



**Kamila Misztal**

## **BIOLOGIA LĘGOWA WROCŁAWSKIEJ POPULACJI KOWALIKA *SITTA EUROPAEA L.* W UJĘCIU GRADIENTU URBANIZACJI ORAZ PORÓWNANIA Z TERENAMI NATURALNYMI**

**Breeding biology of Wrocław population of Nuthatch *Sitta europaea L.*  
against the gradient of urbanization and in comparison to natural areas**

### **Abstrakt**

Study of breeding biology of the Nuthatch was made in two consecutive seasons in the years 2006 – 2007. Detailed observation was made in four study areas of Wrocław with different gradient of urbanization, and those were: Szczytnicki Park, Zachodni Park, Wschodni Park and Fosa Miejska (City Moat) with Słowacki Park. The aim of this work was to check how urbanization affects breeding biology of the studied species and to compare my results with those from natural areas in Białowieża Forest.

It turned out that the main factor to have an effect on the Nuthatch density in each study area is the presence of suitable nesting places. Increased activity of human traffic has no effect on Nuthatch nesting in the parks as long as the first condition is met. Indirect effect of human activity comes from limitation of the density of woodpeckers – the chief providers of holes in young tree stands, and also from forest nursing treatments which waste the habitats. In spite of increased human traffic, Szczytnicki Park still retains the most primeval habitat type and the Nuthatch reached the highest density there.

When collected data was compared with literature it turned out that the number of breeding couples in Szczytnicki Park and Białowieża National Park submitted substantial variances in dozens years. Probably the main cause was predation, changing weather conditions and competition against the starling for nesting holes.

In respect of the entire characteristics, the Nuthatch shows strict preferences and conservatism, even in such changed habitats like city parks. In Wrocław Nuthatches started breeding much earlier (6 – 10 April in 2006; 1 – 5 April in 2007) than in Białowieża Forest, and than in many other locations in the country. This differences effect probably from geographical placement of Wrocław. It is one of the warmest cities in Poland. High temperatures lead to faster foliage and appearance of caterpillars, which allows faster breeding attempts by Nuthatches. Breeding success was the highest in Szczytnicki Park, the lowest in Fosa Miejska. That confirms dependence between nesting places and habitat quality.

The main threat constituted woodpeckers and starlings, but rodents may be as important.