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Wetlands International

This Newsletter is supposed to serve as a contact organ to inform the members of the Woodcock and Snipe Specialist Group (WSSG), a research unit of Wetlands International (WI) and likewise of the IUCN-The World Conservation Union. Subjects of the WSSG are species of the genus *Scolopax*, *Gallinago* and *Lymnocryptes* that differ in several respects remarkably from all other wader species. For this reason a separate research unit was established.

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Editorial

This Newsletter issue is one of the most “generous” ones we have ever had. This obviously reflects the dynamism of the WSSG members. Our colleagues in Central Europe (Russia, Belarus, and also Switzerland) did put the hours in as their numerous contributions are showing. This is clearly very important insofar as the Woodcock and Snipe conservation status greatly depends on the situation in the breeding range. Thanks to their work, knowledge in the “source” countries is improving more and more. We have to encourage these studies and help them as much as we can….but also continue research in Western Europe. The breeding Woodcock survey in progress in Britain is a good example of the information we need. Any Woodcock and Snipe monitoring programme set up in the countries of the distribution area in order to estimate the demographic trend, is one of the most important works we can (and must) promote. That means wintering, migration and breeding survey as well. American colleagues have shown us the way as we can see in the Michigan report in this issue. We can easily understand the interest of such data for documents like Waterbird Population Estimates published by Wetlands International. The 4th edition (in which the WSSG coordinator participated) is in progress but new and more precise information is rather scarce. This is the general objective for the coming years that I would like to propose to you.

How time flies ! After many years of wildlife studies, especially on Woodcock and Snipe at the National Environmental Research Institute in Denmark, Ib Clausager is now retired. We owe him many in depth studies on age criteria of Woodcock that are now used by all specialists. Ib was a forerunner in terms of monitoring. Thanks to his work we got every year very precise information on the age-ratios in Danish Woodcock and Snipe hunting bags which, for many times, also rang an alarm bell for the demographic situation of populations. The data series he collected are probably the longest ones we have in Europe. On behalf of all WSSG members, I would like to thank Ib for his great contribution to our work, his constant kindness and helpfulness, and I sincerely wish him a very pleasant and active retirement.

Three years ago, I was appointed as WSSG coordinator for a ….3 year-period! I am pleased to inform you that the Wetlands International Board of Directors has just decided on my re-appointment at the same post for another 3-year period. This is totally due to the energy all WSSG members have developed. This means that our Specialist Group is considered to be an efficient and competent one. I thank you so much for all your assistance and help. I am sure that I can rely on you to do as well (and surely better !) in the following years.

As usual, I encourage you to send me any time any information you consider important for the Group, and I wish you much success with your scientific work.

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Spring migration of the woodcock, *Scolopax rusticola,* and roding in Russia in 2004

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The annual monitoring of the Russian populations of breeding Woodcock (*Scolopax rusticola*) is very important for the understanding of European population trends. With this aim, we observe spring migration, count roding males, collect meteorological data and information about nests and broods every year. This work is carried out with the financial support of the *Office National de la Chasse et de la Faune Sauvage* in accordance with a special agreement. Some results from 2004 are presented in this paper.

Spring migration

Spring 2004 came to Russia some earlier than usually. In what Central Russia the first roding birds were observed on 25 March (Drovnovo, West of Vladimir region, 160 km E from Moscow and near Serpukhov, south of Moscow region, 100 km south from Moscow), on 26 March (Pokrov, West of Vladimir region) and on 27 March (Gavrilov-Posad, South-West of Ivanovo region). Near Moscow (in the vicinity of Vnukovo airport) the first woodcocks were observed on 31 March. These are the earliest roding data for the last 25 years in these regions. Usually, the first roding birds are observed 2 weeks later. High intensity of spring migration was observed in the period 9-16 April in Central Russia. According to our evening censuses, the numbers of contacts roding of males amounted to13 and 20 contacts during this period. The month of April was cool at night [-5, +2° C] and during daytime [+8, +15° C].

The number of roding birds varied depending on the regions. In Central Russia many birds were observed during short periods of migration (25-31 March, 9-17 April). Since 17 April, their roding activity was decreasing. Locally, the number of birds during the 2004 hunting season (second part of April) was lower than during the 2003 one. However, in some sites and days roding activity was high. For example on 21 April, near Privolzhsk (Ivanovo region Furmanovsky district), 25 contacts were observed in the evening. In the same district, 33 contacts were recorded on 28 April. This could be an example of a concentrated spring migration in particular sites. We analyzed 45 woodcocks, bagged by different hunters during the hunting season in the Vladimir, Kostroma and Moscow regions: 32 were adults and only 13 (29.1%) were first year-birds. We considered that in some central regions the hunting season had opened before the mass migration of first-year birds that took place at the beginning of May when the hunting season was closed. On the opposite, in some of the south central regions the hunting season was open at the "peak" of migration. For example, in Kaluga region, the hunting season was open during the 9-18 April period and a high roding activity (more than 15 birds at listening points) was noted everywhere on 9 and 10 April. The best observations were made in the Borovsky, Zhukovsky (north) and Kirovsky (south) districts.

Overall, in Central Russia, the 2004 spring migration appeared to be rather intensive but occurred during a short period only. In some sites the density of birds was extremely high while other sites looked empty.

Weather conditions during the breeding period

In Central Russia, the first 10-days of May were warm and dry. Between 13 to 27 May the weather was cool and rainy. After a short dry and warm period from 28 May to 2 June cool and wet weather arrived again. In June, the weather was also cool and rainy. These conditions could have had a negative impact on the survival rate of early broods. However, no severe cold and nocturnal frosts were registered in June in Central Russia. July was warm and wet and such "tropical" conditions were very favourable to woodcock breeding, mainly for late broods. In August we observed juvenile and adult birds both in the forest and in feeding sites.
A more unfavourable situation during the breeding season was observed in North-East of the Central region of European Russia (Kostroma, Kirov) and in the Ural (Perm, Cheliabinsk, Ekaterinburg), because of a cold spell and snow in the beginning of May. Moreover, in the Ural, the summer was dry and hot.
In the north of Russia (Arkhangelsk, Vologda, Komi republic) spring arrived early and warm temperatures were noted just after woodcock arrival. After that, the spring came slowly and was long without cold spells. In the north of Arkhangelsk (valley of the Pokshenga river) the snow still covered 50% of the forest ground on18 May. June was not cold, but with strong rains, especially on 16-18 June (flooding was observed). We do not precisely know the impact of this phenomenon on woodcock breeding success. Then the summer was extremely dry before 10 August. There were also a few forest fires. In our opinion these conditions are not favorable to woodcock breeding success.

Overall, 2004 spring-summer was rather favorable to woodcock breeding in Central European Russia, but not in the North and the Ural regions.

Monitoring of breeding numbers

Roding male censuses were carried out at listening points by two main methods: in squares (24x24 and 12x12 km) by a random method (Ferrand, 1993) and through the National roding census on the last Saturday of May.

Censuses on squares

Censuses in squares have been carried out every year since 2000 at 210 to 236 listening points located in 9-10 large (24 x 24 km) and 3-5 small (12 x 12 km) squares. The number of contacts of roding males per 2 hour-periods of observation in the evening (from 21.00 to 23.00) in every point were written down. The censuses were only carried out in good weather conditions (no wind, no rain) in the 20 May - 1 July period.
In 2004, censuses were made in 6 regions (10 districts) of Central European Russia: the Moscow, Vladimir, Kostroma, Ivanovo, Tver and Ryazan *oblasts* and in the North of the Arkhangelsk region (Pinezhsky district). The counts were made in 9 large (24 x 24 km) and 2 small (12 x 12 km) squares. 2061 contacts with roding males were noted at 210 listening points. The average number of contacts amounted to 9.8 per evening. That is somewhat more than in 2002 (9.1), but less than in 2000 (10.2) and 2001 (11.5). "Zero" points (without roding) represented 5.0% in 2004. The decreasing trend of "zero" points is confirmed again (15.3% in 2000; 8.9% in 2001; 7.2% in 2002; 6.2% in 2003). On the opposite, the number of maximum contacts per evening decreases from year to year: 57 in 2000, 49 in 2001, 34 in 2002 and 31 in 2003. In 2004, the maximum number was 36 contacts (Kostroma). The 2000-2004 census results are presented in figures 1-4. According to the general opinion of the observers , the number of birds in 2004 was the same or somewhat less than in 2003 in most of the regions, except in the North of Russia.

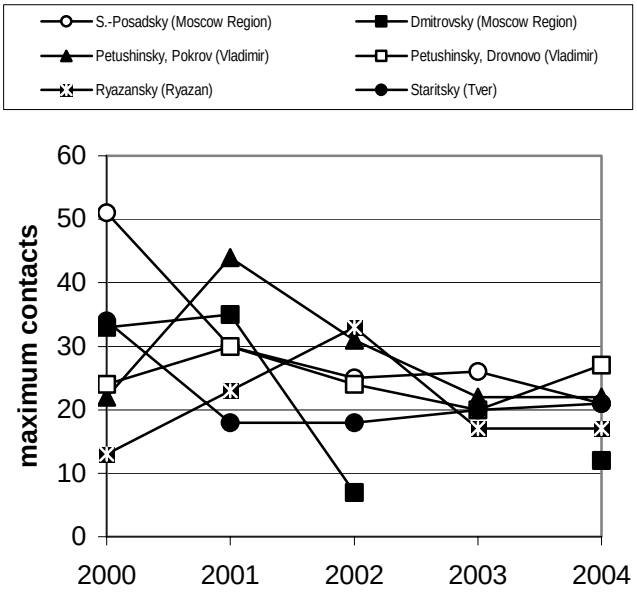

Figure 1: *Maximum number of contacts censused on squares in different regions of Russia in 2000-2004.*

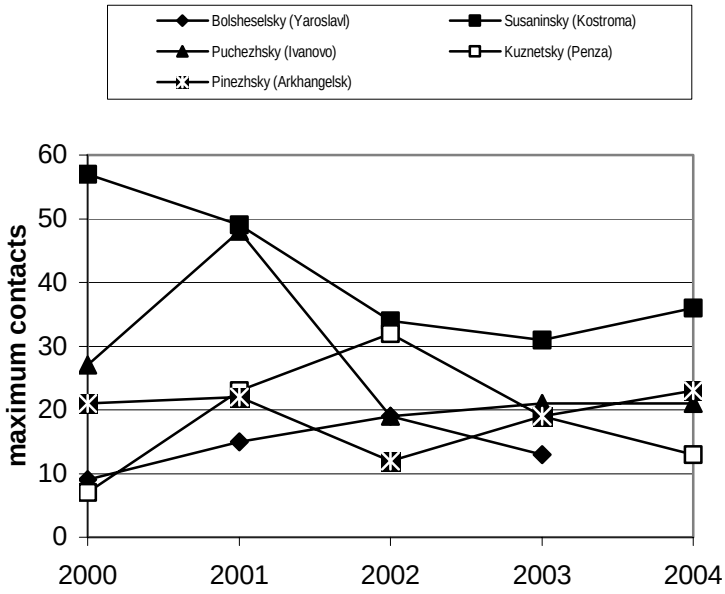

Figure 2: *Maximum number of contacts censused on squares in different regions of Russia in 2000 – 2004.*

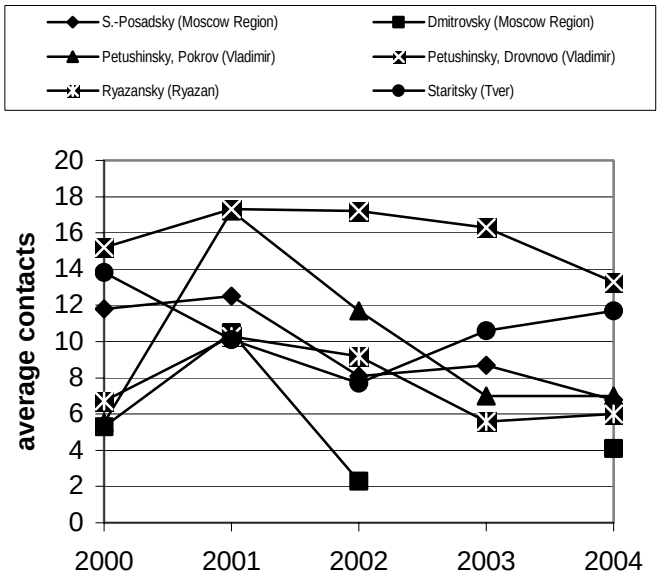

Figure 3: *Average number of contacts censused on squares in different regions of Russia in 2000 – 2004.*

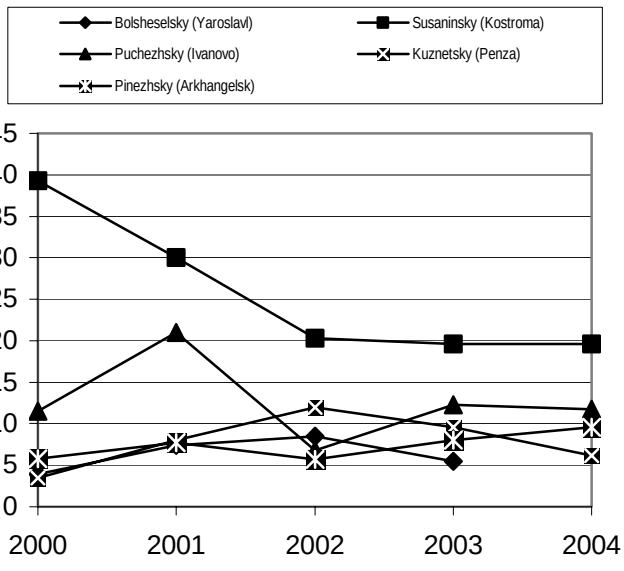

Figure 4: *Average number of contacts censused on squares in different regions of Russia in 2000 – 2004.*

Further roding observations have been made since 1993 at a constant listening point in the North of Arkhangelsk region, Syloga river valley (Berezovka place, (63°19' N; 43°21' E). Every year, 3 to17 censuses (8 on average) were carried out at this point in May-June. In total, 1,223 contacts were observed during 88 evenings (average:14; maximum: 35; minimum: 3 / evening). In 2004, the number of contacts per 2 hour-observations was 10.3. This value is close to the average recorded at all listening points in the "Arkhangelsk" region quadrats in the same year (10.5). The number of roding birds in 2004 was 130% on average (Fig. 5).

At this listening point, the number of roding males was maximum in 1993 and in 1998, and minimum in 1994 and 2002. Since 2003, we observed an increase in roding males in this site.

Generally, the number of roding birds in 2004 was the same as in 2003, but somewhat more than in 2002. In the North of Russia the number of roding males tends to increase. However, we think that it will take time to restore the woodcock breeding numbers after the bad weather conditions encountered by the birds in the winters of 2000/2001, 2001/2002 and in the summer of 2002.

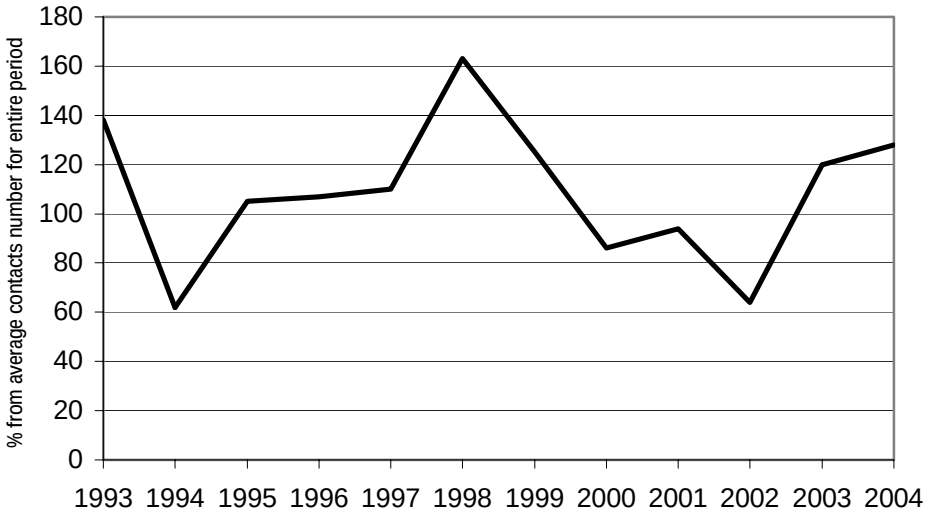

Figure 5: *Roding intensity in the north of the Russian taiga (Arkhangelsk region) in 1993-2004 at a given point in the valley of Syloga river.*

6th national roding census

As of 1999, national roding censuses have been organized by the Moscow woodcock research group together with the Russian hunting association. Every year data are collected in 19 to 35 *oblasts* of European Russia and the Ural in forest areas, except North Caucasus,. Information on this national census, together with questionnaires and methods, is distributed to hunter associations and given in hunting newsletters. The general results of the national roding census are published annually.

