

Monitoring common breeding birds in Flanders: a new step towards an integrated system

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Introduction

Since 1994, the populations of rare, colonial and exotic breeding bird species are monitored (BBV-project) by the Research Institute for Nature and Forest (INBO, the former Institute for Nature Conservation), in collaboration with volunteers of the NGO Natuurpunt (BirdLife partner), Flanders' largest voluntary-based organisation and several local ornithological groups. However, INBO continuously received questions by local and regional governments concerning trends or causes of population-shifts in more common bird species. Moreover, Europe was also demanding more information on common bird species trends. Nevertheless, the start of a common bird census in Flanders has been postponed for a long time due to the lack of interest and financial support (Anselin et al., 1997). After publishing the atlas of breeding birds in Flanders in 2004, continuous attempts have been made to finance this new project. Finally, the development of the Pan European Common Bird Monitoring Scheme has urged us to increase pressure on our government for additional support since Belgium was almost the only European country that could not fully contribute to this scheme. In the end, we succeeded in 2006. In March 2007, additional staff was hired and a contract was made with Natuurpunt to share the data and divide the different tasks. INBO is responsible for developing a standardised method and for reporting to regional governments and the scientific community. Natuurpunt will coordinate the volunteers and will report to them on a regular basis. Finally, INBO is developing an on-line database where volunteers can fill in all the project's observations.

Common Bird Census: methodology

In 2006 we compared all existing European common bird census schemes in order to implement a method in Flanders. Almost all member states use

either point counts or transects or a combination of both to monitor common birds. Both systems have their strong points (Table 1) but after internal consultation and several contacts with fieldworkers, we chose for a method based on point counts.

Table 1: A comparison between point and transect counts
(free after Gregory *et al.* 2004)

Transect counts	Point counts
Excellent in open, extensive areas	Excellent in forest and scrub
Large, mobile and conspicuous species	Also cryptic, shy and skulking species
Excellent in cases of low densities and species poor areas	Excellent in cases of higher densities and more species rich areas
Time efficient	Time is lost moving between points, but counts give time to spot and identify shy birds
Double counting of birds is a minor issue	Double counting of birds is a concern within the count period, especially for larger counts
Suited to situations where access is good	Suited to situations where access is restricted
Can be used for bird-habitat studies	Better suited for bird-habitat studies

The atlas of breeding birds in Flanders was based on territory mapping in 5×5 km UTM-squares with additional information collected in a subset of 8 1×1 km squares (Vermeersch *et al.*, 2004). So, since we already had information in over 5,000 1×1 UTM-squares, we chose that grid as a basis for the new census. The grid was then randomly stratified over 6 habitat types (farmland, woodland, urban, suburban, heathland and marshland) and finally, 6 points were randomly assigned to each grid cell (Fig. 1). Each point has to be counted three times in a year in predefined periods (DD/MM): 01/03-15/04, 16/04-31/05 and 01/06-15/07. All six points in a square have to be counted on the same day and subsequent counts of the same points in different periods should lie apart for at least two weeks.

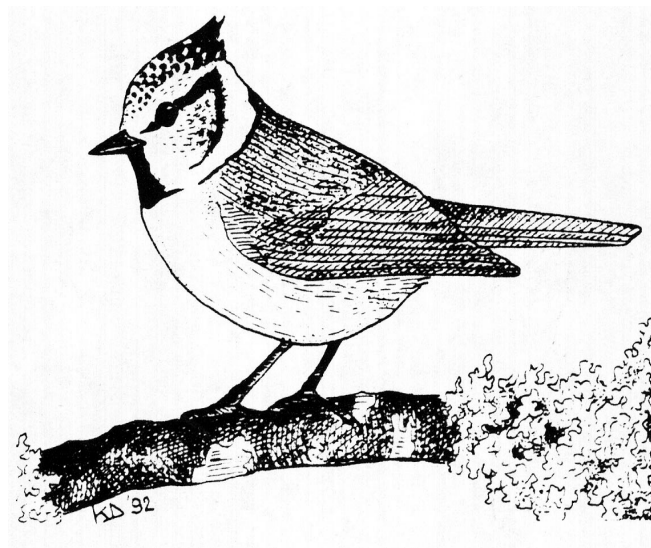
A separate study (Onkelinx *et al.*, 2006) was carried out to estimate the sample size needed to calculate good indices for the majority of common species. The study was based on density-figures in 1×1 km squares from the previous atlas. Finally, 1200 squares were randomly chosen from the above mentioned grid. Considering the number of volunteers and to increase geographical coverage and sample size, we chose for a three-year cycle. Initially, every point had two observation circles around it (50 and 150 meters), but after consulting our Dutch colleagues from SOVON, we chose not to use these circles. Instead, this system is preserved for a calibration study in 10 % of all squares that should allow us to calculate density functions for some of the commoner species (see also Van Turnhout, 2006). In this study, all observations will be drawn on a map, while in the ‘normal’ scheme this is not requested. This fieldwork is carried out by INBO staff.

