# WETLANDS INTERNATIONAL (WI)



# Woodcock and Snipe
## SPECIALIST GROUP

## NEWSLETTER

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Wetlands International

# Woodcock and Snipe Specialist Group

Newsletter No 26

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# Editorial

This Newsletter is supposed to serve as a contact organ to inform the about 100 members of the Woodcock and Snipe Specialist Group (WSSG), a research unit of Wetlands International (WI) and likewise of the World Conservation Organisation (IUCN). 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.

## Research

This issue may provide an overview on running projects. On both sides of the Atlantic they are conducted as scheduled for the triennium 1999 - 2001. Because of their secretive way of life all species the WSSG is dealing with are extremely difficult to monitor by direct observations. All the more is it important to get indirect information by ringing programs, wing sampling, bag statistics and other data provided by hunters. Following the example of the high standard of Woodcock research in North America, the French colleagues of the *Office National de la Chasse* (ONC) have again intensified their ringing activities in France and Russia. In 2000 an all time record of more than 3 500 woodcocks had been ringed in France alone. The considerable number of ringing and recovery data obtained during recent years are now subject of an analysis in close cooperation with American experts. We also appreciate the information provided by the network of woodcock and snipe hunters organized by the relevant clubs in France. Their wing sampling provided insight into age-specific migration patterns. The same holds for the relevant studies conducted in Denmark. Records of hunters on the number of woodcock flushed per time unit convey ideas of population densities and in the long run of trends.

Following a resolution of the CIC-Migratory Bird Commission in 1998 more attention is now paid to bag statistics. After a time-lag of 15 years the French Office National de la Chasse has published the results of a country-wide inquiry on bags in 1998/99 concerning 22 species (see Bibliography, this issue). Differently from the last inquiry (1983/84) snipe bags had been given specified for Common and Jack snipes. The surprisingly large bag of almost 50 000 Jack snipes revealed this extremely secretive species is in fact more common than generally believed.

Valuable studies on population status and habitat requirements of all three snipe species in the Baltic states are conducted by OMPO (Migratory Birds of the Western Palearctic). Preliminary results had been presented during a symposium in Lithuania in March 2000.

Cooperation with our New World experts on *Scolopax minor* have again intensified. David Krementz came over to France to meet our experts at ONC. Reports on on-going projects in America are published in this issue.

## Meetings

From October 4 - 11, 2000, the coordinator joined the Second World Conservation Congress of IUCN in Amman (Jordania). One of the most important events was the adoption of the IUCN-policy on sustainable use of natural resources by an overwhelming majority of the voting delegates.

On October 23 -24, 2000, the first meeting of the Technical Committee of the African-Eurasian Waterbird Agreement (AEWA) within the Bonn Convention on Migratory Species took place in Bonn (Germany). One of the three international organisations in this committee is the International Council for Game and Wildlife Conservation (CIC), which was represented by the coordinator. Suggestions for the proper classification of the Jack snipe in the Annexes of AEWA is one of the tasks to be completed by the committee before its next meeting in November 2001.

From November 4 - 5, 2000, the second Specialist Groups Workshop and Joint Ramsar Bureau Workshops had been organized at Wetlands International headquarters in Wageningen (Holland). The WSSG-Coordinator was particularly engaged in the question to reactivate the Hunting SG. This group had been suspended at the Board of Members meeting in Dakar, November 1998, because it had been inactive for several years. However, during this meeting there was

general agreement that WI should continue to be involved in all matters concerning consumptive use of waterfowl populations. Collecting harvest and wing-survey data will be the main task of the Hunting SG. It was proposed to nominate candidates for coordinators, both in the Old and the New World, before the next WI-BoM-meeting in November 2001.

**Publications**

Thanks to financial support by the International Foundation for the Conservation of Wildlife (IGF) and the German delegation of CIC the urgently awaited publication of the Proceedings of the Fifth Woodcock and Snipe Workshop, held in May 1998 in Czempin (Poland) could be realized. There was only one negative comment from a WI Board member concerning one article in these proceedings, that caused some anxiety. However, since this paper obviously had not been understood by the critic, the coordinator was able to settle the dispute by a clarifying letter.

Copies of the Proceedings which also is included in the series International Wader Studies ( No. 11) had been delivered to all participants of the Workshop; additional copies are available at WI headquarters in Wageningen.

Two active members of the WSSG, the Russian colleagues Sergey Fokin and Vladimir Kuzyakin had taken over the enormous work to search all available Russian literature on *Anas querquedula*. Edited by Herby Kalchreuter and Jeff Kirby this study ("The Garganey in the former USSR") was published in Wetlands International Global Series No. 7 and is also available at WI headquarters.

According to a recent message of Dan McAuley, WSSG-Joint coordinator (New World) the Proceedings of the Ninth American Woodcock Symposium held in 1997 in Louisiana are at the printers now and should be available soon.

**Personal announcement**

This issue of the WSSG-Newsletter will be the last one edited by myself. At the coming WI Board of members meeting, November 29 to December 2, 2001, I will not be available for re-election. After 22 years (since 1979) it is time to step down and hand over the coordination of the WSSG to a younger successor.

I want to take this opportunity to thank all the members of the meanwhile large "family" of the WSSG for their assistance. Many of you had continuously supported our work, that had extended globally during recent years. By a remarkable number of specific research projects we were able to increase our knowledge on such secretive species as woodcocks and snipes considerably during the last tow decades.

This progress could not have been achieved without continuous financial support of several international organizations. In the name of Wetlands International, IUCN and the WSSG in particular I want to express sincere thanks to CIC International, the CIC-German delegation, IGF and OMPO, as well as some national hunters organisations for their contributions. It was pleasure to work for the WSSG.

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# Some observations on woodcock (*Scolopax rusticola*) migration in Eastern Austria and Western Hungary in 1999

Philipp Meran

Spring migration: Due to rather low temperatures during February the first woodcock was not observed before 11 March. 41 outings provided a total of 115 observations (contacts). The last bird was seen on 9 April. During a föhn-period of warm south-western winds woodcocks dwelling in a traditional staging area left altogether *during day-time* - a quite unusual behaviour. The Hungarian Drau valley was particularly frequented during this spring.