A questionnaire is filled out by one observer for one evening at one listening point. Observers are volunteers. Observations are limited to the 2 hour-period around sunset. Every observer is required to note on a form: the location of the point, the description of the roding place, the time when roding starts, the number of seen and heard woodcocks independently of distance, the number of contacts with 2, 3 and more birds at once.

The national roding censuses were made in the same evening for the whole country: on the last Saturday of May. In 2004, it was on 29 May. We distributed about 5 000 forms through the Russian Hunting Association, Military Hunting Association and Regional Hunting Department.

According to our information, in Russia the maximum of roding intensity and stability of contacts from one evening to another is reached between 20 May and 20 June. Roding intensity depends on the weather conditions

during the evening census. The census method allows to postpone the census day to the next few days in order to await better weather conditions for roding observation. So, in 2004, the census was conducted on the fixed Saturday at 93 % of the listening points. For 80-90% of listening points roding started at 21:00 to 23:00. In 2004, we received 2,126 forms from 35 *oblasts*. 7.2 % of them were rejected, because of mistakes during the application of the census method.

The general results are presented in table 1.

In 2004, no roding was observed at 2.0% of the listening points (n=1,973) in 11 regions, and mainly in the Saratov (38.2% of census points), Orenburg (37.5%) and Voronezh regions (17.8%). These regions belong to the south Central-Chernozem region and are more favourable for autumn migration than for breeding. In Central Russia, "zero" points were mainly noted in the Ryazan (2.9%) and Moscow regions (2.1%). This could be the result of great human activity near large towns.

According to the results of the national roding censuses, the average roding intensity in Russia over the last 6 years was of 7.3-9.8 contacts for a 2 hour-period of observation. The average for the different regions was estimated at 2.4 to 16.4 contacts.

Wintering in Russia

Part of the Russian woodcocks used to migrate by a South-South-West flyway. A proportion of these birds will stay in the South of Russia near the Black Sea coast (maritime regions of Krasnodar krai) during the winter, especially in the mild ones. The winter of 2003/2004 was warm and wet in the south of Russia. These conditions were favorable for wintering. During this winter many woodcocks, snipes and pigeons stayed in the Black Sea regions from Novorossiisk to Adler. During our expedition to this region (4-20 January 2004) 129 woodcocks were observed (28 were ringed) during13 nocturnal trips. On average, 10 contacts per night (2.5 hours trip) were recorded. According to the reports of our correspondents, the number of woodcocks in November-December near Novorossiisk was extremely higher than usually. On the opposite, in Georgia and Abkhazia the number of birds was lower. In Russia, the woodcock hunting season is closed in winter.

Table 1: *General results of the 6th national roding census*

Total amount of contacts: **14,711**
Total amount of woodcocks: **17,920**
Total listening points: **1,973**
Average number of contacts per 2 hours: **7.5**
Average number of woodcocks per 2 hours: **9.1**
"Zero" points (without roding): **40 (2.0%)**
Maximum contacts at one point: **44** (Chuvashiya republic)
Maximum birds at one point: **48** (Chuvashiya republic)
Regions with little roding activity (1 - 5 contacts on average): **Volgograd, Voronezh, Saratov, Tambov, Orenburg, Mordovia republic**
Regions with mean roding activity (5,1 - 10 contacts): **Bashkortostan, Chuvashia, Karelia, Komi, Mari-El, Tatarstan, Belgorod, Briansk, Cheliabinsk, Ivanovo, Kirov, Kostroma, Moscow, Ryazan, Sverdlovsk, Smolensk, Tver, Ulianovsk, Perm, Vladimir, Vologda, Udmurtia republic.**
Regions with high roding activity (more than 10,1 contacts): **Arkhangelsk, Kaliningrad, Kaluga, Leningrad, Pskov.**

The natural nesting habitat of Snipe, *Gallinago gallinago gallinago*, in Russia

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Among the waders, the subfamily *Scolopacinae*, of the genus *Gallinago*, and its representative *Gallinago gallinago gallinago*, belong to the least studied ones. This also applies to the vagueness of the Snipe's natural nesting habitat borders in Russia, especially in the Asian part. This led us to a more scrupulous analysis of available literature (more than 300 sources by which the Snipe is mentioned) in order to specify this border and mark it off according to a greater number of points of actual nest findings, obtained in the last decades. Not only all registrations of nesting at the periphery of their natural habitat were of interest, but also within it.
On map (Fig. 1) all precisely determined points of nesting of the species are shown, that we managed to find in literature. In the article, however, only the extreme, boundary nest findings are mentioned to mark off the borders of the Snipe's natural nesting habitats, that were verified by descriptions, and, in some cases, points of probable nestings.
We should note that this information is part of the scientific programme on reproduction and distribution of Snipe in Russia, that was devised thanks to the agreement with the French *Office national de la chasse et de la faune sauvage.*

East-European plain and Ural

The western border of the Snipe's natural habitat runs along the west national frontier (Stepanyan, 1990), and the extreme nest findings were made on the shores of the Vislinsky bay in the Kaliningrad province, near 20° E (Yarovikova, 2004). Nests were found in the provinces located along the west frontier to the north, for example, in the environment of Pskov near 28° E (Kozlova, 1962), in Lakhta by S.-Petersburg near 30° E (Malchevsky & Pukinsky, 1983) and near 31° E on Valaam island on Lake Ladoga in Karelia (Mikhaleva, 2001). Far in the north the most western findings of Snipe nests were made between 31° 07' and 32° 45' E in the province of Murmansk in the Lapland reserve (Semenov Tyan-Shansky & Gilyazov, 1991) and near the Rybachiy peninsula on the Aynovy islands near 31° 35' E (Tatarinkova, 1980).
The southern border of the Snipe's natural habitat extends to Ukraine (Makeyevka area) (Kozlova, 1962; Ivanov, 1976) and the mouth of the Don (Tugarinov & Kozlova, 1953), however nests were found upstream where the Seversky Donets flows into the Don. There, near 47° 45' N on the territory of the Rostov province Snipe nest will not every year (Petrov & Nechayev, 1987; Belik, 1999). More northernly nest were found in the Lipetsk (Sarychev & Klimov, 1999) and Tambov (Gladkov, 1951; Okolelov, 1999) provinces. Snipes only nest in the north and north-west areas of the Saratov province. The southern border of their natural nesting habitat runs along the Volga 40 km upstream of Saratov, and the most southern findings refer to a latitude of near 51° 40' (Zavyalov *et all*., 1998), while Syepanyan (1990) indicated that the southern border of Povolzhye runs along the latitude of 49°. In the South of the Ural in the Orenburg province, Snipes are nesting (Davygora, 2000). However, near the border with Kazakhstan in the east of the province (Svetlinsky district) (Korshikov, 2000) and in the south (Sol-Iletsky district) it was found only on flight (Ryabitsev *et all*., 2001). Easterly nesting has been confirmed in the north of Chelyabinsk province (Kozlova, 1962).
At the northern border of its natural habitat. and according to Ivanov (1976), in the Kola Peninsula the Snipe extends to Murman, although by another information snipes may be found up to the arctic coast (Gladkov, 1951; Stepanyan, 1990). Kozlova (1962), referring to Blair (1936), pointed at findings of clutches and chicks in the Varanger fjord, close to the north-western frontier of Russia. Near the border with Norway on Kola Peninsula ("Pasvik" reserve) nesting is supposed (Grachev, 2002), but according to another

information Snipe are actually nesting there (Makarova *et al*., 2003). Nesting was precisely verified in the Lapland reserve near the latitude of 67° (Bianki *et al*., 1982) in the province ofMurmansk and on the coast of the Mezenskaya inlet in the province of Arkhangelsk and in the Nenetsky autonomous region (Kozlova, 1962). Although any distribution of Snipe to the north on Kanin is still unknown (Yestafyev, 1995), according to Ivanov (1976), this wader nests on the peninsula up to 68° 30' N. It nests in the Malozemelskaya tundra on the Velt river near the latitude of 68° (Gladkov, 1951). It was found nesting in the delta of Pechora on Lovetsky island, 68° 20' N (Anoshin & Mezhnev, *pers. comm.*), in theBolshezemelskaya tundra in the region of More-Yu between 67° 10' and 68° 20' N (Yestafyev, 1991) and on the coast of the Yugorsky Shar strait near 69° 26' N (Uspensky, 1965). In the north-east of the European part of Russia the Snipe nests to the north up to the south-arctic tundra sub-zone (Morozov, 1998). In Polar Ural nesting has been revealed near the latitude of 68° in the country between the rivers Baydarata and Laptayakha (Golovatin & Paskhalny, 2003).
Moreover, nesting of Snipe has been confirmed on the Aynovy islands at the latitude of 69° 50' N (Tatarinkova, 1980) and on Vaygach island at the latitude of 70° 15' N (Kalyakin, 1988; Litvin & Gurtovaya, 1997; Morozov, 2001).

West Siberia

The southern border of its natural habitat runs near the frontier with Kazakhstan (Stepanyan, 1990 *et al*.). Snipe widely populates the Tobolo-Ishimskoye country between the two rivers (Kurgan and Tiumen provinces), where it nests in northern forest-steppe, and is only on flight to the south (Blinova & Blinov, 1997). In the Omsk province it nests in all types of landscape (Yakimenko, 1998). Nests are found in the Ishimsky area (Tiumen province) near latitude 56 and in the Tevrizsky area of the Omsk province near 57° 20' N (Boyko *et al*., 1999). It nests in the Barabinskaya lowland (near Barabinsk at 55° 20' N) and the Ob valley (in the Novosibirskoye reservoir and near Biysk) in the territories of the Novosibirsk province and the Altai (Kozlova, 1962; Gyngazov & Molovidov, 1977). It nests in the inner areas of the Mountainous Altai (Sushkin, 1938; Kuchin, 1973). Nests are found in the Altai Republic on Tenginskoye lake at 50° 50' N and Dzhulu-Kul lake (along the frontier with Tyva) at 50° 35' N (Kuchin, 1976, 1988). Snipes are nesting in the basin of r. Lebed and on Teletskoye lake (Kuchin, 2000). Snipes are found nesting even at heights of up to 2.000 m above sea level in West Altai (Scherbakov, 1990), on Manzherokskoye lake in North Altai and the Ukok plateau in South-East Altai (Malkov & Malkov, 2002). In South Altai outside Russia it nests in the East-Kazakhstan area, where nests are found near Ust-Kamenogorsk (Ivanov, 1976) and in the Markakolskaya hollow (Berezovikov, 1988).
At the northern border of its natural habitat Snipes are nesting all over the territory of the autonomous region of Yamalo-Nenetsky, with the exception of the arctic tundras (Ryzhanovsky & Paskhalny, 2000). It nests on the coast of the Baydaratskaya inlet in the lower reaches of r. Yenzor-Yakha below the latitude of 68° (Karagodin *et al*., 1998). On Yamal it is found nesting to the north up to r. Seyakha near 70° 20' N (Paskhalny & Golovatin, 1995), on the Gydansky peninsula – up to the Yuribei trading station near 71° 00' N (Zhukov & Golubev, 1990).

Middle and East Siberia

The southern border of its natural habitat runs outside Russia (Tugarinov & Kozlova, 1953). The Snipe is distributed to the south up to the "Minusinskaya hollow, Tes-Khem valley, southern Predbaykalye, southern Zabaykalye, the frontier with China (Heyluntszyan province) (Stepanyan, 1990). There are no data on actual nets findings. In Tuva displaying Snipes were found in Uryankhaya, on Ubsu-Nur lake (Yanushevich, 1952), and also in the Kyzylsky and Tandinsky districts of the Central hollow on rivers Haryn-Gol and Tes-Khem (Berman & Zabelin, 1963). Snipes are nesting in Mongolia on the frontier with Buryatia (Khubsugul lake) (Skryabin & Toopitsin, 1998), and more easterly – near Kyakhta and Tshita (Tugarinov & Kozlova, 1953). It is certain that it nests at latitude 56 on Yenisei by Krasnoyarsk (Kozlova, 1962) and in the Irkutsk province on the Bratskoye

reservoir (Lipiin *et al*., 1968) and near latitude 52 in Buryatia on the southern part of Baikal (Tolchin *et al*., 1977; Vasilchenko, 1987) and in the Tchita province near the Ivano-Arakhleyskiye lakes (Izmaylov, 1967). More easterly the most important southern nest findings are in Yakutia in Leno-Kamginskoye country between two rivers above 61° 00' N (Larionov *et al*., 1991).

The northern border of its natural habitat in Siberia runs through the Taymyr autonomous region and the Sakha Republic (Yakutia). Displaying males were registered in the north up to the typical tundra sub-zone and, rarely, even in the arctic tundra (Tomkovich & Vronsky, 1994). Along the valley of Yenisei snipes are nesting up to 70° 10' N. (Rogacheva, 1988), although the most northernly nest finding was in the forest-tundra near the village of Vikolsk at the latitude of 69° (Rogacheva *et al*., 1983). In west Taymyr it is nesting everywhere towards the south of the upper reaches of Pura, i. e. 71° 30' N (Krechmar, 1966) and in central Taymyr in the mouth of the Malaya Logata river (Artyukhov, 1998). According to Stepanyan (1990), in the Taymyr region the Snipe reaches parallel 74. Rogacheva (1998) marks the northern border of the Snipe's nesting natural habitat in central Taymyr off at approximately 73° - 73° 30' N (r. Verkhniaya Taymyra), in east Taymyr – near 72° 30' (Ary-Mas) and towards the mouth of Khatanga (B. Karga cape) near 73° 00' N. At the same time, on Taymyr nests are only found on r. Boganida between latitudes of 71° and 72° (Kozlova, 1962), in a lake section of the Ary-Mas forest-tundra in the Taymyr reserve (Chupin, 1987), as well as in the lower reaches of the Khatanga river near v. Khatanga at 72° 00' N (Kozlova, 1962) and to the south from the mouth of the Popigay river at almost 72° 51' N (Gavrilov, 1993; Golovnyuk *et al*., 1998).

This species is widely distributed in Yakutia (Vorobyev, 1963), except in the arctic tundra (Uspensky *et al*., 1962). On the Anabar river in the north-west part of Yakutia Snipe was observed to the north up to the Uryung-Khaya river (Gladkov & Zaletayev, 1965). It nests in the country between the Olenek – Lena – Kharaulakh – Kuolay rivers (Artykhov, 1990), the Yana delta (Stepanyan, 1990), in the Yano-Indigirskaya lowland and the Indigirka delta (Uspensky *et al*., 1962 *et al*.). However, few nests were found along the arctic coast. Nesting is proved in the Lena delta at latitude 72° 50' (Blokhin, 1990) and the Buor-Khaya inlet (Kapitonov, 1962; Tomkovich, 1988; Blokhin, 1994). A clutch was found by S. V. Volkov in the Yana delta (v. Nizhneyansk) near 71° 20' N (collection of the Zoological Museum of the RSU). More undoubtedly easterly it nests in the Chromo-Indigirskaya tundra at 70° 30' N (Vorobyev, 1963) and in the Kolyma delta (v. Mikhalkino) at 69° 30' N (Spangenberg, 1960; Nikolayev *et al*., 1977).

Far East

At the southern border of its natural habitat, Snipes are nesting in all areas of the Amur region (Barancheyev, 1954), for example, in the upper Zeya basin (Tugarinov & Kozlova, 1953), although there are no proofs of nesting (Kozlova, 1962). It does not nest, but is observed on flight in the Bureinsko-Khinganskaya lowlands (r. Amur) (Vinter, 1982). On the Amur nesting has only been proved in the very lower reaches of the river (Ivanov, 1976), and even in later works (Babenko, 2000) there are no reports of actual nest findings. There is no information on Snipe nesting in the Ussuriysky Territory (Primorye), although of nesting have supposedly taken place in the lower reaches of Bikin (summer observations of displaying birds) (Vorobyev, 1954). In the lower reaches of r. Ussuri nesting has neither been proved (Tugarinov & Kozlova, 1953). In the basin of r. Iman the Snipe does not nest, but is found on flight (Spangenberg, 1965). According to Kozlova (1962), in Primorye this species does apparently not nest. By latest information, the Snipe's nesting in the Primorsky Territory still remains questionable (Nechayev, 1998). It is a flight species on the Kuril Islands (Gizenko, 1955; Nechayev, 1969; Ivanov, 1976). In the north of Sakhalin Snipe are nesting for certain in the Shmidt peninsula and in the North-Sakhalin plain, the north-west coast and in the lower reaches of r. Tym near latitude 52 (Nechayev, 1991).

