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This Newsletter seeks to be a contact organ to inform the members of the Woodcock and Snipe Specialist Group (WSSG), a research unit of Wetlands International (WI) and of IUCN, the International Union for Conservation of Nature. The subjects of WSSG are species of the genera *Scolopax*, *Gallinago* and *Lymnocryptes* that in several respects differ remarkably from all other wader species. For this reason a separate research unit was established.

CONTENTS Page

Editorial

The present issue of the Woodcock & Snipe Specialist Group Newsletter (number 44) begins with a short photographic report of a mission to Russia, done in September 2018. I was there to participate on the capture and ringing of Woodcock, with Russian and French colleagues. This annual monitoring was initiated by the *Office national de la chasse et de la faune sauvage* (ONCFS, France) for more than 20 years and is particularly important to quantify the annual breeding success in Russia. Sergei Fokin, from the Moscow Woodcock Research Group, presents in this issue an article that includes the results of the ringing, but also data from Woodcock bagged by hunters in the 2018 autumn season. These results suggest a high breeding success in 2018 (80.3% of young among ringed birds).

From Denmark we have an update of the results of the Woodcock hunting season. In the 2017/18 season the bag size was good and the proportion of juveniles showed an increase compared to the previous three years. The news from Denmark are completed by a report that describes an experience of three weeks of Woodcock ringing in the south-western part of Jutland. I hope that the wish of Jacob Nielsen to start an annual ringing scheme will be fulfilled soon.

The Russian colleagues report the results of 20 years of national Woodcock roding census. It concerns mainly the European Russia. The proportion of areas with higher levels of roding intensity seem to be reducing over the past 10 years. They also report the influence of annual fluctuations of weather conditions on the spatial variation of roding intensity. From France, we also have the update of the Woodcock monitoring, that includes, as usual, the results of ringing, monitoring of abundance during the migratory and wintering period (based on ringing and hunting data), and the monitoring of the breeding population based on roding counts. Portugal

Concerning snipes, from Russia, we have an update of the monitoring of Common Snipe breeding populations in the European part of Russia. For a significant part of the study area, the 2018 breeding season was less successful for Snipe than the previous one. The French colleagues also updated the monitoring of the Common Snipe and Jack Snipe, in France, during migration and wintering periods. For both species the 2017-2018 hunting season was not good, with lower abundances. From Italy we also have a report presenting the results of the collection of a small sample of plumages, for both snipe species.

To finish this editorial, I would like to write a few words about a colleague, François Gossmann, who is retiring from ONCFS. François is an important reference to our group and I would like to thank him for all his work with the Woodcock, in France and abroad. Fortunately, François will continue to collaborate with us. He will coordinate a project within our group, which aims to contribute to a better knowledge of the species of *Scolopax* in Indonesia and Philippines (see article in this newsletter). Thank you François!

Best wishes to all.

David Gonçalves
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Mission in Russia - Eurasian Woodcock - September 2018

DAVID GONÇALVES
WSSG Chair

Last September I had the opportunity to be on Russia, participating on the capture and ringing of Woodcock, with Russian and French colleagues. This monitoring was initiated by the *Office national de la chasse et de la faune sauvage* (ONCFS, France) for more than 20 years and is particularly important to quantify the annual breeding success in Russia.

During my stay, from 20 to 30 September, we captured near Moscow (in an area of mixed forest), for one night, and in the region of Vologda (a zone of middle Taiga), the other nights.

In the present newsletter you can find an article from Sergei Fokin that presents the results of all the 2018 ringing campaign and the complementary information collected from Woodcock bagged by hunters in the same autumn season.

For me it was a great experience. I had the opportunity to prospect during the day some of the Woodcock nocturnal and diurnal habitats in Vologda region. Here we had some difficulties to find optimal open areas to have Woodcock feeding at night. It seemed to be a consequence of relative lack of moisture and the missing grazing effect by cattle, that, since 2008, is mainly kept on stables and did not go out during all the year.

Preparing the equipment (left; François Gossmann and Cyril Manos) and the first Woodcock captured near Moscow (right; François Gossmann and Petr Zverev). Photos: D. Gonçalves.

Searching for signals of the presence of Woodcock (left; Denis Barret, Mikhail, Sergei Fokin and François Gossmann), like the one on the right photo; Vologda region. Photos: D. Gonçalves.

The cattle on stables (right photo taken close to the visible entry in left photo); Vologda region. Photos: D. Gonçalves.

Landscape (Vologda region). Photo: D. Gonçalves.

Discussing what fields to visit at night to capture Woodcock (left; Gleb Krylov and Sergei Fokin), like this one (right; Gleb Krylov and François Gossmann); Vologda region. Photos: D. Gonçalves.

Into the Taiga forest (Vologda region). Photo: D. Gonçalves.

With Sergei, Denis et François. Photo: G. Krylov.

I would like to remember the importance of collecting this kind of data from one of the most important breeding areas for Woodcock, and how much the stability of the entire Woodcock population in the Western Palearctic depends on what happens in Russia. Finally, I would like to thanks François Gossmann, the ONCFS and the Russian team, for allowing me this opportunity. It was a great pleasure to be with you and follow you in the fields. Thanks to Petr and Vera for their hospitality.

Knowing better the species of *Scolopax* in Indonesia and Philippines - a project for the WSSG

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There are five species of the genus *Scolopax* in Indonesia and the Philippines*: Scolopax saturata, S. rochussenii, S. rosenbergii, S. celebensis, S. bukidnonensis*. But little has been done to study them. Some may already be in great danger and it is urgent to act to at least know the evolution of their conservation status. There is indeed a real issue of knowledge, in monitoring, for these different species. Their habitats are often threatened, their range very small. Their conservation status therefore seems particularly precarious.

The Woodcock and Snipe Specialist Group (WSSG), our group, should contribute to the advancement in knowledge, to give light on the issues to study in priority for these species.

Beyond these woodcocks, are unique habitats, threatened by upheavals linked to different uses of the forest by human activities. Also cohorts of species that can suffer from this rapid degradation.

We propose to gather the maximum of data, of information, various articles making mention of these species, old and recent information.

List also resource persons in these different regions of Indonesia and the Philippines: naturalists, biologists, nature guards, etc. Collect their contact information in order to contact them.

There have been different scientific expeditions in recent years, especially to search for or confirm the existence of new species. The biologists, the organizers of these expeditions, can also be contacted to obtain more general information.

This first step being carried out, one or more expeditions could be carried out in a second time, in order to have new data on these species: expeditions to Celebes, Molluks, Papua New Guinea... The possibility to fit into a more general research expedition with other biological interests could be considered even desirable.

We therefore call on the members of the WSSG so that they can come forward to us for their interest in setting up this program. In a first phase, the transmission of information about these different species will allow to make an initial assessment of the knowledge as well as of all the existing sources of information.

Please contact me if you are interested.

François Gossmann

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Woodcock hunting in Denmark 2017/18, and notes on ringing in 2018

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Total bag and wing survey data

The Woodcock hunting season in Denmark is 1 October to 31 January, and has been unchanged since 2011. Hunting is not restricted by daily bag limits or specific days of hunting, and Woodcock may be hunted from sun up to sun set. At the end of the season all hunters have to report their personal bag to the official Bag Record, but may also, on a voluntary basis, contribute to the Danish Wing Survey, by sending in one wing from each bagged Woodcock. Both the Bag Record and the Wing Survey are administered by the Danish Centre for Environment and Energy/University of Aarhus, Denmark (see on-line data at http://fauna.au.dk/en/).

In the hunting season 2017/18 a preliminary total of 45,190 Woodcock has been reported at the end of the season (June 2018). Reporting for the 2017/18 season can continue until 31 March 2019, but the overall figure is only expected to change slightly. For the hunting season 2016/17, the change in the preliminary to the final reported bag total was small, increasing from 38,789 to 39,117 Woodcock. A change of similar size can be expected for the 2017/18 hunting season.

Compared to previous years, the Woodcock bag size was markedly higher in 2017/18 than the average since 2011 and for most of the years dating back to 1941/42 (see Figure 1). Only the years 2007/08 to 2009/10 have had a higher total bag of Woodcock than recorded in 2017/18. Since Denmark only holds a breeding population of Woodcock of around 2,000 pairs, the vast majority of birds bagged in Denmark are staging and wintering migrants originating from breeding areas in northern Scandinavia and European Russia.

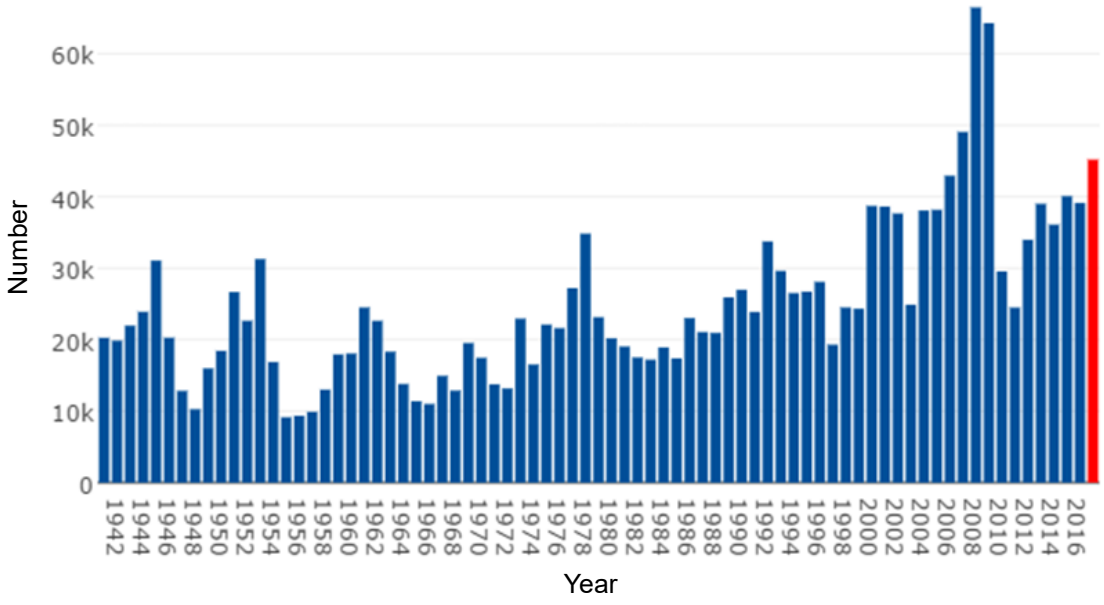

Figure 1. Number of Woodcock (in thousands) bagged by hunters in Denmark during the period 1941 to 2017. The number reported in 2017 is preliminary, as reporting for this season is possible until March 2019.

During the 2017/18 hunting season a total of 977 Woodcock wings were received by the Danish Wing Survey (Christensen 2018). As all wings are labelled with specific harvest date and exact location, they provide information of the seasonal and geographical distribution of the Woodcock bag. Based on plumage characteristics all wings are determined to the age class (adult and juvenile), and this provides both an age specific temporal distribution and an annual index of reproductive success, expressed as the number of juveniles per adult bird.

The geographical distribution of bagged Woodcock in Denmark 2017/18 follows the usual pattern, with the majority being bagged in the western part of the country (Figure 2). In this area, bordering the North Sea, migrating Woodcocks are frequently found in high numbers making (forced) stops before crossing the water to the wintering areas in Great Britain. In 2017/18 the temporal occurrence of Woodcocks in Denmark showed highest numbers throughout November, a pattern that deviate slightly from the long term average showing a single peak in early November, and which corroborate the long term trend of increasing numbers of Woodcock occurring later in the autumn/early winter in Denmark (cf. Christensen & Asferg 2013).

In the hunting season 2017/18 the number of juvenile per adult was 1.5, showing an increase compared to the previous three years. In consequence, the juvenile-adult ratio is close to the average of 1.4 juv/adult since 2002/03, which, however, is still markedly lower than the average of 2.1 juv/adult recorded during the period 1985/86-2001/02. The monthly juvenile/adult ratio showed an exceptionally constant ratio of 60% juveniles in all month (Figure 3). In most years, the juvenile ratio generally is somewhat higher in October.

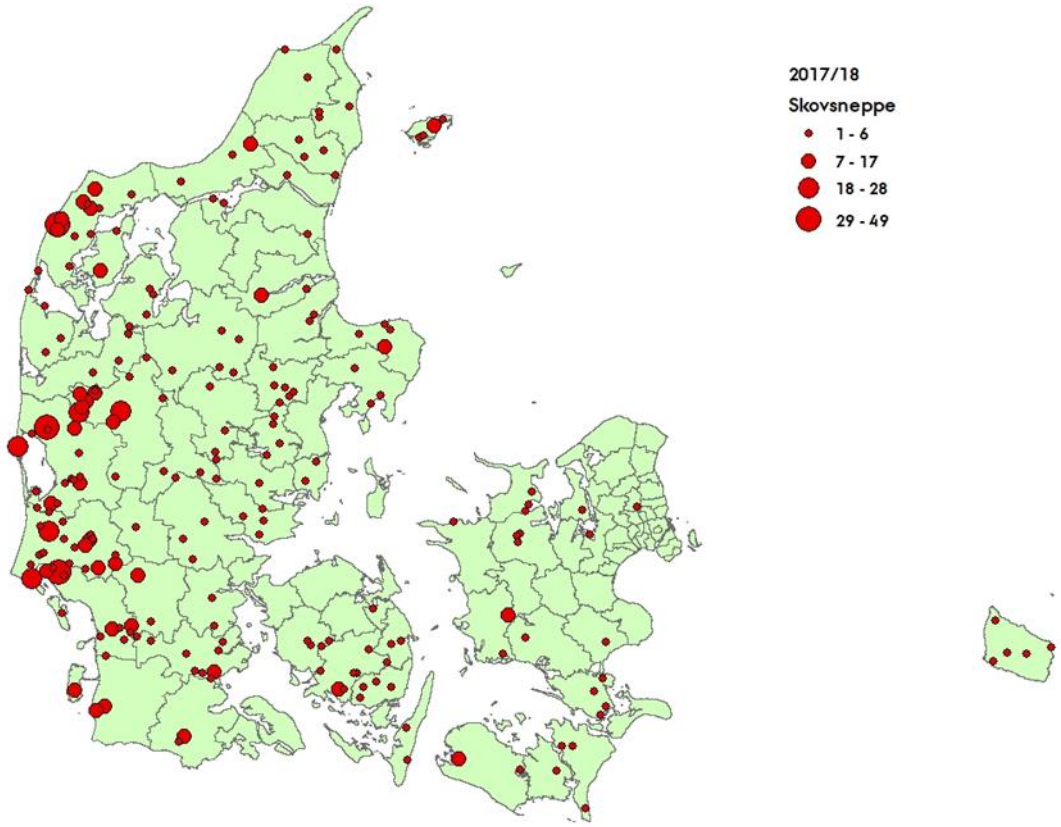

Figure 2. The geographical distribution of 977 wings from Woodcock received during the hunting season 2017/18.

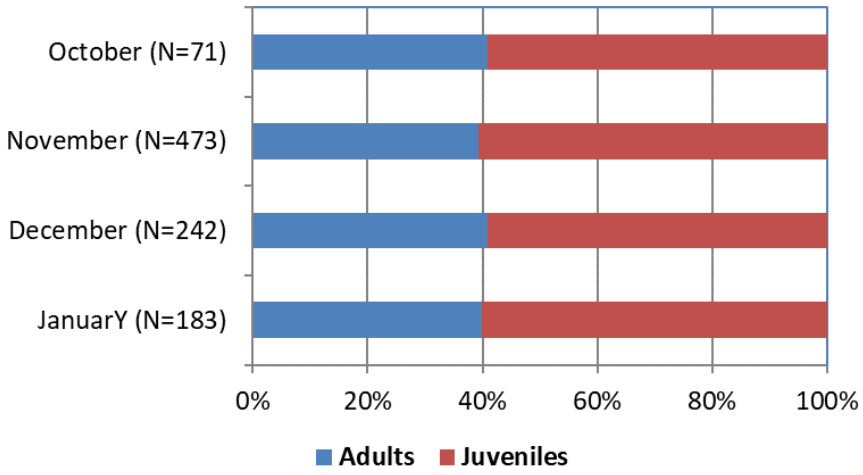

Figure 3. The monthly age composition of Woodcock wings during the hunting season 2017/18. The number of wings is shown.

Notes on ringing activities of Woodcock in 2018 - by Jacob Coleman Nielsen (jcn@bios.au.dk)

There is no specific ringing scheme on the Woodcock in Denmark, although some Woodcock are ringed during general ringing schemes set up for capturing migrating birds. There is also no activity related to capture and ringing Woodcock breeding in Denmark.

This November I spend three weeks every night capturing and ringing Woodcock at a well-known staging area in the south-western part of Jutland – the main peninsula of Denmark. I used lamp and net, dazzling, capturing and ringing near to 60 Woodcock. The age ratio was approximately one to four (adult/juvenile). To begin with, the capture per unit of effort (CPUE) was two to three hours, but soon lowered to one hour or less, as soon as I mastered the technique and understood the behaviour of the feeding woodcocks better. I had a capture success rate of 25% in the end, meaning that I would capture every fourth woodcock that I made a capture attempt on. Which also means that my CPUE of one hour or less required an area where I on average would spot one Woodcock with my lamp every 15 minute. I experimented with the use of a thermal monocular one night, which lowered the amount of meters I traversed, but not the CPUE. The recovery rate of Woodcock ringed in Denmark has historically been approximately 13% (Bønløkke et al. 2006). Combining this recovery rate with my CPUE, in a prime staging area, amounts to roughly, one recovery per eight hour worked in the dark. During the hours spent, I also ringed nine common snipes, four golden plovers and two lapwings.

