

## Avifauna of Wangsan Reservoir, Muan-gun, Jeollanam-do

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**Abstract :** The study conducted in Wangsan reservoir from July, 2006 to August, 2007 found that the observed birds were a total of 747 individuals in 46 species and they were 18 resident species, 15 summer migratory species, 9 winter migratory species, and 4 passage species. Although there were a large number of species and individuals from January to March, the species diversity index was low at 1.24~1.73, and the species diversity index was relatively high at 2.58~2.67 from May to July when the numbers of species and individuals were high. In this research, 5 endangered species were observed.

**Key words :** Dominant species, Species diversity, Legally protected species, Reservoir

### Introduction

Wangsan reservoir is a small reservoir located administratively in Wangsan-ri, Samhyang-myeon, Muan-gun, Jeollanam-do and lies 7 km north to Yeongsangang (river) and 2-3 km away from the West Coast. It covers 112,441 m<sup>2</sup> of area and is 1,533 m in circumference. The reservoir plays a role in supplying agricultural water.

The reservoir is surrounded by low hills and farming lands broadly. As it is located adjacent to the West Coast, there is a possibility for migratory birds to use it as a stopover on their migration route, but there is no data that supports such possibility.

Therefore, this study aims to find out if migratory birds use the Wangsan reservoir.

### Target Regions and Methods

#### Target regions

The whole area of Wangsan reservoir, Wangsan-ri, Samhyang-myeon, Muan-gun, Jeollanam-do and its vicinity were surveyed (Fig. 1).

#### Research methods

From July, 2006 to August, 2007, the numbers of species and individuals of birds inhabiting the whole area of Wangsan reservoir were investigated. For this study, a line transect and the spot census were used simultaneously. The line transect is recording appearing birds using binoculars

(10×25, Nikon) or a telescope (×15~45, Nikon) while wading at 2 km/hr along roads or paths around the reservoir. The spot census is counting the whole number of individuals in areas where birds are densely populated or at major observation points (Bibby et al., 1992).

Based on Won's (1981) Illustration flora & fauna of Korea. vol. 25 Avifauna and A Field Guide to the Birds of Korea (Lee et al., 2000), recordings were organized by region and for legally protected species, Natural Monuments of Korea in Color (Yoon et al., 1998) and Endangered and Reserved Wild Species in Korea (Won and Yoon, 1998) were referenced.

Here are some formulas for the research analysis (Brower et al., 1990; Shannon and Weaver, 1949; Margalef, 1963).

#### 1) Dominance (Dom.)

$$\text{Dom.(\%)} = (n_i/N) \times 100$$

$n_i$ : number of individuals in the  $i$  th species

$N$ : total number of individuals in survey area

#### 2) Species diversity (H')

$$H' = -\sum (n_i/N) \times \ln(n_i/N)$$

### Result and Discussion

#### Observed birds by survey period

A survey conducted in Wangsan reservoir from July, 2007 to August, 2008 found that the observed birds were a total of 747 individuals in 46 species and their species composition included 18 resident species, 14 summer migratory species, 11 winter migratory species, and 3 passage species (Table 1).

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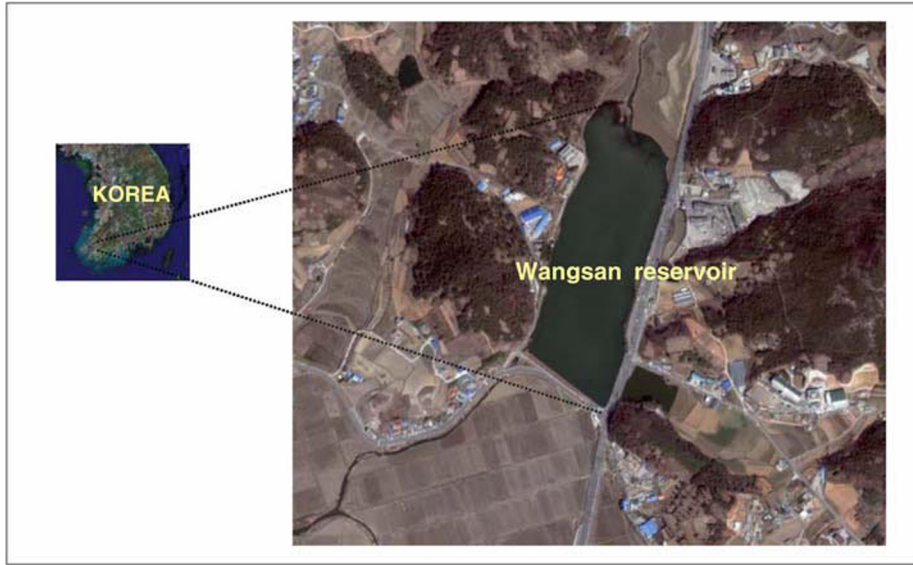