The following table lists birds bagged in Hungary ( 1 in Austria) during evening and morning flights and the number of contacts during these outings.

| Date | Location | Number seen | Number bagged | Age | Sex | Weight (g.) | Bill length (mm) | Time of the day (h) |
|---|---|---|---|---|---|---|---|---|
| 13.3. | Ujvárfalva | 7 | 1 | juv. | _ | 335 | 77 | 18.10 - 18.40 |
| 18.3. | Ujvárfalva | 7 | 1 | ad. | _ | 330 | 68 | 18.26 - 18.49 |
| 19.3. | Ujvárfalva | 6 | 1 | ad. | _ | 298 | 76 | 18.15 - 18.35 |
| 22.3. | Keresztur | 3 | 1 | juv. | _ | 312 | 75 | 5.02 - 5.12 |
| 22.3. | Ujvárfalva | 7 | 1 | ad. | _ | 337 | 72 | 18.12 - 18.46 |
| 23.3. | Ujvárfalva | 4 | 1 | ad. | _ | 328 | 68 | 18.21 - 18.47 |
| 24.3. | Ujvárfalva | 10 | 2 | ad., juv. | _, _ | 304, 272 | 73, 74 | 18.19 - 18.59 |
| 25.3. | Ujvárfalva | 8 | 1 | juv. | _ | 333 | 67 | 18.32 - 19.03 |
| 26.3. | Ujvárfalva | 5 | 1 | juv. | _ | 315 | 69 | 18.35 - 19.04 |
| 28.3. | Ujvárfalva | 7 | 2 | ad., ad. | _, _ | 335, 331 | 73, 69 | 19.40 - 20.11 |
| 9.4. | Kogl, Auwald | 3 | 1 | juv. | _ | 283 | 69 | 20.18 - 20.35 |

Fall migration: 34 outings with a total of 59 contacts revealed the following pattern of migration in Austria. Not before the end of October larger numbers of woodcock were seen at Kremser and Reinischkogel, when temperatures had risen. In Salzburg and Upper Austria record numbers passed through during a few days in November. In Western Hungary, however, exceptionally many woodcocks were seen from October until beginning of December.

Only the following three woodcocks had been bagged and analyzed in Steiermark (Austria):

| Date | Location | Number seen | Number bagged | Age | Sex | Weight (g.) | Bill length (mm) | Time of the day (h) |
|---|---|---|---|---|---|---|---|---|
| 22.10. | Grambach | 4 | 1 | juv. | _ | 287 | 74 | 18.10 - 18.43 |
| 3.11. | Gasselsdorf | 7 | 1 | juv. | _ | 284 | 66 | 16.52 - 17.09 |
| 8.11. | Gasselsdorf | 6 | 1 | ad. | _ | 345 | 73 | 17.02 - 17.20 |

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# Wing sampling in Denmark - Season 1999/2000

Since 1979 wings of waterfowl, snipes and woodcock bagged by Danish hunters are sampled by the National Environmental Research Institute (NERI), Kalø. The DMU report No. 324, edited by Ib Clausager provides the following results:

**Common snipe** (*Gallinago gallinago* )

640 wings have been submitted, thus 229 more than in the previous season. The age-ratio of 2.4 juveniles per adult, indicating a less successful breeding season than the two previous ones. The long-term average (14 years) was 3.9 juveniles per adult. As usual, more than half of the snipes had been bagged during September, most of them in Western Denmark.

**Jack snipe** (*Lymnocryptes minimus* )

60 wings were obtained in fall 1999, thus again more than in the previous season (42). More than half of these birds were bagged in October (45%) and November (32%), primarily around the Ringkøbing Fjord. Due to lack of distinct age criteria no age-ratios could be calculated.

**Woodcock** (*Scolopax rusticola* )

With 579 wings submitted the number had again increased compared with the two previous seasons (439 and 313, respectively). The age-ratio was 2.1 juveniles per adult and thus in the order of the 14 years average. Most woodcocks were bagged from the end of October until 20 November. However, 16% of the bag was obtained during December, most likely a result of the mild climate during this fall.

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# Activities of the woodcock (*Scolopax rusticola*) - network in France 1999/2000.

SUMMARYby HK

Edited by Yves Ferrand, Francois Gossmann and Claudine Bastat the *Lettre d'Information No. 9 - Reseau «Bécasse»* was issued in October 2000. Under the auspices of the *Office National de la Chasse* several projects are conducted and provided the following preliminary results:

**Ringing**

Activities to ring woodcocks staging in France during fall, winter and spring were again intensified. Almost all the country (78 departments) is now covered. At 1 026 sites a total of 3 593 birds were caught and ringed, primarily at night with spotlights, by a network of 277 helpers. This means again an all-time record since 1983/84, when the project was initiated. The age-ratio of the birds caught was 59,4% juveniles per adult, thus one of the lowest recorded during this project.

240 ringed birds had been recaptured, of which 116 (5.8%) had been ringed in the same, and 124 during previous seasons (direct and indirect recoveries).

During all the 2164 nocturnal outings the ringers contacted altogether 14 220 woodcocks and thus also provided data on migration phenology. The majority was ringed in November (25%) and December (36%).

During this season a total of 28 woodcocks ringed in France had been recovered in foreign countries (12 ringed in the same, 16 in previous seasons), namely Austria, United Kingdom, Denmark, Finland, Baltic states, Russia, Ukraine, and almost half of them (13) in Spain and Portugal. Overall, 337 woodcocks ringed in France had been recovered in 23 foreign countries.

During 14 consecutive winters a total of 15 839 woodcocks had been ringed, and 3 312 had been recovered so far. This amount of data gave reason for a first analysis, also concerning survival rates. Average annual survival was calculated as 0.45 for adults, and 0.35 for juveniles. The average life expectancy of an adult woodcock was estimated as 1.25 years. This study was submitted for publication in the renown journal *Wildlife Biology*.

The relatively high recovery rate (>20%) and low survival rates found in this part of the population wintering in France gave reason to the authors for concern and more detailed investigations in the future. However, the annual woodcock bag in France was more or less in the same order over this period, namely 1.3 million in 1983/84, 1.17 million in 1998/99 (comment by HK, based on the statistics of ONC, Landry & Migot 2000, see Bibliography).

**Monitory the breeding population**

Since 1988 the woodcock breeding population had been monitored in France, based on surveys of roding birds in spring. The study was intensified since 1993. In 2000, most of the country (70 departments) had been covered, including regions at the border of local metapopulations. 1 072 listening points were distributed over potential woodcock habitat, 17% of them provided positive results (at least one roding bird). While over previous years the percentage of occupation was more or less stable (about 25%), this value was the lowest so far. This is partly by a negative impact of the hurricane of December 1999 on habitat quality. Even in regions of previously high abundance the occupation rate has dropped considerably. The results of future seasons may provide information on the reasons of this event.

**Movements of wintering woodcocks**

In November 1999 21 adults and 16 juveniles had been equipped with radio-transmitters in a forest of the Côtes d'Armor. Eleven of them carried a special instrument to record daily activities that were monitored from 9 to 31 January.

The study documented considerable individual variations in behaviour. Some birds exhibited high site fidelity to diurnal roosting as well as nocturnal feeding places. Others made use of several areas for roosting and/or feeding. Up to 2.5 km were covered between roosting and feeding spots. The data revealed three peaks of feeding activity during the night. The study will be continued in the season 2000/2001.

**Studies in Russia**

Since several years research activities of the ONC had been extended to the main breeding range of European woodcocks. In spring 2000 almost 2 000 helpers in 44 regions had observed the arrival of the migrants and filled out their forms. Moreover, on 65 quadrates (12 ✖ 12 km), 23 in Northwestern and 42 mainly in Central Russia had been monitored for roding birds. 90% of a total of 440 listening points had provided at least one contact.