I was never alone in the dark, experiencing an array of the Danish wildlife, with the red deer keeping me company almost every night, and with the occasionally roar of the odd stag in late rutting.

My ambition is to start an annual ringing scheme drawing on volunteers from the shooting and bird ringing community. Moreover, the hope is to start a monitoring and study scheme on breeding woodcocks in Denmark involving GPS or other tagging methods. All inspired by the work done and pioneered in England and France. It is very clear to me that we know very little of our breeding woodcocks here in Denmark - a total of 1,844 woodcocks have been ringed in the period 1921-2002, of which less than 10 have been ringed during the breeding season (Bønløkke et al. 2006).

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The results of the 20 years of national roding census

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Introduction

The National Woodcock roding census has been hold since 1999 at a nesting area of the species. The nesting area is a forest area located in the European Russia primarily (Fokin & Blokhin 2006, 2013 and others). The roding census has been organized by the *State Information-Analytical Center of Game Animals and Habitats* and the *«Woodcock» group*. About 3000 forms were sent by the «*Rosokhotrybolovsoyuz*» *Association* every year. Since 2016 many authorities of Russian regions have been participating in a wide organization of the roding census also. That allowed to double the returned forms from private hunting husbandries, special nature reserves, public hunting areas and others. 280,329 contacts with Woodcock were registered at 37,295 points (one returned form – one observer) in 43 Russian regions for 20 years. The main purpose was an analysis of the roding intensity for long-term changes within status monitoring of the most popular wader hunting species. Here we examine the presence and the roding intensity that they are linked with Woodcock number in the regions (Kuzyakin, 1999, 2000 *et. al*.).

Material & Methods

Details on the organization and the methods used for the roding census were described earlier (Fokin *et.al*. 2000 and others). In the last years we discarded some of the returned forms due to non-compliance with certain aspects of the protocol. Therefore, we conducted an analysis that allows us to say how positively this selection affected the data quality of the roding census. In first period variableness of the roding census data is higher than the data after the selection, which improved the data quality in second period and reduced the properties of the variableness. Statistical processing of the roding census data was done using Statistica 10 software (StatSoft, Inc 2018). Accuracy of the roding census data from other sources was compared with data collected by the «Woodcock» group in the period May-June from 2000 to 2008 (Fokin *et. al*. 2001; Blokhin 2005, 2014). Between the two data sets there is a strong positive correlation in the mean number of contacts. Also we compared the mean number of contacts and the air temperature at night (NASA GES DISC) by Russian regions since 27 May to 11 June in different years. Warm and cold periods were counted by 5.5°C temperature limit for Woodcock. The periods were assigned to the roding census properties. Statistical analysis tested correlations between the long-term periods and the roding census properties. Woodcock distribution maps of the mean number of contacts with Woodcock (roding intensity) were generated by geostatistical kriging method (Surfer Version 11.6.1159; Golden Software, Inc 2018), which we used for connection analysis air temperature at night with the mean number of contacts and Woodcock distribution (Blokhin & Artemenkov in press). In this study the mean number of contacts were bound to geographical centers of the regions in the European Russia (Figure 1).

Results & Discussion

We analysed absolute values of contacts with roding Woodcock for two hours of the roding census in the European Russia, by provinces and regions. Roding intensity was variable, from 6.1 ± 0.1 (2014) to 9.8 ± 0.1 (1999) contacts on the average (± standard error). Areas of high roding intensity (with high mean number of contacts) are optimum areas of Woodcock distribution – some regions in the North, North-West and Center of the European Russia. In the census periods low roding intensity is typical for all South and North-East regions (Figure 1). Maps of Woodcock distribution were built considering the mean number of contacts in the roding census period 1999-2018. We grouped regions by roding intensity (<3.1; 3.1-6.0; 6.1-9.0; >9.0); these groups present differences compared to our previous articles (Blokhin & Fokin 2006, 2014). Considering two periods of ten years, our results show that areas with high roding intensity (>9.0 contacts) reduced greatly in the second period (Figure 1). Over the past 20 years the proportion of areas with "medium" roding (6.1-9.0 contacts) has remained relatively stable, between 37.6-40.0% in all regions. At the same period the proportion of "good" roding areas reduced almost by half – from 36.2 to 18.3%; then proportion of "low" (3.1-6.0 contacts) and "very low" (<3.1 contacts) roding areas increased almost two times –from 23.7 to 44.1%. The spatial gradual changes in the proportion of areas with intense and weak roding for the 20-year period is presented in Figure 2. In 2018 the proportion of "good" roding areas reached minimum value for all the roding census period – 7.7% (n = 39).

In different years the maximum number of contacts were noted for 13 provinces at the census season. In Karelia the highest roding intensity reached 64 contacts for the two hours of the census in 2011 (Blokhin & Fokin 2014) and 58 contacts in 2015. The corresponding points were located in provinces with "low" (Lipetsk province) and "good" roding areas (Kaliningrad, Tver and Chelyabinsk provinces), but the majority of the points presented "medium" roding level (Vologda, Leningrad, Yaroslavl, Perm, Chuvashia provinces and others). In the European Russia, over the past 20 years there is a decreasing trend in the roding census properties (R^2=0.75 for maximum, R^2=0.72 for mean). The lowest value, ever registered, for the maximum number of contacts, was observed in 2014, and corresponds to 24 contacts. It was registered in three provinces (Vologda, Leningrad, Yaroslavl).

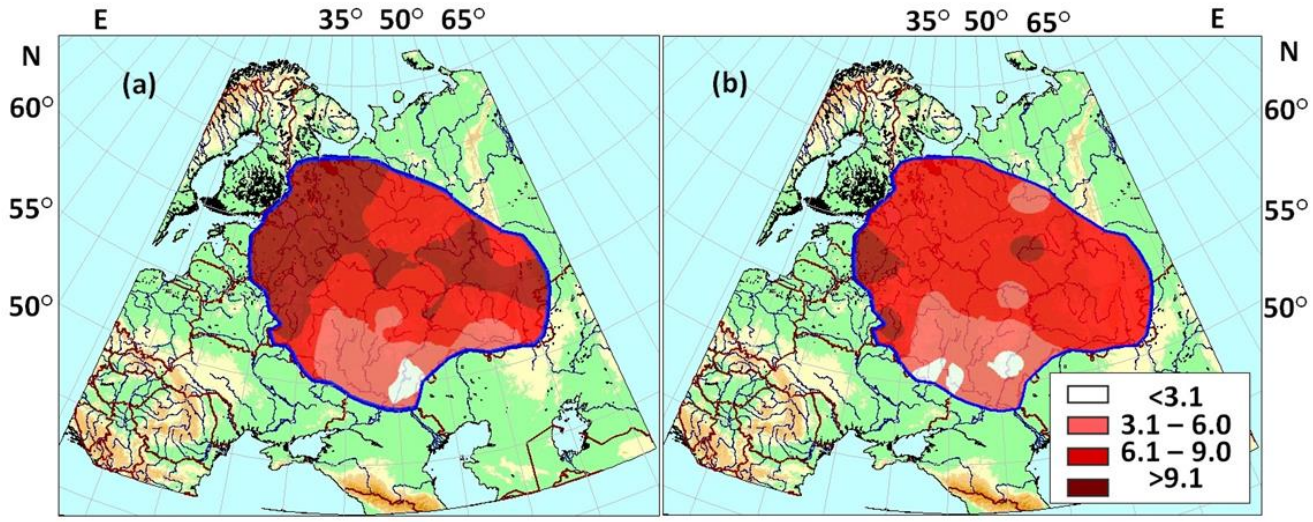

Figure 1. The spatial distribution of Woodcock roding intensity (classes of the mean number of contacts) in the European Russia (on the areas of the National Roding census) for the two 10-year periods: 1999-2008 (a) and 2009-2018 (b). Roding intensity classes: >9.0 contacts (high), 6.1-9.0 contacts (medium); 3.1-6.0 contacts (low); <3.1 contacts (very low).

At Figure 3 percent differences are shown to maximum (95% percentile), mean (mean number of contacts) and zero (0 contacts) roding intensity areas (Figure 3). A change in the 95% percentile shows better the dynamics of high roding intensity than the absolute maximum values. The 95% percentile is the most frequent value of the end distribution data (from 95% to 100%).

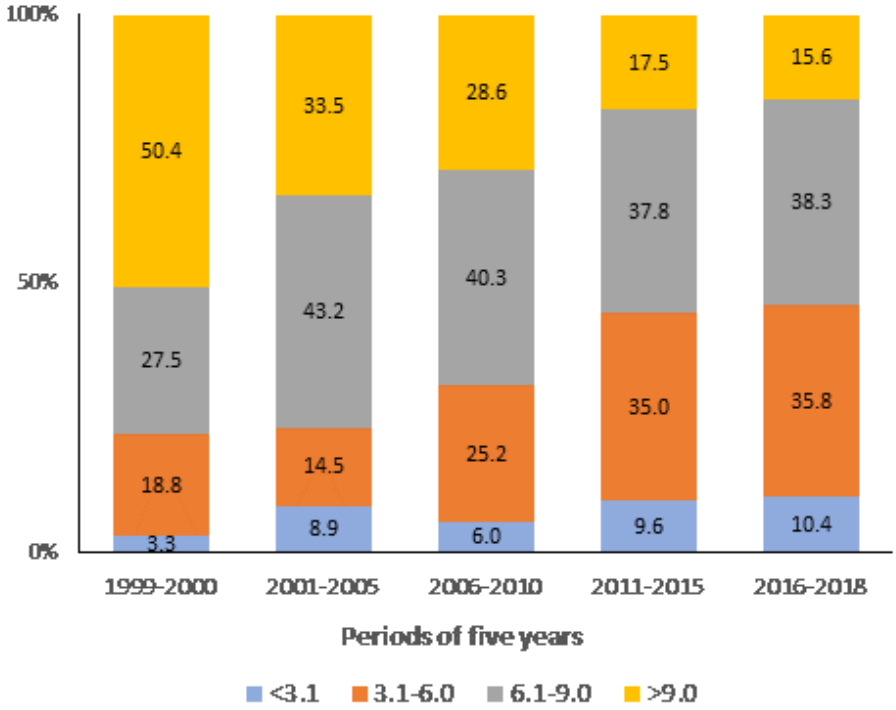

Figure 2. Variation on the proportion of the different roding intensity classes (mean number of contacts, for five years' periods since 1999. Roding intensity classes: >9.0 contacts (high), 6.1-9.0 contacts (medium); 3.1-6.0 contacts (low); <3.1 contacts (very low).

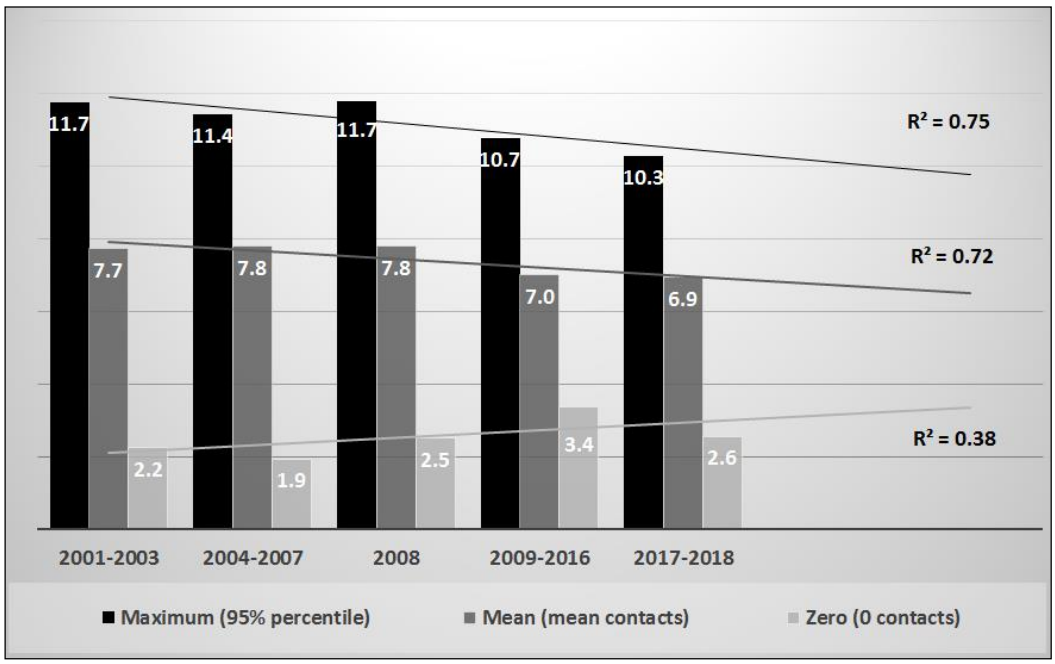

Figure 3. The area ratios of the European Russia with different roding intensity for "warm" (1999-2000, 2004-2007, 2009-2016) and "cold" (2001-2003, 2008, 2017-2018) long-term periods since 1999.

Regional singularities on the Woodcock distribution is connected to the dynamic redistribution of nesting birds at big areas and to the weather conditions observed in spring and summer. The fluctuations observed on the mean number of contacts shows a decreasing trend for regions and in the whole European Russia over the past 10 years (Figure 3, 4). Because areas with high roding intensity are related to temperature isotherm 2 – 9 °C (Blokhin & Artemenkov in press), values of air temperature at night of the census years were compared to mean number of contacts (5.5±0.5 °C). In some periods ("warm") this isotherm was located higher: 1999-2000, 2004-2007, 2009-2016. In other periods ("cold") it was located lower: 2001-2003, 2008, 2017-2018.

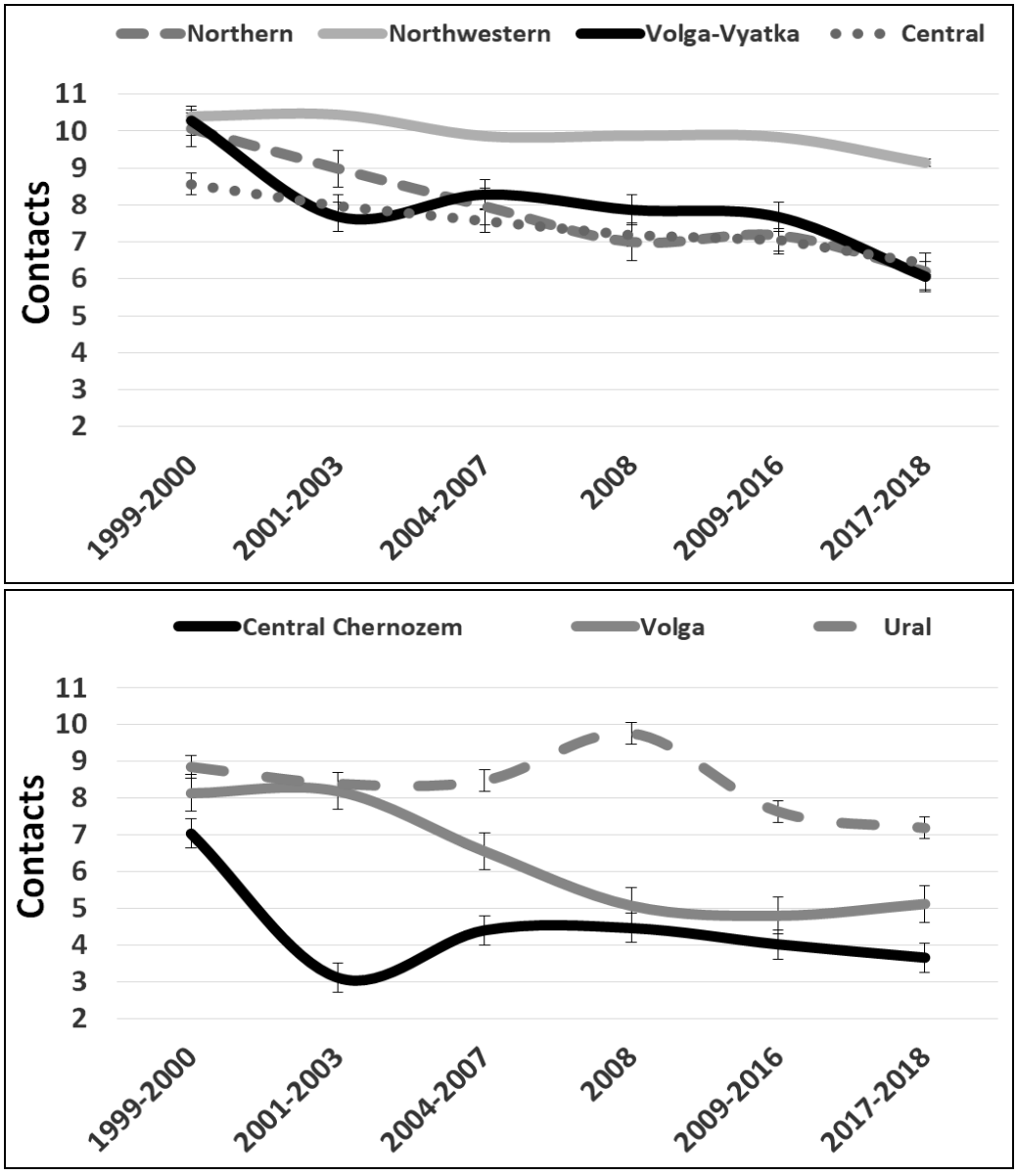

Figure 4. Variation of the roding intensity (mean number of contacts ± standard error) by "warm" (1999-2000, 2004-2007, 2009-2016) and "cold" (2001-2003, 2008, 2017-2018) periods for the regions of the European Russia.