At he northern border of its natural habitat and according to Kischinsky (1988), Snipes are nesting northwards up to the southern border of arctic tundra in the north-east of Asia to the north of the Lena delta. For certain, Snipe nests on Chukotka near latitude 69 in the Chaunskya lowland (Ostapenko, 1973; Krechmat *et al*.,

1991) and on the coast of the Schmidt cape (Dorogoy, 1998), near latitude 68 on the Amguema river (Dorogoy, 1997) and above latitude 66 in the middle reaches of r. Chegitun (Syroechkovsky *et al*., 2003).
The eastern border of the Snipe's natural habitat runs through the territory of the Sakhalin and Kamchatka areas and the Koryak and Chukotka autonomous regions. According to Stepanyan (1990), Snipe is distributed up to the east coast of the Chukotsky peninsula, the coast of the Bering Sea, Kamchatka, the Komandorskiye islands, the coast of the Sea of Okhotsk and Sakhalin, the southern part of the Ussuri basin. However nesting is not precisely determined on the Komandorskiye islands and Ussuri river (Kozlova, 1962).
The north-east coast of Sakhalin (Chaivo bay near 143° 20' E) is the most easternly place of Snipe nesting in the south of the Far East (Nechayev, 1991). Further eastern points of nesting are the environment of Petropavlovsk-Kamchatsky near 159° 00' E (Gerasimov, 2003), the Kronotsy reserve near longitude 161 (Lobkov, 1986) and Karaginsky Island between longitudes 163 – 165 (Gerasimov & Vyatkin, 1973). Snipe are even nesting at heights up to 1.100 m above sea level (Gerasimov, 2002). More northerly nests are found in Parapolsky dale (Lobkov, 1983), on the Koryak plateau in the Geka bay near 165° 10' E, on r. Khatyrka near 175° 30' E (Kischinsky, 1980), on the Anadyr from its upper reaches to the mouth of this river near 177° 40' E (Kiryuschenko, 1973; Krechmar *et al*., 1991; Dorogoy, 1997), on the Kanchalan river at 179° 10' E (Kischinsky *et all*., 1983) and on the Chukot Peninsula on r. Chegitun near 172° 00' W (Syroechkovsky *et all*., 2003).

Results and discussion

According to bibliographical sources, containing concrete information on nesting (clutches and unfledges chicks), the area of Snipe reproduction in Russia ranges from the west to the east: from 20° E to 172° W, from Vislinsky Bay of the Baltic Sea to r. Chegitun in the east of Chukotka. In the European part of Russia the most extreme nesting area in the south, probably isolated from the main natural habitat points of nesting, is located between latitudes 47 – 48 in the lower reaches of Seversky Donets. Other most southerly findings of nests were situated between latitudes 51 and 52 on the Lower Volga. In the north, the border of extreme Snipe distribution runs near latitude 70 on the Aynovy and the Vaigach Islands, and on the mainland Bely Nos Cape on the Yugorsky Peninsula is the most northern point. In the Asian part of the country the most southern place of Snipe nesting is known to be situated between latitudes 50 and 51 in the Altai and on the Lake Dzhulu-Kul. In East Siberia (river sources of Angara, L. Arakhley) and in the Far East (North Sakhalin and south-east Kamchatka) the extreme points of determined nesting are located near latitude 51. In the north the most extreme nest findings are found almost below latitude 73 in the lower reaches of the Khatanga and Lena delta – these are the highest latitude areas of Snipe nesting in Eurasia.
Following the landscape-zone division of the Russian territory, the Snipe widely nests in the southern typical tundra, forest-tundra, throughout the forested area, in forest-steppe and along river valleys and lake hollows – in steppe, and does not nest in the arctic tundra nor semi-desert. In the mountains Snipes are probably nesting up to a height of 2 000 m above sea level (Altai). Snipe is found to nest only on a few islands of the arctic basin (Aynovy and Vaigach) and in the northern Pacific.
Within the administrative divisions Snipe is found on flight almost in all areas of the Russian Federation, and does not only nest in the very south of the European part: in the Astrakhan and Volgograd provinces, Kalmykia and North Caucasus, with the exception of Rostov province (Sviridova, 2000). In the Asian part of Russia the Snipe apparently does not nest, except in the Territory of Primorsky. Thus, the Snipe is probably a nesting species in 76 of the 89 republics and territoiries of the Russian Federation.

Conclusion

Although Snipe populates the major part of Russia, the modern conceptions of the distribution of the species are still insufficient. Our literature review (of course not exhaustive by the number of sources used) allowed to estimate the type of the present information on Snipe and the volume of the data collected in

different regions on this species. It revealed that by many sources suppositions or statements on Snipe reproduction in one or another area were made, that were solely based on regular contacts with displaying males. There is no doubt that a certain, and probably major part of the facts on Snipe nesting remains unpublished. Because of the "banality" of the species many authors of scientific works did not cite any concrete and detail arguments of Snipe nesting. This has even been felt in many studies that were made close to the borders of the species' natural nesting habitat, where every evidence of nesting is of undoubted interest to specify their breeding area and further monitoring of the long-term fluctuations of these borders. The absence of facts on Snipe nesting in modern publications partly explains why so little literature sources from the last decade were used in this study.

The original layout of the map of Russia with our points of investigations marked on it, although not complete shows the balance between the places with factual nest findings (provided by concrete descriptions in the literature) in the different regions of Russia. Apparent gaps along the southern border of the Snipe's natural habitat are especially visible between the Volga and Irtysh, in Middle and East Siberia and in the Far East. For the time being, this allows to mark off just a relative border, like it was decades ago. At the same time, the north and east limits of the Snipe distribution range became noticeably clearer with the appearance of new data, and showed that the boundaries of proved nesting expanded.

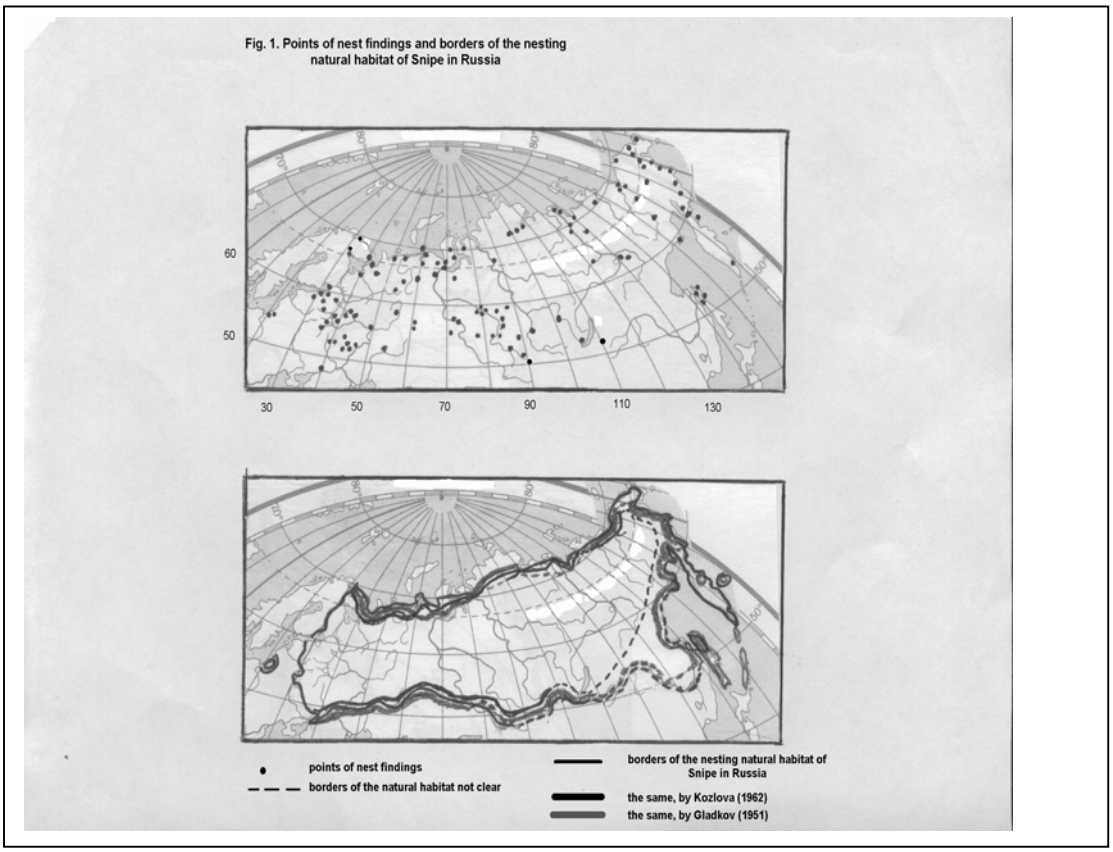

Fig. 1. Points of nest findings and borders of the nesting natural habitat of Snipe in Russia

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Regularities in the dynamics of Woodcock numbers in Central Russia during autumn migration

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Annual records of woodcock numbers were made in the same period (September-October) and on the same pasture ground (100 ha) in the area located not far from Tver (56°53´N ; 36°33´E) from 2000 to 2004. The records of nocturnal contacts were noted every night simultaneously with bird catchings to ring them according to a special scientific agreement with ONCFS.

The recorded data together with the information on the bag of hunters who used pointing dogs give an idea of the dynamics of the woodcock population numbers over several years in Central Russia.

In recent years, the frequency of woodcock occurrence in autumn biotopes has undergone considerable changes indicating a dramatic reduction in woodcock numbers. In 2000, 150 woodcocks were recorded in the permanent area over the entire survey period, the same number of woodcocks was recorded in 2001, while in 2003 and 2004 the recorded number only represented 33% and 24% of the above number respectively, i.e. three times less than

before. In 2002 woodcocks were not observed in open-land areas, because of the severe drought caused by the lack of precipitation in the snowless period. However, in that dry year, and according to the hunters bags, their number did not show any noticeable changes. Thus, a dramatic reduction in woodcock numbers has been recorded in the last two years.

In autumn, as soon as the reproduction period is over, woodcocks are mainly shot by owners of setters, pointers, and spaniels. The hunter bag in the European part of Russia is in proportion to the availability index of woodcock numbers and indirectly supports the results of the autumn records and the revealed tendency for a reduction in species numbers. In the period 2000-2002, 100 hunters with pointing dogs shot 530 woodcocks per season, on average, while in 2003 they shot only 350 woodcocks, i.e. 60% of the previous number. In 2004, along with a further reduction of the woodcock numbers, that is supported by the records taken in the permanent area, a decrease in the autumn hunter bag can be expected.

The presence of groups of two or more birds in open feeding biotopes can be considered as one of the criteria of the woodcock population state. The frequency of occurrence of such groups is in direct proportion to the number of woodcocks on pasture grounds. For example, in 2000-2001, nearly half of the see birds were grouped (40.5%). Because of the insignificant number of woodcocks in 2003 and 2004, groups of birds were seldom met; only single birds were recorded. In 2004, only two woodcocks found in the immediate vicinity of each other were recorded once.

During the study period, summer and autumn greatly differed in climatic conditions: in 2000, the amount of precipitation was relatively low; year 2001 was rainy; year 2002 featured lack of precipitation from spring up to winter; year 2004 was characterized by a humid summer and a dry autumn. However, irrespective of the climatic conditions in a given year and the weather in autumn, woodcocks appear in noticeable quantities in open biotopes on September 20-21. Before that time, in the second decade of September, they are seen on cart roads and even on paved roads. During all the years of recording, irrespective of the weather, woodcocks were observed in considerable quantities in open biotopes from September 21 up to October 6; during October 7-12, woodcocks were met irregularly and in insignificant quantities; during October 13-20, single birds were recorded and after October 20 they disappeared from the pasture and were only met by accident. Thus, it should be admitted that the terms of traditional autumn succession of feeding biotopes for woodcocks depend on reasons that are not related to weather and climatic conditions.

Throughout the study, the following readings of weather parameters were taken several times a day: atmospheric pressure, air temperature, cloudiness, wind force and direction, precipitation, phase of the moon. The analysis of these indices and results of the records obtained in the test area makes it possible to conclude that the weather (except for such extreme phenomena as heavy snow-fall and thick snow cover, low subzero temperatures) does not affect the woodcock numbers in open biotopes.

The occurrence of woodcocks in open feeding biotopes is governed by stringent regularities; this is well observed in 2000 and 2001, the years of the relatively high woodcock number. In these years, the rises and falls in woodcock numbers on pasture grounds are, in fact, observed at the same dates: September 20-23 - rise, September 24-25 - fall, September 26-28 - rise, September 29-30 fall, October 1-3 - rise and so on. The observed cyclic recurrence of variations in woodcock numbers is statistically reliable. The coefficient of correlation of rises and falls in the woodcock number is close to 1 (0.85) in the years 2000 and 2001. The revealed regularity is well illustrated by the graph.

In 2000 and 2001, the woodcock number varied at regular intervals of 2-3 days: 3 days - rise, then 2 days - fall. The tendency for a similar coincidental cycle of variations is observed in 2003 and 2004 but, because of the low woodcock number, it is not so well pronounced (Figure 1).

Thus, long-term observations indicate that, contrary to the widespread opinion, neither the weather and probably nor the daylight hours, but some other factors are responsible for the terms and cyclic intervals of woodcock occurrence in autumn feeding biotopes.

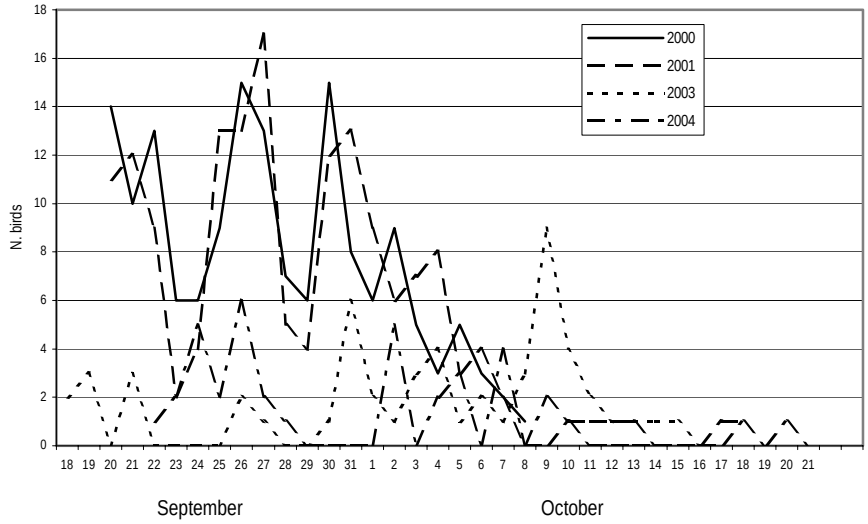

Figure 1: *Dynamics of Woodcock numbers in a permanent study area.*

The first short-bill woodcock bagged on roding in Russia

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In Russia short-bill woodcocks are very rare and were only observed in autumn (Maltchevski & Pukinski,1983; Fokin *et al*., 2003). We had never obtained any evidence of the possibility of the "brevirostre" to breed.
The first short-bill woodcock bagged in spring was shot at 120 km north-west from Smolensk, near the town of Velizh, in the village of Kraslevichi (55°31'N; 31°00'E) on 18 April 2004 in the evening during the hunting period. This bird (a male) was roding with the specific display sounds "croo-croo" and "psci-psci". So, this woodcock probably took part in breeding. Its weight was 265 g (normal for the breeding season) and its bill length 48 mm.

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Some results of roding Woodcock, *Scolopax rusticola*, monitoring in Belarus

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Introduction

Woodcock is one of the less studied birds in Belarus. Only very few special researches have been conducted on its biology, roding behaviour, distribution and abundance. Despite of this Woodcock is a very popular game bird that is harvested every year in our country. That is why it is very important to better know its biology. The objectives of our investigation were: to define the duration of the periods of Woodcock evening roding in Belarus, to find out the number of birds that are taking part in courtship flights in different seasons and places and to define the periods with maximal male activity during the evenings in every month.

Methods

Since 2000 we have been conducting censuses of Woodcock in Belarus. For our investigation we chose 10 points situated in different parts of the republic and every year made our observations there. We used the method of counting roding males while they make their evening flights. We recorded the number of contacts (visual or acoustic observations of aroding bird), the time of each contact with a minute accuracy and the weather conditions. All data obtained were recorded on special forms. Observations were made several times in every point, each month of every year. Counts always started for about forty minutes before a first contact was supposed to take place and finished after an hour of waiting after the last contact.