Due to inclement weather conditions the first part of the reproductive period was probably not very successful in Central Russia. In Northern Russia (Karelia) for the same reason woodcocks were still seeking refuge along river banks. 12 nests and 12 broods with chicks had been detected in Central Russia, the relevant figures for the St. Petersbourg region were one and three.

Fall migration was delayed for at least ten days compared with previous seasons. At the beginning of October only a short passage was registered in Northwestern Russia.

According to Russian bag statistics about 150 000 woodcocks had been harvested in spring (primarily roding birds) and about 55 000 in fall.

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# OMPO International Meeting on Snipes

Review by HK

From 3 - 4 March 2000 the Working Group on Migratory Birds in the Western Palearctic (OMPO) has organized a symposium in Vilnius, Lithuania. The targets were several aspects of population dynamics of three snipe species in their main European breeding range. Papers presented were published in June 2000 in OMPO-Newsletter No. 21 (Special Issue). It may be ordered by OMPO (5, avenue des Chasseurs, F-75017 Paris, France). During this meeting of experts the following interesting informations had been provided:

## Common snipe (*Gallinago gallinago*)

Due to its greater flexibility in habitat requirements this species is the most common one in this region (70 000 - 90 000 breeding pairs in Belarus, according to a rather rough estimate of E. Mongin). About 15 000 pairs, thus about three times more than previously thought, resulted from the intense surveys of Ma_ik_nas, Sva_as and Jusys in Lithuania. The marked decline in 1965-85 due to intensive farming was partly compensated by colonisation of small habitat patches within agricultural areas. However, nest predation in these habitats modified by man was rather high due to the rapidly increasing numbers of corvids (crows and magpies). On average, more than 40% of all nests failed. Another problem is the overgrowing of remaining key wetlands.

Among other waders larger numbers of common snipes had been caught by long term ringing projects at two wetlands in Poland (1 680 near Gdansk by Meissner, almost 3 000 at Jeziosko, central Poland, by Wlodarczyk and Kaczmarek). They also provided information of migration phenology and morphometric data.

Grishanow reported an earlier record of two successful broods per season by one female in the Kaliningrad region of Russia.

## Great snipe (*Gallinago media*)

Several papers dealt with this rarer species. Due to its pronounced lekking behaviour at special sites, at least the number of males can be estimated more accurately than in other snipe species. Thanks to his long-term studies in Norway Kålås provided information on breeding biology, lekking behaviour and methods for monitoring breeding populations. The very special breeding habitats of great snipes, namely floodplain meadows and eutrophic fens, had been considerably altered by drainage for agriculture and/or overgrowing, which caused the drastic decline of this species since the beginning of the 20th century. This development was found almost identical in the three Baltic states, the Kaliningrad region and in Belarus: Great snipes had been quite common in the 19th century, then almost disappeared as breeding species, but slightly increased during the last two decades. Climatic impacts may also have played a role in the shift of metapopulations at the border of the main Eastern European breeding range (comment of the reviewer). Kålås provided an overview on most recent population estimates in different parts of the range.

## Jack snipe (*Lymnocryptes minimus*)

Due to small size and extremely secretive behaviour data on this species always had been scanty. Very few breeding records were reported from Belarus, Lithuania ( a first record in the 20th century) and possibly earlier ones in the Kaliningrad region. The main breeding range is probably farther north and east than that of the other snipes, since it was more regularly observed dur-

ing migration. For example, by a special snipe ringing project of Mačikūnas *et al.* in Lithuania 8% of the birds caught in fall 1999 had been Jack snipes (N = 206).

A similar numerical relationship between Common and Jack snipe was found by the wing sampling project of Devort. In 1996 he received 25 090 wings of the former, and 2 114 of the latter species, all from the wintering areas, mainly France. Thus, Devort's presentation did not only add to our knowledge on migration phenology and moulting, but also added a mosaic stone to the question of the size of the western palearctic population of this rather unknown species (comment of the reviewer).

The symposium was concluded by a comprehensive summary by Olivier on the recent situation of snipe habitats all along the ranges of these species. Based on many years of own experience he provided instructions for proper habitat management.

# Caracterisation genetique de differentes populations de Becasses des bois (*Scolopax Rusticola*) par la technique rapd

**Attilio Arillo, Maria C. Dani, Aldo Lattes, Anna M. Risso & Silvio Spanó**

L'équipe de recherche du DIP.TE.RIS. de l'Université de Genes (Italie) a analysé 88 fois de bécasses tuées – moins d'une heure avant le prélèvement – par les chasseurs specialistes du Club della Beccaccia italien en differents endroits: 10 en Ecosse, 22 près de Uppsala (Suède), 14 près d'Alessandria (Italie du Nord), 19 su le Mont Amiata (Italie centrale), 12 en Lucania (Italie du Sud), 8 dans la péninsule de Sinop (Turquie) et 3 en Crimée (Ukraina) (fig. 1).

Le DNA du génome a été amplifié par la technique RAPD (Random Amplified Polymorphic DNA) (Williams *et al.*, 1990) et les produits de l'amplification visualisés par électrophorèse.

Les bandes ont été considerées des "markers" dominants de "loci" mendéliens pour en obtenir des évaluations des fréquences "alleliques" et ainsi calculer les distances génétiques entre les différents échantillons de bécasses selon Nei (1972) (tab.I).

Les distances de Nei groupées par la méthode UPGMA (Sneath et Sokal, 1972) ont donné le dendrogramme de la fig. 2 (ici on n'a pas compris les trois bécasses tuées en Crimée, trop peu nombreuses pour en tirer des considerations significatives).

Ces résultats montrent que les bécasses de la Lucania et de la Turquie sont bien séparées des autres, qui constituent un group génétiquement plus homogène (Arillo *et al.*, 2000).

On peut ainsi hypotiser que les bècasses qui arrivent pendant l'automne dans le nord et l'ouest d'Italie viennent de populations européennes nord-occidentales; celles qui arrivent dans le sud du Pays viendraient d'autres régions (plus orientales), c'est-à-dire que les populations qui hivernent en Italie ne sont pas partout les memes et en consequence la pression de chasse est plus diluée et donc mieux tolérée.

Les bécasses qui hivernent en Turquie sont encore mieux separables des autres.

Ces résultats demeurent d'accord avec les données sur la migration de cette éspèce et sur sa fidélité aux lieux d'hivernage (Wilson, 1979; Spanò et Borgo, 1993; Kuzyakin, 1994, 2000; Fadat, 1995; Ferrand et Gossmann, 1995; Sorace *et al.*, 1999).

Pour celà les bécasses qui hivernent dans les Iles Britanniques et tout le long de la facade atlantique de l'Ouest européen ne se melangent pas avec celles qui hivernent sur les cotes de la Mer Noir, tout en provenant de différentes populations reproductives.

On voit des situations en partie superposantes dans les régions intermediaires.