Considering the whole roding census sampling period (1999-2018) the air temperature at night and the mean number of contacts are positively correlated (0.3 – 0.5) for Northern, Northwestern, Central and Volga-Vyatka regions and low negatively correlated (0.0 – 0.1) for Central Chernozem (Central Black Earth), Volga and Ural regions. If we consider only data of the second period (2008–2018), when returned forms not properly filled were discarded, the correlations between air temperature at night and mean number of contacts become stronger positive (0.5 – 0.7) for Northern, Northwestern, Central and Volga-Vyatka regions and stronger negative (0.3 – 1.0) for the Volga and Ural regions. Therefore, in "warm" periods high roding intensity (or larger Woodcock population) was noted for regions of Northern, Northwestern, Central and Volga-Vyatka regions; in the "cold" periods a tendency to higher roding intensity was observed for the southern regions of Volga and Ural. Therefore, the Woodcock breeding population seem to redistribute annually, across the nesting area of the European Russia provinces, influenced by the weather conditions.

Considering all the census points, the frequency of the result zero of roding intensity varied from 1.3% in 2006 to 4.2% in 2012. The percentage of provinces with zero roding intensity reached 60.5% in 2018, haven't been higher than 25.0 – 48.4%. Variation along years on the frequency of zero roding intensity demonstrates a positive trend and mean roding intensity presented a negative trend, perhaps following negative processes into nesting Woodcock population or wider intrapopulation changes (Figure 3, 4). The first XXI century roding monitoring census have shown the stable status of the Woodcock breeding population in the European Russia (Blokhin & Fokin 2014 and others), but over the past 10 years a negative trend started showing at the edge and in the optimum species area distribution. At large areas weather conditions during the monitoring period affect the results of the census. Due to the redistribution of the Woodcock population within the breeding area, against the background of weather fluctuations, in the "warm" periods zones of high roding intensity were more often detected in the central and more northern regions, and in the "cold" periods in the more southern regions.

At large areas the roding census seem to point to a decrease on the e Woodcock breeding population over the last years. At the same time, the autumn censuses of the Woodcock during night ringing does not show a decrease in numbers. Moreover, there may even be an increase in the number of nesting Woodcock populations in Russia due to the increase in the area of young forests attractive to the species over the past 30 years (Gossmann et all, 2017). The success of reproduction and survival of the Woodcock, although changing over the years, but has no trend to decline (Vysotsky, 2016). The process has on the background a very high hunting mortality in Europe (Ferrand and Gossmann, 2009). In the European Russia the monitoring of the Woodcock status should continue, using different methodologies (the roding census, an autumn census at a ringing time, the ringing results, a census of hunting bags), to estimate the trend of the Woodcock population. The studies are necessary to define management measures of precautionary and sustainable Woodcock exploitation.

Acknowledgements

We express our thanks to all participants of the National Woodcock roding census, their numerous local organizers and direct performers - hunters, employees of hunting, nature lovers and others. For many years the study has been developed in close cooperation with the *Office national de la chasse et de la faune sauvage* (ONCFS, France).

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Ringing and wing collection of Woodcock in Russia in autumn 2018

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Ringing

In autumn 2018, the Moscow research group "Woodcock" has organized expeditions to capture and ring Woodcock and register other observations of autumn Woodcock migration in six regions of Russia: Moscow, Vladimir, Ivanovo, Tver, Vologda and Kostroma.

Five European Woodcock specialists participated in the expeditions: Francois Gossmann, Damian Coreau - Office National de La Chasse et de La Faune Sauvage (ONCFS); Cyrill Manos, Denis Barret - Hunting Federation of France and David Gonçalves - Chair of the Woodcock and Snipe Specialist Group (WSSG). Thirteen Russian ornithologists-ringers took part in these researches. In addition, we were assisted by gamekeepers and local collaborators.

The expeditions were conducted according to scientific donation agreement between ONCFS and BirdRussia ("Woodcock" project) and also with equipment and financial help by the Hunting Association of the Department of Isere (France).

The field work took place between 16.09 and 28.10. The international expedition in the Vologda region, Vologda and Kirillov districts (around 100-130 km N-W from Vologda), in typical European Russian middle taiga zone, lasted from 22.09 to 9.10, in 14 different sites near the villages of Peski, Matveevskoe, Podol, Rukino, Otekleevo, Stepanovo and some nearest villages. Three night trips were conducted to the big field in National Park near village Nikolsky Torzhok in Kirilovsky district.

The general results of ringing in 2018:

Number of regions - 6
Number of ringer's teams - 9
Number of sites - 35
Number of ringers - 18
Number of night trips - 149
Number of contacts with Woodcock- 1083
Number of ringed Woodcock - 299
Number of recaptures at this season - 14
Number of indirect recaptures - 0
Capture success - 29,0 %
Adults- 59
Young - 240
Young Early Broods - 120
Young Late Broods - 118
Young undetermined - 2
Proportion of young - 80,3 %
Proportion among young: early broods - 50,4 %, late broods- 49,6 %

Results of night censuses and capturing are present in the Table 1.

In addition, during all the expeditions, it was also ringed: Common Snipe - 6, Jack snipe - 1, Great Snipe - 1, Golden plover - 2, Corncrake - 1.

The age ratio - percentage of young - among Woodcock captured varied between regions (Table 2).

These results suggest, on the one hand, the high breeding success this year, and on the other hand, good weather and feeding conditions for late broods. We can see that the percentage of young Woodcock as a whole was high in all regions where the ringing was carried out, except the Vologda region. Among the young, the proportion of birds from later broods was higher in the Vladimir, Ivanovo, Tver and North Kostroma. This can be explained by the peculiarities of weather conditions, which is confirmed by data from weather stations.

Table 1. Night censuses and ringing results in Russia by Moscow Woodcock group in autumn 2018

Region	Time spent searching with projector (min.)	Total number of contacts	Average contacts/hour (IAN)	Number of Woodcock ringed	Number of Woodcock recaptured
Kostroma, Susanino	2,160	159	4.4	60	6
Kostroma, Kologrive	6,190	294	2.9	63	3
Vologda	5,870	255	2.6	59	4
Tver’	4,180	68	1.0	25	-
Ivanovo	6,190	145	1.6	60	1
Moscow	4,320	100	1.4	15	-
Vladimir	2,670	57	1.3	14	-
Total	31,580	1 078	2.05	299 *	14

* including 3 other Woodcock were ringed (1 in Novgorod and 2 in Moscow Zoo and released in Kaluga oblast)

Table 2. Age ratio (percentage of young) among Woodcock captured in different regions.

Region	% of young	Among young		Total number of birds
		% of young early brood	% of young late brood	
Kostroma, Susanino	78,3	83,0	17,0	60
Kostroma, Kologrive	82,5	40,4	59,6	63
Vologda	67,8	57,5	42,5	59
Tver’	84,0	45,0	55,0	25
Ivanovo	85,0	25,5	74,5	60
Moscow	86,7	76,9	23,1	15
Vladimir	92,8	30,8	69,2	14

For example, in Vladimir region during the breeding season, the weather conditions of spring and summer were generally within normal limits. The weather in April was favourable for nesting. There were no sharp cold snows (except for a short period of April 22-23). May turned out to be warm and sunny without the usual periods of cold spell with snow. Short rains were replaced by warm clear weather. However, May and June were very dry: in May fell 56% of normal precipitation, and in June - only 29%. After that, July was very favourable for broods: there was "tropical" weather - the heat alternated with almost daily rains. Precipitation fell 202% of normal. The same weather occurred in other regions (Ivanovo, Tver’, Kostroma), but not in Vologda.

On the other hand, in autumn (September-October) during migration the most favourable conditions for feeding Woodcock (wet rainy weather) was observed in Vologda, something worse in Kostroma regions, and not so good in other regions, where it was drier. In Vologda the precipitation fell 84 mm (150 % of normal) in September and 61 mm (122%) in October. In Kostroma – 75 mm (123%) and 47 mm (73%) accordingly. In Vladimir region - 50 mm (96%) in September and only 39 mm (64%) in October. The number of Woodcock in open habitats at night (IAN) was higher in Vologda and Kostroma regions.

Of course, IAN is more dependent on the quality of open habitats. The most optimal places (long-term pastures) were found in the Kostroma region. In the Vologda region night feeding of Woodcock is timed to hayfields. Since 2008, the cattle in Vologda region were transferred to the stables and did not go out to graze. Fields are seeded with forage grasses, mostly clover. In June-July, the clover is mowed and by the time of the beginning of the

ringing works the young grass grows in the fields. Such places are not optimal for feeding Woodcock, birds are dispersed in open habitats, on the small roads, do not form large groups, their search is difficult.

In the Ivanovo and Tver' regions (in our study areas) extensive hayfields and pastures mainly attract only migrating Woodcock, obviously due to the low number of local nesting populations. In the Vladimir region there is a catastrophic decrease in open habitats (pastures and hayfields), which are quickly overgrown with grass and forest.

2. Collection of information on the age structure of Woodcock bagged by hunters in the autumn season - 2018

To estimate the age structure of the Woodcock population and its breeding success, we determined the age of Woodcock captured for ringing and shot by hunters. We organized a collection of photos of the wings. For each Woodcock bagged we asked the hunter to take pictures from one wing, from the upper part and the under part, and send it by e-mail to our group. The information on how to get the photos was made available through the websites as well as published in the "Russian hunting newspaper".

We received information from 24 hunters who shot Woodcock in Moscow, Ivanovo, Yaroslavl, Vladimir, Vologda, Ryazan, Smolensk, Kirov and Leningrad regions, and in the Republics of Mordovia, Tatarstan and Crimea. Such a small number of hunters who sent information is due to the unpopularity of autumn Woodcock hunting in Central Russia, as well as the passivity of true fans of this hunt and even the reluctance to help scientists.

We received photos from 98 Woodcock. The age was determined by the analysis of feathers of the wing, in collaboration with the French specialist from the ONCFS, Francois Gossmann, for whom hunters' messages were automatically forwarded. Of the 98 Woodcocks 41 were identified as adults, 57 as young, including 25 from early brood and 28 from late brood and 4 young without details due to poor photo quality. Thus, the percentage of young among bagged birds was 58.2%, which is significantly less than the value obtained with night captures for ringing, 80.3%. Young from late broods made up 52,8% of the total number of young with type of brood determined, that is, about the same value as that obtained with the night captures (49.6%).

The large proportion of adult Woodcock in shooting can be explained by the peculiarities of the autumn migration. Young Woodcock are the first to disappear from Central Russian area, and old birds fly away later, sometimes until the beginning of November. We noted that the proportion of adults increases dramatically from 10 October. Additionally, Russian hunters prefer to hunt Woodcock when the leaves fall from the trees, which makes it easier to hunt (clearly seen a pointing dog's works) and shooting. In Central Russia, massive leaf fall this year happened on 15-20 October, almost a week later than usual.

The earliest photo came from a hunter who bagged a Woodcock September 21, in the South of the Moscow region, and the latest also from him and from the same place – November 5. In Central Russia, 48 of 78 Woodcock were bagged before October 10. Among them, the young accounted for 62.5%. After October 10, 30 Woodcock were bagged, including only 33.3% of young. Perhaps due to different weather conditions on spring and summer, in different regions, the success of reproduction of Woodcock differed significantly among them. For example, among birds shot in Tatarstan (n=15) 86.6% were young, but the small sample does not allow making general conclusions on this region.

Among the 14 Woodcock bagged in the Crimea in November, the young accounted for 57.1%, but the Crimea can already be considered a wintering area.

In General, we can conclude that the Woodcock breeding season in Russia as a whole was successful, and its autumn population during migration remains generally stable and even slightly higher than in previous years, which confirms the high average index of night contacts per hour (IAN=2, 05), the highest in the last four autumn seasons (2015 - 1.54, 2016 - 1.35, 2017-1.60). At the same time, it varied considerably by regions under study.

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Summary

The results of woodcock ringing in autumn 2018 by the Moscow scientific group "Woodcock" are presented. Nine teams (18 ringers) worked in 6 regions on 35 sites. 1083 Woodcock were discovered with a projector during 149 night trips; 299 were ringed and 14 recaptured. The percentage of young among the birds captured was 80.3%, which indicates an overall high breeding success. The average index of night contacts per hour (IAN) was 2.05, the highest in the last 4 autumn seasons. We implemented a scheme to collect photos from the wings of Woodcock shot by hunters in the autumn 2018. We received photos of 92 Woodcocks, from 12 Russian regions. The age of birds was determined by the observation of the wing plumage. The percentage of young was 54.3%, which is significantly less than the value obtained in captures during ringing. An explanation for this phenomenon is given. Young from late broods made up 48% of the total number of young, that is, about the same as in the captures during ringing (49.6%).

A field where some Woodcock were captured at night - Vologda region, September 2018; Photo: D. Gonçalves.

2018 European Russia Common Snipe report

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In 2018, the cooperation between Russian Society for Conservation and Studies of Birds and *Office national de la chasse et de la faune sauvage* (ONCFS) concerning the monitoring of Common Snipe (*Gallinago gallinago*) populations in European Russia has been continued. In April–July 2018, the census of "drumming" males of Snipe was made at the same control sites and with the same protocol as in 2012 (Blokhin 2012). They were conducted on the territory of 12 Provinces/Republics of the Russian Federation. Totally, in 2018, 135 plots were visited corresponding to a total area of 104.66 km^2.

Weather conditions of the 2018 season

North region

South tundra and forest-tundra. The winter was unusually snowy, so tundra was covered with deep snow in early June. At this time, the snow in the southern forest-tundra was completely gone in open areas. As in 2017, the spring was late and cold. Slow snowmelt and later opening of rivers led to prolonged flooding, so the river valleys were flooded until the end of June. The first half of summer was dry and hot, so many ponds and swamps dried out.

North taiga. Spring was late. By mid-May, there was a lot of snow in the forest (up to 60 cm). After a sharp warming and friendly snowmelt swamps were filled with water. The snow melted in the third decade of May. The flood on the rivers began in mid-May and was high. In June-early July, it rained at times. The water level in bogs outside the floodplains was low, below that of the last year. Watering and hydration of wetlands in the census period were medium, or low in the interfluves and high in the floodplains.

Middle taiga. Spring 2018 has been pretty cool, but within average temperatures over the last 20 years. The snow was a little less than usual. Precipitation in April was in the normal range. The flood was high. By the end of April, the soil was very wet. May and June were unusually dry and many habitats of Snipe dried up.

North-West region

South taiga. The winter was with little snow, and spring with average moisture regime. There was more water on swamps and rivers than last year.

Central region

South taiga. In the West of the south taiga subzone, the spring was average in moisture, but abnormally hot and dry weather led to the fact that in June the peat bogs dried up significantly. In the East of the subzone spring was friendly and warm, with little rainfall. Since the end of the first decade of April there was a long, but not very high flood. Almost all of the habitat of the Snipe was normally hydrated.

Mixed coniferous-broadleaved forest. Spring was late. In late March there was still a lot of snow. Sharp warming in early April had caused heavy snowmelt, and by the middle of the month the snow was completely gone. The flood was medium (rivers Dubna, Volga) or high (rivers Klyazma, Oka). The moisture of habitats of Snipe in spring was high (as in 2017). The weather in April and May was without cold snap and was favourable for Snipe breeding. June and July were moderately warm with regular rains.

Broad-leaved forest. The spring was long and cold. Due to the melting of a large amount of snow, the flood was high, but short-term. The peak of the flood and its rapid decline occurred in the second decade of April. By early May, some part of floodplain meadows has already dried out, but temporary ponds remained in some places.

Volgo-Vyatsky region

Mixed coniferous-broadleaved forest. Spring was late. The flood was high, in floodplains puddles remained for a long time. In the swamps, the moisture was higher than last year.

Volga region

Broad-leaved forests. Spring was late. April and early May were very wet. All habitats of Snipe were strongly wet.

Central Black Earth region

Broad-leaved forest and forest-steppe. The winter was snowy, the spring was late and rapid. The flood began late, only in early April. The water level in floodplain meadows was 0.5 m higher than last year, and the bogginess of river floodplains increased.

Results & discussion

South tundra

In the basin of Pechora in the north-east of Bolshezemelskaya tundra (Komi Republic) at watersheds Snipe inhabits flat-hilly bogs with willow bushes (6.3 ± 1.4 pairs/km^2) and open fens at flood-lands (3.3 pairs/km^2).

Forest-tundra

In the basin of Pechora in the south-east of Bolshezemelskaya tundra (Komi Republic) at watershed big-hilly bogs, Snipe was rarer (8.7 ± 4.4 pairs/km^2), than at valleys and river flood-lands (6.7 pairs/km^2).

The spring of 2018 reminded the spring of 2017. In spite that the flood was lower, it was prolonged, allowing Snipe to nest in the floodplain. In the floodplains of south tundra and forest-tundra the number was higher than last year, characterized by abnormally high flood. The number of Snipe on flat-hilly bogs in the south tundra was lower than in 2017, which was caused by the cold and the later destruction of the snow cover. There was already no snow cover by the beginning of census in south forest-tundra. As a result, the density of Snipe in the forest-tundra on big-hilly bogs was the highest in all years of observations. It is possible that part of the Snipe, in normal years, settled in south tundra, remained on breeding in forest-tundra. Since 2004 negative trends of the Snipe breeding population have been observed in the flat-hilly bogs and in floodplains of south tundra and forest-tundra. Over the same period of 15 years, a positive trend is observed in big-hilly bogs.