In Belarus, Woodcock roding usually takes place from the end of March until July but sometimes one can observe it earlier. Roding, however, more likely is not a common thing because of bad weather conditions, and can happen only in years with an "early" spring. On 26 March 2001 we found a nest with 4 eggs in the south of Belarus and this fact gives us right to claim that Woodcock may even start to rode in the beginning of March. It is worth saying that the earliest Woodcock nest found in Belarus and described in literature before our finding, referred to 30 April.

Results

Our observation period lasted from April until July. The results of our investigation are presented in table 1.

Month	N. contacts		Duration of roding, in min.		N. obs.
	minimum-maximum	average	minimum-maximum	average	
April	2-24	11.0	12-103	55.2	21
May	5-20	11.6	38-148	76.2	22
June	6-27	16.2	66-183	106.6	22
July	1-14	7.2	18-89	56.9	20

***Table 1**: Woodcock evening roding activity and its duration in April – July.*

As one can notice the most intensive roding takes place in June. In this month we recorded the highest number of contacts and a maximum roding time duration – 16.2 and 106.6 accordingly. The lowest number of contacts is recorded in July and it is supposed to be connected with the end of the breeding period and lower male activity.

In order to determine the peaks of highest evening roding activity in every month we divided this time into 9 periods of 30 minutes. For every period we marked the average number of contacts (Fig. 1)

It is easy to notice that the roding activity changes during the whole evening and has its minimal and maximal points for every month. Moreover, for every month we can determine one-hour intervals when more than 60% of all contacts can be recorded.

The characteristics of each month are the following:

- *April*. We never observed roding before 19:00 and after 21:59. Roding activity in this month is more pronounced between 20:30 and 20:59. Between 20:00-20:59, 71% of all contacts can be recorded.
- *May*. Evening roding usually starts at 20:00-20:29 and finishes no later than 22:59. The roding activity peak is recorded between 21:00 and 21:29. Between 20:30-21:29, 65% of all contacts can be recorded.
- *June*. Roding starts no earlier than 19:30 and finishes at 23:00-23:29. The roding activity is more pronounced between 22:00-22:29. Between 21:30-22:29, 64% of all contacts can be recorded.
- *July*. We never observed roding before 21:00-21:29 and after 22:30-22:59. The roding activity peak is recorded between 22:00 and 22:29. Between 21:30-22:29, 86% of all contacts can be recorded.

Although as a rule the time periods of the beginning and end of evening roding described here really occur in Belarus, one can sometimes observe a very early beginning or a very late end of roding. On 1 June we recorded the first contact at 19.08. We still do not know what caused such early beginning of roding (about an hour earlier than usual). Two other cases proved that the full moon can extend the time of roding (Fig. 2).

We may also notice that the males continued their roding flights after the main period. It is amazing, but in two different cases the birds finished their roding about half an hour earlier than usual , then there was a strange period between 21:30 and 22:59 with zero activity and finally they resumed roding and finished it before 23:59.

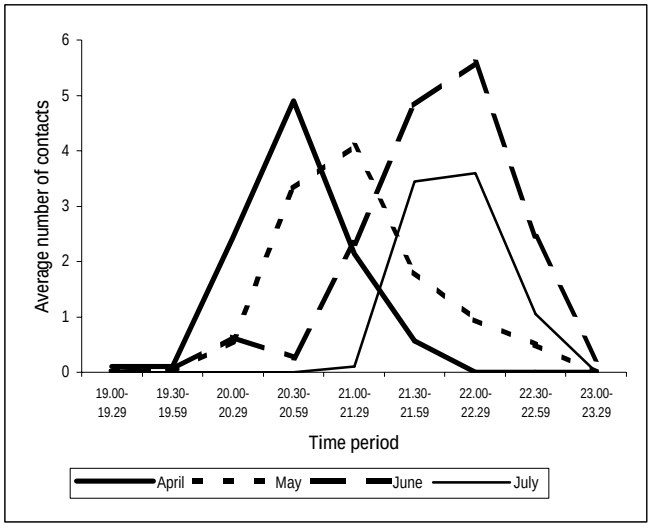

***Figure 1**: Distribution over time of male evening roding activity in April – July.*

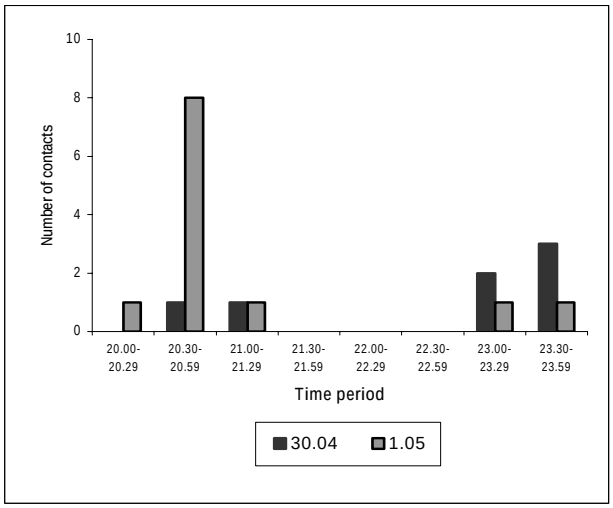

***Figure 2**: Roding activity in two subsequent evenings with full moon – 30 April and 1 May – at two different points.*

Hunting bags of Woodcock, *Scolopax rusticola*, in Belarus: one year monitoring results

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Introduction

Woodcock has always been a popular game bird in Belarus. In spite of a not very big size and expensive cartridges many people still want to hunt this species. In Belarus, hunting Woodcock in spring is more popular than in autumn because it is more traditional. As a rule, the Woodcock spring hunt starts on April 1and lasts till May 10every day but it is up to the hunting department leaders to change this period. A hunter can use pointing dogs or spaniels to find shot birds (using dogs of other racesis not allowed). A hunter can shoot only roding males, but not any birds flushed from the ground. In order to get permission for hunting one should buy a licence. Then in the end of hunting season he should mark the number of bagged birds and give the licence back to the department. Though the departments must ask the licences back many of them do not do so. And if they do they still do not analyze this material. That is why it is not easy to estimate hunting bags and this has led to an almost complete absence of data on the amount of Woodcock bags in Belarus.

Methods

In spring 2003 we distributed special forms to 120 district hunting departments of Belarus. The latter are subordinated to The Belarussian Association of Hunters and Fisherman. This organization gave us the addresses of the departments and helped to devise the forms. The questionnaire concerned data on the number of Woodcock hunting licences issued, the number of Woodcock bagged, the total number of hunters in a district and the forest area per district. We also asked the departments leaders to express their opinion about the Woodcock numbers and the trend of hunter numbers over the last 5-10 years.

Results

Only 68 hunting departments (57% of the total number) sent us the forms back. Data analysis showed that only about 24% of total number of hunters took Woodcock hunting licences in spring 2003. As this kind of licence allows to bag other game birds as well, it is rather difficult to define actual number of hunters who took this licence only for Woodcock. So, we can consider that in Belarus one fourth to a maximum of hunters shot Woodcock in the spring of 2003

A total spring hunting bag of 3,040 woodcocks was calculated according to the data from the forms. The average number of woodcocks harvested in every district was 51 birds. The maximum number of Woodcock bagged per district was defined in the Minsk region (105 birds), and the minimum in the Grodno region (29 birds). In 6 districts (9% of the total number) Woodcock has not been harvested because of the low density of this species or because of the absence of willing hunters.

52 districts have not sent the forms back to us. From this number we eliminate 9% where Woodcock spring hunting could not take place (see the reasons above) and thus we arrive at 47 districts. Then we extrapolate the average bag per district to this number and get about 2,400 birds: 3,040 plus 2,400 gives us 5,440. Thus we can say that about 5,440 woodcocks were bagged in Belarus in the spring of 2003.

Kuzyakin (2002) having conducted regular monitoring of Woodcock bagged in spring hunting, considers that about 25% of shot Woodcock is usually not found on the ground. So to get a more precise number of the woodcocks shot we should take this fact into account. Thus we estimate that about 6,800 woodcocks were shot in Belarus in spring 2003 and this is the number recommended to operate with.

As we have already mentioned we also asked the departments leaders to express their opinion about the Woodcock numbers and the trend of the hunter numbers over the last 5-10

years. 13% of the answers pointed to the increase of Woodcock hunter numbers over the last 5 years, 37% marked the stability of this number and 50% pointed to the decline of Woodcock hunter numbers. They also gave the reasons of such decline: cartridges, petrol and licences have become rather expensive and not every hunter can afford it. 37% of the answers pointed to the stability of Woodcock numbers, 13% marked a small decline, 2% marked a great decline in Woodcock numbers, and 40% pointed to a small increase. Department leaders also wrote us the possible reasons of such increase in Woodcock numbers: hayfields and ploughed fields get overgrown with young trees, fellings become more numerous, areas with young forests increase. Many of them pointed to the increase not only of areas with suitable places for roding and nesting but also to the increase in the number of males taking part in the evening roding flights.

Discussion

By the analysis of results we cannot define the influence of hunting on the whole Belarussian Woodcock population yet, as we still have no precise data on the total Woodcock numbers in Belarus. There has never been any special research on this in the country. We are only going to conduct a few of such investigations in the following years.

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Progress report for the project "Habitat inventory, identification of sites following the IBA criteria and development of National Conservation Action Plan for the Great Snipe in Belarus".

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In the past, the Great Snipe was widespread and considered a common breeding species in Belarus. However, intensive destruction of habitats, changes in agricultural practice and hunting impacted the numbers and distribution of this species on the Belarus territory. The recent data on changes in the Belarusian Great Snipe population were lacking. During our special survey in 2000-2001, we collected important information concerning the changes in numbers and distribution of this species (Mongin, 2002). According to our data, over the past 40 years the breeding population of the Great Snipe in Belarus declined 2-2.5 fold and the habitats of this species were reduced by ~50%. We hypothesized that the decline in the breeding population during this period was mainly caused by habitat loss. An important fact is that not more than 20% of the present population of the Great Snipe in Belarus is breeding and feeding in the protected areas. If no protection plan is developed, the further decline of the Great Snipe and the destruction of its breeding areas may be expected as a result of human activities.

With a subsidy of the Flagship Species Fund Small Grants Programme (DEFRA/FFI) and a Small Grant from the Rufford Foundation, we initiated a new project to create a comprehensive inventory of the Great Snipe population in Belarus, according to the IBA criteria, and to develop a national conservation action plan for this species.

Results

In the past season, 10 IBA territories for the Great Snipe have been identified in different districts of Belarus. Additionally, we found 5 potential IBA territories in 4 districts. As a result of this research, 4 new territories acquired protection status. Our data on the decline in Great Snipe numbers, also allowed

to include this species in the list of protected birds as of 17 June 2004.
We developed a new methodology to carry out monitoring and counts of the Great Snipe for the state programme "National System of Environment Monitoring in the Republic of Belarus". Based on our recommendations, 5 additional sites have been included in the State Register of monitoring points.

Counts of the Great Snipe were conducted in the previously known lekking arenas and on other sites. We gathered the data on potential factors, which may negatively affect the species and its habitats. For monitoring counts and ringing, we caught the birds in known lekking arenas. This year, 2 males have repeatedly been caught at the same lek. During the five-year work period, the total of 9 males were retrapped. Birds were repeatedly caught after one, two and three years.

Analysis of repeated biometric measurements revealed significant differences in wing length (t = 4.21; df = 8; p < 0.01, Fig.1). Such differences may be due to the different wear of primary feathers in young and old bird. Sather *et al*. (1994) have found that one year-old Great Snipe showed more primary feather wear than older birds during the breeding season. These authors registered significant differences in the mean wing length between young and old males. We have recorded a maximum difference of 7 mm in a juvenile bird, which was ringed on 15 July and retrapped on 2 June of the next year at the lekking arena. Because the post-juvenile moult takes place in the autumn (Cramp & Simons, 1993; Devort, 2000) primary feathers may also be longer in older birds because of their own growth.

Our data on repeated captures of Great Snipe males on 2 monitored leks suggest that considerable numbers of males return to the same lekking areas (we estimate this at 15%, without taking into account any mortality rate).

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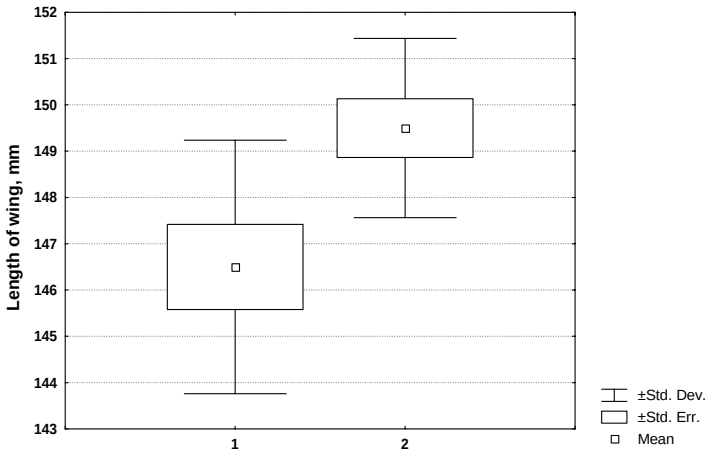

Figure 1: *First and repeated measurements of wing length in the Great Snipes caught.*

First results of Woodcock ringing in Belarus

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Woodcock *Scolopax rusticola* is a common breeding species found during migration in all regions of Belarus. This secretive species is difficult to study and ring as it spends the day in woodland and feeds in the field during the night. Therefore very limited data on Woodcock have been collected in Belarus up to now.

As a result of an initiative of the French *Office National de la Chasse et de la Faune Sauvage*, represented by Yves Ferrand and François Gossman, a joint Belarussian-French-Russian expedition was organized to start Woodcock ringing and initiate further studies of the biology of this species in Belarus.

Results

This year, ringing and an inventory of Woodcock habitats were conducted during the first decade of October in 4 regions of Belarus. Subsequently, local researchers continued to ring birds in 4 additional nights (15, 16, 23 October and 13 November). During 10 nights we had 54 contacts and ringed 16 woodcocks (30% success rate). Maximum number of contacts was 15 for one place. The weight of caught juvenile birds had an upward tendency during migration (Fig.1). We explain this by post-juvenile moult and by different stages of fat accumulation in birds.

During the same night trips, we additionally ringed 6 Jack Snipes and 1 Common Snipe. Jack Snipes were observed in the middle of October. One Jack Snipe was caught repeatedly on the same site after one week. This bird has increased its weight by 11 grams.

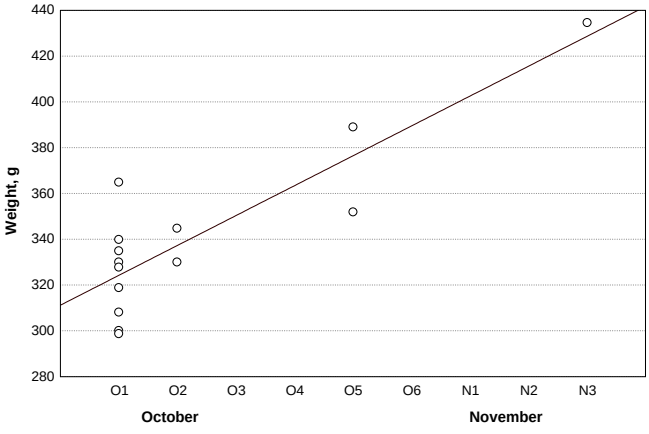

Figure 1: *Weight of juvenile Woodcocks caught in autumn 2004.*

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Common snipe, *Gallinago gallinago*, ringing at the stopover site in the Jeziorsko Reservoir, Central Poland

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Common snipe is a common migrant throughout Poland during spring and autumn migration (Tomiałojć and Stawarczyk, 2003). It appears even on small water bodies, marshes and flooded river valleys in small flocks inland the country (Tomiałojć & Stawarczyk, 2003). Concentrations of high numbers of birds of up to a few hundreds are not common. This is why this species is not often caught at different ringing stations used for wader ringing. In many catching places it is represented only in small numbers comparatively with other wader species. The Jeziorsko dam reservoir is one of the traditional stopover places for common snipe migrating through Poland (Janiszewski *et al.*, 1998). Due to specific water level management, the reservoir offers excellent feeding conditions for migrating waders and ducks (Włodarczyk *et al.*, 2002). In spring, the water is stored in the reservoir whereas in the summer months the dam is opened. The reservoir is emptied which creates large muddy areas at the end of the reservoir. At that time, the birds that are feeding on water invertebrates concentrate there in large numbers. This allowed to set up a good ringing point for the wader species by students from the University of Lodz. Ringing activity at the reservoir started in 1989, three years after the completion of the construction of the dam (Janiszewski *et al.*, 1993). Every year birds are caught in walk-in traps, in varying numbers between years (from 4 in years 1989-1991 up to 28 in years 2000-2003). Mist nets are used only occasionally. Birds are aged, measured, weighed and ringed. The following measurements are collected: total head length, total wing length, total bill length, length of bill from nostrils to tip, and tarsus length. The fat score for waders has been noted since year 2000 (Busse, 2000). However, ringing activity varied between years and is constrained to the summer months. For adult birds the moult of wing and tail feathers is described using the BTO scale described in Busse (2000).

