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GREEN BARRIER PT. PUSRI POTENTIAL AS BIRDS HABITAT

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ABSTRAK

Penelitian telah dilakukan untuk mengetahui jenis-jenis burung pada Green Barrier PT. Pusri dan untuk menjelaskan fungsi vegetasi yang ada di Green Barrier tersebut bagi berbagai jenis burung. Pengambilan data dilakukan di area *Green Barrier* seluas 28 ha milik PT. Pusri selama Juli-Agustus 2015. Metode yang digunakan adalah metode observasi langsung pada garis transek yang telah ditentukan berdasarkan daerah sumber air dan keterwakilan tipe vegetasi yang mewakili habitat potensial burung. Burung yang teramati kemudian diidentifikasi jenis dan dicatat aktivitasnya termasuk bersarang, makan, dan bertengger serta tumbuhan yang dimanfaatkannya. Hasil penelitian diperoleh 17 jenis burung yang tergolong kedalam 13 famili. Jenis tumbuhan yang paling banyak dimanfaatkan oleh burung adalah Sengon (*Paraserianthes falcataria*). Tercatat sedikitnya 10 jenis burung yang memanfaatkan tumbuhan tersebut sebagai tempat bertengger, makan dan bersarang. Ketersediaan air dalam bentuk kolam ikan buatan pada lokasi kolam ikan 1 (transek 3) mampu memikat burung air seperti; blekok sawah (*Ardeola spesiosa*) dan trinil pantai (*Tringa hypoleeucos*) untuk datang mencari makan di Green Barrier PT. Pusri sehingga perlu dikelola untuk menjaga fungsinya sebagai habitat burung.

Kata kunci: jenis burung, jenis tumbuhan, habitat, *Green Barrier* PT. Pusri

ABSTRACT

A study has been conducted to determine birds species in Green Barrier of PT. Pusri and to explains the function of the existing vegetation in the Green Barrier for birds. Retrieval of data was conducted in 28 ha of Green Barrier area of PT Pusri, during July to August 2015. The collecting of data was determined by line transects through observation directly, assuming the selection of sites based on water resources and representation of vegetation types that represent a potential habitat for birds. The observed birds then identified and recorded include their activities such as nesting, feeding, perch and kind of plants that their exploited. The results found 17 species in 13 families. Plant species that are most frequently used by birds is *Paraserianthes falcataria*. It was recorded that at least 10 species of birds found in the Green Barrier PT. Pusri utilize this plants species as a perch, feeding and nesting. The availability of water in the form of an artificial fish ponds at the Fish Pond 1 (transect 3) could attract water birds such as; Javan Pond-Heron (*Ardeola spesiosa*) and Common Sandpipers (*Tringa hypoleeucos*) to come and looking for food making the needs of the Green Barrier area to be managed to maintain its function as a habitat for birds.

Keywords: birds, plants, habitat, *Green Barrier* PT. Pusri.

INTRODUCTION

As it is known that the rate of forest degradation is increasing continuesly. Forest fire and land-use change activities such as land clearing for agriculture, plantation, mining and the settlement became the reason of forest loss. The forest degradation is a threat to bird species which require forests as habitat. According to Alikodra (2002), the birds need habitat to find food, water, shelter, playground and a place to breed. Masy'ud (1989) added when the state of the area is not suitable to meet their needs, then the reaction that arises is these animals will move on looking for other places that provide their needs. In such reduced ecological forest condition, the presence of green open space will be very helpful in providing habitat, especially for birds.

PT Pusri is a company engaged in urea fertilizer producers and a pioneer in Palembang, South Sumatra Province. As one of their environmental management efforts, PT Pusri has been running a program called Green Barrier Program. The program is the provision of land with an area of 28 ha consisting of plant revegetation. As a green open space, Green Barrier PT. Pusri have potential habitat for various species of birds. Although, to determine its potential in providing habitat still need further research.