North taiga

In the basin of Severnaya Dvina (Arkhangelsk province) snipes were very few at floodplains at damp meadows and meadows in combination with fens - 0.7 ± 0.2 pairs/km^2, damp clearings – 0.4 ± 0.3 pairs/km^2 and they were not on the fens. There were more snipes at raised bogs - 1.0 ± 0.2 pairs/km^2 and mesotrophic mires - 2.5 ± 0.6 pairs/km^2. Very high numbers of Snipe were revealed in the floodplain of r. Kuloy, where it reached 15.0 ± 0.7 pairs/km^2 at damp meadows in combination with fens and, especially, very low in the mesotrophic mire - 1.1 ± 0.9 pairs/km^2.

In 2018, the number of Snipe (Severnaya Dvina basin, r. Pokshenga) everywhere was very low. This is probably due to the cold spring and, less likely, adverse hydrological conditions. Only in the floodplain of r. Kuloy the number of Snipe was higher than last year, although large areas were submerged by the flood. Since 2003, at r. Pokshenga negative dynamics of population density of Snipe was observed in fens and damp clearings. The clearings become overgrown and the number of Snipe falls there. On fens, there is no such clarity with the population of Snipe. A positive trend in the population of Snipe can be traced over the past 15 years at mesotrophic mires and floodplains.

Middle taiga

At the eastern shore of Lake Ladoga (Karelia Republic) at damp abandoned fields Snipes were very rare (1.1 ± 0.4 pairs/km^2), and at damp spots on abandoned fields in the floodplain (2.0). The highest numbers of Snipe were recorded in lowland at forest fens (4.6 ± 1.5) and open mesotrophic mire (6.0 ± 4.2), which is higher than in other years.

The density of Snipe (Lake Ladoga basin) in 2018 was below last years in mesotrophic mire and forest fens, and the average level at damp abandoned

fields and wet spots (farmlands and places near roads around villages) outside of floodplain. Over the past 5 years, the number of Snipe at damp places decreases, fluctuates, but it is stable on lowland marshes, and grows on mesotrophic mire.

South taiga

At Pskov-Chudskaya lowland (Pskov province), the highest density of Snipe population was registered at floodplain fens (5.4). Below it was on mesotrophic mire (4.5 ± 1.2 pairs/km^2), and on raised bogs snipes are not marked.

In the basin of Zapadnaya Dvina (Smolensk province), most Snipe were at damp hollows near uninhabited villages and at damp spots in farmlands (9.2 ± 1.5 pairs/km^2), observed in areas where mires had been burnt out (6.7). In other habitats, the number of Snipe was average at floodplains on grass and tussock meadows (0.3 ± 0.2 pairs/km^2), and at mesotrophic mire (3.2 ± 2.2 pairs/km^2). On raised bogs snipes are not marked.

In the basin of the Upper Volga (Ivanovo province) at a lowland reed-cattail floodplain bog the number of Snipe was the highest annually (37.5 pairs/km^2), but lower than a year ago. Like last year, the density of birds was also very high at a mesotrophic mire out of floodplain (25.0). At damp floodplain meadows the density of Snipe made up 22.2 ± 3.5 pairs/km^2, at burnt places – 8.2 ± 0.4 pairs/km^2. At peat quarries completely covered with quagmire, the density of Snipe was 13,3 pairs/km^2. At raised bogs with separate undersized pines, territorial males gathered closer to mesotrophic edges of bogs (10.3 ± 1.2 pairs/km^2).

In south taiga at Pskov-Chudskaya lowland the number of Snipe was the lowest in all years at mesotrophic mires and raised bogs, and average, but higher than in the last year, at floodplain fens. Obviously, the hydrological regime of non-floodplain bogs was less favourable, than in other years, and this was reflected in the decrease of the number of Snipe. During the 5-year period of accounting there are negative trends of Snipe density in all habitats, swamps and floodplains. In the basin of Zapadnaya Dvina (r. Yelsha) the number of breeding Snipe males has increased in 2017, in comparison with the previous year, only on damp depressions near uninhabited villages in farmlands. Snipe numbers have decreased in floodplains and mesotrophic mires, and at burnt places which once held the fire remained as last year. Probably the reason for the decrease in the number of Snipe in floodplains and watersheds (on mires and mesotrophic bogs) was insufficient moisture due to dry weather in late spring – early summer. In the Upper Volga basin, the density of Snipe in almost all habitats has decreased compared to 2017, despite favourable weather conditions, prolonged flooding and normal moisture regime.

Coniferous-deciduous forest

In the basin of the Upper Volga (Vladimir province and the Moscow Region) the highest density of Snipe was registered at damp meadows alternating with fens at non-flooded areas of the floodplain (22.0 pairs/km^2). At mesotrophic mires, the number of Snipe was high (17.8). It was also high at drain depressions in farmlands (9.2 ± 1.8 pairs/km^2) and floodplains where water meadows alternate with sedge fens and temporary reservoirs (8.0 ± 0.9 pairs/km^2). On watersheds, at meadow areas adjoining bogged depressions, less snipes were found (6.7). Even less snipes nested in bogged floodplain woods (2.9 ± 0.1 pairs/km^2) and in watershed bogged woods (0.6 ± 0.4 pairs/km^2).

In the basin of middle Volga (Mordovia Republic, Penza and Ryazan provinces) most of all snipes bred at peateries (5.7 pairs/km^2). Less Snipe were in river valleys at lowland open and forest fens (10.6 ± 2.6 pairs/km^2), raised bogs (3.3 pairs/km^2), mesotrophic mire (2.2 pairs/km^2) and floodplain meadows (2.9 ± 2.0 pairs/km^2).

In the breeding season of 2018 in the subzone of mixed forests in the Upper Volga basin, with an average and high level of moisture in the watersheds and floodplains, the number of Snipe was high (mesotrophic mires and floodplain terraces) or medium level (floodplains and forest swamps), although lower than in 2017. In the middle Volga basin in almost all habitats the density of Snipe has decreased compared to the last year.

Deciduous forest

In areas of sedge open fens in combination with hydromorphic meadows, river flood-lands of the middle Volga in the North of the subzone of broad-

leaved forests (the Moscow Region) 3.6 ± 1.1 pairs/km^2 were revealed. At similar Snipe habitats in flood-lands of the Volga basin in the South of the subzone (Penza province) – 1.8 ± 0.7 pairs/km^2. At watershed forest fen the density of Snipe made up 3.2 ± 1.2 pairs/km^2.

In flood-lands of the Dnepr basin (Kursk province) the density of Snipe at damp meadows in combination with open fens, made up 3.0 pairs/km^2.

In the wet year 2018, in the subzone of broadleaved forests, the Snipe density in the floodplains of the middle Volga basin was high or at an average level. In the basin of Dnepr, the density was as low as in 2017. The density of Snipe remained at the level of last year in forest bogs at watersheds. Snipe was absent at treatment facilities, due to some technical works there. Since 2012, the population density of Snipe has been gradually decreasing in the floodplain habitats in the basin of Dnepr and the middle Volga. The trend of decline in this indicator is also observed at forest bogs.

Forest-steppe

In flood-lands of the Dnepr basin (Kursk province) the density of Snipe at damp meadows in combination with open fens, made up 2.7 pairs/km^2, and at open fens – 3.0 pairs/km^2.

In 2018, in comparison with the previous year, the density of Snipe was the lowest at fen of artificial origin (former peateries and fish ponds) and on the floodplain meadows remained at the same level. Since 2012, Snipe density has been decreasing in these habitats.

According to monitoring in different geographic areas, the number of Snipe during the breeding season was higher than in 2017, in forest-tundra (in various habitat types in 2017 breeding density of Snipe ranged from 6.7 to 8.7 pairs/km^2). Lower than in 2017, the number of Snipe was in south tundra (3.3 – 6.3 pairs/km^2), north taiga (0.4 – 15.0 pairs/km^2), middle taiga (1.1 – 6.0 pairs/km2), south taiga (0.3 – 37.5 pairs/km^2), coniferous-deciduous forests (0.6 – 17.8 pairs/km^2) and deciduous forests (1.8 – 3.6 pairs/km^2). On the same level as last year was the number of Snipe in forest-steppe (2.7 - 3.0 pairs/km^2). In the main sorts of habitats, the number of breeding Snipe was higher than in 2017, at big-hilly bogs and river floodplains (in addition to the south taiga, mixed coniferous-deciduous forests and forest-steppe). At fens it was at the level of the last year or lower. This number was lower at flat-hilly bogs, mesotrophic mires and raised bogs. Among different sorts of habitats, the breeding population of Snipe was the highest at floodplain fens of south taiga (37.5 pairs/km^2), the lowest - at damp clearings and also in floodplains at damp meadows and meadows in combination with fens in the north (0 pairs/km^2) and south taiga (0.3 pairs/km^2) subzone. Thus, for a significant part of the study area, the last breeding season was less successful for Snipe than it was in 2017 (Table 1).

Table 1. Dynamics of the number of Common Snipe at boggy habitats in 2018 in relation to 2017. ↑ – higher; ↓ – lower; = – level as last year.

	flood-lands	hilly bogs	oligotrophic	mesotrophic	eutrophic
south tundra	=	↓			
forest-tundra	↑	↑			
north taiga	↑			↓	↓
middle taiga				↓	↓
south taiga	↓		↓	↓	↓
mixed forest (North)	↓			↑	
mixed forest (South-East)	↓		↓	↓	
deciduous forest	↓				
forest-steppe	=				=

The number of sites, where more males were noted in relation to the previous year, has a negative trend since 2012. For the same period, the number of sites with fewer males compared to the previous year has a positive trend. Since 2012 the total number of Snipe males (or conditional pairs) recorded at all sites fluctuate in the range of 327 to 518. In 2018, their number (485 males) was only slightly lower than in 2017 (516). Average indicators of the number of snipes per 1 site (all control sites and those sites where snipes are marked) were similar. In General, over the past 7 years, these indicators have a very weak trend to rise (Figure 1). But the number of sites where Snipe was absent in 2018 was more than last year, which is largely due to the large number of "empty" sites in north taiga. For the same reason, the rate of the sites where Snipe was observed turned out to be the lowest since 2012 (Figure 2). For 7 years, this indicator, although fluctuating, has a generally stable trend. On sites in floodplain habitats about a half of all Snipe is annually revealed (from 42.2 to 60.6%). Less Snipe is found in floodplains, in percentage of its total number at all sites – the trend has been negative since 2012.

Figure 1. The average number of Common Snipe per site in all control sites and in those sites where snipes are marked, the years 2012-2018.

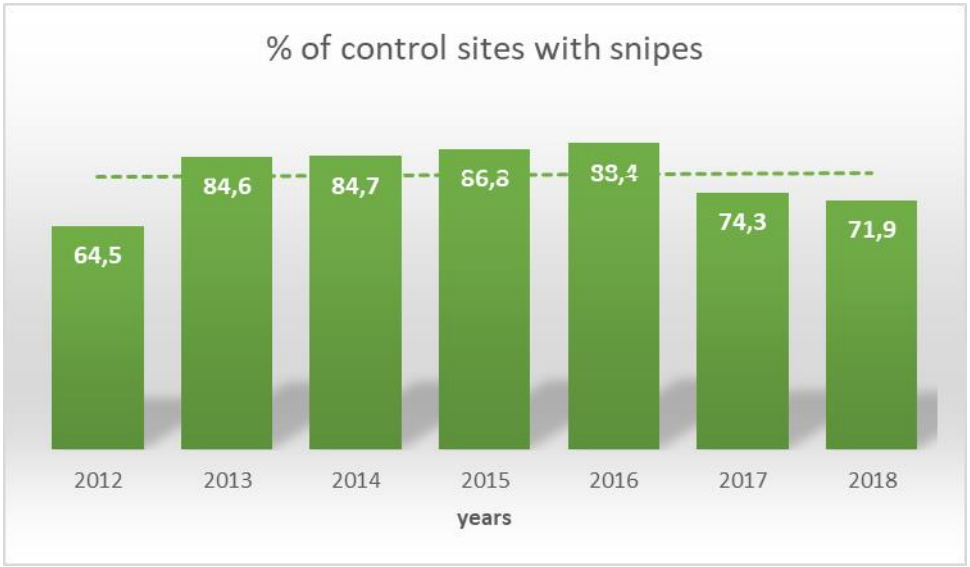

Figure 2. Variation of the percentage of sites where snipe was recorded from 2012 to 2018.

Acknowledgments

We thank the project coordinators in France Dr. Kevin Le Rest and all the participants of the census: Dr. S. Yu. Fokin, Prof. A.V. Artem'iev, Dr. S.V. Korkina, M. V. Kozlova, Dr. V. N. Mel'nikov, Dr. A.L. Mischenko, V.V. Morozov, Yu. M. Romanov, A.M. Rikov, Dr. O. V. Sukhanova, Dr. M.V. Sidenko, Dr. S.N. Spiridonov, Dr. T.V. Sviridova, Dr. S.V. Jerdeva, and S.N. Andreev, A.V. Bragin, D.V. Chasov, Dr. D.E. Chudnenko, A.A. Esergepov, E.A. Hudyakova, I.I. Loginov, A. P. Mezhnev, V.V. Puchnin, E.A. Shesternin, G.A. Staropopov, O.A. Zubkova who have taken work on implementation of the Snipe project in the regions.

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Juvenile of Common Snipe - São Jorge island, Azores, Portugal; Photo: D. Gonçalves

2017-2018 French Woodcock Report

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Weather conditions

An intense cold settled from early winter in north and east of Europe. It pushed the first migrants to their wintering areas. However, France had a heavy hydrous deficit, which influenced the distribution of migrating and wintering birds. From mid-December, milder temperatures carrying rainfall restored the situation except for southeast. In these areas, the 2017/18 ringing season was one of the worst since many years. Despite a cold event with heavy snowfalls early-February, birds remained in their wintering areas and no movement to the coastal areas had been noticed. A last cold weather set in end of February and settled until beginning of March, which may have delayed the first migration departures.

Ringing results

Quantitative ringing results

During season 2017/18, French ringers of the Réseau Bécasse ONCFS/FNC/FDC carried out 5,313 hours of field survey, contacting 24,400 woodcocks. With 6,381 woodcocks ringed and 453 retrapped, this season was alike previous years. Since 2007/08, 5,500 to 6,800 birds are ringed every year in France. There have been good catching results in November, December and January with 1,585, 1,905 and 1,477 birds. These 3 months represented 78% of the total catch volumes. This season was very unusual in the southeast of France because of drought, with consequences on the number of woodcock (Figure 1). Almost all birds left around mid-March and only three woodcocks were catch in April.

Proportion of juveniles

The proportion of juveniles among birds ringed was quite low with 53.5%. This percentage is a bit lower than previous years but stable since season 2014/15, oscillating between 51.6% and 56.2%. Most important, is the disparity between regions compared to season 2016/17. For some of them, in the west, proportion of juveniles increased up to +13.6 percentage units and for others, in southeast, it decreased up to -32.4 percentage units. The breeding conditions in 2017, which were better in Fennoscandia than in Russia, can partially explain this difference. However, the weather conditions in the wintering areas would be a key factor. In regions with hydrous deficit, young birds would have continued their migration further, contrary to adults whose more likely come back to their usual wintering areas.

2017-2018 ringing season in numbers

N. *départements*:	88
N. ringing sites:	1,527
N. ringers:	365
N. nocturnal trips (hours):	2,717 (5,313)
N. contacts:	24,463
N. ringed woodcocks:	6,381
Trapping rate:	27.9 %
N. direct retraps:	173
N. indirect retraps:	280
N. direct recoveries:	258
N. indirect recoveries:	452
Annual direct recovery rate:	4.0 %

Monitoring of abundance during the migratory and wintering period

Migratory and wintering number of woodcock in France is monitored by two indices: the nocturnal abundance index (number of woodcock seen per hour, NAI) registered during ringing trips at night and a hunting index (number of woodcock seen per standardized hunting trip of 3.5 hours, ICA) collected by the *Club National des Bécassiers* (CNB).

In 2017/18, the NAI was 4.51, a bit lower than last years (4.62) but still a high value compare to the past years (Figure 2). The ICA showed a stronger decrease from its highest value last year (1.76) to a middle value of 1.61. Some bias exists in the calculus of these indexes (e.g. increasing detection from ringers and hunters) and we are still working on a project aiming to analyse both abundance indexes while accounting for sampling period and location. Results will be presented in the next WSSG newsletter.

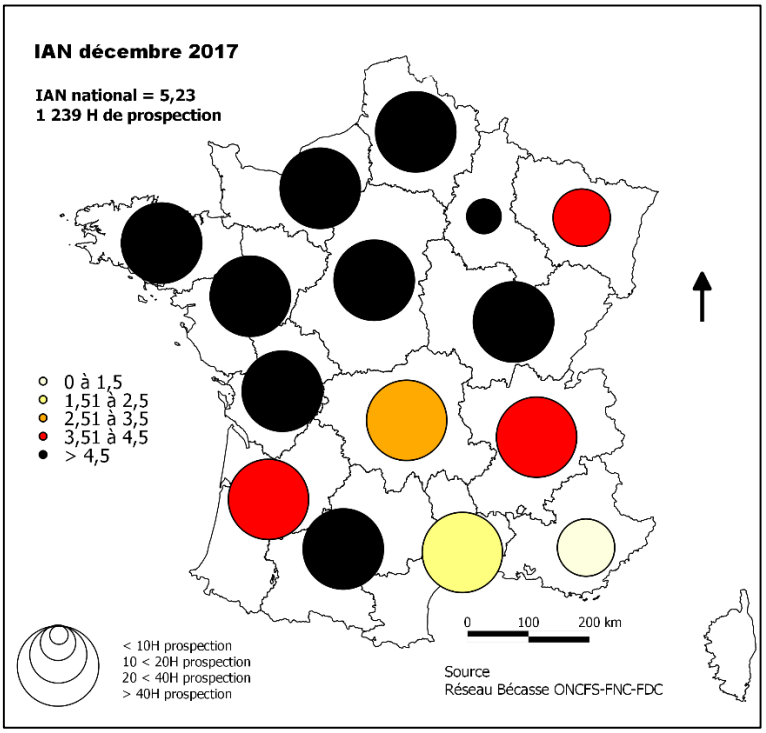

Figure 1. Number of contacts/hour during ringing trips in December 2017 (IAN, nocturnal index of abundance).

