



SHORT NOTES

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**NEW YEAR'S EVE FIREWORKS IMPACT
ON THE NUMBER OF MAGPIES
ON THE ROOSTING PLACE**

ABSTRACT

Roost sites play a very important role in magpie's life cycle. Frightening birds away may have disadvantageous influence on its population. There have been conducted researches concerning changes in roosting birds number for intense use of fireworks on New Year's Eve. The researches took place on magpies' roosting sites in Zielona Góra, W Poland. The results suggest there should be ban on using fireworks or there should be marked certain town areas (after consulting with ornithologists) where fireworks could be used.

INTRODUCTION

In the second half of the 20th century on urbanised areas the magpie number started to increase rapidly (Birkhead 1991, Jerzak 2001, Zhengmei Wang et al. 2010). A large density of breeding pairs resulted into increase of roosting flocks number. The largest stated roost site was situated in Lviv where 1700 individuals roosted (Bokotey 1997).

The magpie comes under the species that gather in winter on shared roost sites. It appears to be an interesting behaviour, for magpie is a territorial species, which stays on its territory during the year. In winter birds abandon their territory and roost in shared roost sites. There have been a few theories explaining that behaviour. According to Wynne-Edwards (1962) the common roosting is essential for self-regulation of population number. Gadgil (1972) noticed that this is a behaviour protecting birds from predators which are becoming more active in winter. The group of researchers hypothesized that common roost site serves exchange of information about feed distribution that is hard to reach in winter. (e.g. Ward, Zahavi 1973). Moller (1985) suggested explaining magpie common roost sites as exchange of information about "marital" status of close neighbours. It seems, therefore, that roost sites play an important role in magpie's life cycle. It should be even protected on the city territory where many occurring factors

might intrude roosting. One of such factors is common use of fireworks on New Year's Eve and on New Year's Day. The Authors decided to conduct researches if it actually has any influence on magpies' number on roost sites.

RESEARCH TERRITORY

Researches were conducted on magpie roost sites located in Zielona Góra, W Poland. There are 120.000 inhabitants in and the city and it is surrounded by forests. Magpie population has been increasing since the beginning of the 20th century (Gruhl 1929, Jerzak 2001). The roost site is located on tree-lane (mainly *Tilia sp.*) on Wyspiańskiego Street in eastern part of the city.

METHODOLOGY

Roosting magpie counts were conducted from 1. November 2013 and during winter in a week long intervals. It was especially important to count the birds on New Year's Eve (in the evening after dusk) and then on New Year's Day (before dawn) in order to state what changes have occurred in bird roosting number during the highest intensity of fireworks.

RESULTS

Magpies' number on roost sites started to increase in November reaching the highest number in December (up to 156). On New Year's Eve there was a radical decline of bird number from 30 individuals to only 5 (Fig. 1). Magpie number has fallen in December, what was presumably caused by irregular firework shots. In January magpies' number

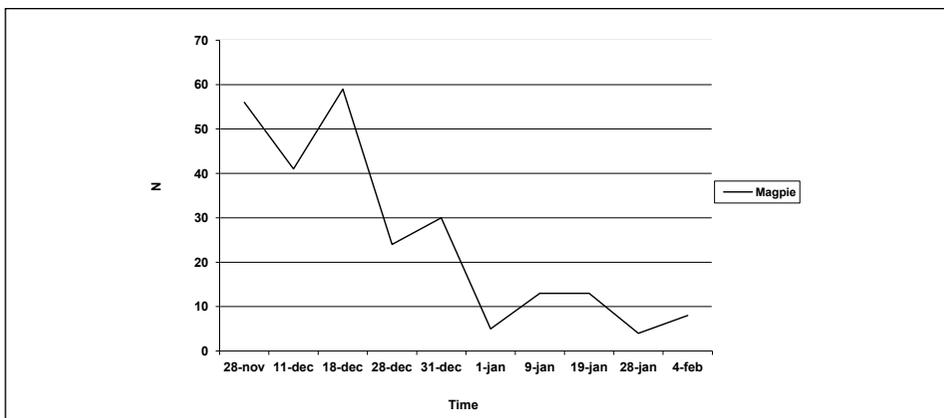


Figure 1. Changes in magpies' number on roost site in Zielona Góra on Wyspiańskiego Street during winter 2013/2014

started to grow afterwards, however it did not reach the number from before New Year's Eve.

DISCUSSION

Many researches have been conducted on magpies roosting places (Jerzak 2001). Many hypotheses have been also suggested. There is a clear evidence for the fact that roost sites in the city are more numerous than the ones located outside the town. It is caused by magpie occurrence in much larger concentrations on urbanised areas. Researchers stated changes in number caused by weather: temperature, wind (Czechowski et al. 2005) but the number changes are of small amplitude. However, number decline stated on New Year's Eve was sharp and radical. The attention to number decline of magpie on roost sites in Zielona Góra in December and January had been paid even before (Jerzak 2001). In all likelihood it may be caused by early firework shots and also after New Year's Day. It is against the law due to the fact that The Mayor issues an order allowing for firework shots only on New Year's Eve.

A radical bird number decline was stated in our researches on New Year's Eve. Birds uneasily restore their number from that night. There is much information about disadvantageous influence on animals caused by fireworks. Fatalities were even stated. Research results suggest that fireworks should not be allowed or there should be marked certain town areas (after consulting with ornithologists), where fireworks would be used.

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