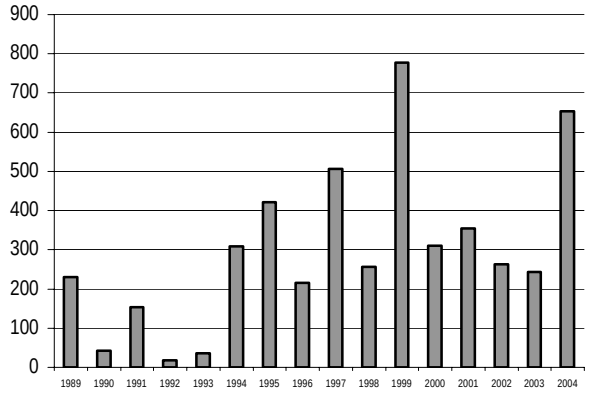

Figure 1: *Number of ringed common snipes in the Jeziorsko reservoir in years 1989-2004.*

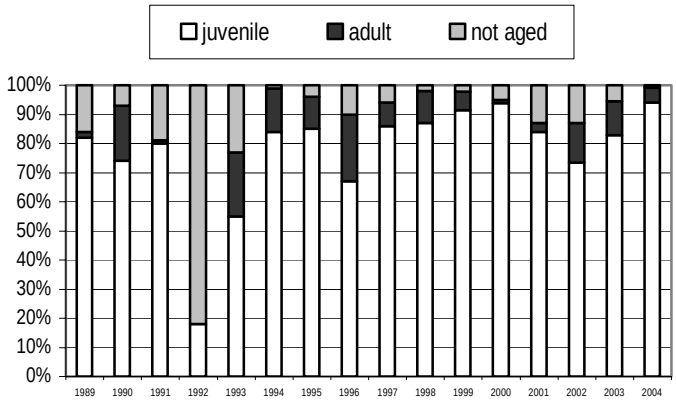

Figure 2: *Age ratio among ringed common snipes in the Jeziorsko reservoir.*

In years 1989-2004 a number of 4,796 individuals was caught and ringed. Ringing results in first five years of work were poor due to the small number of traps. In years 1998-2003 they reached the level of more than 200 birds ringed annually (Fig. 1). Results from years 1999 and 2004 were unusually good. Ringing results were not connected with the number of birds observed at Jeziorsko. For example in year 1999 the ringing results were the best, flock numbers and size observed at the reservoir were similar to previous seasons (Bargiel *in. litt.).* Juvenile birds were the most common age class (Fig.2). Postjuvenile moult of juveniles resulted in problems with age identification in September. It led to the presence of bird fractions that were not aged. Especially in the first six years of study this group was numerous. Despite this problem the annual percentage of adult birds did not exceed 20%. Data obtained from birds that were trapped two times during one season suggest that snipes used Jeziorsko as a replenished site. Common snipes will stay at the reservoir for quite a long time, resting and building up their fat reserves. For example, the mean duration of stay in year 1999 was 17 days but examples of birds that stayed for at least one month were also detected (Fig. 3). During their stay, the birds are showing a tendency to gain weight. There is a positive correlation between the duration of stay and the weight gain ($r = 0.5$ $p = 0.001$, $n = 37$). Some individuals gain up to 30 grams which is about 30% of the mean weight for snipes at Jeziorsko. In 16 years of work the set of 121 recoveries was collected. Nearly all of these come from the wintering grounds of the species (Table 1). Only two recoveries concern the probable breeding grounds of birds migrating through central Poland. It were: one bird killed in the autumn near Jaroslaw in Russia and one bird ringed in the summer in the Prypiat river valley in Belarus.

country	number of recoveries
France	95
Italy	13
Great Britain	6
Spain	3
Maroco	2
Ireland	1
Belarus	1
Russia	1

Table 1: *Number of recoveries birds ringed in the Jeziorsko reservoir in different countries.*

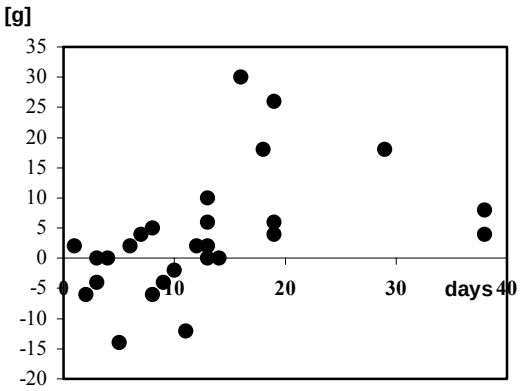

Figure 3: *Weight changes of retraped snipes in year 1999.*

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Radiotracking of a Woodcock male in the Swiss pre-Alps: preliminary results

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Introduction

Woodcock has been included in the Bird Conservation Program in Switzerland. In this framework, we caught and radio-equipped a male in 2004. Bird monitoring was carried out from mid-May to the end of October. The preliminary results are presented below. One should consider this to be an introduction to a more thorough study which will concern up to around 10 woodcocks in 2005.

Study area

Catching took place in the Ormonts valley in the Swiss pre-Alps. This valley stretches over 20 km, from the bottom of the Diablerets mountain (altitude: 3209 m) to Aigle in the Rhone valley (altitude: 400 m). The upper limit of the forest is comprised between 1800m and 1890m. Several pastures used in summer form large clearings in the forest. Five villages and many chalets are located along the valley.
Climatic conditions prevent Woodcock from wintering. In spite of a late-staying layer of snow (till May), the first roding males can be observed in the beginning of April at 1 750 m.

Material and methods

Capture

Catching took place on 14 May 2004. 60 meters of mistnets were set up in the upper section of the Ormonts valley (altitude: 1 400 m; 46°20'N – 7°09'E). The bird, called Pax, was radio-equipped with a Biotrack® transmitter. Unfortunately, Pax lost its transmitter between June 13 and 20 but was retrapped on June 22at the same place and under the same conditions as on May 14.

Radio-transmitter and receivers

The transmitter was equipped with an activity sensor that modifies the transmitter emission rhythm. In the mountains, echo is the most important problem for localisations. They can occur at a long distance (1 km) and a short distance as well due to a section of mountain, a rock or even a tree.
Two different models of receivers were used: a Yaesu® FT-290R II and a Titley® Regal 2000.

Observation effort

The bird was located 84 times during 51 field trips made between14 May to 7 November. In total, 130 hours were devoted to the study. Data were recorded for 24 hours on 1-2 August and 5-6 August.

Results

Behaviour

Pax's behaviour was very clear. It was a male participating in roding. As monitoring started in mid-May, the first period of breeding season is missing in our data. However, this situation and its re-equipment in June gave us the opportunity to track the bird till the end of October.
From May to October, 3 different periods can be considered:

- roding period: from April to the beginning of July,
- moulting period: from July to mid-September,
- pre-migratory period: from mid-September to the end of October.

Habitat use and activity were very different during these 3 periods. The roding period was very "classic" and ended in the beginning of July in 2004. Between 2 and 5 July, the bird moved to 5 km away from its roding place in an area where roding is usually rare. As of this date, its behaviour concerning the choice of a site changed. For about 2 months, it stayed at the same place of some thousands of square meters. Then, from 15 September on, from time to time Pax left its forest and limited

home range. He first moved at night, then at daytime and at night, up to 2-3 km using different habitats: a wet pasture, an alder plantation in altitude, bushes along a brook in a pasture. On 31 October, Pax left the valley. Characteristics of these 3 periods are presented in Table 1.

	Nuptial Period 14/5-2/7	Post-nuptial period 5/7-9/9	Pre-migratory period 15/9-27/10
Home range area	150 ha	17 ha	312 ha
Mean altitude	1594.3 ± 141.2 m	1530.8 ± 77. m	1545.4 ± 144.9 m
Differences in altitude between two consecutive sites	84.4 ± 75.1 m	35.6 ± 45.2 m	128.0 ± 88.5 m
Mean distance between 2 consecutive sites	430.0 ± 449.6 m	109.3 ± 107.0 m	1003.3 ± 880.1 m

Tableau 1 : *Home range area, mean altitude, differences in altitude and mean distance between 2 consecutive sites during breeding, post-nuptial and pre-migratory periods.*

Habitat

During the breeding period, 28 locations were obtained in daytime and 6 at night. Except for one, all were made in forest and were located between 1 300 m and 1 800 m altitude in the north-west side of the Ormonts valley. So the bird remained very faithful to the roding area where it was caught.
During the post-nuptial period, the 33 locations were mainly taken at daytime except for 4 that were taken at night. All this took place in the forest 5 km away from the roding place to the north-west (Tomeley). During this period, Pax's home range is well defined: a Northerly-exposed steep slope. This area was damaged by a storm 10 years ago and by an avalanche in 1999.Therefore, forest is very scattered and covered by a 10-ha area of very thick *megaphorbiaie*.
During the pre-migratory period, 15 of the 23 locations are situated in the usual home range of the post-nuptial period and 8 are registered 1.2 to 2.7 km away at the same or higher altitudes. Six are nocturnal and 17 are diurnal. Five nocturnal locations were taken in wet pastures with a moderate slope. Usually, the bird stayed at night in an open area and then came back to its usual diurnal forest site, even if a closer forest could have been suitable to rest during the day. However, Pax twice used diurnal sites close to its nocturnal feeding places: once in an alder plantation, another time in a wooded site along a brook between 2 pastures, each time at 1 700 m altitude.
The pre-migratory period seems to be a dangerous one for woodcocks since they are more exposed at night but also at daytime.

Activity

An activity index was defined as the number of transmitter-emission rhythm changes registered per 5 mn. The results are presented in figure 1.
During the summer and autumn activity was diurnal. No nocturnal recordings indicated any activity.
Diurnal activity is not constant. Some phases can be defined from our 2 circadian recordings. In August, Pax is active between 5:00 and 6:00 in the morning. A first activity phase is noted around 8:00 a.m. followed by an evident decrease. From 9:00 to 10:00 a.m. a new activity phase is observed which lasts till 13:00 to 14:00 p.m. Then a 3 hour-rest is registered. Three short activity phases seem to appear from mid-afternoon to night fall.
During the pre-migratory period, we could have expected a more intense activity at night in pastures in order to increase energy reserves by feeding. No nocturnal activity was observed. However, the nocturnal habitats used by Pax are probably rich in earthworms and other preys. This behavioural aspect needs to be clarified.

Discussion

This study, of course, is based on a single bird and any generalisation could be risky. However, some behavioural indications are interesting to note.

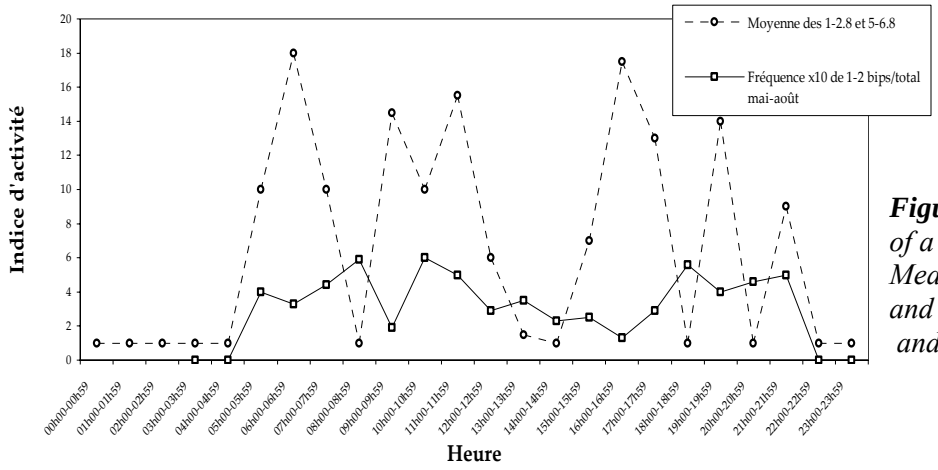

Figure 1 : *24 hour-rhythm of a Woodcock male. Means for May-August and 1-2 August 2004 and 5-6 August 2004.*

Diurnal and nocturnal sites during breeding period are characterized by a clear forest with an under-story composed of thick herbaceous strata, *megaphorbiaie* for example, associated with a little-developed one. This being so, the woodcocks can feed and avoid a predator by walking away (usually to the top) without flying. If they need to fly, usually at less than 10 m of the danger, they escape to the bottom in a hole of the forest. All sites used after escape were located at the bottom whatever the period.

Typically, roding areas, and then diurnal and nocturnal sites, are northerly and north-westerly-exposed, and therefore humidity is almost permanent.

During the post-nuptial period,the home range does not change(17 ha in our case). Clear forest with a large underwood of *megaphorbiaie* is very suitable to moult: fresh and wet soil, very rich in prey and a possibility to escape a predator on foot without flying. This home range is sufficiently small to be well-known by the bird and thus to feel secure.

During the pre-migratory period, our bird extended its home range to 312 ha. This value does not exactly reflect the real situation because of a diurnal site at Tomeley. We observed that the bird will explore its environment in several directions, staying either at the same or a higher altitude. This behaviour resembles the behaviour of part of the wintering woodcocks. In our opinion, these explorations could rather be interpreted as pre-migratory restlessness than a real search for more food. Indeed, during their nocturnal activity no feeding behaviour was shown. With respect to the rule of minimal energetic losses this is rather surprising.

Conclusion

The present work carried out in 2004 with a single bird has already added information on Woodcock summer-autumn behaviour which is the most badly-known activity for this species.

In 2005, captures of several males (and maybe Pax again!) but also of females should allow us to improve our knowledge and propose a general behaviour pattern for the pre-Alps population. A precise analysis of diurnal and nocturnal sites should be of help to us to better understand the Woodcock needs in this region. Vegetation structure and soil-fauna will be specifically analysed.

Acknowledgments

Since much more space would be needed to personally thank all the people who contributed to the data collection but we just wish to mention and thank the organisations that gave us financial help: Swiss Ornithological Station of Sempach and WWF of Vaud Canton. The author also thanks Yves Ferrand and Evelyne Taran for their help with the English translation.

2003 Western Switzerland Woodcock Report

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2003 is the 15th Woodcock monitoring year in Western Switzerland. This monitoring started in the canton of Vaud in 1989, and then was extended to the whole of Western Switzerland. Since 1993, only 3 regions have participated.
This report presents the results of three different census designs. Three types of indices based on roding males are collected: data from random listening points (index 1), from simultaneous censuses (index 2) and from a sample of Woodcock high-density sites (index 3). All data are collected during evening roding.
Presently, the Swiss Woodcock data are collected within the framework of the "Swiss Woodcock-Waldschnepfe-Beccaccia Network". Some data are now collected in winter (Estoppey & Mulhauser, 2004) and a radio-tracking-based study has started (Estoppey, 2005).

Results for index 1

Cantons of Neuchâtel, Valais and Vaud (1993-2003)

Remember that index 1 can be divided as follows: Tg (proportion of positive sites; at least one roding bird), TF (proportion of high abundance sites; n. contacts ≥ 5) and Tf (proportion of low abundance sites; 1≤ n. contacts < 5). Of course, Tg = TF + Tf. The mean number of contacts has also been taken into account. Variations of index 1 are presented in figure 1.

In 2003, Tg appears to be very low and almost reaches its lower level. The mean number of contacts raises to a value slightly higher than the mean. Its increase has been noted as of 2001. In our 2001-2002 report (2003a) we wrote that Tg should decrease but that the number of contacts should be on the increase. This is the situation we observe in 2003. The low Tg value can be explained by the low proportion of high abundance sites (TF) and low abundance ones (Tf) as well.
From 1989 to 2000, the general trends of indices are showing a relative stability (Estoppey, 2001) in Western Switzerland. From 1993 to 2003, in the cantons of Neuchâtel, Valais and Vaud, the Tg and Tf trends have significantly decreased (r_s = -0.636 and 0.527, resp.). For the number of contacts and TF, no significant trend is detected (r_s = -0.298 and -0.342, resp.).