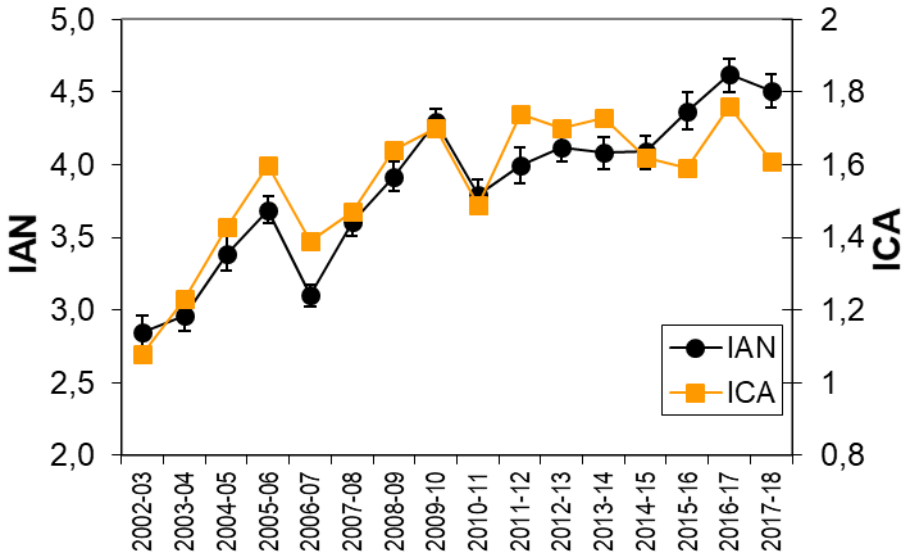

Figure 2. Annual variations of the number of contacts/hour during ringing trips (IAN, nocturnal index of abundance) and hunting trips (ICA, hunting index of abundance from CNB).

Roding results

600 listening points are scheduled every year since the implementation of the new sampling design in 2013. 546 were done by observers from *Réseau Bécasse ONCFS/FNC/FDC* during spring 2018. The proportion of positive points (observation of at least one roding male) allowed to estimate the probability of woodcock roding presence in France. It was 18% in 2018, a value very close to those obtained these past 5 years.

Monitoring of abundance and distribution of breeding birds in France

24,800 listening points were surveyed since the beginning of the roding monitoring protocol, 31 years ago. All these data have been analysed using advanced statistical tools and we show a 30% decline of roding males since 1988.

This data analysis first focused on identifying environmental factors that could influence breeding birds' abundance. With statistic modelling, these factors have been used as predictors for the number of roding contacts. Using the relation established by Hoodless et al. (2008), this number has been transposed as a number of males.

Inside the French main breeding area, the model estimate 34,000 males at the beginning of the study period (1988-90) and 23,850 for the last 3 years (2016-18). This decline of 30% happened mostly between 1988 and 2004 (decline of 23%, Figure 3). This decline has also affected the number of positive listening points, which decreased from 33.7% in 1988 to 23% in 2018, with consequences on the breeding distribution of the species in France (Figure 4). The decrease is higher in the south part of the breeding area, and in low altitude. The strongest decrease was in the Alpes mountains ecological region with a decline of 49%.

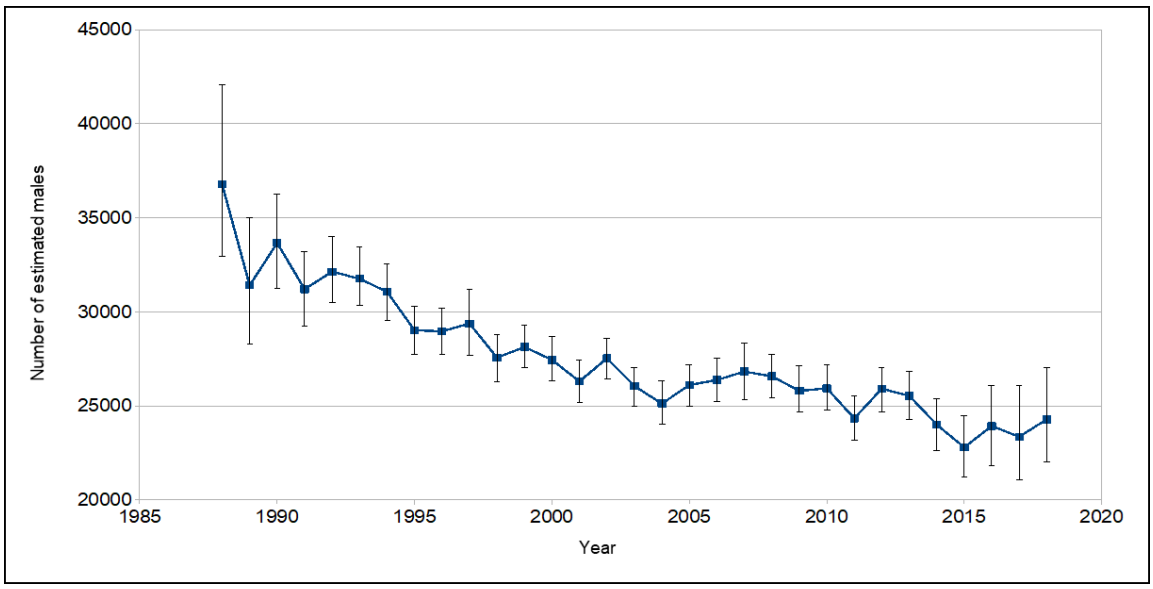

Figure 3. Relative trend of the number of males between 1988 and 2018 in France.

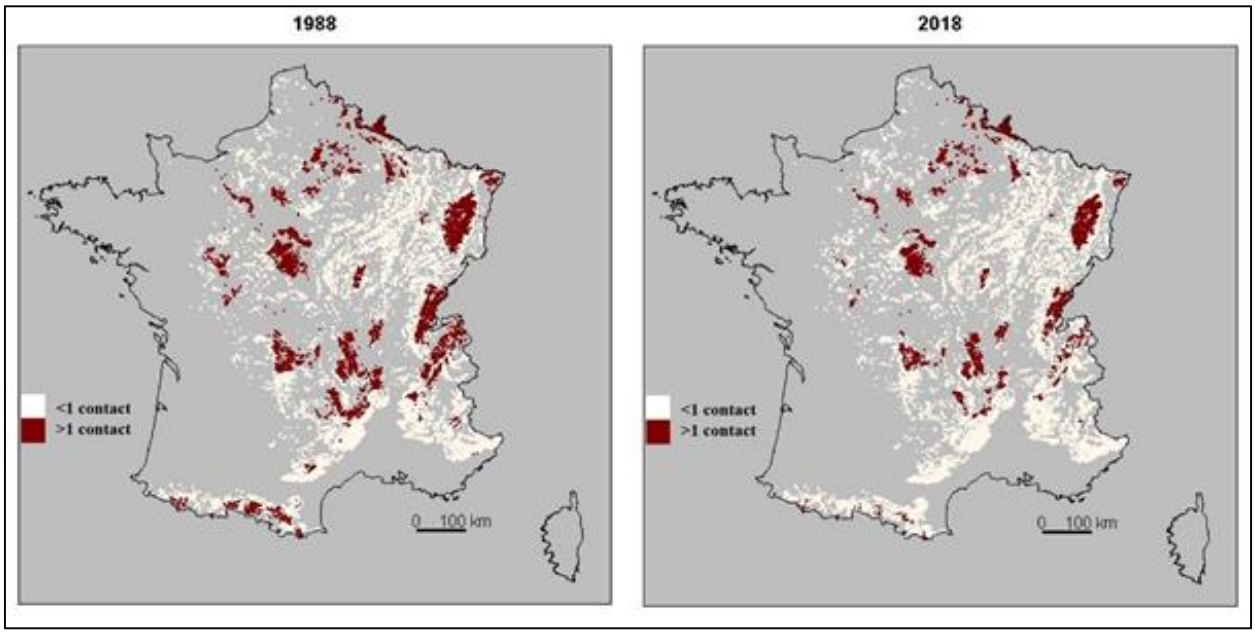

Figure 4. Roding male presence/absence on the listening points predicted for the years 1988 and 2018.

Different hypothesis may be advance to explain this negative trend. First, a shift of the breeding phenology and especially of the roding peak. Roding activity is mainly driven by the photoperiod and thus a shift of the roding peak is unlikely. Moreover, the protocol set the listening points between 15th of May and 15th of June (end of June for points above 500 m altitude), which concerns a large time scale. France is located at the southwestern limit of the woodcock breeding distribution in Western Palearctic (with exception of the Azores). The observed decline would thus more likely be related with global warming, climate affecting food availability, predator distribution, etc. Nevertheless, other factors can be involved e.g. the strong increased of wild board population or hunting practices. All these hypotheses are still to be investigate.

Acknowledgements

This report is the result of an important field work carried out by members of the ONCFS/FNC/FDC Woodcock network (Réseau Bécasse ONCFS/FNC/FDC). We thank all of them, being professionals of ONCFS, Fédérations départementales des chasseurs (FDC) and volunteers. We also thank the CNB for allowing us to use the data collected by CNB members.

Reference

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2017-2018 French Snipe Report

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I - Ringing results

The French Snipe network ONCFS/FNC/FDC/CICB gathers about 130 ringers spread over the major part of France where snipe can be observed in migration and winter. The network caught 1,498 snipes during the 2017/18 season, 1,233 Common Snipe *Gallinago gallinago* and 265 Jack Snipe *Lymnocryptes minimus*. The number of Common Snipe was thus slightly higher than the 2016/17 season (the worst season since 2006/07) but still low in comparison with other seasons. The number of Jack Snipe was the lowest since five years and by 40% lower than in 2016/17 season.

74 recoveries (from hunting) were registered during the 2017/18 season, 68 Common Snipe and 6 Jack Snipe. These numbers are very low in comparison with other seasons, likely related with the lower number of snipes shot during this season (see the monitoring of hunting bag below). 12 Common Snipe recoveries came from birds ringed abroad: three from the Netherlands, two from Hungary and Belarus, one from Czech Republic, Germany, Spain and Finland. Two birds ringed in France were also recovered abroad, one in Denmark and one in Belarus. It was the first time that a bird ringed in France by the Snipe network was recovered in Belarus. Indirect recoveries (birds ringed and recovered during different seasons) were as numerous as direct ones (birds ringed and recovered during the same season). The maximum ringing-recovery elapsed time recorded in 2016/17 was 5.5 years and the maximum ringing-recovery distance was 2,175km.

II - Plumage collection

As for the previous years, an examination of Common Snipe and Jack Snipe plumages was carried out to determine age and sex of shot birds (based on wing and tail feathers). In total, about 4,450 Common Snipe and 950 Jack Snipe plumages were collected in France, mainly by the CICB (*Club International des Chasseurs de Bécassine*, a non-profit organization of snipe hunters) members and by the *Fédérations Départementales des Chasseurs* (FDC) of *Aveyron*, *Cantal*, *Gironde, Haute-Loire, Indre, Lozère* and *Puy-de-Dôme*. This number of plumages collected is on the average but is much lower than the one collected in 2016/17 (more than 8,000, the record since the beginning of this survey in 2004/05).

II.1 The Common Snipe

Geographical distribution of collected plumage

The plumages were collected in 38 French *départements*. As in the past, the total sample was divided in two parts (Figure 1): one corresponding to the English Channel and Atlantic regions (n = 2,835); the other one including inland as well as the Mediterranean regions (n = 1,616), see Figure 1. These areas were labelled Fennoscandian and Continental flyways respectively until now but these labels where no longer relevant since snipes fitted with GPS/ARGOS tags in the English Channel and Atlantic regions were found to nest mostly in Eastern Europe and Russia, rarely in Fennoscandia.

Pas-de-Calais and *Gironde* French departments were still big contributors for the English Channel

and Atlantic coastal areas, representing 50% of the total of plumages collected. These data from these two departments thus contributed a lot to the results found. *Seine-Maritime*, *Somme*, *Manche*, *Vendée* and *Loire-Atlantique* also contributed significantly with hundreds of plumages collected. In the inland and Mediterranean regions, *Cantal* contributed to 61,5% of the sample size with 994 plumages collected and thus drive a lot the results found. *Lozère* and *Loire* departments collected more than one hundred plumages.

Temporal distribution of collected plumage

With the same assumption as in the previous reports, i.e. the number of collected plumages is positively correlated with abundance, the chronology of collected plumage may reveal important features on the post-nuptial migration. The number of collected plumage increased between the beginning of August and the end of September, stabilized during the first half of October and reached a peak during the second half of October (Figure 2). This number has then quickly decreased until December and stabilized in January. The peak reached during the second half of October was much more significant in the inland and Mediterranean regions than in the English Channel and Atlantic regions. In the latter, collected plumages were almost stable between mid-September to mid-November. The decrease in November was also sharper in the inland and Mediterranean regions, likely due to bad hydric conditions in the country (exceptionally dry soils), especially in these regions.

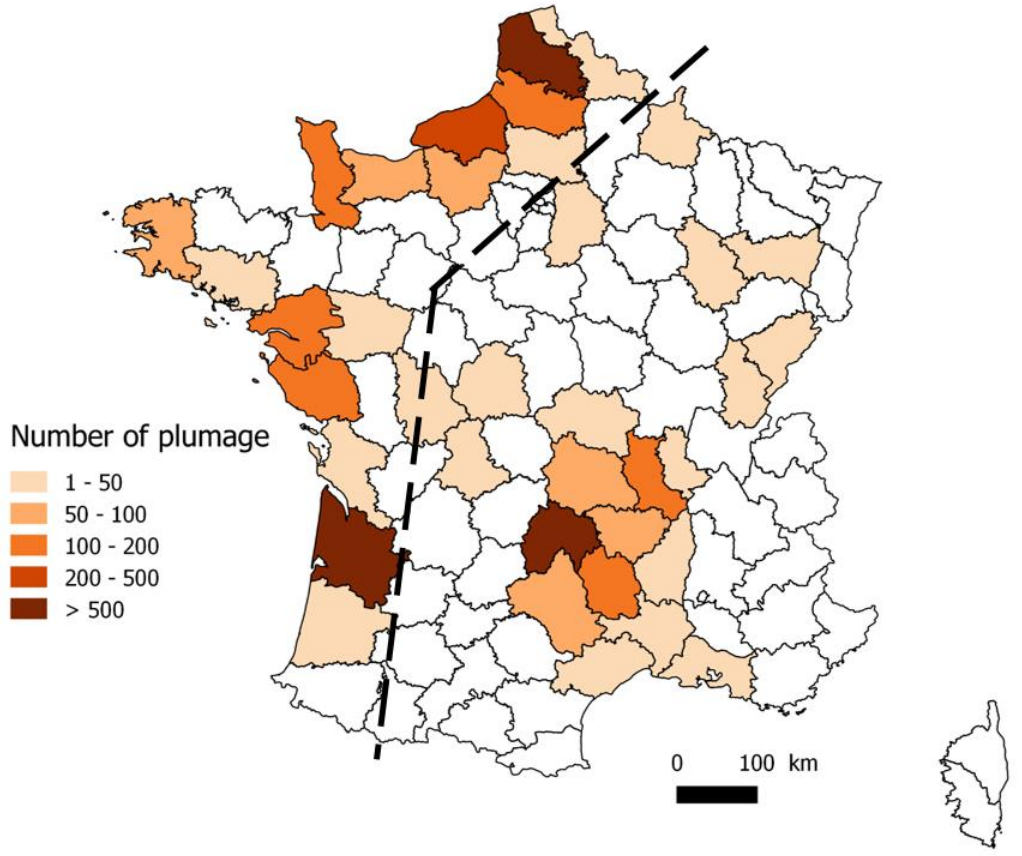

Figure 1 - Geographical distribution of Common Snipe plumages collected in 2017/18 and limit between the two sub-samples.