Le très bas nombre de reprises sur les cotes de la Mer Noire de bécasses baguées vis-a-vis de l'important accroissement des baguages en France et dans la Russie de l'ouest (presque 25 000 bagues) (Ferrand *et al.*, 2000; Iljinsky *et al.*, 2000) bien que beaucoup d'elles y viennent tuées (voire aussi le très lourd tourisme de chasse) vont confirmer notre hypothèse.

Tout celà pourrait peut-etre expliquer la suffisamment bonne conservation des stocks bécassiers, mais ça n'autorise pas la coupable manque d'une coordination internationale pour son aménagement.

# Bibliografia

ARILLO A., DANI M.C., LATTES A., RISSO A.M. & SPANO' S., 2000 – Confronto fra lo studio delle popolazioni europee di Beccaccia (*Scolopax rusticola*) tramite l'analisi delle distanze genetiche e i risultati dell'inanellamento in relazione ai loro spostamenti migratori. *La Regina del Bosco,* 47 : 39-42.

FADAT C., 1995-La Bécasse des bois en hiver. Charles Fadat ed., Clermont- l'Hérault

FERRAND Y. & GOSSMANN F., 1995-La Bécasse des bois. Hatier, Paris.

FERRAND Y., GOSSMANN F. & BASTAT C., 2000 – Reseau "Bécasse" – Lettre d'information n. 9 – ONC-CNERA, pp. 1-8.

ILJINSKY I.V., FETISOV S.A., PTSCHELINZEV V.S., VEREVKIN M.V., GOLOVAN V.I., CHISTYAKOV D.V. & GOSSMANN F., 2000 – First results of Woodcock (*Scolopax rusticola*) ringing in the north-west region of Russia. In Kalchreuter H. (ed.), Proc. 5th European Woodcock and Snipe Workshop, Wetlands International: 15-18.

KUZYAKIN V.A., 1994 – Principal point of the Russian Woodcock programme. 4th European Woodcock & Snipe Workshop, IWRB Publ. 31: 66-70.

KUZYAKIN V.A., 2000 – Recent research activities on Woodcock (*Scolopax rusticola*) in Russia. *In* Kalchreuter H. (ed.), Proc. 5th European Woodcock and Snipe Workshop, Wetlands International: 5-9.

NEI M., 1972 – Genetic distance between populations. Amer. Nat., 106: 283-292.

SNEATH P.H.A., R. R. SOKAL, 1973 - Numerical Taxonomy. W.H. Freeman, San Francisco.

SORACE A., LANDUCCI G., RUDA P., CARERE C., 1999- Age classes , morphometrics and body mass of Woodcocks (*Scolopax rusticola*) wintering in Central Italy. Die Vogelwarte 40: 57-62.

SPANO' S. & BORGO E., 1993- Age –ratios, Radioactivity and Foods of Eurasian Woodcock in Italy. Proc. 8th American Woodcock Symp., U.S. Dpt. Interior, Biol. Rep. 16 : 126-130.

WILLIAMS J. G., KUBELIK A. R., LIVAK K. J., RAFALSKI J. A., TINGEY S. V., 1990 - DNA polymorphisms amplified by arbitrary primers are useful as genetic markers. Nucleic Acids res., 18:6531-6535.

WILSON J., 1979- Wintering site fidelity of woodcock in Ireland. Proc. 2nd Eur.Woodcock & Snipe Workshop, Fordingbridge: 18-27.


**Fig. 1: Endroits de échantillonnage : 1-Ecosse (=Scozia), 2 –Uppsala (=Svezia), 3- Alessandria, 4 – Monte Amiata, 5-Lucania, 6- Turquie (=Turchia), 7 – Crimée (=Crimea)**

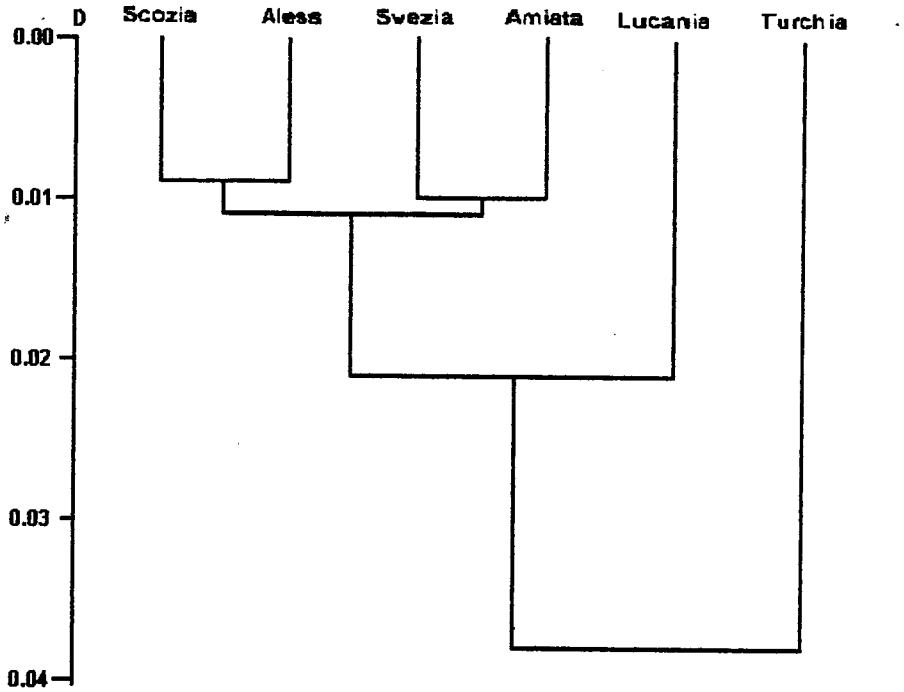


**Fig.2: Cluster des distances de Nei (méthode UPGMA).**

| | Scozia | Lucania | Amiata | Crimea | Svezia | Alessandria | Turchia |
|---|---|---|---|---|---|---|---|
| Scozia | - - | 0,021 | 0,011 | 0,090 | 0,013 | 0,009 | 0,032 |
| Lucania | 0,021 | - - | 0,023 | 0,115 | 0,020 | 0,020 | 0,044 |
| Amiata | 0,011 | 0,023 | - - | 0,079 | 0,010 | 0,013 | 0,037 |
| Crimea | 0,090 | 0,115 | 0,079 | - - | 0,094 | 0,096 | 0,106 |
| Svezia | 0,013 | 0,020 | 0,010 | 0,094 | - - | 0,013 | 0,041 |
| Alessandria | 0,009 | 0,020 | 0,013 | 0,096 | 0,013 | - - | 0,037 |
| Turchia | 0,032 | 0,044 | 0,037 | 0,106 | 0,041 | 0,037 | - - |

**Tab. 1: Distances génétiques entre les populations calculées après Nei (1972).**

SUMMARY(by HK)

DNA-analyses of 88 woodcocks collected at seven localities (Fig. 1) revealed birds wintering in Europe originate from different breeding populations (Tab. 1, Fig. 2). Specimens from Scotland to central Italy are more or less homogeneous, while those of southern Italy and Turkey differ from them genetically and may therefore originate from a more eastern population. This hypothesis is supported by recoveries of ringed birds.

