

## GENERAL INFORMATION

<b>author(s)</b>	Dhondt AA, Eyckerman R
<b>year</b>	1980
<b>English title</b>	Competition between the great tit and the blue tit outside the breeding season in field experiments
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<b>reference</b>	Ecology 61
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<b>type</b>	article (a1)
<b>ecosystem service</b>	supporting - biodiversity
<b>keywords</b>	birds
<b>taxa</b>	<i>Parus major</i> , <i>Parus caeruleus</i>
<b>project</b>	long-term study of great tit and blue tit (since 1959 in Ghent, since 1972 in Gontrode)
<b>supervisor</b>	
<b>institution</b>	University of Antwerp, Department of Biology
<b>document</b>	pdf, hardcopy
<b>data</b>	

## MATERIALS & METHODS

<b>study area</b>	
<b>time period</b>	1972–1978
<b>goal</b>	test the hypothesis that great tit and blue tit compete outside the breeding season
<b>set-up</b>	1972–... nest boxes with a 32 mm circular opening (8 per hectare) October 1976: experiment 1 (Gontrode) = opening of nest boxes reduced to 26 mm (too small for great tit) + control area October 1977: experiment 2 (Soenen) April 1978: one nest box opened in each censused great tit zone to allow great tit breeding
<b>data collection</b>	32 mm nest boxes <ul style="list-style-type: none"> <li>- during the breeding season: nest boxes checked once a week: content noted, nestlings banded, a large proportion of the adults trapped</li> <li>- winter: nest boxes checked two times for roosting birds</li> </ul> experiments <ul style="list-style-type: none"> <li>- nest boxes checked during the breeding and winter season</li> <li>- number of great tit remaining: census of singing males in March</li> </ul>
<b>remarks</b>	Previous research of Dhondt showed that the densities of blue tit and great tit are similar at low densities of both species (i.e., < 10 breeding pairs / 10 ha) whereas the increase in density of blue tit levelled off for an increase in great tit density at high breeding pair densities. As competition during the breeding season more strongly affected great tit, Dhondt&Eyckerman hypothesized that competition outside the breeding season affected the species. Dhondt also performed aviary experiments in which blue tit could choose between nest boxes with small and large openings. All blue tits chose the nest boxes with large openings. When great tits were introduced, the blue tits shifted to the small-holed nest boxes.

## **RESULTS**

Breeding densities of blue tit were significantly higher in the experiments than in the prior 32 mm nest boxes. The densities of roosting blue tit in nest boxes during winter were also significantly higher in the 26 mm nest boxes.

During winter, blue tit and great tit compete for roosting sites, and great tit excludes blue tit from nesting sites suitable for great tit.