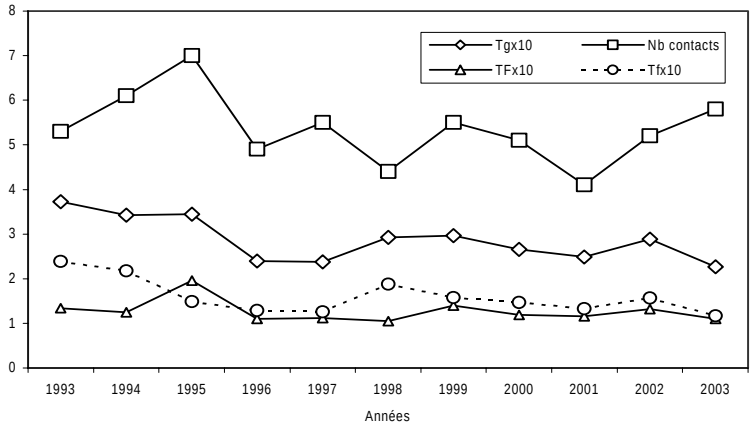

***Figure 1**: Western Swiss. Cantons of Neuchâtel, Valais and Vaud. Variations over 11 years of Tg [proportion of positive listening points(x 10)], Nb (mean number of contacts at positive points), TF [proportion of high abundance points (Nb ≥ 5); x 10], Tf [proportion of low abundance points (1 ≤ Nb < 5); x 10]. Tg = Tf+TF.*

Canton of Vaud (1989-2003)

The canton of Vaud results can be analysed separately for many reasons. On the one hand, its surface area is large, the forests are great and, consequently, the number of listening points is high. On the other hand, since monitoring started 2 years earlier than in the other cantons, the analysis can be made over 15 years.
Tg, TF and Tf 2003 values are the lowest ever registered since 1989. However, the number of contacts (Nb) is relatively high what confirms our predictions.
Figure 2 shows that Nb, TF are high in 1991, 1995 and 1999. High values were expected in 2003 but worryingly only Nb is high. However, peaks of Tg and Tf are noted in 1990, 1993-94, 1998 and 2002, i.e. 2 years before Nb and TF.
Remember that a woodcock flies more often over the centre of the roding area than over its periphery. When listening points are randomly chosen some of them will be situated in the centre of a roding area, and some others in the periphery of another roding area. In the canton of Vaud, for example, if the surfaces of roding areas all vary at the same time then Tg, TF and Tf will vary also. TF variations correspond to fluctuations in the surfaces of roding area centres where the Nb value is high. Tf variations correspond to those of roding-area periphery surfaces.
In the canton of Neuchâtel, Mulhauser (2002) described a 4 year-cycle like the one we observed in the canton of Vaud. Remember what Tg, TF, Tf and Nb variations mean. In the first year, the roding areas are small and the Nb value is low. In the second year, the centre and periphery of the roding area increase in size and Nb also increases but does not reach its maximum. From Mulhauser (op.cit.) we know that at this time the females would be numerous and would scatter like males do. In the third year, the periphery area decreases and the surface area of the roding centre increases again. This could be explained by a concentrated male activity in places where females are located, insofar as Nb reaches its maximum. Finally, in the fourth year the roding-area surface decreases and the number of males is low.
Even if index variations seem to be cyclic in the canton of Vaud a general decreasing trend is observed. From 1989 to 2003, all indices show a decreasing but statistically not significant trend [Tg (r_s = -0.368); TF (r_s = -0.207); Tf (r_s = -0.342); Nb (r_s = -0.236)].
One more time, it is fundamental to continue our observations.

Results for index 2

In 2003, more than 150 people participated in 7 censuses that were carried out in Western Switzerland. The results obtained in 2002 and 2003 are still too recent to allow a precise analysis. However, we can note that not so many males were observed in 2003 compared to 2002, what corresponds to index 1 values.
Simultaneous census results will be compared both to index 1 and index 3 values.

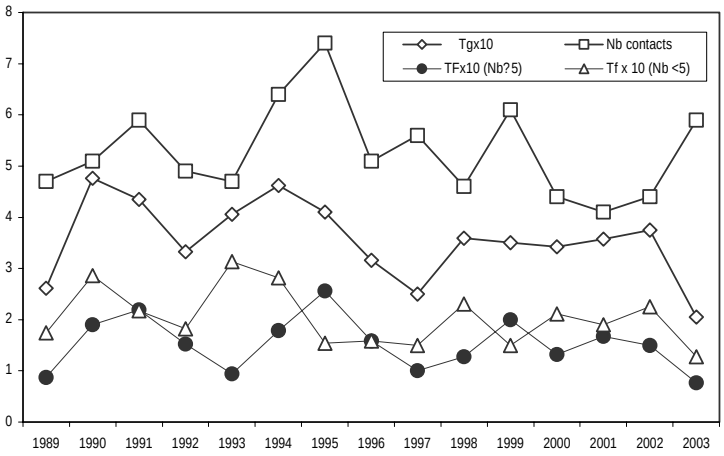

Figure 2 : *Variations in the Tg (x 10), Nb average, TF (x 10) and Tf (x 10) from 1989 to 2003 in the canton of Vaud. (see text for abbreviations).*

Results for index 3

In 2000 and 2001, 6 listening points were already regularly visited in the Jura and Alps. Each point is located in a different roding area. Several observers visit every point at least one time in May-June. As soon as in 2002, the number of listening points was enlarged to 13. All of them were visited in 2003. The mean number of contacts for all these points gives a rather good abundance index. This index can be estimated for 6 sites from 2000 to 2003 (table 1). Some values were re-calculated insofar as we only take account of the values collected in May and June, zero values included. This did not modify the trends observed in the previous report.

Different indices are presented in table 2 and figure 3. The index 1 and index 3 variations present the same pattern even though they are based on different data. This correlation needs to be confirmed for a longer period as well as the difference that seems to appear between the Jura and the Alps. Data obtained in 2002 and 2003 from simultaneous censuses (index 2) seem to confirm this difference. In 2003, the number of contacts decreased by 23.7% at the two roding areas in the Jura but only by 9.4% in the one situated in the Alps (2 year-period).

Name of listening point	Canton	Region	Altitude	2000	*N*	2001	*N*	2002	*N*	2003	*N*
Bois de la Vaux	VD	Jura	1370	12.0	*1*	8.7	*3*	13.0	*4*	10.3	6
Givrine 2	VD	Jura	1290	9.4	*9*	5.8	*6*	10.6	*8*	8.6	5
Les Marches	VD	Alps	1740	18.0	*1*	20.0	*1*	13.0	*2*	15.1	7
Essert	VS	Alps	800	1.0	*4*	0.3	*4*	5.6	*4*	11.0	4
Draversa	VS	Alps	1570	17.0	*1*	9.0	*1*	12.0	*3*	13.0	3
Chemenau	VS	Alps	1330	14.5	*4*	13.5	*6*	14.1	*9*	17.3	7
Mean				12.0		9.6		11.4		12.6	
Limasse	VD	Jura	1200			6.0	*1*	6.0	*4*	7.8	4
Taillée à Jérémie	VD	Jura	1220			7.0	*1*	11.0	*4*	11.2	6
Le Molard	VD	Alps	1450	8	*1*			9.8	*5*	9.2	9
Bois des Arlettes	VD	Alps	1725			8	*1*	2.7	*3*	14.8	4
Grand Jeur	VS	Alps	1620	4.0	*1*			7.0	*5*	9.0	2
Pouénéré	VS	Alps	1560					2.8	*5*	5.0	6
Praz de Fort	VS	Alps	1600					0	*4*	0	4
Moyenne sur tous les PE				-		-		8.3		10.2	

Tableau 1: *Mean number of contacts at 13 listening points in the cantons of Valais and Vaud. (in Year column) N: number of observation evenings in May and June. In the second part of the table, some listening points were not visited in 2000 and 2001. Values were re-calculated after Estoppey (2003b) (see text).*

	2000	2001	2002	2003
Index 3 Jura & Alps	12 .0	9.6	11.4	12.6
Index 3 Jura n = 2	10.7	3.3	11.8	9.5
Index 3 Alps n = 4	12.6	1.7	11.2	14.1
Index 1 : mean N. of contacts (Vaud)	4.4	4.1	4.4	5.9

Tableau 2: *Mean number of contacts registered in May and June. Index 3 (collected in 6 sites located in the center of the roding area). Mean by region and total mean for the canton of Vaud .*

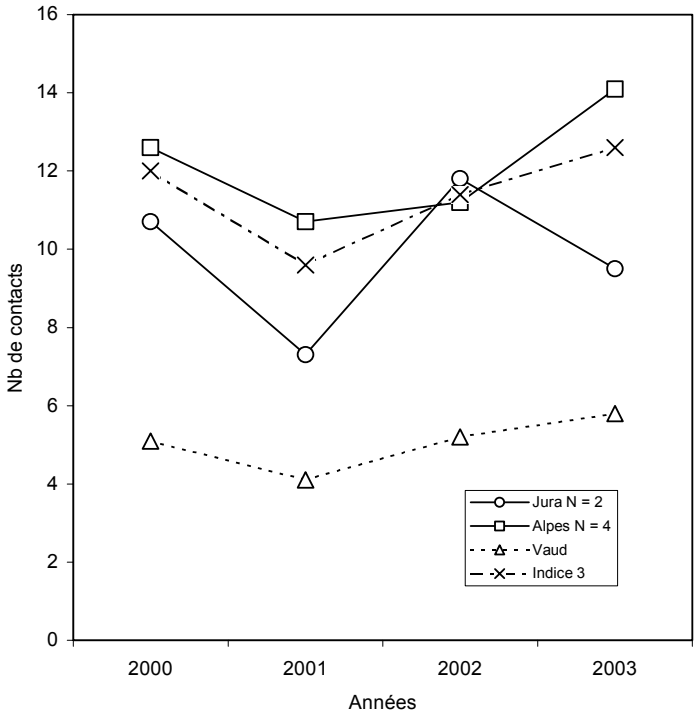

Figure 3 : *Mean number of contacts registered in May and June ;*
index 3: data collected in six sites located in the centre of roding areas;
mean of index 3 for the Jura and the Alps;
Vaud: index 1.
A similar pattern of variations in index 1(Vaud) and index 3 must be noted.

Conclusion

Woodcock monitoring carried out in western Switzerland since 1989 shows that the populations are probably fragile. Indeed, they are living in relatively small forests where human disturbance is high, even in the Jura.
We have to pay much attention to the demographic situation of the Woodcock populations in Central Europe, and to those of whole Eurasia as well. Indeed, if human disturbance during the breeding period is probably unimportant in a major part of the Woodcock distribution area, the hunting pressure remains important in the wintering area and along migratory flyways.

Acknowledgments

I greatly thank all observers who have been working in the fields for several years with much faithfulness in order to improve our knowledge on Woodcock. Monitoring would be impossible at the scale of Switzerland without the help of the "Swiss Woodcock-Waldschnepfe-Beccaccia Network" members and the coordinators Blaise Mulhauser, Alain Perrenoud and Jacques Trüb. My gratitude also goes to the Wildlife Conservation of the canton of Vaud, to the Swiss Ornithological Station of Sempach and to the World Wildlife Fund, Vaudsection, for their financial and logistic help. I also thank Yves Ferrand and Evelyne Taran for their help with the English translation.

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Wintering Woodcock ,*Scolopax rusticola*, monitoring in Italian protected areas. First results

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According to our project presented in Nantes on November 2003 at the *6th Woodcock and Snipe Workshop,* Woodcock monitoring has been carried out during the wintering season 2003-2004 in "Monti Sibillini" National Park (Umbria-Marche, Central Italy), in "Macchia di Gattaceca e del Barco" Natural Reserve (Lazio, Central Italy) and in "Pineta di Appiano Gentile e Tradate" Regional Park (Lombardia, northern Italy). Census method consisted mainly in the diurnal survey of selected sample areas with pointing dogs, but in one case (Macchia di Gattaceca e del Barco), operators used dusk observation points at the edge of woodlands too (in particular a peach-tree orchard). The preliminary results of such surveys have been shown in Salerno on September 2004 during the first *FANBPO Symposium*.

In Tables 1,2 and 3, the results for each surveyed Park are presented.

Of course, we need more data to get a better evaluation of the importance of protected areas for Woodcock conservation. Fortunately, next winter (2004-2005) we will be able to survey a bigger sample of Parks thanks to the study that will be carried out in "Beigua" Regional Park (Liguria, NW Italy), "Valle del Ticino" Natural Park (Piemonte, NW Italy), and "Conero" Natural Park (Marche, C Italy).

Table 1: *Census results for "Monti Sibillini" National Park (Umbria-Marche, Central Italy).*

Results of diurnal surveys with pointing dogs (2003-2004)

Date	Censused Ha	Total number of woodcocks	Total density (wood/100 ha)	Provinces		
				AP	PG	MC
16/01/2004	525	2	0.38	ns	2	0
23/01/2004	765	6	0,78	5	1	0
30/01/2004	5	0	0	0	ns	ns
06/02/2004	885	8	0.9	6	1	1
13/02/2004	1000	7	0.7	3	1	3
20/02/2004	745	4	0.54	1	1	2
27/02/2004	440	4	0.91	3	ns	1
Total	4.365	31	0.71	18	6	7

ns = no data

Synthesis of the data obtained on woodcock winter population density (2003-2004)

	Min.	Max	Mean	St. Dev.
Winter density	0	0.91	0.71	0.33

Table 2: *Census results for "Macchia di Gattacieca e del Barco" Natural Reserve (Lazio, Central Italy).*

Results of diurnal surveys with pointing dogs (2003-2004)

Date	Censused ha	Total number of woodcocks	Total density (wood/100 ha)	Sampling areas				
				Z1	Z2	Z3	Z4	Z5
19/12/2003	150	2	1.33	ns	ns	2	ns	ns
26/12/2003	550	8	1.45	2	0	5	1	ns
02/01/2004	250	4	1.6	ns	ns	3	1	ns
09/01/2004	85	2	2.35	ns	ns	2	ns	ns
16/01/2004	700	9	1.29	3	3	2	1	ns
23/01/2004	680	9	1.32	2	3	2	1	1
30/01/2004	600	11	1,83	5	2	3	1	ns
06/02/2004	500	8	1.6	4	1	2	1	ns
13/02/2004	550	11	2	3	2	2	4	ns
Total	4.065	64	1.57	19	11	23	10	1

ns = no data

Synthesis of the data obtained on woodcock winter population density (2003-2004)

	Min.	Max	Mean	S. D.
Winter density	1.29	2.35	1.57	0.36

Results of dusk observation points (2003-2004)

Date	N.woodcocks	N. observation points	Date	N.woodcocks	N. observation points
18/12/2003	2	1	12/01/2004	5	1
22/12/2003	4	1	23/01/2004	4	1
26/12/2003	6	1	30/01/2004	3	1
29/12/2003	6	1	01/02/2004	4	1
02/01/2004	7	2	06/02/2004	7	3
06/01/2004	4	1	13/02/2004	13	4
07/01/2004	6	1			

Table 3*: Census results in "Pineta di Appiano Gentile e Tradate" Regional Park (Lombardia, Northern Italy).*

Results of diurnal surveys with pointing dogs (2003-2004)

Date	Censused ha	Total number of woodcocks	Total density (wood/100 ha)	Sampling areas			
				Z1	Z2	Z3	Z4
13/12/2003	300	1	0.33	ns	1	ns	0
16/12/2003	300	4	1.33	1	ns	3	ns
20/12/2003	300	0	0	ns	0	ns	0
23/12/2003	250	4	1.33	1	ns	3	ns
27/12/2003	300	1	0.33	ns	1	ns	0
13/01/2004	300	5	1.67	1	ns	4	ns
17/01/2004	150	0	0	ns	0	ns	ns
20/01/2004	150	2	1.33	ns	ns	2	ns
24/01/2004	300	1	0.33	0	1	ns	ns
31/01/2004	300	1	0.33	0	1	ns	ns
03/02/2004	150	0	0	0	ns	ns	ns
07/02/2004	300	0	0	0	0	ns	ns
10/02/2004	300	1	0.33	ns	0	1	ns
Total	3.400	20	0.59	3	4	13	0

ns = no data

Synthesis of the data obtained on woodcock winter population density (2003-2004)

	Min.	Max	Mean	S. D.
Winter density	0	1.67	0.59	0.61

2003-2004 French Woodcock report

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Ringing results

Quantitative results

The numbers of ringed woodcock in France during the 2003-2004 wintering season is the highest for the last 20 years (Fig. 1). The success rate was 25% which is a good result compared to the last 2 years. Birds ringed in the inland regions represent 42% of all ringed birds. This has to be taken into account in the analysis insofar as the hunting pressure on Woodcock is rather lower in these regions (North-Eastern regions, Centre, Central Massif and Rhone-Alps region) than elsewhere.