MATERIALS AND METHODS

This study was conducted in July-August 2015, situated in Green Barrier of PT. Pusri Palembang, South Sumatra Province. The tools used in this study are binoculars, GPS, camera, compass, map, metering band, gloves, tally sheets, and MacKinnon et al. (2010) identification book's.

The method used is direct observation at the predetermined transect lines. The observed location is determined based on water resources and representation of vegetation types that represent a potential habitat for birds. From a predetermined point a transect line drawn far 200 m and then in the opposite direction was divided into several sampling points. A total of four transect lines, each within 200 meters and having five points was observed.

The observations made at 06.00-09.00 am and 15:00-18.00 pm. Data collected include: species, number of species, number of individuals, and bird activities. Overall data is then analyzed descriptive quantitatively. Frequency analysis or the distribution of birds showed as the presence of a bird species in an area of observation.

$$\text{Frequency of species} = \frac{\text{Number of points species}}{\text{amount of sample points}}$$

$$\text{Relative frequency} = \frac{\text{Frequency of species}}{\text{Total frequency}} \text{ x } 100\%$$

RESULTS AND DISCUSSION

The results shows that the Green Barrier area of PT Pusri has become a habitat for 17 bird species which belong to 13 families. According to the Indonesian Government Regulation Nr. 7 of 1999, there are four species of birds are classified as protected species, they are; Brahminy Kite (*Haliastur indus*), Ruddy Kingfisher (*Halcyon coromanda*), Collared Kingfisher (*Todiramphus chloris*) and Plain-throated Sunbird (*Antrepthes malacensis*). The following (Table 1) is a list of bird species found in the Green Barrier of PT. Pusri, Palembang.

Table 1. List of birds species that lived in Green Barrier of PT. Pusri

Birds			Relative frequency(%)
Family	Species name	Common name	
Accipitridae	*Haliastur indus**	Brahminy Kite	85
Apodidae	*Collocalia sp*	Swiftlet	20
Alcedinidae	*Halcyon coromanda**	Ruddy Kingfisher	10
Alcedinidae	*Todiramphus chloris**	Collared Kingfisher	30
Ardeidae	*Ardeola speciosa*	Javan Pond-Heron	5
Capitonidae	*Megalaima haemacephala*	Coppersmith Barbet	15
Columbidae	*Geopelia striata*	Zebra-Dove	20
Hirundinidae	*Hirundo rustica*	Barn Swallow	75
Nectariniidae	*Anthreptes malacensis**	Plain-throated Sunbird	10
Picidae	*Picoides moluccensis*	Sunda Woodpecker	15
Ploceidae	*Lonchura punctulata*	Scaly-breasted Munia	25
Ploceidae	*Lonchura striata*	White-rumped Munia	45
Ploceidae	*Passer montanus*	Eurasian Tree Sparrow	80
Pycnonotidae	*Pycnonotus aurigaster*	Sooty-headed Bulbul	60
Scolopacidae	*Tringa hypoleucos*	Common Sandpipers	5
Silviidae	*Orthotomus ruficeps*	Ashy Tailorbird	80
Silviidae	*Prinia familiaris*	Bar-winged Prinia	20

*Note: * Protected under Indonesian Government Regulation No. 7 of 1999*

Overall, the relative frequency of birds ranging from 5% - 85%. Brahminy Kite (*Haliastur indus*) is a bird species with the highest relative frequency (85%), because the home range of this bird is larger than the other species of birds, so this bird is found almost throughout the observation points. Iqbal *et al* (2009) mentioned that Brahminy Kite different from other predator birds that eat prey to perch in trees or on the surface of the soil but this eagle can eat his prey while flying in the air.

