlu dipersiapkan tempat bersarang buatan yang memadai, setelah burung-burung tersebut dihalau menjauh dari area Peron (GTS Ax).

Kata kunci: Famili Ardeidae; Jenis-jenis burung; Mangrove; Delta Mahakam

ABSTRACT

One of the problems related to mangrove forest degradation is the uncontrolled increase in the Ardeidae family bird population in the coastal area of the Mahakam Delta within the Pertamina Hulu Mahakam concession area. These birds do not have adequate places at night to perch or rest. The results revealed that the quiet state of the platform during the day and the warmth at night encouraged birds from the family of Ardeidae to occupy the platform. Habitat restoration is integrally needed by planting mangrove vegetation in the region, as recommended in previous research. After the birds are forced away from the Platform (GTS Ax) area, the existing natural mangrove areas must be prepared with appropriate artificial nesting sites.

***Keywords**: Ardeidae family; Bird species; Mangrove; Mahakam Delta*

INTRODUCTION

A bird is a species of animal with a close relationship with its environment. According to Boer (2018), their existence within a particular region is used as a bio-indicator of ecological quality. Although this species of animal wanders widely due to its ability to fly, it needs places to perch to rest. Therefore, as a result of this, birds' existence in a region is dependent on the sustainability of habitat-elements. Moreover, the distribution of animals, in general, is not arbitrary or uniformly distributed, as the species may have a strategic and profitable role for the

animal. In MacKinnon et al. (2010) stated that the population patterns indicate that a heterogeneous environment might influence bird occupation because the grouping the pattern tends to increase but return to population numbers and other variables.

According to Iswandaru (2018), some environmental conditions that influence their lifestyle within a habitat are safety, prosperity, and the availability of food, nesting, and breeding places. Furthermore, it is assumed that food availability initiates several bird species' population development within various places. The movement of birds from one region or country to another is called migration, which occurs during seasonal changes that influence food availability in a specific location. As a result, some species tend to migrate to extended distant areas, such as the migration of some European bird-species' to Africa, Australian birds to the Pulau Seribu archipelago in northern Jakarta during winter.

However, it is also common for an uncontrollably increasing population to exist due to substantial food availability called local migration or pests. Therefore, this research aims to solve the problem of bird population within the platform of Pertamina Hulu Mahakam and also answers questions from a large number of individuals regarding the mitigation of birds from the GTS Ax platform.

METHODS

The research was conducted in Delta Mahakam in the concession area of Pertamina Hulu Mahakam. Data were obtained by watching the birds using aNIKON binocular (10 x 40) for approximately 15–20 seconds from morning (06.00 – 09.00) toevening (16.00 – 18.30). The Ardeidae family comprises four species of birds, namely *Egretta alba* (Kuntul Besar, Great Egret), *Egretta eulophotes* (Kuntul Cina, Chinese Egret), *Egretta intermedia* (Kuntul Perak, Intermediate Egret), and *Egretta garzetta* (Kuntul Kecil, Little Egret). Figure 1shows that there are three species of Egretta bird; however, the condition of the GTS Ax platform attracts a large number of these birds.

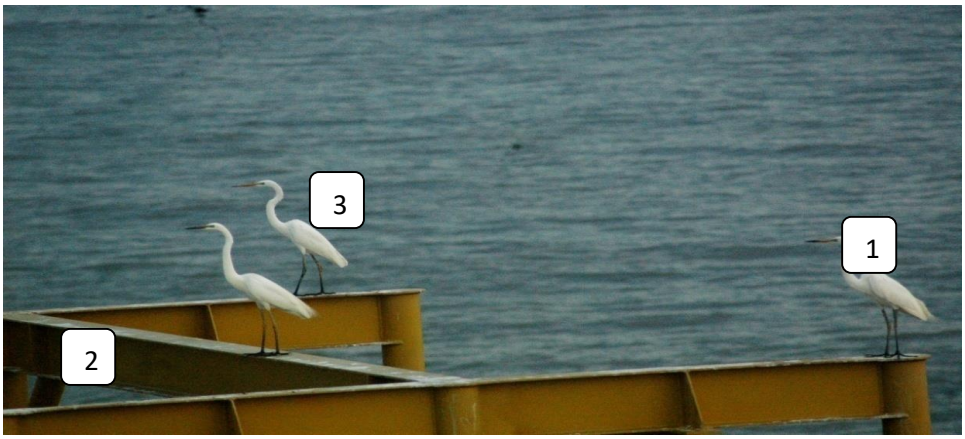

Figure 1. Some species of birds found at the research site (GTS-Ax SPU) are*Egretta alba* (Kuntul Besar, Great Egret), *E. Eulophotes* (Kuntul Cina, Chinese Egret), and *E. Intermedia* (Kuntul Perak, Intermediate egret).