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# Age-ratios des Becasses (*Scolopax Rusticola*) tuees en Italie pendant 24 saisons de Chasse (1976-1999)

Silvio Spanó and Loris Galli

Dès 1976 on a examiné 11 313 ailes de Bécasse envoyées par les chasseurs de toutes les régions italiennes. Il y a une zone centrale (Emilia Romagna et Toscana en particulier) où le pourcentage d'oiseaux adults est toujours plus élevé qu'ailleurs (Spanò, 1993; Spanò & Borgo, 1993); néanmoins cette donnée devrait etre interprétée avec du soin vis-à-vis de l'influence que les variables climatiques ont sur la dispersion des classe d'age (Fadat, 1995).

A partir de 11 313 ailes (471,4 – D.S. 272,5 par en moyenne ) on rélève 64,9% jeunes de l'année (moyenne nationale 1976-99, v. table 1) avec une tendence significative vers une baisse ($r = -0,684$, $p < 0,01$).

Il est vraisemblable qu'une diminution de la compétition intraspécifique en suite d'une chasse lourde irait favoriser le succès de reproduction et en consequence un pourcentage de jeunes plus élevé (Fadat, 1995), en accord aussi avec le modèle de Potts & Hirons (1983) qui considèrent la mortalité des bécasses adultes densité-dépendante. Pourtant la hausse progressive des adultes dans les tableux de chasse italiens serait un indice de bonne santé des populations qu'ici hivernent; et tout celà bien que le nombre de chasseurs "specialistes" et l'expansion du tourisme de chasse soient accrus. La fermeture de la chasse à fin janvier, la limitation locale des jours de chasse par semaine, des tableaux individuelles, du nombre globale des chasseurs (en Italie sont aujourd'hui presque la moitiè par rapport aux années 1980) pourraient avoir eu un effect favorable sur les populations bécassières qui hivernent dans l'Europe de l'Ouest, aussi que l'accroissement du tourism de chasse, et donc de sa presssion, dans les régions de la Mer Noire ne devrait pas influencer les populations qui hivernent en Italie: des recheches recentes sur le DNA vont confirmer une séparation de ces differentes souches (Burlando *et al.*, 1996; Arillo *et al.*, 2000), chose déjà hypotisée par l'étude de la radioactivité après Chernobyl (Spanò & Borgo, 1993) et confirmée par les reprises des bécasses baguées en Italie centrale (Landucci & Ruda, 1997; Sorace *et al.* 1999).

## BIBLIOGRAPHIE

Arillo A., Dani M.C., Lattes A., Risso A.M. & Spanò S., 2000 – Confronto fra lo studio delle popolazioni europee di Beccaccia (*Scolopax rusticola*) tramite l'analisi delle distanze genetiche e i risultati dell'inanellamento in relazione ai loro spostamenti migratori – *La Regina del Bosco*, 47: 39-42.

Burlando B., Spanò S. & Machetti M., 1996 – A study of the genetic in populations of the European Woodcock (*Scolopax rusticola*) by random amplification of polymorphic DNA. *Ital. J. Zool.*, 63: 31-36.

Fadat. C., 1995 – La Bécasse de bois en hiver. Fadat, Clermont-L'Hérault.

Landucci G. & Ruda P., 1997 – L'attività di cattura di Beccaccia Scolopax rusticola nella Tenuta Presidenziale di Castelporziano: breve resoconto. Suppl. Ric. Biol. Selvaggina, XXVII: 951-954.

Potts G.R. & Hirons G.J.M., 1983 – Towards a realistic simulation model for Woodcock population. Proc. 2nd Eur. Woodcock & Snipe Workshop, Fordingbridge: 83-91.

Sorace A., Landucci G., Ruda P., Carere C., 1999 – Age classes, morphometrics and body mass of Woodcocks (Scolopax rusticola) wintering in Central Italy. Die Vogelwarte, 40: 57-62.

Spanò S., 1993 – Il punto sulla Beccaccia. Olimpia, Firenze.

SUMMARY (by HK)

Age-ratios of woodcocks bagged in Italy from 1976-1999

A total of 11313 wings obtained over 24 years revealed an average age-ratio of 64.9% juveniles. The authors explained the slight, but significant decrease of age-ratios over the years (table 1 ) as a consequence of lower hunting pressure in Italy, which may have caused higher densities in the relevant breeding populations and thus lower reproductive rates.

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# Rélation entre les récoltes de bécasses (*Scolopax rusticola*) et l'activité solaire: une hypothèse

Mirceą Mătieş & Dan Munteanu

Il y a longtemps qu'on a constaté que la superficie de soleil n'est pas uniforme. Pendant certaines périodes - en moyenne toutes les 11,2 années - apparaissent sur sa surface des taches solaires visibles parfois même à la jumelle au moment du son lever et de son coucher, et qui modifient, d'une manière appréciable, l'ensemble de son champ magnétique. Parallèlement à ce phénomène, on enregistre une activité solaire maximale coincidant avec l'apparition des taches les plus étendues et les plus nombreuses, ainsi qu'une activité minimale alternant avec la première. Ces modifications cycliques provoquent également des perturbations importantes dans le champ magnétique de la terre, se répercutant en premier lieu sur les aurores boréales, mais aussi sur des nombreux phénomènes thermiques, physiques et biologiques. Certains rythmes biologiques ou bien agriculturaux sont, par exemple, en étroite corrélation avec la périodicité des taches solaires. C'est ainsi que la production des vins de la région de Bordeaux/France a été maximale pendant les années aux grandes perturbations magnétiques provoquées par l'activité solaire maximale (les taches solaires des années 1891-1893, 1904-1906, 1917-1918 etc.), de même que les épidémies de diphtérie, de typhus récurrents, comme aussi les augmentations de la fréquence des maladies et accidents cardio-vasculaires en France se sont superposées presque exactement à l'activité solaire intense indiquée par la périodicité moyenne de 11,2 années(Jarian 1950, Rheinberg & Gatha 1957, Smith & Gottlieb 1974).

En ce qui concerne l'influence de l'activité solaire sur les oscillations numériques des populations de bécasses euro-asiatiques, on n'a pas encore fait, jusqu'à présent, des recherches scientifiques, quoiqu'il y a de suffisantes données annuelles (par saisons cynégétiques) se référant aux récoltes de bécasses des différents pays. Nous estimons que la raison principale de l'ignorance de cette corrélation réside dans le fait que la principale population européenne de l'espèce (celle provenue des Pays baltes, de Finlande et de Scandinavie) peut changer partiellement, d'une année à l'autre, sa région d'hivernage préférée. De cette manière, les statistiques concernant les récoltes de bécasses de chaque pays, prises séparément, ne peuvent offrir des preuves suffisantes pour démontrer leur corrélation avec l'activité solaire.