Vegetation plays an important role in determining the types of birds that make such vegetation as habitat. Partasasmita (1998) explained that a bird will utilize a variety of habitat types in a going concern. Some birds will utilize the types of plants that could be a source of feed, nest and shelter physiologically. DeWalt et al (2003) in his research explained that insects and certain fruits in the secondary forest is a source of good feed for several species of birds and a supporting factor habitat for bird species. After further observation there are at least 10 species of trees that are located within the Green Barrier of PT. Pusri. They are; *Paraserianthes falcataria, Pterocarpus indicus, Tectona grandis, Hura crepitans, Terminalia catappa, Swietenia macrophylla, Neolamarckia cadamba, Ficus sp, Alstonia scholaris* and *Bambusa* sp.

The interaction that occurs between the relationship of plants and bird species is a mutual interaction (Nugroho et al. (2015). For plants, birds can be an intermediary for bird dispersal while the plant itself as the resource of foods, shelters, playgrounds and nestings. Difference between plant species within a region will affect the type of birds that utilize it as a habitat. This is especially true in the dispersal that can not be spread by wind. In general, the number of bird species and use of plants in the Green Barrier of PT. Pusri can be seen in Figure 1 and Figure 2

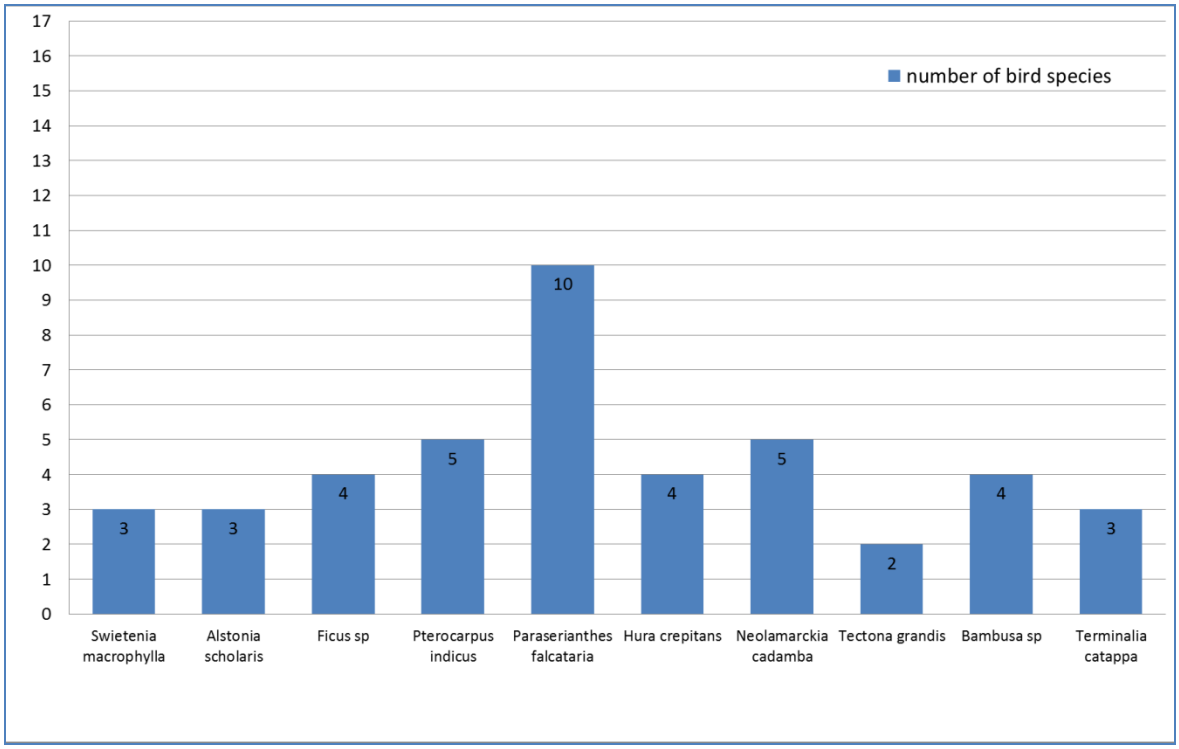

Figure1. Number of bird species that utilize plant species in the Green Barrier of PT. Pusri