2002-2003 ringing season in numbers

N. *départements* :	89
N. ringing sites :	1 319
N. ringers :	333
N. nocturnal trips :	2 651
N. contacts :	18 101
N. ringed woodcocks :	4 254
Success rate :	25%
N. direct retraps :	141
N. indirect retraps :	168
N. direct recoveries :	208
N. indirect recoveries:	347
Annual direct recovery rate:	4.9%
Length of ring wearing time:	29 days

(28 days for direct recoveries <20 km; n=171)

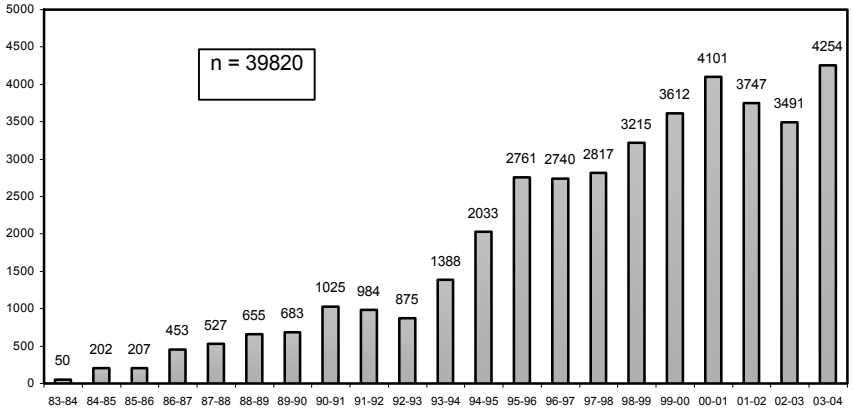

Figure 1*: Inter-annual fluctuations of ringing results.*

Phenology of migration

Contrary to last year, in 2003-2004 the monthly fluctuation of catchings followed a "classic" pattern. A peak was registered in November followed by a constant decrease till February (Fig. 2). However, the season was characterized by a greater proportion of catchings than usual in October (5.5%). So, one may consider the early migratory wave to be specific of the 2003 post-nuptial Woodcock migration. This is the consequence of the very low temperatures suddenly encountered in northern and eastern Europe in mid-October. After that, a second migratory wave was not noticed before the beginning of November.

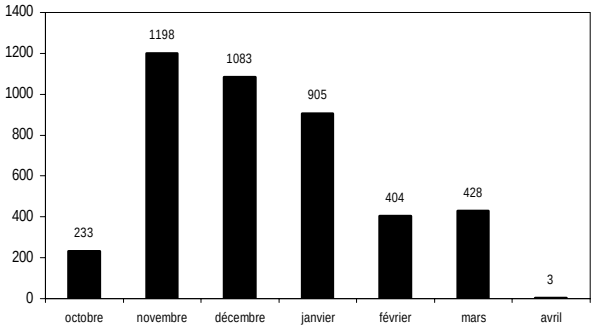

Figure 2: *Monthly fluctuations of catchings during the 2003-2004 season.*

Proportion of young

First-year birds represented 54.5% of all ringed birds. This value remains low. Of course, it is higher than in 2002-2003 (51.4%) but again lower than in 2001-2002 (57.8%). The decreasing trend of the proportion of young is confirmed again for this season (Fig.3). The low value of the annual direct recovery rate (4.9%) and the rather high length of ring wearing (29 days) could lead us to conclude to a decrease of hunting pressure for Woodcock if such trends would be confirmed. However, the extension of the ringers' network to the eastern part of France where the hunting pressure is lower than in the coastal regions and the re-location of ringing sites close to hunting-free places could also have played a role.

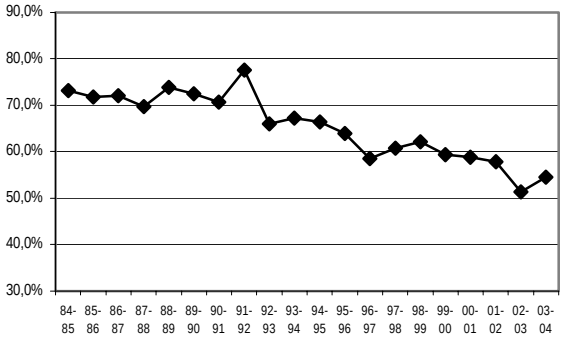

Figure 3: *Inter-annual variations of ringed woodcock age-ratios.*

Abundance

Woodcock migratory and wintering numbers are monitored every year in France by an index that corresponds to the mean number of contacts /hour (IAN) registered during ringing trips. Around 18 000 contacts were noted during 6 455 hours in the 2003-2004 autumn-winter. For this season, IAN amounts to 2.96 (Fig. 4). The intra-annual variations of a hunting index (ICA) collected by *Club national des bécassiers* show a difference for the last 2 years only. From these 2 indices no specific trend can be defined for the Woodcock wintering numbers in France.

The monthly values of IAN were significantly higher in October (as expected according to the catching results) and November 2003-2004 than 2002-2003.

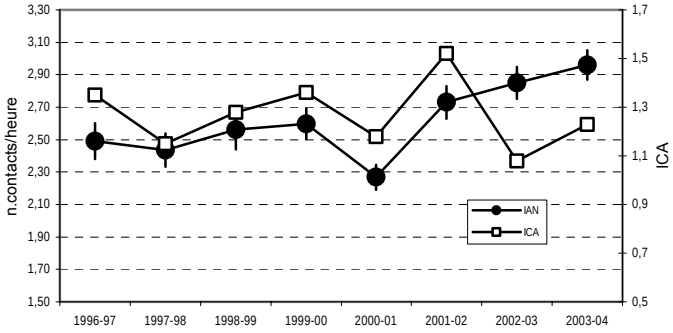

Figure 4: *Annual fluctuations of the number of contacts/h during ringing trips (IAN: nocturnal index of abundance) and hunting trips (ICA: hunting index of abundance).*

During 2003-2004, 39 recoveries of woodcocks ringed in France have been reported.
These are 15 direct recoveries (11 in Russia, 2 in Lithuania, 1 in Belarus, 1 in Spain) and 24 indirect recoveries (15 in Russia, 4 in Spain, 2 in Lithuania, 1 in Slovakia, 1 in Hungary, 1 in Italy).

Details of the foreign recoveries of woodcocks ringed in France since the beginning of the 80s are presented in Table 1. More than 600 birds were collected in Europe (except France), 63.7% of which between March and August (during spring hunting for most of them). 247 recoveries were recorded in Russia. This result confirms the great importance of this country as a source of woodcocks that are wintering in Western Europe. The Baltic countries, Sweden, Finland and Central European countries complete it. Spain (128 recoveries) clearly appears to be an important host country, especially in cases of cold spell. 21 recoveries have been recorded in the British Isles, probably of birds in transit to more southern wintering sites.

Country of recovery	Recoveries from September to February	Recoveries from March to August	Total
Russia	11	236	247
Belarus		13	13
Estonia	1	7	8
Latvia	1	40	41
Lithuania		18	12
Ukraine	1		1
Finland	1	10	11
Sweden		19	19
Norway		1	1
Denmark	10		10
The Netherlands	3		3
Belgium	8		8
Switzerland	2		2
Austria	2	10	12
Germany	4	4	8
Slovakia		1	1
Hungary		20	20
Poland	1	8	9
Slovenia		2	2
Turkey	1		1
Italy	11		11
Spain	127	1	128
Portugal	5		5
Great-Britain	20	1	21
Ireland	2	1	3
Total	**211**	**392**	**603**

Table 1: *Details of foreign recoveries of woodcocks ringed in France.*

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Roding results

In 2004, the roding censuses took place in 62 *départements,* like in 2003.

National occupation rate

Remember that this rate corresponds to the % of listening points at which at least one roding male is observed (= positive site). In 2004, its value is 0.215. This value is slightly lower than 2003 rate but remains within the values recorded in previous years.
The occupation rates of the high and low abundance sites are 0.071 and 0.143 respectively. The 2004 value for the high abundance sites remains rather high. The 2004 value for the low abundance sites is within the average.

Population trend

The population trend of the French breeding woodcock population has been analysed for a 10 year-period. In total, 49 *départements* had censused roding woodcocks without interruption from 1995 to 2004. The data are given in table 2.
Inter-annual variations of the proportion of positive sites, high abundance sites and low-abundance sites are presented in figure 5.

Results are close to those of the last census year. No trend can be detected in the proportion of positive and high abundance sites although a slight decrease is registered in the proportion of low-abundance sites.
So the pattern is seemingly always the same: the high abundance sites maintain their numbers whereas the marginal sites continue to slowly disappear. No convincing explanation can be proposed at the present time.

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
N. sites	827	801	794	816	792	772	775	797	803	796
N. positive sites (at least 1 roding bird)	229	185	187	193	206	165	187	177	181	192
Low abundance sites (1<n.roding birds ≤ 4)	161	127	130	146	157	109	118	125	123	125
High abundance sites(5 ≥ n.roding birds)	68	56	57	47	49	56	69	52	58	67

Table 2: *Details of data used to estimate population trends.*

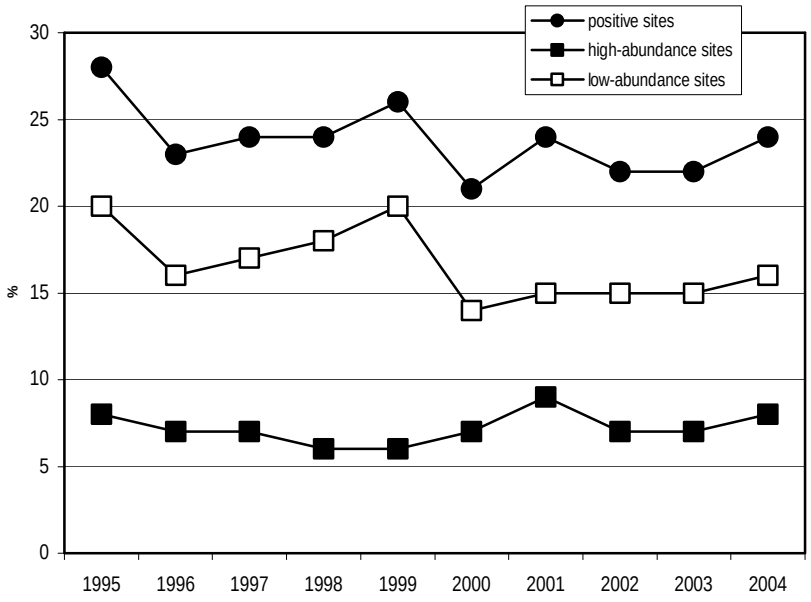

Figure 5: *Annual fluctuations of the proportion of positive, high-abundance and low-abundance sites.*

Acknowledgments

We greatly thank all observers and technical coordinators, professionals of the *Fédérations départementales des chasseurs*, *Office national de la chasse et de la faune sauvage*, and *Office national des forêts*, and also volunteers especially those of the *Club national des bécassiers* who have been working to collect data for this report.
Special thanks also to Claudine Bastat and Michel Guénézan for their great technical help with data analysis.

The 2003 Breeding Woodcock Survey in Britain

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Background

In a recent review of the population status of birds in the UK, the woodcock was 'amber listed' as a bird of conservation concern because of an apparent long-term decline in breeding numbers (Gregory *et al*., 2002). However, to date the available data have consisted of sightings of woodcock during the course of general bird surveys rather than counts from dedicated surveys (Gibbons *et al*., 1993). A survey method based on counts of roding males, as developed in France (Ferrand 1993, Ferrand *et al*., 2003), seemed more appropriate for assessing population trends. Pilot work involved assessing optimal timing for the counts, both seasonally and during the day, and demonstrating a relationship between the number of woodcock registrations and the number of individual males at a site (Hoodless, 2004).

Survey aims and methods

In 2003, The Game Conservancy Trust and The British Trust for Ornithology undertook a survey of breeding woodcock with two aims: (1) to produce baseline population index figures for breeding woodcock populations for England, Scotland and Wales and (2) to investigate the distribution and abundance of breeding woodcock in relation to woodland habitat characteristics and land use in habitats adjoining woodland. A total of 1000 survey locations was randomly selected and stratified by region and woodland area. Because roding birds are generally associated with woodland, the biologically appropriate sampling unit is the stand of trees. A random sample from all 1-km squares containing at least 10% woodland was used to target the woods to be surveyed. Observers were also permitted to submit counts from self-selected sites. The basic unit of abundance was the number of roding woodcock contacted in a one hour period at dusk. Counts were made at a pre-selected point that gave good visibility, such as the junction of two rides. Observers made these counts of roding birds on three visits to their wood during May and June. Habitat data were collected at four 5 m diameter circles, each 50 m from the observation point. These included the number of trees, ground vegetation cover and the dominant tree species. Open canopy areas around the point were also mapped.

Woodcock distribution

Recording forms were received for a total of 947 sites, including 10 from Ireland. The data provide good samples for all regions of Britain (Fig. 1). Overall, woodcock were recorded in 416 (44%) of the woods visited. However, there was much variation between regions and counties in the occupancy of woods and abundance of birds. The occupancy of woods was lowest in Wales with birds recorded in just 20% of woods, but it was highest in eastern England where woodcock were reported in 72% of woods (Fig. 2). In terms of numbers within occupied woods, Wales stands out as having far lower abundance than any other region. The highest abundance within occupied woods (more than 6 roding birds per hour on average) is found in an arc lying across southern Scotland, northern England and the north Midlands down through eastern England into East Anglia. An outlying pocket of high abundance occurs in the central southern English counties. Interestingly, breeding woodcock were absent or only occurred in low numbers in those parts of England and Wales (mainly western coastal areas) where they tend to be most abundant in winter, as appears to be the case in France also.

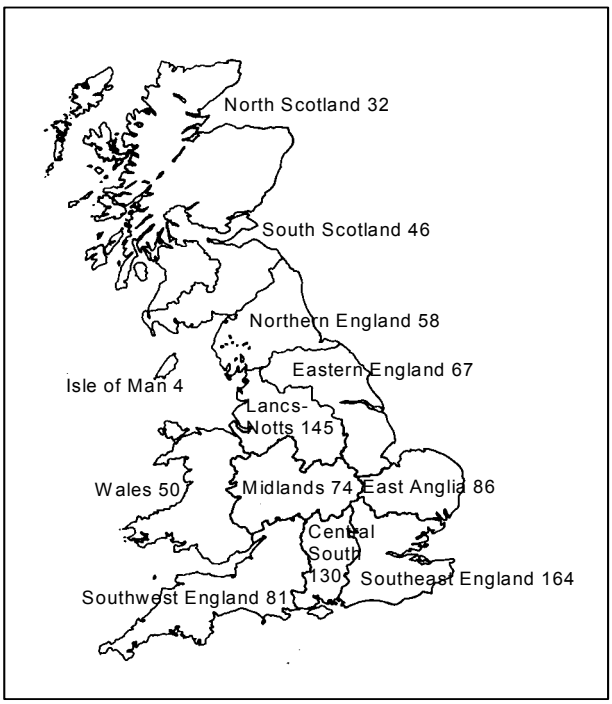

Figure 1: *Boundaries of regions used for the woodcock survey and numbers of sites surveyed within each region. Regions were selected on the basis that each contained similar amounts of woodland within four size classes.*

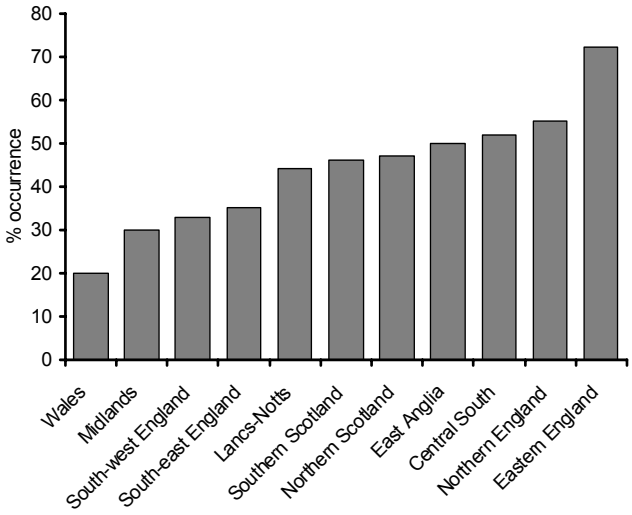

Figure 2: *Regional rates of woodcock occurrence.*

Habitat relationships

In addition to those recorded in the field, habitat variables were extracted from various electronic databases. Data were obtained on landscape compositions around sites, woodland type and size, and the density of roads and houses. Compositional analysis was used to compare land uses at sites where breeding woodcock were present and absent. Habitat relationships have also been examined using Poisson regression models. Initial analyses show that while region has the strongest effect on woodcock numbers, various aspects of the habitat are also important. Woodcock abundance is related to the density of deciduous, mixed and conifer woodland within a 1 km radius of the count point, with the density of deciduous woodland explaining more of the variation in the bird data than density of mixed or conifer woodland. Woodcock numbers are higher in woods where trees are less dense and which have a higher percentage cover of ground vegetation. There was a negative relationship with the density of urban areas within a 1 km radius, but this variable was confounded with woodland density and alternative measures are being derived to examine the effect of human disturbance.