Fig. 1. The map shows Wangsan reservoir, Wangsan-ri, Samhyang-myeon, Muan-gun, Jeollanam-do.

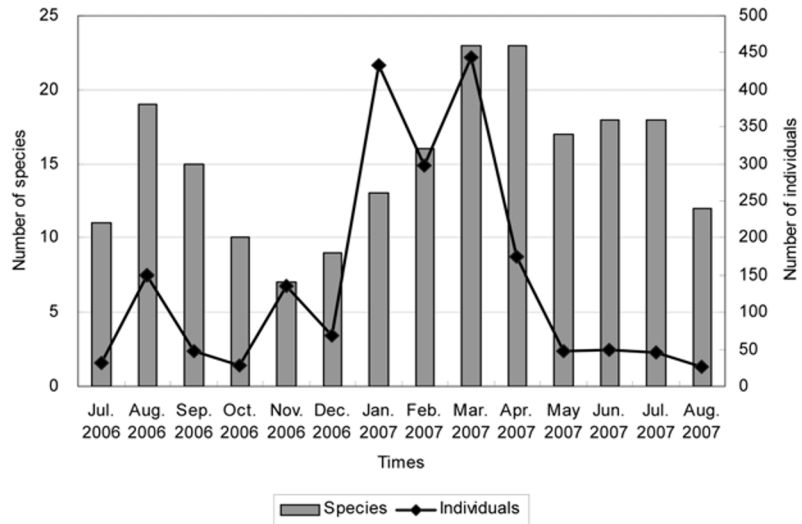


Fig. 2. Monthly variations of the number of species and individuals in Wangsan reservoir.

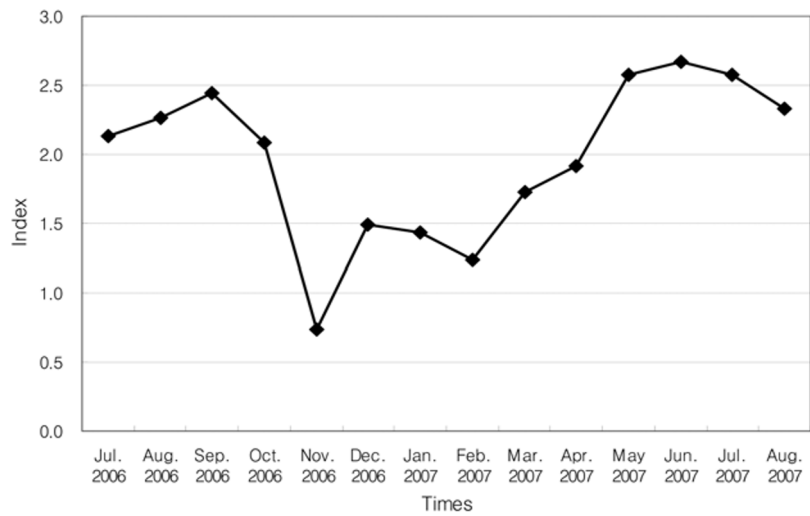


Fig. 3. Monthly variation of the species diversity (H') in Wangsan reservoir.

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