Nous présentons, dans le graphique ci-joint, la situation des récoltes de bécasses dans le sud de la Roumanie (réalisées par le Général Georges Manu - d'après **Cristoveanu**, 1975) et dans l'Écosse (d'après **Monica Shorten**, 1974), parallèlement avec l'activité solaire, ainsi que certaines données hydrologiques.

L'analyse de ce graphique ainsi que celle des autres données concernant la migration de la bécasse nous permettent de constater, en premier lieu, l'importante fluctuation multiannuelle du nombre de bécasses pouvant être récoltées, par saisons cynégétiques, dans des endroits différents; ces fluctuations peuvent, indirectement, donner des indications sur l'accroissement ou la diminution numérique de l'ensemble de la population européenne de l'espèce.

Pour certaines saisons (1928/29, 1937/38 etc.) nous remarquons le fait que la population bécassière qui a nidifié dans les Pays baltes et en Scandinavie a migré plus intensément vers les zones d'hivernage de l'ouest, en Grande-Bretagne; par contre, pour d'autres saisons (1939/40, 1926/27 etc.) elle a préféré les zones de l'est (Pays baltiques) et, à un moindre degré, celles de l'ouest. Il est évident que pendant la saison cynégétique de 1939/40, la population bécassière a été attirée par les zones d'hivernage de l'est, par la Roumanie, comme suite, surtout, des précipitations excessives enregistrées pendant ces années, dans le basin inférieur du Danube (voir, dans le graphique ci-joint, le hygrogramme de la rivière Ialomiţa).

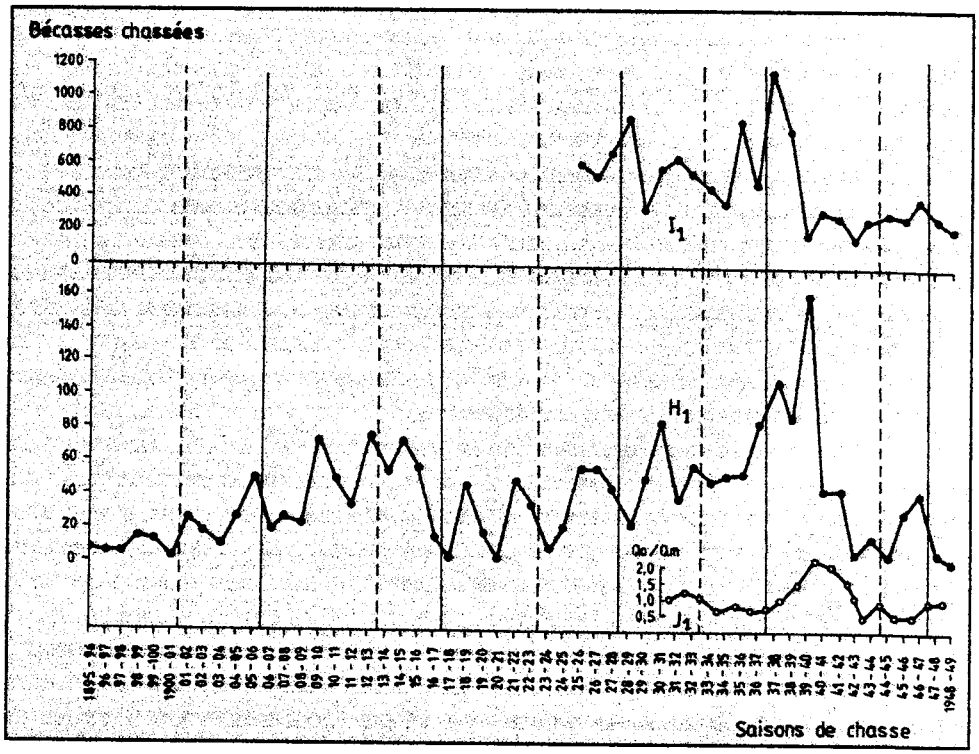
Le même graphique nous suggère, en second lieu, le fait que pendant les années pendant lesquelles l'activité solaire a été accrue (1936-40, 1926-30, 1946-48 etc.) le nombre des effectifs

bécassières a augmenté, et qu`il a été suivi de leur diminution pendant les années dont l`activité solaire a été diminuée (1942-45, 1932-35 etc.).

À part les fluctuations multiannuelles mentionnées, la population bécassière a enregistré, surtout pendant les dernières décennies, une diminution inquiétante aussi bien en Europe qu`en Asie.

L`"effrontément" de la population bécassière qui avait marqué un apogée dans les années 1936-40 - période d`activité solaire maximale - a été produit aussi par le fait que la majorité s`est massée et a été obligée de passer les mois froids de la saison 1939-40 surtout dans les quartiers d`hiver de l`est, au potentiel nutritif plus réduit.

Nous estimons que la relation entre l`activité solaire et l`oscillations quantitatives des populations bécassières, ne pourra être prouvée que par la centralisation de toutes les récoltes des pays européens et méditerraniens, c`est-à-dire par une coordination internationale adéquate.




**Légende du graphique: "Les récoltes annuelles de bécasses par saisons cynégétiques":**

**H1. Dans le sud de la Roumanie, réalisées par Georges Manu;**
**I1. En Écosse, d`après Monica Shorten, 1974;**
**J1. La variation chronologique de l`écoulement annuel de la rivière Ialomi_a (dans le sud de la Roumanie) au point hygrométrique Slobozia (d`après Dumitrescu, 1964);**

- **Point noir: bécasses récoltées et enregistrées pendant chaque saison cynégétique;**
- **Ligne verticale continue: années à activité solaire maximale;**
- **Ligne verticale interrompue: années à activité solaire minimale;**
- **Cercle: valeur moyenne de l`écoulement annuel de la rivière Ialomi_a à Slobozia (d`après Dumitrescu, 1964);**
- **Qa/Qm: écoulement moyen annuel / écoulement moyen multiannuel.**