The voluntary network

Starting from the existing network in the BBV-project, approximately 40 regional coordinators were found throughout Flanders. Natuurpunt and INBO started giving lectures about the project and its methodology in March. Although this was a rather late start, volunteers were very eager to join in and after a few weeks, over 300 squares (for 2007) were already assigned to approximately 150 different people. For the following years, success will be even higher since some regional groups chose to start only next year. All volunteers received maps, field forms and a methodology folder (Fig. 1).

On-line data collection

At INBO, the IT-staff is now working on an online system for data collection for both the BBV-project and the new monitoring scheme. Three different types of logins are defined: administrators (INBO and Natuurpunt), regional coordinators (with access to all data in their respective regions) and volunteers. The implementation of such on-line systems has proven to be a great success in water-bird counts and butterfly monitoring schemes already. The speed of reporting has increased significantly, fieldworkers have less paper work and therefore there is less room for errors. At the same time, this new approach allows us to add all the existing atlas and monitoring data to the on-line system as an extra feedback.



Methodehandleiding bij het project 'Algemene Broedvogelmonitoring Vlaanderen (ABV)'

Glenn Vermeersch, Anny Anselin, Marc Herremans

Een initiatief van het Instituut voor Natuur- en Bosonderzoek (INBO) en de Vlaamse Vogelwerkgroep van Natuurpunt in samenwerking met Natuurpunt Studie.



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Algemene broedvogelmonitoring Vlaanderen (ABV) - Veldform

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Nummer km-hok : Waarnemer :
 Nummer telpunt : Adres :
 Tijdsperiode : Telefoon :
 Datum : Email :

Soort	Aantal	Soort	Aantal	Soort	Aantal	Soort	Aantal
Aalscholver		Grote Gele Kwikstaart		Kuffeuwerk		Spreeuw	
Appelvink		Grote Karskiet		Kuffmees		Sprinkhaanzanger	
Baardman		Grauwe Klauwvler		Kwak		Staarmees	
Barmois spec.		Grauwe Vliegenvanger		Kwartel		Stadsluif	
Bergeend		Grauwe Gors		Kwartelkoning		Steenuil	
Bijeneter		Grauwe Kiekendief		Magelaengans		Stelkruut	
Blaauwe Reiger		Grasmus		Mandarijneend		Stormmeeuw	
Blaauwe Kiekendief		Graspeper		Makop		Strandplevier	
Blaauwborst		Grauwe Gans		Meerkot		Tafelend	
Bonte Vliegenvanger		Groene Specht		Merel		Tapuit	
Boerenzwaluw		Groentling		Monnikspartiet		Tijffaf	
Bontbekplevier		Grote Lijster		Nachtgaa		Torenvalk	
Bonte Strandloper		Grote Stern		Nachtzwaluw		Tortel	
Boonkruiper		Grutto		Nijlgans		Tuinfuiter	
Boonkruiper		Halbandparkiet		Noordse Stern		Tureluur	
Boonkruiper		Havik		Oeverloper		Turkse Tortel	
Boonkruiper		Heggenus		Oeverzwaluw		Veldseuwerk	
Boonkruiper		Holenduij		Olevar		Velduil	
Boonkruiper		Hop		Orpheusspogvel		Vink	
Boonkruiper		Houduij		Papje		Viedf	
Brandgans		Huiszwaluw		Pijlstaart		Vlaamse Gaal	
Bruine Kiekendief		Huiszwaluw		Pimpmees		Vuurgouthaan	
Buidelmee		Javogel		Porselinhoen		Waterhoen	
Buizerd		Indische Gans		Putter		Waterl	
Canadese Gans		Kauw		Ransui		Waterspreeuw	
Carolina-eend		Keep		Rietgors		Wespendief	
Casarca		Kerkuil		Rietzanger		Wielewaal	
Dodaars		Kieft		Ringmus		Wilde Eend	
Draakha		Kleine Bonte Specht		Rose Stelkstaart		Winterkoning	
Dwergslam		Kleine Barmois		Rode Wouw		Winterhalg	
Ekster		Kleine Karskiet		Roek		Witte Kwikstaart	
Engelse Gele Kwik		Kleine Mantelmeeuw		Roerdomp		Woudaagje	
Europese Kanarie		Klapkester		Roodborsttapuit		Zwarte Specht	
Fazant		Kleine Plevier		Roodborst		Zwarte Wouw	
Fils		Kluut		Roodhalgans		Zilvermeeuw	
Fluter		Knu		Roodmus		Zomertaling	
Fuut		Knobbelzwaan		Rouwkwikstaart		Zwarte Kraai	
Gedings		Koolmees		Scholekster		Zwarte Roodstaart	
Gekraagde Roodstaart		Krakend		Sig		Zwarte Wouw	
Gele Kwikstaart		Krakend		Slechvalk		Zwarte Zwaan	
Geoorde Fuut		Krakend		Sieboend		Zwarte Mees	
Gierzwaluw		Krakend		Snor		Zwarte Specht	
Glanzskop		Krakend		Soepend		Zwartkop	
Goudhaan		Krooneend		Soepgans		Zwartkopmeeuw	
Goudvink		Kruisbek		Sperwer			
Grote Bonte Specht		Kuffeend		Spogvel			