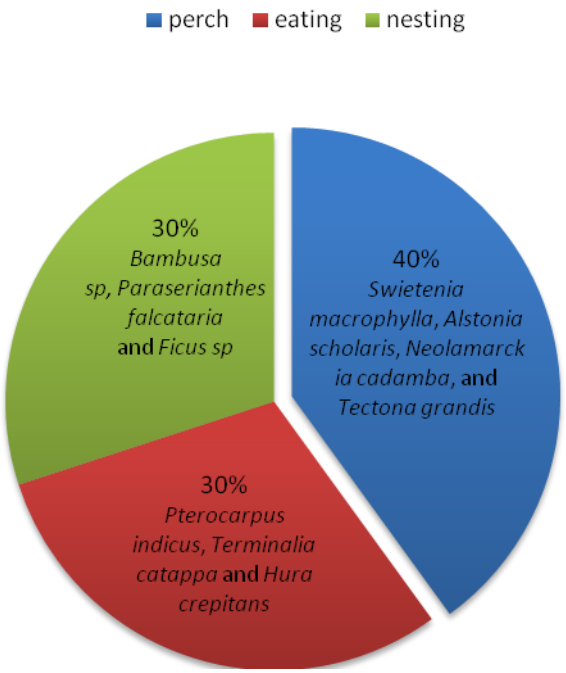

Figure2. The percentage of plant species utilized by birds

he plant species that most frequently used by birds is sengon (*Paraserianthes falcataria*). It was recorded that at least 10 species of birds were utilize this plant species as perch, feeding and nesting. The amount is inversely proportional to the use of *Tectona grandis* because during the observations, there are only two species of birds that take advantage of the plant and its function as a place to perch. According to Krisnawati et al. (2011), sengon (*Paraserianthes falcataria*) is a large tree that can grow up to 40 m with its first branch heights up to 20 m with the ability to grow up to 100 cm. This tree starts flowering at the beginning 3 years after planting and then fruitful.

Each plant species has its own benefits for the species of birds, both as perch, feeding and nesting. Of the 10 species of plants that exist throughout the observation point, 40% of plant species are only used by bird species as perch, 30% foraging, and 30% as a nesting place (Figure 2). In addition to the vegetation, the presence of artificial fish ponds located in the area of Green Barrier of PT. Pusri was able to attract water birds such as *Ardeola spesiosa* and *Tringa hypoleucos* to come and looking for food. This bird was found walking around the fish pond (Transect 3) looking for something to eat. According o Ewbank (2015), *Ardeola speciosa* is usually foraging by standing, waiting and walked slowly around the waters. Paradela et al. (2014) mentioned that the artificial lake as a water source in the area of the isthmus led to the addition of the abundance of species and the diversity of avifauna significantly. In addition, young sandpipers birds known migration in the second half of July, more than in the second half of August (Meissner 1997). Common Sandpipers is always nested on the ground, which generally have dense vegetation near water sources whic is relatively flat (Holland, 1982). Gavareski (1976) added that the diversity of birds will be directly proportional to the diversity of vegetation and forest area outside the influence of urban areas. Moorman et al (2012) also mentioned that bird diversity is more closely related to vegetation structure and various necessities of life such as canopies for shelter and foraging. Thus, the availability of green open space, in this term of Green Barrier area of PT Pusri, is very important to maintain habitat for birds.

CONCLUSION

At least 17 species of birds were found utilize the Green Barrier of PT. Pusri as habitat. The presence of 4 (four) bird species which protected by national regulation, i.e.: Brahminy kite (*Haliastur indus*), Ruddy Kingfisher (*Halcyon coromanda*), Collared Kingfisher (*Todiramphus chloris*) and Plain-throated Sunbird (*Antrepthes malacensis)*, indicates the important role of this green barrier area in maintaining bird habitat. Vegetation and fish ponds in the area became an important factor in supporting bird's habitat. Plant species that are most frequently used by birds is sengon (*Paraserianthes falcataria*).

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