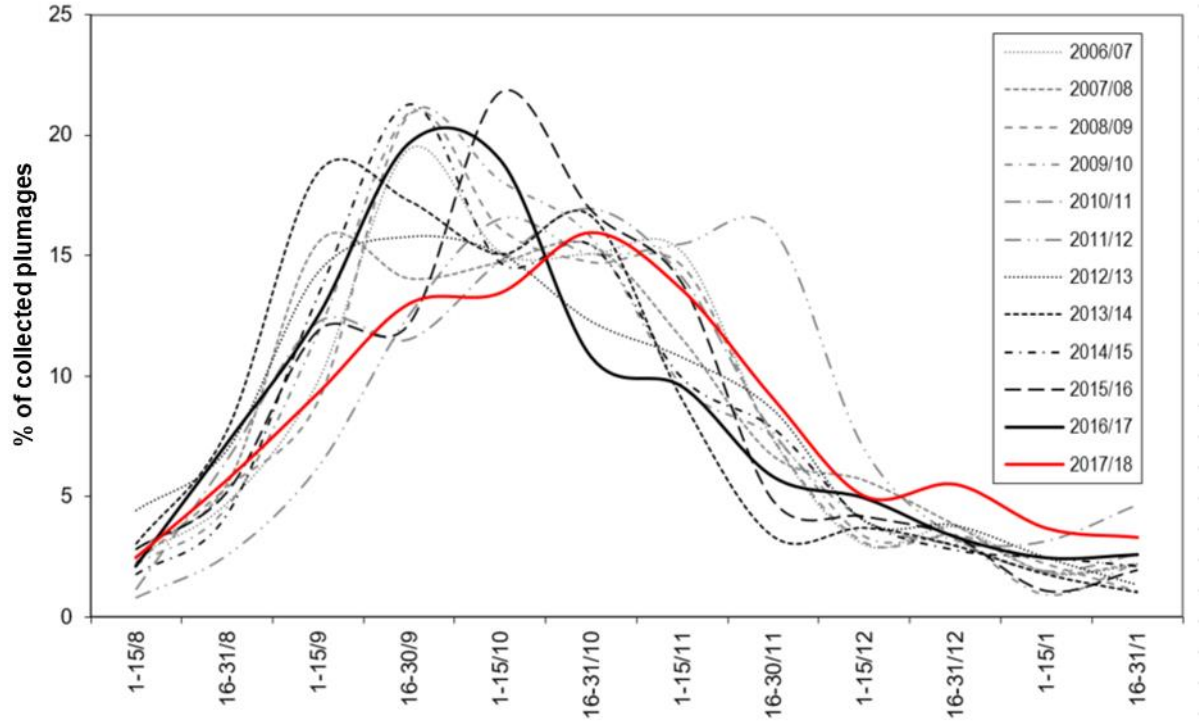

Figure 2. Intra-annual variations of the proportion of Common Snipe plumages collected from 2006/07 to 2017/18.

Arrival of snipes was rather late comparing with other seasons (Figure 2). The peak of abundance for 2017/18 shifted by almost three weeks and less marked than for other seasons. Temperatures remained very mild throughout Europe until October. Nocturnal frosts intensified during the first half of October in northern Scandinavia and Russia, forcing the last snipes still being on their breeding grounds (usually adults) to start their postnuptial migration. Two snipes fitted with GPS/ARGOS tags left their breeding areas during this period and probably arrived in France in November. The chronology of migration observed in 2017/18 was similar to the one observed in 2010/11, a season when snipes were not abundant too.

Proportion of juveniles

The proportion juveniles for all data was 69.6%, i.e. ½ point higher than the previous season. This proportion is important to calculate because it results, at least in part, from the number of juveniles produced by adults. Under some assumptions, this allows us to have a breeding success index. However, differential migration over space (the proportion of juveniles is different between regions) and time (young migrants before adults) can modified the information. For instance, the wings collected early in the season, while adults have not yet migrated, may overestimate the proportion of juveniles. Whatever, we can make the realistic assumption that the bias of this index (difference between its value and the reality) remains the same whatever the season considered. Then, the study of the relative variation of this index will highlight changes in the breeding success.

The proportion of juveniles was stable since the start of monitoring (Figure 3), although high values observed regularly in the 1990s and early 2000s are now rarer. The proportion of juveniles in the 2017/18 season is very close to the average of the last 15 years (69.7%). 2017 nesting success would be in average for the snipe populations migrating and/or wintering in France. The low abundance recorded in France during this season was therefore more likely related with the poor hydric conditions, preventing snipes to stop and stay on French territories as they usually do.

As usual, the proportion of juveniles was close to 100% in August, decreased quickly in September,

more slowly in October, and stabilized in November (Figure 4). In 2017/18, the pattern is almost identical for both areas considered, although the low number of wings harvested in August in the inland regions does not allow appreciating the changes during the beginning of the season.

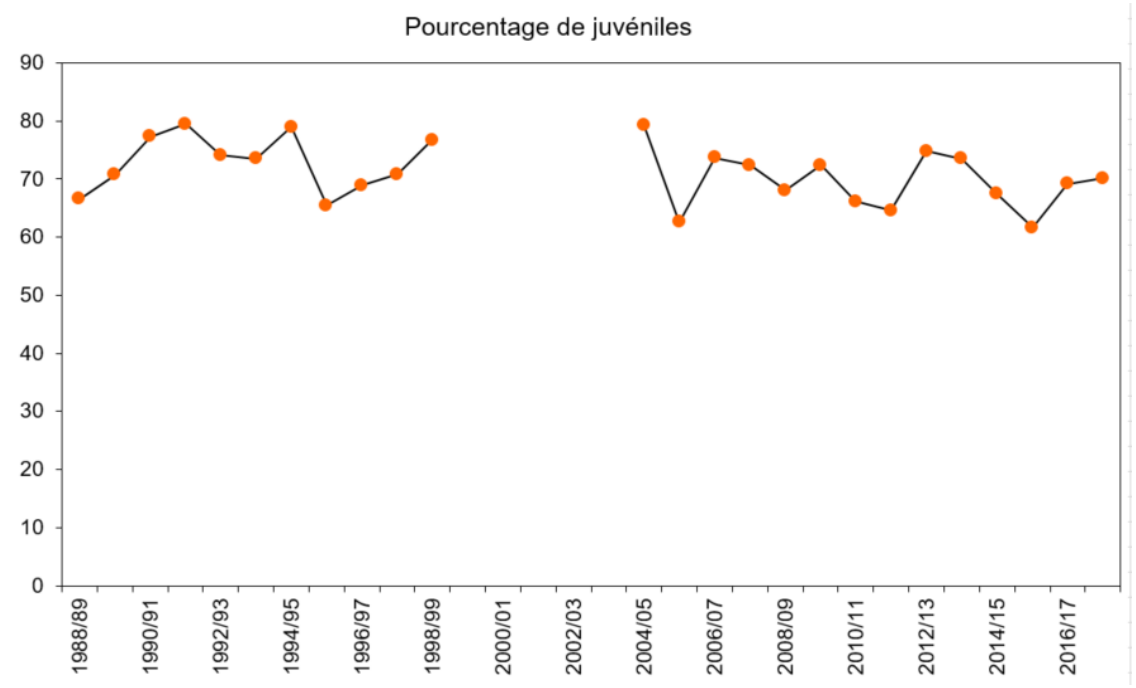

Figure 3. Inter-annual variations of the proportion of juveniles among Common Snipe plumages collected from 1988/89 to 2017/18 season for all data. No data collected from 1999 to 2004.

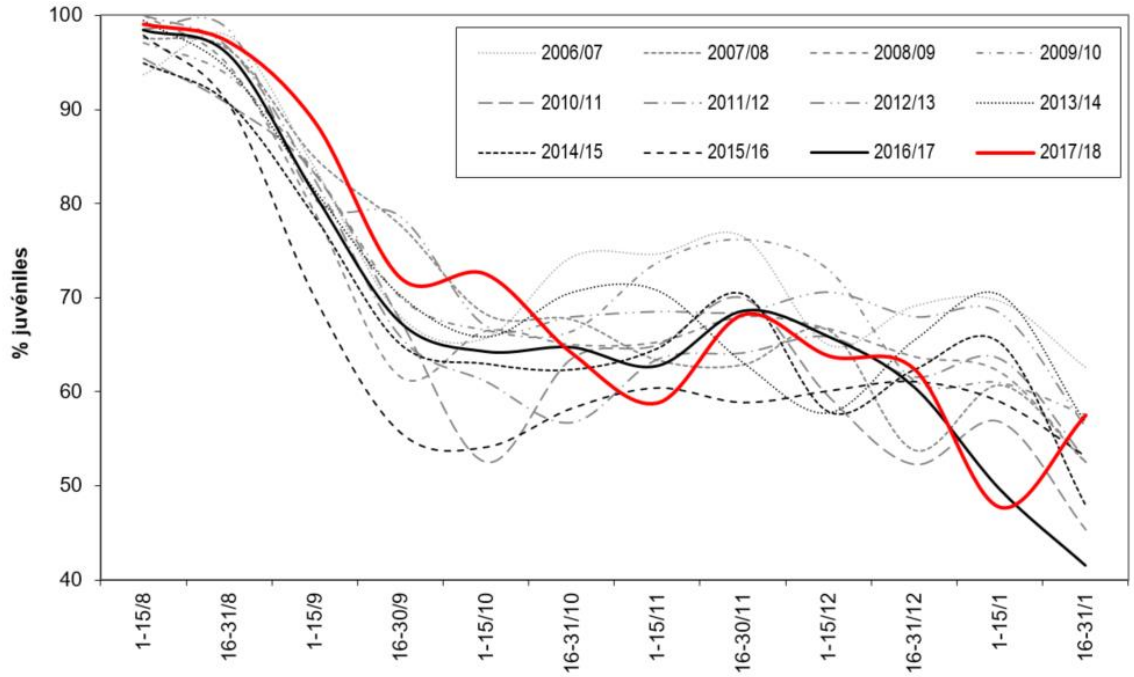

Figure 4. Intra-annual variations of the proportion of juveniles for the Common Snipe from 2006/07 to 2017/18.

The proportion of juveniles is used every year in population dynamic assessment (Péron *et al.* 2013). This model estimates the rate of increase of the snipe population migrating and/or wintering in France based on the proportion of juveniles in November, considered as a realistic indicator of the recruitment rate. When the proportion of juveniles in November is above 54% in the English Channel and Atlantic regions, and above 61% in the inland and Mediterranean regions, the population dynamic is considered stable or increasing. The proportions of juveniles observed in November 2017 remained above these thresholds, which did not suggest particular concerns about the Common Snipe population migrating and/or wintering in France.

Proportion of males and females

The proportion of males is always less than 50% in France. In 2017/18, it was 44% for the full dataset and close between the two areas considered: 44.6% in the English Channel and Atlantic regions and 42.6% in the inland and Mediterranean regions (Table 1). When considering only adults, the proportion of males was 41% and the difference between the two areas considered became more obvious: 37.3% and 43.5% respectively. Adult males were therefore less abundant (in proportion) in the inland and Mediterranean regions. This distribution of the sexes was in line with other seasons but contrasted with the 2016/17 season when adult males were more numerous in these regions.

Table 1 – Number of male and female Common Snipe among adults & juveniles, and only adults, and from the two areas considered

Common Snipe	Male	Female	% Males
Adults and juveniles			
English Channel and Atlantic regions	1,056	1,311	44.6%
Inland and Mediterranean regions	587	790	42.6%
Only adults			
English Channel and Atlantic regions	258	335	43.5%
Inland and Mediterranean regions	171	281	37.8%

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II.2 The Jack Snipe

The plumage collection of the Jack Snipe was also less numerous than in previous seasons, with just under 1,000 individuals analysed (938) in 2017/18. This result is the lowest since the 2012/13 season and contrasted a lot with the results of the last two seasons which exceeded the 2,000 plumages collected. The 2017/18 season was therefore not better for Jack Snipe than for the Common Snipe. The drought of autumn 2017 had thus also affect these later migrants.

Geographical distribution of collected plumage

The distribution of collected plumage of Jack Snipe is always very characteristic. Along the English-Channel coast, the departments of *Pas-de-Calais*, *Somme* and *Seine-Maritime* have collected 250 plumages (respectively 133, 54 and 63 plumages), i.e. about 44% of the data from the English Channel and Atlantic regions. Near the Atlantic coast, it was *Gironde* whose had most of the data: 180 plumages, i.e. 30% of the data from these regions. Totally, English Channel and Atlantic regions represented more than 60% of the national sample (see Figure 5).

Within inland and Mediterranean regions, it was *Massif Central* and especially the *Cantal* department whose has collected the most data (183 plumages from the latter, i.e. 50% of the data from these regions). The data from *Cantal* thus contributed a lot to the results found for the inland regions. The *Loire* and *Lozère* departments also contribute significantly (8% and 12% respectively).

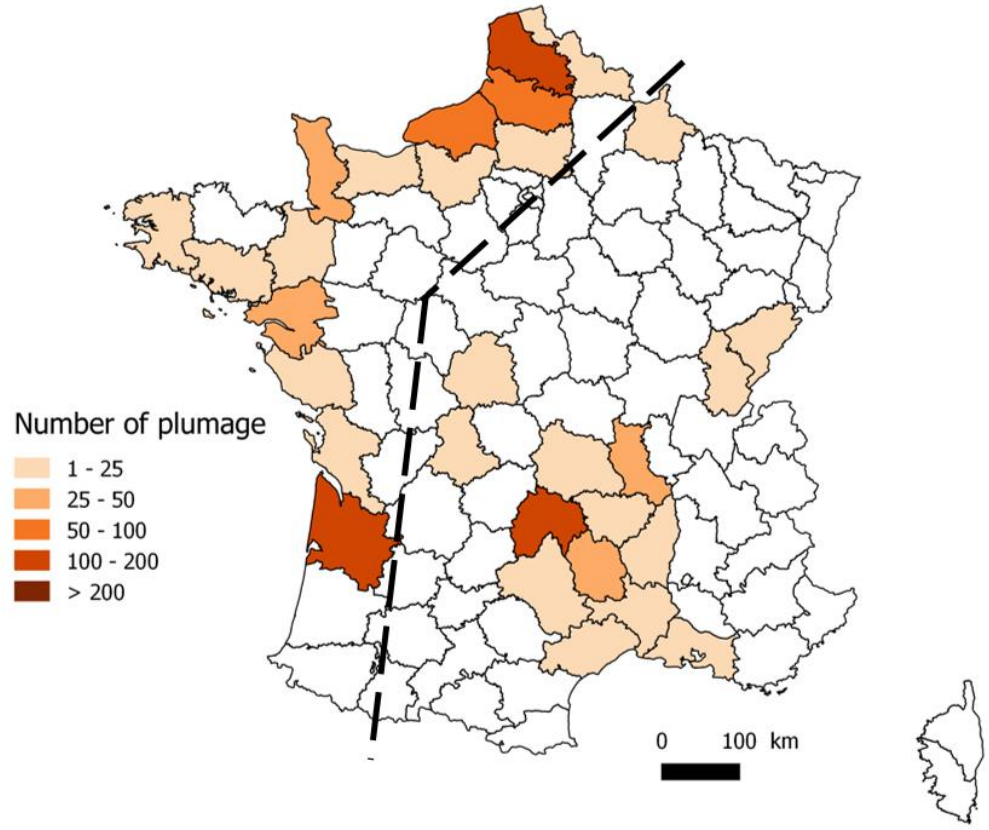

Figure 5 - Geographical distribution of Jack Snipe plumages in 2017/18 and limit between the two sub-samples.

Temporal distribution of collected plumage

As for the Common Snipe, it is possible to appreciate the postnuptial migration phenology under the hypothesis that the number of plumages collected is positively correlated with abundance.
Jack Snipe always presented a single peak of abundance, usually at the end of October. The 2017/18 season showed the same pattern, with more than 25% of the plumages collected during the end of October (see Figure 6). The first half of October and November were also good, since they each reached more than 130 plumages collected. Abundance decreased significantly from December and then stabilized until the end of January. The number of plumage harvested during the last half of January was slightly higher but it may be due to the increasing hunting pressure just before the end of hunting date limit (31 January).
The chronology of plumages collected followed the same pattern in both areas considered. Especially, the peak during the second half of October was clearly observed for both areas. The decline in November was, however, more evident in the inland and Mediterranean regions and abundance were at lower levels during the winter.

Proportion of juveniles

As with Common Snipe, the proportion of young among the Jack Snipe plumages collected may give important information on the breeding success. We focused mainly on the relative trend of this index over time and it did not show significant variation since 10 years, except a peak in 2013/14 (see Figure 7). Significant variations in the 2004/05 to 2006/07 seasons may be due to errors since the age determination criteria were probably not yet completely under control by wing readers at this period. The criteria for determining sex and age are now well known and were published last year (Devort *et al.* 2017).

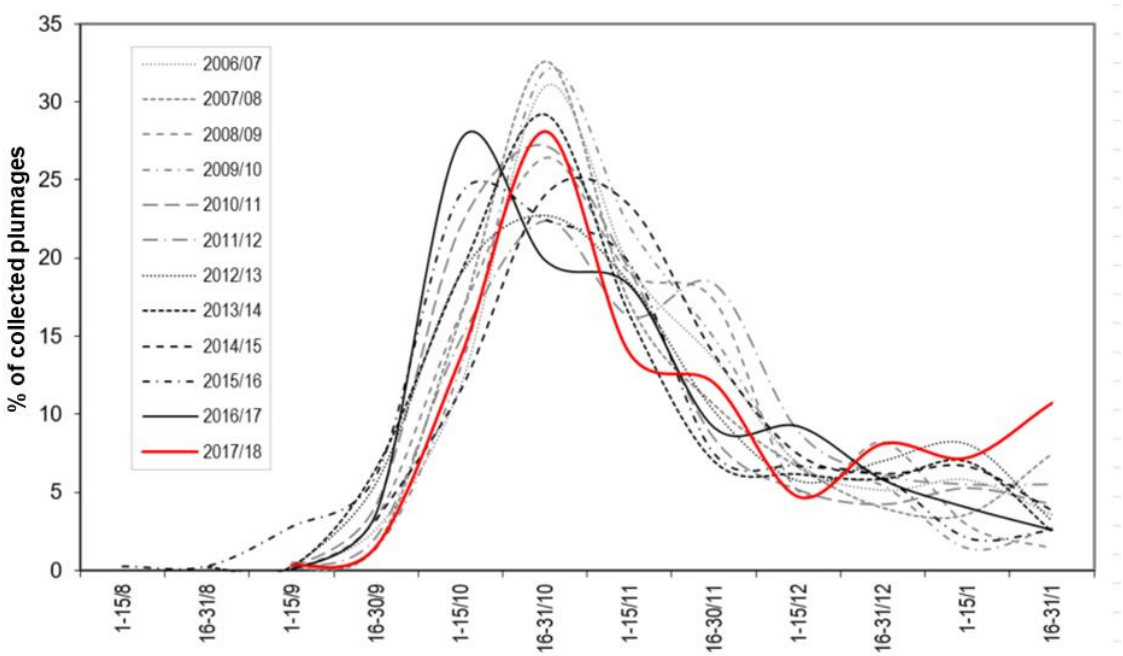

Figure 6 - Intra-annual variations of the proportion of Jack Snipe plumages collected from 2006/07 to 2017/18.