| | 1976 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Piemonte | 70,5 | 92 | 62,5 | 77,7 | 75 | 62,8 | 81,8 | 70,9 | 87,5 | 66,6 | 71,4 | 63,6 | 64,5 | 50 | 71 | 41,9 | 60 | 60,5 | 52,5 | 79,5 | 52,6 | 65,2 | 56 | 66,97 |
| V.Aosta | 100 | 50 | 75 | | | | | | | | | | | | | | | | | | | | | |
| Liguria | 75,5 | 62,9 | 32 | 62,5 | 62,8 | 82,9 | 77,2 | 78,5 | 75 | 52,3 | 53,3 | 60 | 48,8 | 65,4 | 50,6 | 44,1 | 69,5 | 47,7 | 69,4 | 49,2 | 63 | 80,6 | 73,1 | 64,5 |
| Lombardia | 0 | 78,4 | 64,1 | 86 | 63,1 | 3,4 | 79,4 | 74,6 | 63,4 | 75 | 94,4 | | 69,3 | | 71,6 | 62,5 | | 83,7 | 29,7 | 57,9 | 68,7 | | 72,7 | 65,96 |
| Emilia | 51,5 | 60 | 57,6 | 67,8 | 52,6 | 69,2 | 72,7 | 68 | 72,7 | 66,6 | 59,1 | | 50 | 54,5 | 40 | 62 | 73,6 | 40 | 50 | 60 | 56,8 | 57,1 | 69,8 | 100 |
| Fri.+Ven. | 100 | 100 | 50 | 66,6 | | | 100 | | | | | 87,5 | | | 68,7 | | 55,5 | 38,5 | 70 | | 54,5 | 66,7 | 71,4 | 80 |
| Toscana | 60,2 | 61,8 | 49 | 76,4 | 74 | 83,8 | 71,4 | 0 | 72 | 62,5 | | 65 | 47,6 | 63,5 | 54,2 | 50 | 38,5 | 82,6 | 69,6 | 54,5 | 44,4 | | 36,4 | 55 |
| Umbria | 79,1 | 67,4 | | 40,6 | | | 74,3 | | | | | 75 | | 87,5 | 50 | 55,6 | | 65,4 | | 63,1 | 73,7 | 54,5 | 71,1 | 76,9 |
| Marche | 55,1 | 66,6 | 71,4 | 57,1 | | | 81,8 | | | | | 50 | 75 | | 69 | 68,6 | 75 | 58,3 | 47,4 | 64,7 | 50 | 57,1 | 87,5 | 76,9 |
| Abruzzo | | 62,5 | 76,4 | 83,6 | | 100 | 50 | 50 | | 0 | 33,3 | | 70,6 | | 62,5 | 47,4 | | | | | 60 | | 50 | 55,5 |
| Molise | | 100 | 88,8 | | | | | | | | | | | | | | | | | | | | | 78,5 |
| Lazio | 78,1 | 77,7 | 62,5 | 33,3 | | | | | | | | | 66,7 | 100 | | | | 61,5 | 42,8 | | | | | 45 |
| Campania | 83,3 | 75 | 70 | 62,5 | | | 78,1 | | | | | | | | 71,4 | | 92,9 | 50 | 60 | | 67,6 | | | |
| Puglia | 84,9 | 88,2 | 67,4 | 3,6 | 77,4 | 56,6 | 78,5 | | | | | 100 | 78,3 | | 100 | 42,9 | 67,9 | 41,1 | | 17,4 | 33,3 | | 38,5 | |
| Lucania | 59,6 | 76,5 | 84,6 | 93,3 | | | 92,8 | 100 | 87,9 | 36,3 | 66,6 | 64,3 | 69,4 | 42,8 | 55,7 | | 80 | 44,4 | 57,1 | 83,8 | 100 | 50 | 66,7 | 84,3 |
| Calabria | 82,3 | 68,5 | 82,2 | 64,1 | | | 95,5 | 85,7 | 89,4 | | 86,7 | | 60 | | 85,7 | | 83,3 | 63,4 | 68,7 | | 41,2 | | | 65,6 |
| Sicilia | 62,5 | 72,8 | 83,1 | 91,5 | 71,7 | 86,6 | | 91,6 | 85 | | 90,5 | 38 | 67,6 | 75,2 | 71,4 | 47,6 | | 76,4 | | 94,1 | 88,9 | | | |
| Sardegna | 68,7 | 70,2 | 68,1 | 72,9 | | 65,3 | 75,2 | 65,1 | 75,4 | 56,8 | 54,6 | 30,2 | 78,6 | 57,7 | 58,8 | | 60,5 | 80,7 | | 35,1 | 75 | | 21,1 | 68,67 |
| **MEDIA** | **68** | **72,3** | **66** | **75,4** | **67** | **74,2** | **79** | **70,7** | **76** | **61,8** | **74,8** | **57,3** | **61,4** | **62,7** | **62** | **64,8** | **61,5** | **59,5** | **49,8** | **54,4** | **60,4** | **57,8** | **62,8** | **65,8** |
| N° Ali | 547 | 1229 | 758 | 732 | 237 | 241 | 395 | 255 | 469 | 267 | 443 | 210 | 289 | 130 | 561 | 593 | 384 | 636 | 768 | 408 | 336 | 139 | 312 | 974 |



**Table 1: Age-ratios (Jeunes de l'année per adults) des Bevasses tuées en Intalie pendent 24 saisons de chasse.**

**Bibliographie**

CRISTOVEANU, N. - 1975 - La chasse de la bécasse en Roumanie entre 1895-1948. La Mordorée nr. 113, Montpellier.

DUMITRESCU, S. - 1964 - Varia_ia scurgerii anuale la râurile din R.P.România. Hidroteh. gosp. apelor _i meteorol. XII Bucure_ti.

JARIAN, H. - 1950 - Le soleil et son rayonnement. Coll. "Que sais-je ?" Paris, Press. univ. de France.

REINBERG, A., GATHA, I. - 1957 - Rythmes et cycles biologiques. Paris, Press. univ. de France.

SHORTEN, M. - 1974 - The European Woodcock (Scolopax rusticola) The Game Conservancy. Report 21: 1-95, Bournemouth.

SMITH, E.V.P., GOTTLIEB, D.M. - 1974 - Solar flux and its variations. Space Sci. Rev., XVI: 771-802.

SUMMARY(by HK)

Relationship between woodcock harvest and solar actvity: a hypothesis

The authors provided some evidence for their hypothesis cyclic variations in solar activity (solid and dashed vertical lines in the graph) might influence migration phenology of the woodcock (expressed in the numbers harvested in a Scottish estate, curve $I_1$, and Roumania, curve $H_1$). Precipitation (expressed by hydrological data of a river in the Danube Delta, curve $I_1$) might also influence the abundance of migrating woodcocks.

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# Effects of Hunting on Survival and Habitat use by American Woodcock on Breeding and Migration Areas

Daniel G. McAuley, J. R. Longcore, R. Bradford Allen, Greg F. Sepik, Scot Williamson, Bill Palmer, John Dunn and Kevin Evans

The American woodcock (*Scolopax minor*) population has declined during the last 29 years at an annual rate of 2.5% in the Eastern region and 1.6% in the Central region. In 1996, the breeding population index in the Eastern region was the lowest on record. The major causes of the decline are thought to be degradation and loss of suitable habitat on breeding and wintering areas. Although hunting is not thought to be a cause of the decline, hunting mortality can be controlled and research on the effects of hunting mortality on woodcock populations at both local and regional levels is lacking.

We will use radio-telemetry to determine sources of mortality, survival rates, habitat use, and movement of woodcock during tall on local areas within the breeding range of woodcock. Also, we will relate fall survival on local study areas to local singing ground surveys . If funding and partner interest can be obtained we will attempt a similar effort on staging areas during migration.