RESULT AND ANALYSIS

Many species of Egretta have broad distribution and are characterized by feet, neck, long beaks to accommodate fish, as well as small vertebrates and invertebrates. The nest is built on treetops along the coast, using a pile of twigs. The Egretta species are already accustomed to this platform without any problem. On the contrary, it is believed that the platform provides hot air because it is an active gas source. This study gathered some information to support the platform's characteristics when it is no longer active and the bird has left.

The platform's silence due to lack of activities is one reason the bird occupied it, not due to the presence of warik (*Macaca fascicularis*) or the crocodiles' activities, which makes them spend the night on the mangrove. Therefore, the platform becomes the right choice because it is not far from the land. However, it does not contain adequate space on the platform and a roof for protection from rainwater. Inevitable regulation related to the visit of the platform makes it difficult to obtain adequate data. It was predicted that most birds find it difficult to get protection during rainy days, and then others fly away to the land to avoid the rainwater. At night the number of birds is more significant, and a trial account showed more than 800. The following figure shows the night condition of birds in this area.

Figure 2. The high temperature (hot) on the platform is one reason for the birds' night visitation.

The majority of the GTS Ax habitat changes to the fish ponds, which belong to the communities, as shown in the following figures.

Figure 3. The Habitat of Mangrove or Nipah has Already Changed WithFew Big Trees for Perching

Mangrove formation is the integration between terrestrial and marine habitat, with the impact of tide and freshwater used to produce resources and ash and soil erosion from the headwater. Furthermore, mangrove brings seawater's life to the land and terrestrial life, which makes species of birds look for food along with the coastal areas and open seawater. The land with all vegetation is a perfect breeding habitat for birds, perch, care for their young ones, and night rest. The following two figures show that the land and the vegetation above them provide unfavorable habitats for birds.

Figure 4. Nipah Forest With FishPond Activities Becoming an Unsafe Place for Birds toStay or Feed

The availability and diversity of food resources play an essential role in the growth of bird populations in mangroves. When the attacking typology of the bird population on GTS Ax was identified, their response to natural habitat changes in mangrove and its availability was understood. Furthermore, they learn to adapt to the changes while selecting better options. In Care (2020) stated that Egretta on the behavior of perched on trees found in the suburbs of ponds and mangroves. This bird usually inhabits open lands, agricultural areas near rivers or other water bodies, such as rice fields and ponds are also included near the beach. According to Julianto et al. (2016) and Syahadat et al. (2015), birds would prefer good vegetation and be covered in order to feel better for their activities and survive. It was concluded that the changes in mangrove habitat tend to affect birds' behavior, such as their time for night rest. It is common amongst the Ardeidae species Egretta, famous as Burung Kuntul and Cangak.

In Anggriana et al. (2018), Lekipiou et al. (2018), and Malindu et al. (2016), damaged mangrove environmental conditions can threaten the existence of birds. Furthermore, Chrystanto (2014) and Partasasmita et al. (2015) stated that the habitats have different environmental conditions, competition, and cooperation between individuals to feed themselves, depending on how the living creatures respond to their survival. According to Arifanti et al. (2019), the Delta Mahakam has a long ecological history and social culture. Meanwhile, the potential of natural resources and high biodiversity has already taken the attention of many stakeholders. Furthermore, Wahyuni et al. (2019) stated that the law and regulation to maintain the delta Mahakam were insufficient to stop the various disturbing activities. Therefore, without any rehabilitation and effort to stop the conversion of Delta Mahakam, the destruction tends to increase continuously. The disturbing occupation of bird, attack of monkey (warik), or crocodile continues to spread.

The GTS-Ax SPU platform area offers the bird a better alternative for perching, feeding, nesting, and resting at night, compared to the mangrove habitat with prevailing conditions. The number of birds on GTS-Ax is above 800 individuals, and the occupancy time at the platform SPU is usually between 5.30 – 6.00 p.m, while the period to leave is below 6.00 a.m.

CONCLUSION AND RECOMMENDATION

Some bird repellent methodologies attributed to the predatory voice, ultrasonic wave, and flashlight near the platform's hazardous area were unsuccessful. Birds are absent on the platform, especially on rainy days and during mitigation. Therefore, they do not need to be frightened in any way.

The previous research project recommended an integral restoration of habitat. It consists of planting natural mangrove vegetation in the region, and preparing artificial nesting places at some locations is compulsory after chasing them away from the platform area (GTS Ax).

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