Figure 7 - Inter-annual variations of the proportion of juveniles among Jack Snipe plumages collected from 2004/05 to 2017/18 period.

Jack Snipe migration is more singular than Common Snipe one: juveniles and adults arrived at the same time in France. The proportion of juveniles would thus be a reliable indicator of the breeding success. This proportion reached 63.4% in 2017/18 (Figure 7), indicating a reproductive success slightly lower than the average of the last 10 years (66.3%), but equivalent to the one of the last two seasons (62.2% and 64.7%). We thus did not have any particular concerns about the breeding success in 2017, although the number of wings collected is much lower than usual.

For this species, the proportions of juveniles between the two geographic areas considered were usually similar. In 2017/18, the proportion of juveniles was 64.6% in the English Channel and Atlantic regions and 61.4% in the inland and Mediterranean regions, but this difference is not significant. These similar values between these two large areas suggests that it is possible to interpret

the proportion of juveniles as a large-scale breeding success.

The temporal variation in the proportion of juveniles did not indicated trend, whatever the season considered (Figure 8). The intra-seasonal variations observed are more likely due to random variations in the sample size, particularly at the beginning and the end of the season, when plumage collected are the less numerous.

Proportion of males/females

Sex of Jack Snipe can be evaluated by the length of the wing (wing length <115 mm = female, wing length> 117 mm = male, correction of 1.7 mm due to wing drying). This measurement showed that that males were significantly less numerous than females among plumages collected in 2017/18 (32%, n = 786). Note however that the number of males was probably a bit underestimated, as evidence from the reliability tests done (not shown here).

The number of males have always been less than female. It is likely that the migratory route and/or wintering area differs between the sexes. Most of the time males were slightly more numerous in the inland regions (Table 2). Unfortunately, there is few plumages collected in the east part of the country and in the Mediterranean regions to check for sex ratio in these geographical areas. Moreover, Jack Snipe hunting is forbidden in many countries in Europe and it is thus difficult to have samples abroad.

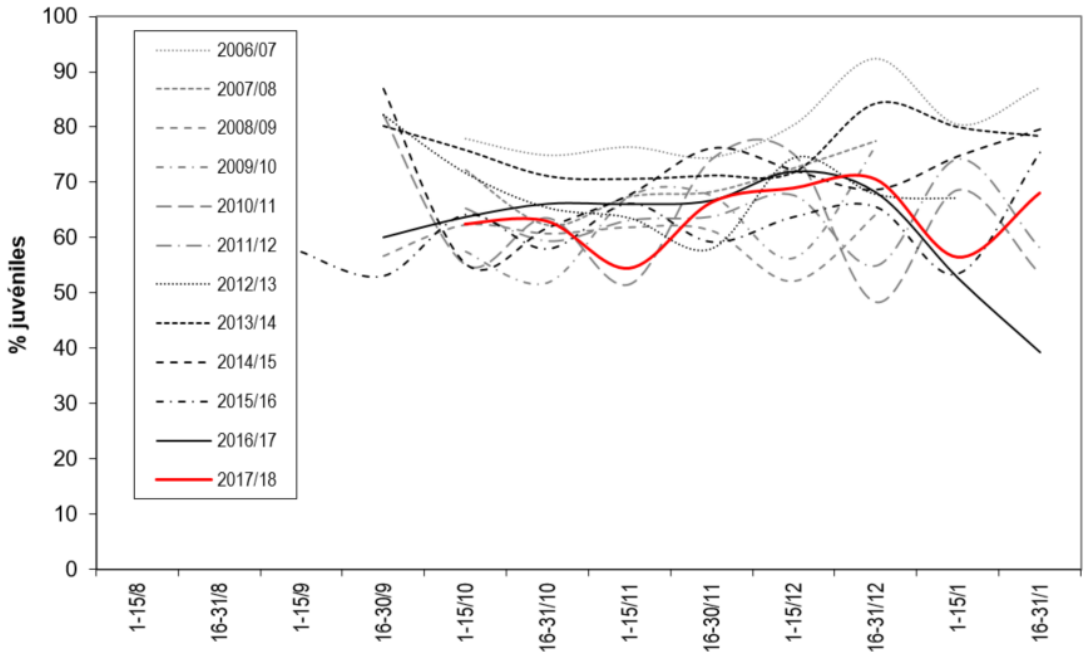

Figure 8 - Intra-annual variations of the proportion of juveniles for the Jack Snipe from 2006/07 to 2017/18.

***Table 2** – Number of male and female Jack Snipe among adults & juveniles, and only adults, and from the two areas considered*

Jack Snipe	Males	Females	% Males
Adults and juveniles			
English Channel and Atlantic regions	140	333	29.6%
Inland and Mediterranean regions	110	199	35.6%
Only adults			
English Channel and Atlantic regions	38	114	25.0%
Inland and Mediterranean regions	35	84	29.4%

III. The monitoring of hunting bags

The results presented in Figure 9 concern the information collected by the CICB from some of its members. 23 hunting territories were surveyed for the period 2000/01 to 2017/18.

In 2017/18 season, the hunting bag of Common Snipe (3,777) was the lowest since 2012/13 and are below the annual average (4,287). The hunting bag of Jack Snipe (747) was also low: 50% less than the previous season and 25% less than the average (990). These values confirm that the 2017/18 season was not good for the snipes, probably the worst since the last five years.

IV. Conclusion

Despite late and cold spring, climatic conditions in the breeding areas were quite good in 2017, especially in northern Russia. Late spring have permitted keeping high snow reserves, which provide in turns good water level conditions when snow smelt. However cold have delayed the arrival of the breeding birds on their nesting sites. Common Snipe fitted with GPS / Argos transmitters arrived during the beginning of June on the northern breeding areas. For this species, the number of males displaying was higher than in 2016 (Blokhin 2017), likely due to wetter conditions and habitats. For the Jack Snipe, which nests further north, the late cold must significantly delay the installation of birds on breeding sites. However, good water conditions and warmer temperatures in July certainly favoured the rearing of young and their summer survival.

Based on the number of plumages collected (Figure 1) and the hunting bag from the reference sites (Figure 9), the 2017/18 season was poor for snipes. However, the analysis of plumages showed that the 2017 breeding success was only slightly below the average of the last 10 years, which is consistent with the climatic conditions detailed above. The assumption that the number of plumages collected is positively correlated with the total hunting bag is reasonable. The correlation between the national bag and the real number of birds in the population is more open to discussion. Indeed, concentration of birds on favourable sectors (depending on water levels) may facilitate hunting while the number of individuals in the population is stable (which was likely the case in 2016/17). The opposite is also possible, that is to say a lower number of individuals due to adverse water conditions that do not allow snipes to stay for a long time. This is likely what happened in 2017/18 with an exceptionally dry autumn, especially in the south part of the country.

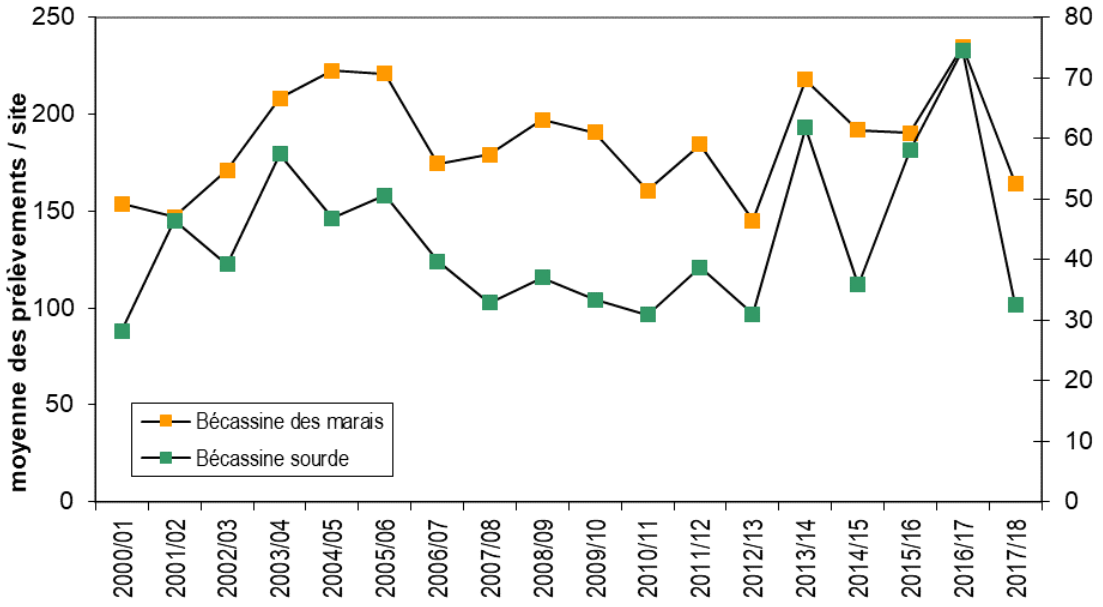

Figure 9 - Average of common snipe and jack snipe hunting bags for a reference site for the period 2000/01 - 2017/18.

Regarding the arrival timing of the snipes based on wing collection, we show that Common Snipe arrived rather late and Jack Snipe at the usual dates. For the latter, it is thus a return to the normal date of the abundance peak, after two seasons with a very early peak. The migration phenology of Common Snipe is more flexible and a three weeks' delay in the peak abundance (as observed in 2017/18) is not exceptional. The water conditions of autumn may have played a role in this shift by limiting the staying time of the birds during the beginning of the season.

The bag numbers from the 23 hunting sites, as the number of plumages collected, plummeted for both species. This is even more obvious since they reached record values during the previous season. The hydric conditions of autumn would have favored concentration of snipe on these hunting sites where hunters usually handle water levels. These low numbers lead to classify the season 2017/18 as bad for snipe's hunting.

Acknowledgements

This report is the result of an important field work carried out by members of CICB and by the ONCFS/FNC Snipes network. We thank all of them: volunteers, *Fédérations départementales des chasseurs* and professionals of ONCFS.

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Wings of Common Snipe (above: adult; below: young). Photo: D. Gonçalves.

2017-2018 Italian snipe plumage collection

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The wise harvest management of game species requires to set up a population monitoring scheme to estimate their status of conservation. Such monitoring has to be based on quantitative and qualitative data. Among these, the collected plumages can be very useful for a wise harvest management. For the first year the Migratory Bird Office of *Federazione Italiana della Caccia* (FIdC) decided to organise plumage collections based on wing and tail feathers for Common Snipe and Jack Snipe.

Plumage collection

In 2017-18 Migratory Bird Office of *Federazione Italiana della Caccia* (FIdC) decided to start data collections based on plumage collections in Italy, trough Common Snipe and Jack Snipe project (Tramontana 2011,2014,2015). The plumages were collected from voluntary hunters to determine age and sex of shot birds. In this first experimental phase, 36 Common Snipe and 39 Jack Snipe plumages were collected, mainly by members of the *Club del Beccaccino* (a non-profit organization of snipe hunters) and the ACMA (*Associazione Cacciatori Migratori Acquatici)*. The plumages were collected in the following sites: the site of Serravalle in Chienti, in the Macerata province; the site of Orte-Gallese, in the Viterbo province; the site of Ravenna, in the Ravenna province; the site of Codigoro, in the Ferrara province.

Temporal distribution of collected plumage

Under the same assumption as in the previous reports (i.e. the number of collected plumages is positively correlated with number of snipe sighted and number of snipe shot, and then with real numbers) (Tramontana and Sorrenti. 2017), for Common Snipe the postnuptial migration was characterized by a peak of abundance in the 1st decade of November and the 2nd decade of November (Figure 1), while for Jack Snipe the peak of abundance occurred between the 1st decade of November and the 3rd decade of November (Figure2).

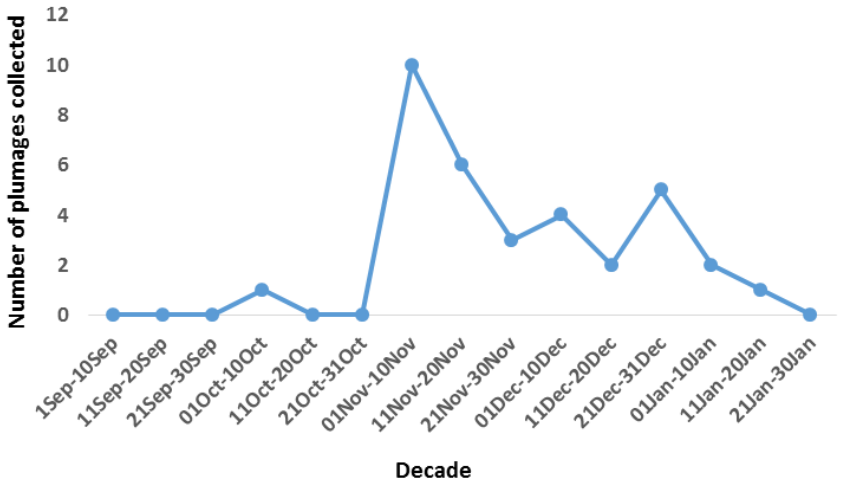

Figure 1. Intra-annual variations of Common Snipe plumages collected in 2017/2018.

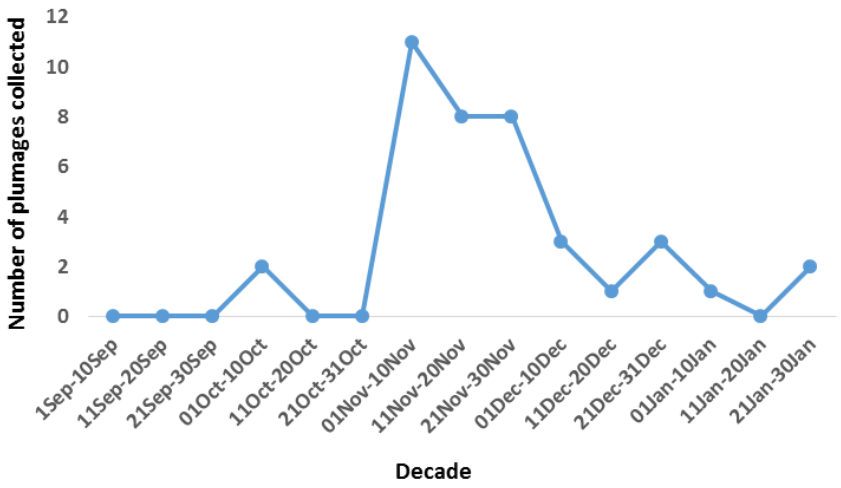

Figure 2. Intra-annual variations of Jack Snipe plumages collected in 2017/2018.

There is evidence that the fields conditions play a role on migration phenology of Common Snipe and Jack Snipe. Scarce rains in August, September and October may have reduced habitat suitability in Central and Southern Italy and forced snipes to move towards those regions.

Proportion of juveniles

In total 36 Common Snipe and 39 Jack Snipe plumages were separated in two age classes: juvenile or adult. For Common Snipe the proportion of juveniles was 61,1% (age ratio = 1.5), while for Jack Snipe the proportion of juveniles (estimated from examination of tail feathers) was 69,2% (Figure 3).

Proportion of males/females

For Common Snipe it was not possible to determine the sex, because we did not have the tail feathers. For Jack Snipe, the proportion of males in the whole sample was 23% (n=39, considering wings length < 115 mm being females and wings length > 117 mm being males and a correction of 1.7 mm because of the wing drying) (Figure 4) (Devort *et al.* 2017). In agreement with Le Rest *et al.* (2017), we cannot say if it was a result of differential distribution during winter between males and females or if it reflected a disequilibrium in the population of Jack Snipe.

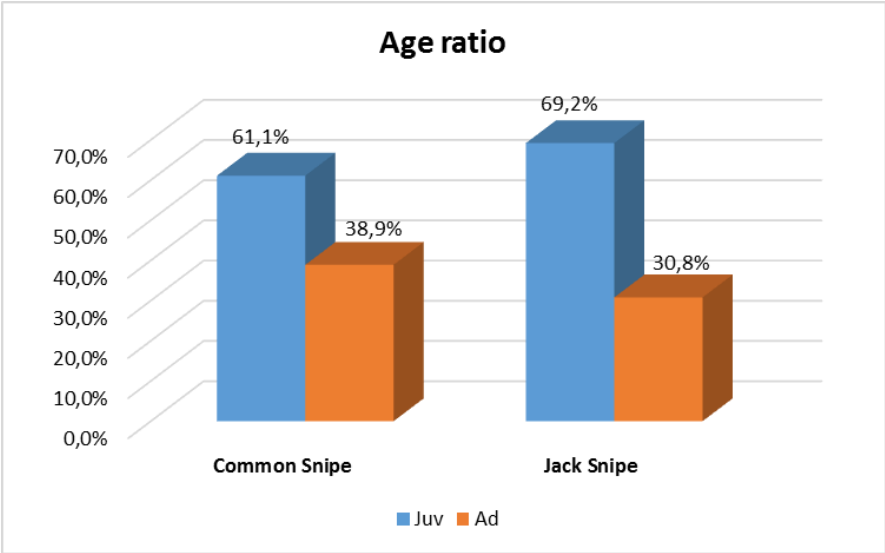

Figure 3. Proportion of juveniles among Common Snipe and Jack Snipe plumages collected in 2017/2018.

