INTRODUCTION

Background
Ragunan Zoological Park lies at southern part of Jakarta at Jalan Harsono RM No.1 with an area of 1.4 km². It has 295 species of animal live inside (World Association of Zoos and Aquariums 2008). Among these animals, bird is included.

There are two kinds of bird living inside Ragunan Zoological Park, caged and wild birds. Caged birds are the birds to be displayed for education and recreation purposes. While wild birds are the birds which live freely inside Ragunan Zoological Park, these birds may come from migratory birds that use Ragunan Zoological Park as its halting place or from nearby location that make Ragunan Zoological Park as its place for living.

The wild birds inside Ragunan Zoological Park changes in number and diversity everytime an observation was held. Sunaryan (1999) mentioned 54 species and 21 family of wild birds, while Amin (2002) mentioned 74 species and 32 family of wild birds.

Purpose
The purpose of this research is to know the diversity and density of wild birds in Ragunan Zoological Park.

Time and Place
This research was conducted from February - July 2008. The birds were observed from March-May 2008, Monday to Friday, from 06.00-10.00 AM and 1.30-5.00 PM at Ragunan Zoological Park.

MATERIALS and METHOD

Materials
The objects of this research was the wild birds observed in the area of Ragunan Zoological Park, while the equipment used in this research were Ragunan Zoological Park map (Appendix 7), binocular Pegasus 8x40, notebook, writing kit, compass, counting tool, a guide book of birds observation by MacKinnon (1998) and thermometer.

Method
Observation
Point Count method was used as a method for this research (Sutherland 1996). Fourty stations were selected for observation with the radii for each station is 50 m. The distance between two stations (point) has the range of 100-150 m. Observation was done from 06.00 to 10.00 AM in six and 1.30 to 5.00 PM in three repetition during bright day or if it is not raining. temperature (Celcius), weather (bright, bright cloudy, cloudy), wind condition (no wind, slight, gusty, strong wind) (Hostetler & Martin 2006), and cloud cover (overcast or scattered) (Katti M 2008) were included as environmental data.

Identification
The observed birds were identified on the field using a guide book of bird observation by MacKinnon. The identification was also done at Zoology Division Research Center of Biology LIPI Cibinong.

Data Analysis
The data of identified birds were analyzed with Shannon-Wiener index for diversity of wild birds and IPA (indices ponctuels d'abondance) count for the density of wild birds. Identified wild birds also compared with previous observations done by the other researchers.

Shannon-Weiner index

\[
I = \frac{\sum_{i=1}^{N} Ni \ln Ni}{N} \quad H = -\sum_{i=1}^{N} Pi \ln Pi
\]

Ni = Number of i species
Ntotal = Total number of birds counted

(Blondel et al. 1970 noted inside Balen et al. 1986)

RESULT

There are 64 species and 28 family of wild birds observed. Morning observation showed 59 species and 26 family, while afternoon observation showed 47 species and 25 family.

Morning observation had 17 species and 3 family differ from the afternoon observation, Those 17 species are Acridotheres tristis, Amandava amandava, Anhinga melanogaster, Ducula aenea, Falco sp, Ficedula westermann, Ficedula zanthopygia, Lalage nigra, Lonchura leucogastroides, Mynetta cinerea, Orthotomus cuculatus, Pericrocotus cinnamomeus, Pericrocotus flammeus,