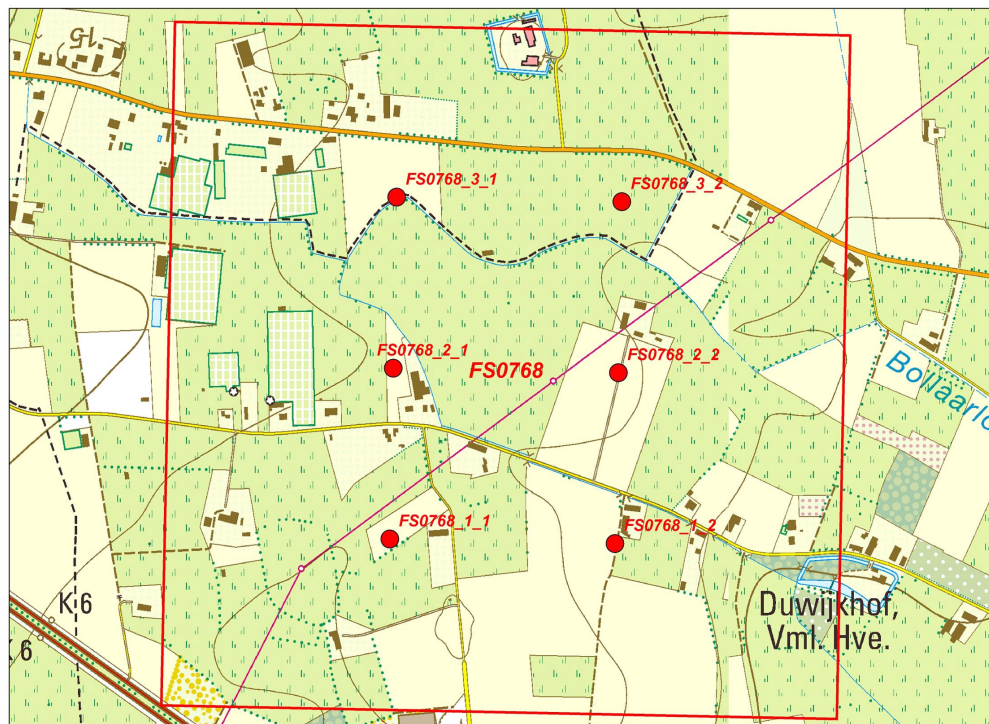


Fig. 1: The volunteers' equipment: map, field forms and summarized methodology folder

Future prospects: integration of existing data and implementation of new projects

The ultimate goal of INBO is to produce a yearly 'Bird Report' based on an integration of existing and new projects. The start of the common bird census is another step towards such an integrated system. However, to achieve the scheme in Fig. 2, a lot of work still needs to be done. One more project to be set up in the near future is a 'Waterways bird survey' since both the common and rare breeding bird census are insufficient to obtain good data on species like Kingfisher (*Alcedo atthis*) and Grey wagtail (*Motacilla cinerea*). Along with Natuurpunt, the set-up for this project is planned for 2008.