Further work

Further analysis is required to determine the factors influencing woodcock abundance at the regional level. Our intention for the future is to continue with surveys at a sample of about 50 woods each year and to repeat the complete survey at the national scale every five years.

Acknowledgments

We thank all the volunteers who participated in the survey and the BTO Regional Representatives who organised the coverage. We are grateful to the Shooting Times Woodcock Club and an anonymous English charitable trust for funding the survey.

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American woodcock status in Michigan, 2004 (extract of Ruffed grouse and American woodcock status in Michigan, 2004, Wildlife report n°3425, September 2004)

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Ruffed grouse (*Bonasa umbellus*) and American woodcock (S*colopax minor*) are popular forest game birds that are pursued by about 103,000 Michigan hunters annually. Hunters spend an average of seven to eight days hunting grouse and woodcock each year, adding up to almost a million days of recreation in Michigan annually (Frawley, 2004). Non-hunters also place a high value on grouse and woodcock. Many people enjoy listening to or watching drumming male grouse and the courtship displays of woodcock. Additionally, grouse and woodcock are important components of early successional forest habitat.

Methods

The Michigan Department of Natural Resources (DNR) uses several surveys to monitor ruffed grouse and woodcock populations, including hunter cooperator surveys, spring breeding surveys, and hunter mail surveys. Cooperator surveys are based on volunteer hunters who express an interest in participating and are willing to maintain hunting records every year. Cooperating hunters record numbers of hours hunted and ruffed grouse and woodcock flushed each day. Data obtained from cooperating hunters are summarized as the number of grouse or woodcock flushed per hour of hunting. Flush rates reported by cooperators provide an early indicator of harvest, but the final estimates of hunting effort and harvest come from a post-season mail survey of randomly selected hunters.

DNR personnel and volunteers conduct spring breeding surveys of ruffed grouse and woodcock using roadside routes. Each route has ten listening stops that are consistent from year to year. The number of ruffed grouse drums or woodcock heard during a fixed time interval (four and two minutes, respectively) is recorded at each stop. Because timing of breeding and habitat preferences differ for the two species, separate surveys are conducted. The woodcock breeding survey is coordinated by the United States Fish and Wildlife Service (USFWS) in cooperation with the DNR. Ruffed grouse survey routes were established in locations of known grouse populations. Similarly, before 1968, woodcock routes were established in locations of known woodcock populations. However, beginning in 1968, the USFWS established woodcock routes within randomly-chosen 10-minute blocks (Kelley 2004). Data for both surveys are summarized as the number of woodcock or grouse heard per survey route. In addition, volunteers band over 1,000 woodcock each spring to monitor recruitment and trends in survival (Krementz *et al.*, 2003). The data are summarized as the number of woodcock chicks observed and banded per 100 hours of effort.

Results and discussion

Review of recent hunting seasons

The number of woodcock flushed per hour by cooperators in 2003 (1.51) increased 8.6% statewide compared to flush rates from 2002 (1.39). Woodcock flush rates were highest in Zone 2, followed by Zones 1 and 3, respectively (Fig.1 and 2). Average flush rates peaked during October 1-15 and then declined or remained the same during the rest of the intervals in Zones 1 and 3 (Table 1). Flush rates peaked during the first week of woodcock hunting in Zone 2. Seasonal changes in woodcock flush rates most likely reflect southward fall migrations (Luukkonen *et al.,* 1998) and pre-migratory concentration of woodcock. Preliminary research in Michigan revealed that the median migration date for radio-marked woodcock was October 22 in 2002.The earliest departure date was September 20 (Myatt &Krementz, 2003).

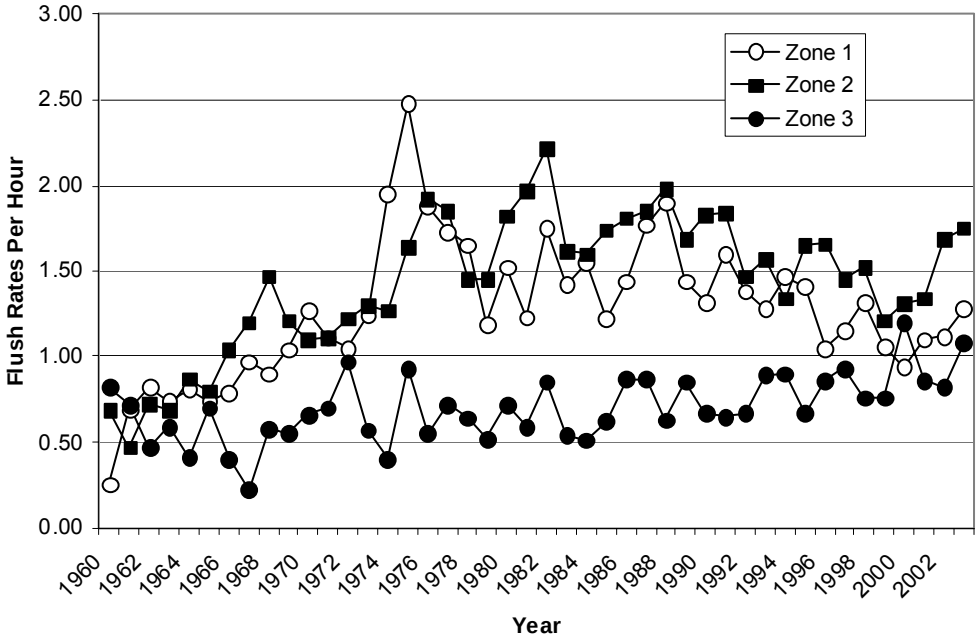

***Figure 1**: American woodcock flush rates reported by cooperating hunters, 1960-2003.*

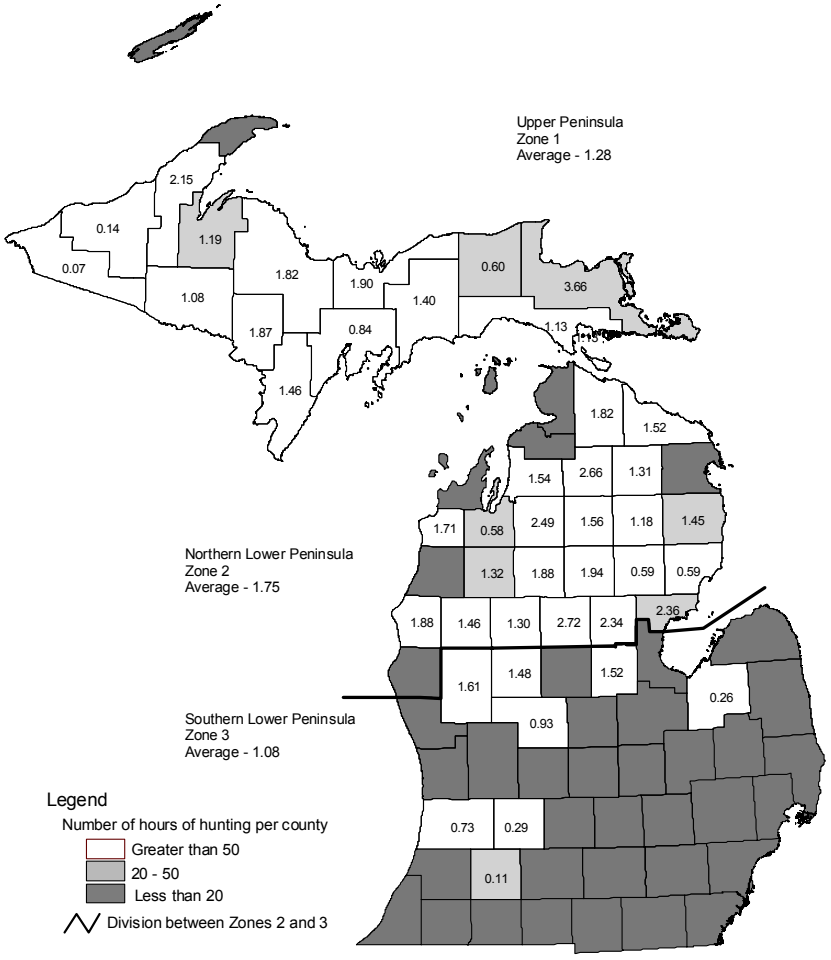

***Figure 2**: Average American woodcock flushed per hour by cooperators in 2003.*

Appendix B. Average American woodcock flushed per hour by cooperators in 2003.

	Zone[a]		
	1	2	3
September 15 - 30	1.48	3.33	1.00
October 1 - 15	1.53	2.36	1.87
October 16 - 31	1.06	1.90	1.87
November 1 - 14	0.24	0.85	1.16
December 1 - 15	0.00	0.00	0.00
December 16 – January 1	0.00	0.00	0.00

[a] See Appendix A for boundaries of Zones.

Table 1: *Average ruffed grouse and American woodcock flushes per hour, by two-week intervals, as reported by cooperating hunters in 2003.*

Approximately 43,000 hunters harvested about 139,000 woodcock while spending 301,000 days afield in 2003 (Frawley 2004). This is approximately 64% lower than the record harvest of 390,000 woodcock in 1976. However, there were also more hunters (126,000) spending more days afield (908,000) in 1976 than in 2003 (Fig. 3). The number of woodcock harvested per hunter day is actually higher now than before the harvest peak in 1976 (Fig. 4).

Spring Breeding Surveys

Results of woodcock breeding surveys were based on preliminary analysis of data from 89 survey routes (Kelley, 2004). Significant changes in the woodcock index for Michigan between 2003 and 2004 were not detected. An average of 3.33 singing males were heard per route. The central region index, consisting of information from Illinois, Indiana, Manitoba, Michigan, Minnesota, Ohio, Ontario, and Wisconsin, also demonstrated no significant change from 2003, with an average of 2.22 males heard per route (Kelley, 2004). Although there was little change between 2003 and 2004, Michigan has experienced an average long-term decline of 1.7% per year since 1968 (Kelley, 2004).

Woodcock banders in Michigan spent approximately 1,700 hours afield in 2004 and banded 993 chicks. The average brood size observed was 3.1, the same as 2002 and 2003. In 2004, there were 74.8 chicks observed and 54.6 chicks banded per 100 hours of search time, compared to 60.2 observed and 46 banded in 2003.

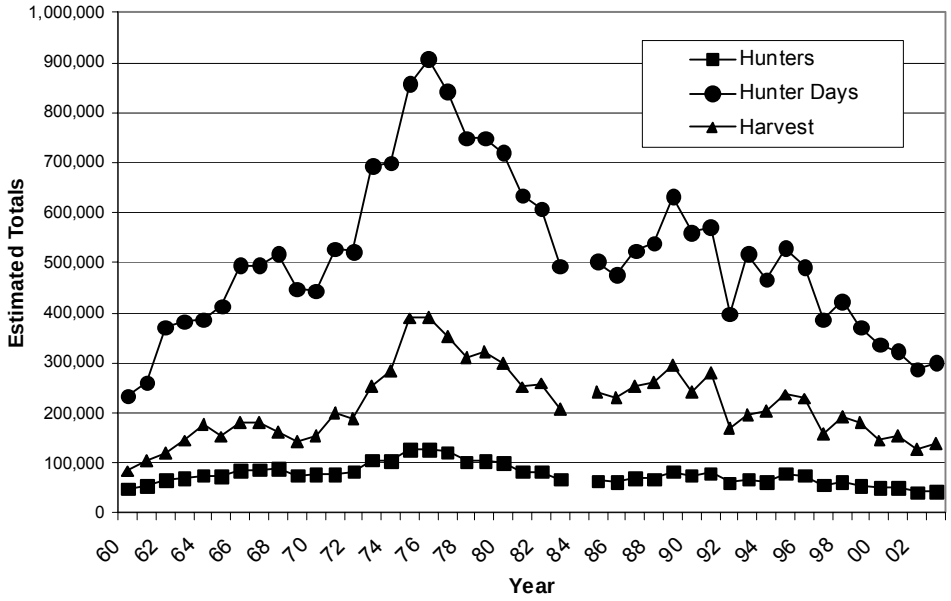

Figure 3*: Mail survey estimates of the number of American woodcock hunters, hunter days, and harvest in Michigan, 1960-2003 (estimates not available for 1984).*

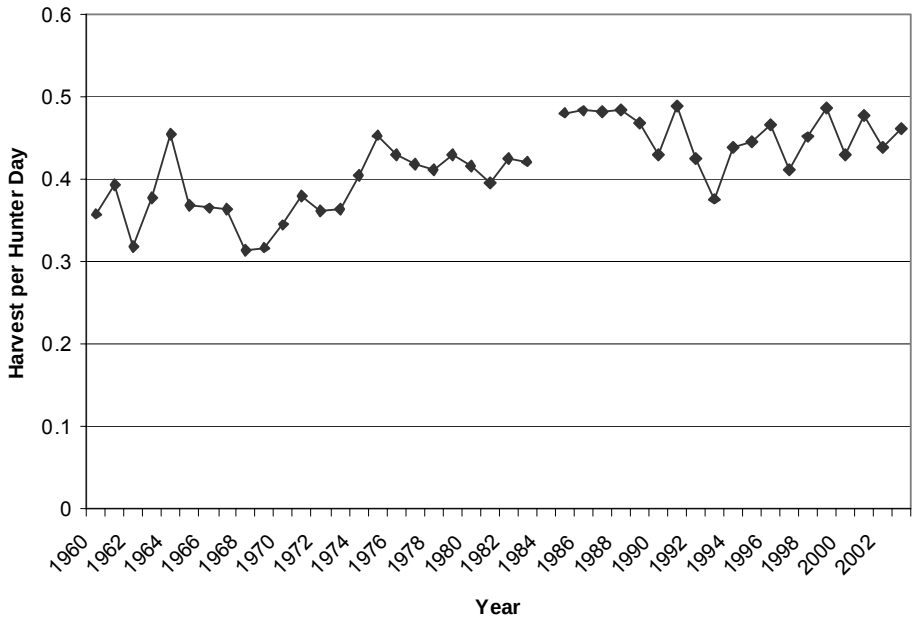

Figure 4: *Mail survey estimates of woodcock harvest per hunter day in Michigan, 1960-2003 (estimates are not available for 1984).*

2004 Woodcock Population Status and Hunting Forecast

Woodcock hunters may expect a season similar to last year. The USFWS mandated that the woodcock hunting season open no earlier than the Saturday closest to September 22. This year the opening date is September 25 and hunters could take up to 140,000 woodcock this fall. While good numbers of grouse and woodcock can be found in all parts of Michigan, the highest densities are located in the northern two-thirds of the state.

The long-term reduction in the woodcock population index based on the breeding bird survey raises questions and concerns about available habitat and the effects of hunting. The declining availability of quality habitat is believed to be a primary cause for the decline in the population (Dessecker & Pursglove, 2000). However, the USFWS has adjusted woodcock hunting season dates and reduced bag limits four times since 1968 in response to this population decline.

A three-year research study in Michigan, Minnesota, and Wisconsin is being conducted to document survival, sources of mortality, local movements, and habitat use of woodcock breeding in the western Great Lakes region (Bruggink *et al*., 2004). Woodcock fall survival on both hunted and nonhunted (or lightly hunted) sites will be estimated during this period (Doherty & Anderson, 2002). In Michigan, the study area in Dickinson County was closed to woodcock hunting beginning in 2002, and this area will remain closed through the 2004 hunting season. A map of this area can be found in the 2004-2005 Michigan Hunting and Trapping Guide. The results of this and other studies will be discussed at the Tenth Woodcock Symposium, which Michigan will be hosting in 2006. Researchers will convene to discuss woodcock status and current research. This event is held every four to eight years, and the attendees will include woodcock experts from across North America and Europe.

Acknowledgments

We thank all the cooperators who kept and provided grouse and woodcock hunting records and participated in banding woodcock. Steve Merchant and Adam Bump provided historical data for Minnesota and Wisconsin drumming counts. Many DNR employees and volunteers conducted spring breeding surveys and assisted in data entry. Julie Kennedy entered cooperator data. Mike Bailey, Brian Frawley, Pat Lederle, David Luukkonen, Sarah Mayhew, Bill Moritz, Cheryl Nelson-Flierman, and Mark Sargent reviewed an earlier version of this report. Portions of this report were copied in whole or in part from previous status reports. Similar reports may be found at www.michigan.gov/dnr.

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