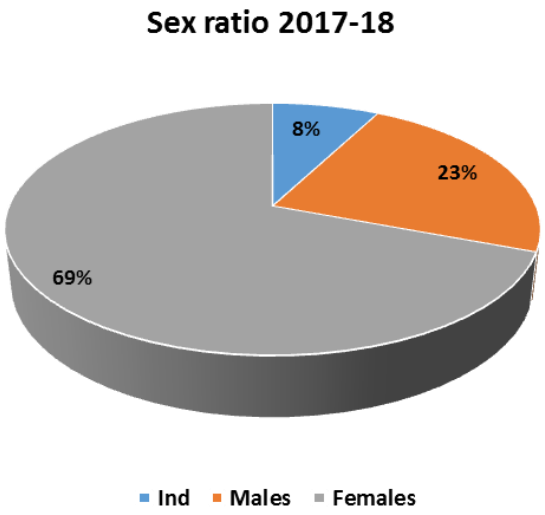

Figure 4. Proportion of males/females among Jack Snipe plumages collected in 2017/2018.

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2017-2018 Woodcock hunting season in mainland Portugal

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This report presents the results gathered by the *Associação Nacional de Caçadores de Galinholas* (ANCG; National Association of Woodcock Hunters) during the 2017-2018 Woodcock (*Scolopax rusticola*) hunting season in mainland Portugal. Hunting was allowed from November 1, 2017 to February 10, 2018, on, at least, two days per week (Sundays, Thursdays), and national holidays, with a bag limit of three birds/hunter/day. These regulations are the same since 2009-2010 hunting season, when ANCG started to collect information to evaluate the Woodcock hunting season in mainland Portugal.

Abundance

We analysed 440 hunting trip reports, performed by 36 different collaborators in 17 districts (Figure 1a). One hunting trip corresponds to one morning or one afternoon of hunting, with pointing dogs. Ten of the 17 districts represented had 10 or more hunting trips reported. The mean (± SE) duration of a hunting trip was 3.45 ± 0.05 hours (n = 440), and most were performed by hunters hunting alone (44.8%) or in pairs (36.1%).

We estimated a hunting index of abundance (ICA – *Indice Cynégétique d'Abondance*) which corresponds to the number of different Woodcock seen, per hunter, during a standard hunting trip of 3.5 hours. The ICA mean value (± SE) for the 2017-2018 season, 1.33 ± 0.08, was lower than the recorded on the previous hunting season ($z = 3.464$, $p = 0.010$) (Figure 2).

The pattern of variation in abundance throughout the 2017-2018 hunting season (Figure 3, red line) differed from the mean pattern of the previous seven hunting seasons (2010-2011 to 2016-2017; Figure 3, black line), namely in the decrease observed in late November, in the delay of the peak of abundance (in the second decade of December) and in the relatively low abundance in January and February.

The difference in the distribution of abundance, previously noticed between northern and southern regions of mainland Portugal (Rodrigues *et al*. 2013), was observed again, Woodcock abundance was higher in the south (Figure 1b).

Demography

We analysed 84 wings, collected by 12 different collaborators in six districts (Figure 4), but only for three of these districts the number of wings was equal to or greater than 10.

The age class [young (< year old) or adult (> 1 year old)] was determined by wing examination, according to Ferrand & Gossmann (2009), and hunters were asked to determine the birds' sex by gonad examination. The percentage of young birds was 34.5 % (Table 1), nearly half of that observed on the previous hunting season (Rodrigues *et al.* 2017) and the lowest since 2009-2010 (Figure 5).

This low value may be due to the geographic origin of most wings: 98.8% were collected in the north of the country, where the percentage of young birds tend to be lower (Rodrigues *et al.* 2016). The proportion of young and adults varied significantly between hunting seasons ($\chi^2 = 34.304$, d.f. = 8, $p < 0.001$). The percentage of males was 59.0 %. The proportion of males and females showed no significant variations between seasons ($\chi^2 = 10.835$, d.f. = 8, $p = 0.211$); the sex ratio of the Woodcock in mainland Portugal remains close to one (Rodrigues *et al*. 2013).

Unlike on previous hunting seasons (e.g. Rodrigues *et al.* 2016), the few wings received for 2017-2018 do not allow the representation of the geographic distribution of the percentage of young birds.

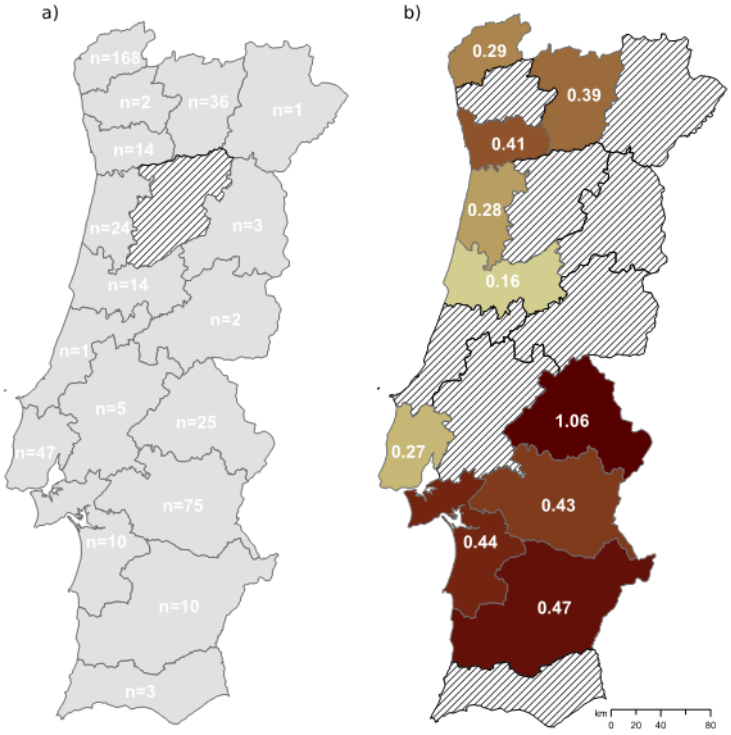

Figure 1. Results for the Woodcock hunting trip reports in mainland Portugal, by district, in the 2017-2018 hunting season: a) Distribution of the hunting trip reports analysed (in grey). b) Variation in the mean value of abundance of Woodcock (hunting index of abundance = number of different Woodcock seen, per hunter, during a standard hunting trip of 3.5 hours); (only districts with 10 or more reports were considered).

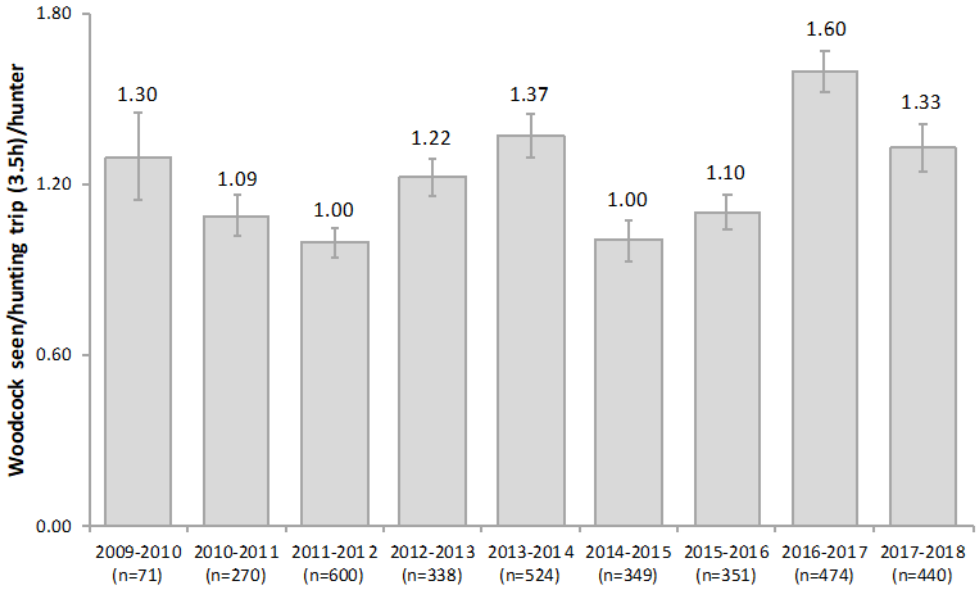

Figure 2. Variation, by hunting season, of the mean (±SE) value of abundance of Woodcock (hunting index of abundance = number of different Woodcock seen, per hunter, during a standard hunting trip of 3.5 hours), in mainland Portugal; n = number of hunting trips analysed.

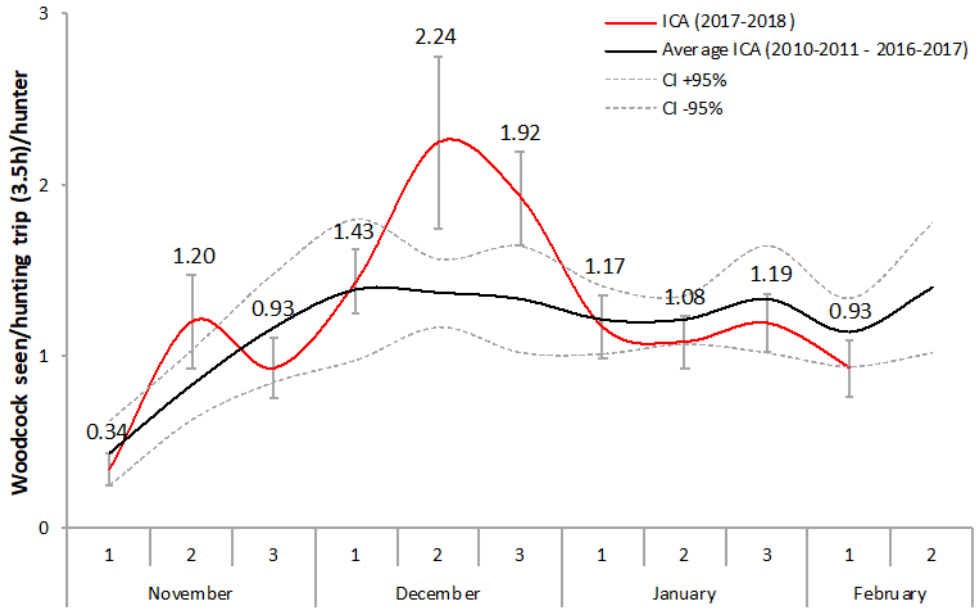

Figure 3. Variation, by decade (period of ten days), of the mean value of abundance of Woodcock (hunting index of abundance, ICA = number of different Woodcock seen, per hunter, during a standard hunting trip of 3.5 hours), in the hunting season 2017-2018 (red line; vertical lines: ± CI 95%), and the average for the seasons 2010-2011 to 2016-2017 (dark line; dashed line: ± CI 95%) in mainland Portugal.

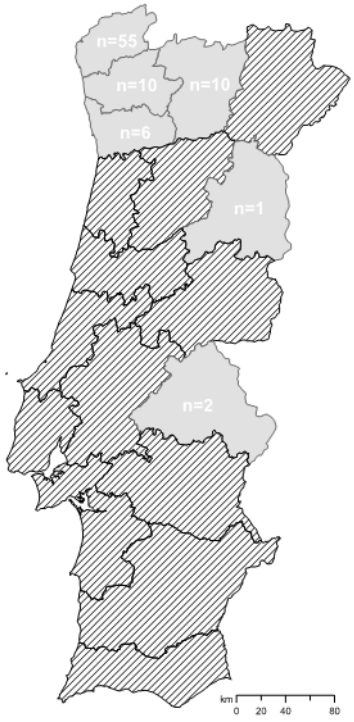

Figure 4. Distribution of the number of Woodcock wings collected in mainland Portugal, by district, in the 2017-2018 hunting season.

Table 1. Frequencies of age and sex classes among the Woodcock analysed in the 2017-2018 hunting season.

		Age		
		Adults	Young	Total
Sex	Females	20	5	25
	Males	23	13	36
	Undetermined	12	11	23
	Total	55	29	84

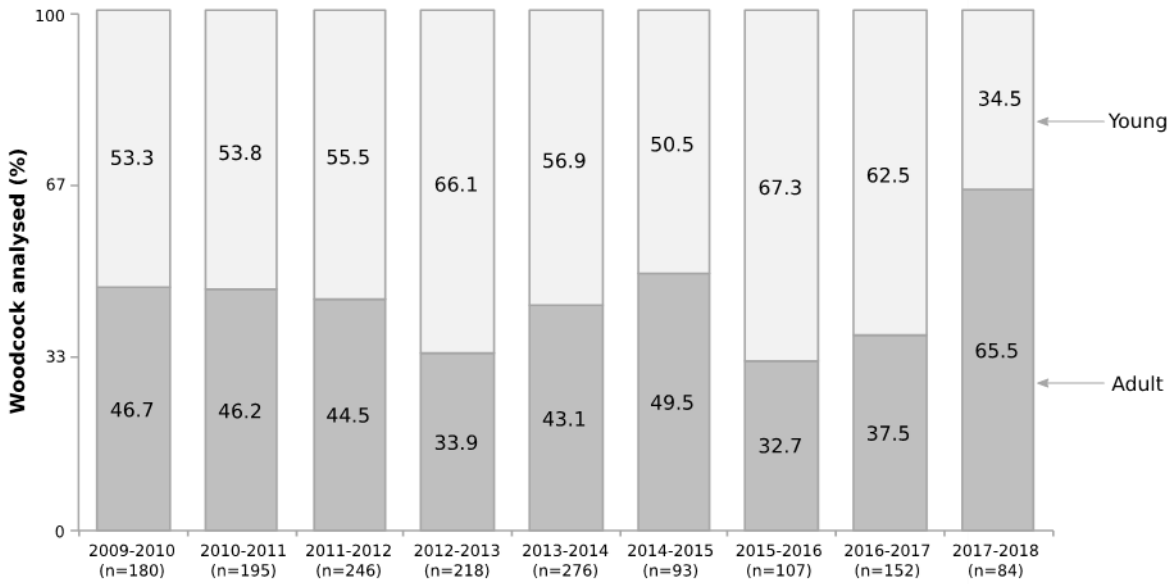

Figure 5. Variation, by hunting season, of the percentages of young and adult Woodcock analysed in mainland Portugal; n = number of wings analysed.

Body condition

The hunters determined the weight of 57 Woodcock shot. The mean body weight (± SE) of the birds in the 2017-2018 hunting season was 307.0 ± 4.4 g (Table 2). There were no differences in body weight between sexes ($F_{1,54}$ = 0.035, p = 0.852), or age classes ($F_{1,56}$ = 0.931, p = 0.339). Weight varied among hunting seasons ($F_{8,1247}$ = 2.117, p = 0.032), in 2017-2018 the Woodcock were heavier than those from 2012-2013 (Tukey-Kramer HSD, $p < 0.05$).

Table 2. Weight of the Woodcock analysed in the 2017-2018 hunting season by age/sex class.

	Weight (g)				
	Mean	Median	Minimum	Maximum	SE
Adult females (n=19)	303.9	296.0	265.0	365.0	6.0
Young females (n=4)	329.5	332.5	285.0	368.0	18.5
Adult males (n=21)	306.4	304.0	232.0	380.0	6.8
Young males (n=11)	310.7	304.0	220.0	396.0	14.3
Total (n=57)	307.0	303.0	220.0	396.0	4.4

Conclusions

In the 2016-2017 hunting season in mainland Portugal, the variation in Woodcock abundance followed the general pattern of the previous hunting seasons, but the season's ICA mean value was the highest ever recorded since 2009-2010, 1.60 (Woodcock seen/hunter/hunting trip). The abundance was relatively higher in the center-interior than in coastal and northern Portugal.
Concerning the number of wings received, in 2016-2017 it increased in relation to the previous hunting season: 152 wings, sent by 15 hunters; nine districts were represented. Still, the sampling remains relatively modest. The percentage of young birds (62.5%) was one of the highest among all the hunting seasons studied and the values tended again to be lower in the coastal and northern districts. The percentage of males (44.1%) returned to a value close to those observed before 2015/2016. The birds had a body weight similar to that of the previous season.

Acknowledgements

We would like to thank all the hunters who provided the data used in this study.

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Underway, looking for Woodcock; Photo: D. Gonçalves

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Blogs

COLIN MISKELLY, curator of vertebrates at the **Museum of New Zealand**, Te Papa, provided us with the links to two articles published on the "Te Papa Blog", concerning snipes' endemic to New Zealand, genus *Coenocorypha*.

Although not currently part of the genus *Gallinago*, I think it is very interesting and important to be aware of what is known about these very specific endemic species. The links are listed below. My thanks to Colin and

congratulations for your work.

A sniper in the subantarctic (https://blog.tepapa.govt.nz/2018/02/26/a-sniper-in-the-subantarctic/)

Snares Island snipe and chick. Photo by Colin Miskelly.

The littlest snipe (https://blog.tepapa.govt.nz/2018/04/09/the-littlest-snipe/)

An adult male Chatham Island snipe, Rangatira Island, March 2018. Photo by Colin Miskelly.