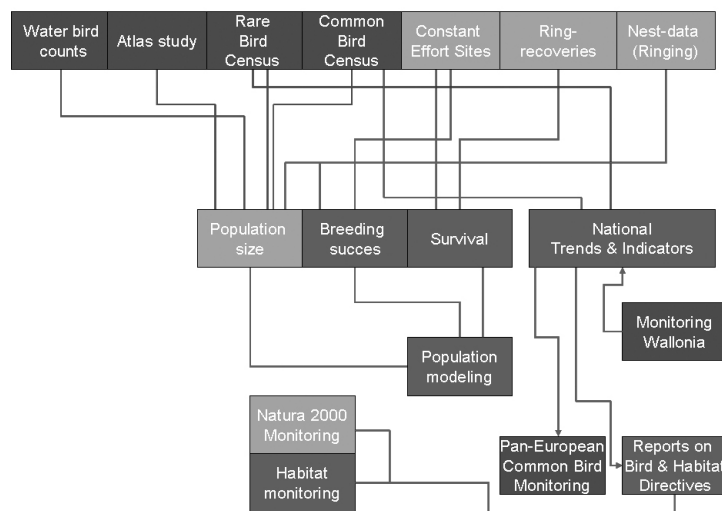


Fig. 2: Integrating existing and future projects

Ringing data are of great value in understanding survival and reproductive success of a number of species. In Belgium, ringing data are collected by the Royal Belgian Institute for Natural Science (KBIN). For some species, long data series are available (e.g. Sparrowhawk, Fig. 3). INBO will try to incorporate some of the data in their forthcoming bird reports.

A very limited number of Belgian bird ringers invest time in a Constant Effort Site (CES) programme. However, the CES-programme has proven to yield very valuable data on survival and reproduction rates of several small passerine species. Therefore plans exist to expand and standardise the CES-sites and efforts in a joint project between INBO and KBIN. In 2006, 5 CES (Constant Effort Sites) were run in Belgium. We aim to establish at least 15 such sites in the near future.

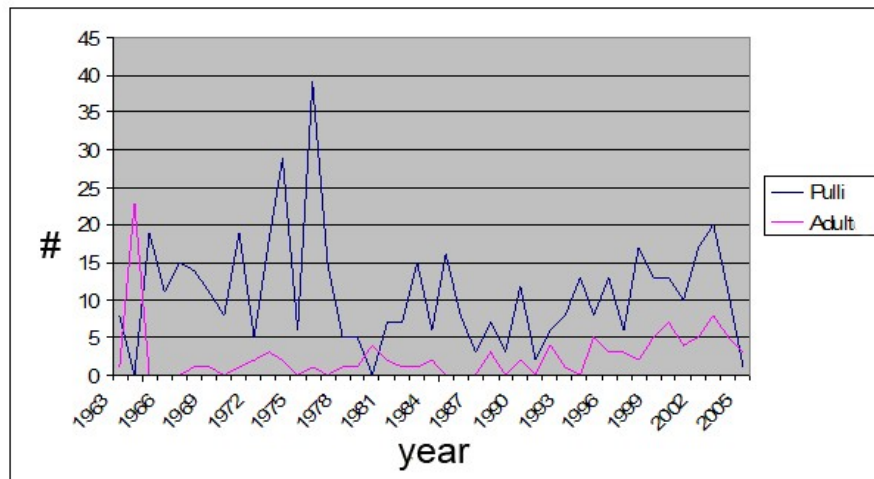


Fig. 3: Overview of ringed Sparrowhawks *Accipiter nisus* in Belgium by KBIN

Several study groups in Flemish universities publish very interesting life history research and effects of global warming based on long data series of several cavity-breeding species like tits, Nuthatches and Pied flycatchers. These data could also be incorporated in future breeding bird reports in order to explain possible trends resulting from the monitoring schemes. Finally, European legislation is a driving force behind the set-up of an integrated system in Flanders. Every member state has to report (every six years) on distribution, trends and future prospects of all species listed on Annex 2 and 4 of the Habitats Directive. Therefore, the Flemish Minister of Environment has declared (integrated) monitoring as one of the prime tasks of INBO.

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