This study is a cooperative venture among USGS- Patuxent Wildlife Research Center (PWRC), U.S. Fish and Wildlife Service (USFWS)-Region 5 (Moosehorn National Wildlife Refuge [MNWR] and Erie NWR [ENWR]), Maine Department of Inland Fisheries and Wildlife (MDIFW), Pennsylvania Game Commission, Champion International Corp., Dartmouth College, New Hampshire Fish and Game Department, the Wildlife Management Institute, Vermont National Guard, University of Vermont, and Vermont Fish and Game Department. Expected Completion Date: December 31, 2001.

*The following text is an update of the report of 1999, published in WSSG-Newsletter No. 25, p. 15 - 19.*

The woodcock survival study has progressed as planned. This year is the final field season on all study sites, except in Vermont. We only monitored birds on the Vermont study site during this field season. This year we radio-marked 44 birds in Vermont bringing the total number of birds marked during the study to 913 woodcock.

**Spring Monitoring**

Data from Singing Ground Surveys (SGS) at all sites indicate that the woodcock populations on all study sites monitored are either stable or increasing. In April and May 2000, the equivalent of 12 SGS were completed at MNWR; 105 males were recorded. This number was slightly less than the 110 birds in 1999, identical to the number heard in 1998, and greater than the 92 heard in 1997. These results are still below the high of 120 recorded in 1995. We conducted 18 SGS on Champion International Corp. land and recorded 135 males in 2000, which is slightly more than the 127 males in 1999 and the 132 males in 1998, while substantially greater than the 109 recorded in 1997.

In 2000, MDIFW personnel recorded 40 males on SGS at Frye Mt. Wildlife Management Area (FMWMA), an increase of about 38%. During spring 1999, they recorded 29 singing male woodcock at FMWMA, which was a 45% increase over 1998 when they recorded 20 singing males. . In NH in 2000, 7 SGS were run recording 40 males, a slight increase from the 36 heard in 1999 and the 33 heard in 1998. Surveys were not run on the Vermont site.

In PA, 11 SGS were run on the sites closed to hunting. In 2000, 66 males were recorded, which is slightly more than the 61 recorded in 1999, and 63 in 1998, but it is a 29% increase over the 51 heard in 1997. On the hunted sites, 4 SGS were run and the 2000 SGS (80 males) recorded substantially more birds than the previous 3 years; 62 in 1999, 66 in 1998, and 48 in 1997.

**Spring Captures**

In 2000, we captured 15 displaying males and 2 females at MNWR and 25 males, and 1 female at the Champion site. The age ratio among males was skewed to adult (ASY) birds at MNWR (10 ASY: 5 second year [SY]) and nearly all were ASY at the Champion site (22 ASY: 3 SY), indicating poor survival of young birds from 1999. In 1999, we captured 8 males and 3 females at MNWR and 49 males and 11 females at the Champion site. The age ratios were again skewed to ASY birds at the Champion site (Males, 33 ASY: 16 SY, Females, 9 ASY: 2 SY), while the ratio was even (Males, 4 SY: 4 ASY, Females, 1 ASY: 2 SY) at MNWR. In 1998, we captured and banded 25 males on the Champion site and 18 at MNWR. The age ratio among the dominant singing males was skewed toward ASY birds at both sites (Champion: 16 ASY vs. 9 SY) (MNWR: 14 ASY vs. 3 SY). The low ratio probably reflects the poor survival of young in 1997 caused by the summer drought. At MNWR, we caught 5 females with broods and 9 at the Champion site. The age ratio of the females also was skewed at MNWR with all 5 being ASY but at the Champion site the ratio was nearly equal with 5 of 9 being ASY. In 1997, we captured and banded 21 males on the Champion site. The age ratio among the dominant singing males was skewed toward ASY birds (13 ASY vs. 4 SY). At MNWR, we caught 7 females with broods and 6 at the Champion site. The age ratio of the females also was skewed with S of 7 at MNWR and 5 of 6 at the Champion site being ASY. This indicates that production and survival of young birds from the 1996 brood season to spring of 1997 was poor.

In Maine in 1997, cold, wet weather in April caused plant and brood phenology to be 2-3 weeks later than usual. In 1998, April was warm and dry and phenology was 1 - 2 weeks earlier than usual. In 1999, phenology was normal with hot, dry weather throughout the nesting and brood season. In 2000, a mild winter caused birds to arrive and nest 1-2 weeks earlier than normal although cool April weather caused plant phenology to be almost normal.

The peak of the woodcock hatch in 2000 was 10-14 days earlier than the historical average for MNWR. During May we searched for broods for 17.8 hours with a pointing dog and located 13 different broods (8 on MNWR and S on Champion land). The brood production index (broods located / hour of search time) for MNWR of 0.96 broods / h, indicates average production. The index at the Champion site was 0.53 / h and indicates poor production. In 1999, we searched for broods for 34.2 hours and located 24 different broods (5 on MNWR and 19 on Champion land). Because of extremely dry (hence, poor scenting) conditions during the brood season, I do not believe that the results were a true index of that year's production. During the first 2 weeks of the season time was split between MNWR and Champion and the brood index was nearly identical for both sites; MNWR, 0.442 broods / h vs. Champion, 0.487 broods / h. This would indicate poor production, however after receiving some rain during late May the index increased to 1.17~ on the Champion site. Additional surveys were not done at MNWR. We believe brood production was better in 1999 than 1998 at both sites. In 1998, the peak of the hatch was 7-10 days earlier than the average at MNWR. We searched for broods for 40.5 hours and located 36 different broods (11 on MNWR and 15 on Champion land). The production indices were 0.6 at MNWR and 0.7 at the Champion site, indicating that brood production was similar between the 2 areas. In 1997, we spent 34.2 hours searching for broods with a pointing dog and located 36 different broods (17 on MNWR and 19 on Champion land). The production indices were 1.2 at MNWR and 1.1 at the Champion site, indicating that brood production was similar between the 2 areas.

No singing males were captured at FMWMA during 2000. During spring 1999, 7 singing males were captured (4 SY: 3 ASY). In 1998, at the FMWMA personnel from MDIFW captured 14 singing males. The age ratio was skewed toward SY birds (9 SY vs 5 ASY), which differed from the other sites in Maine that are usually equal or skewed toward ASY birds. No brood work was done at FMWMA.

**Fall Captures**

In Maine in 1999, near drought conditions prevailed over parts of the state during the summer, although occasional rain storms in July provided some moisture. Weather during the summer of 2000 was in direct contrast to 1999 as cool wet conditions occurred all summer. FMWMA was

the only site where birds were captured in 2000. In August, 25 birds were captured in mist nets. The age ratio was highly skewed to young birds (20 young/ AD F). This would indicate extremely high reproductive success. However, because adults undergo a wing molt in August, the ratio is likely biased. At the start of the 1999 season, woodcock activity was low at the MNWR and Champion sites. Capture rates at these sites were less than half of the previous years. Weights of captured birds were 10-20g below normal for that time of the year. Age ratios (young / adult female [AD F]) at this time were extremely low (<1 young / AD F). The drought was broken by 2 tropical storms that brought > 12 inches of rain within 1 week. After 20 September, the age ratio on these 2 sites was >1.5 young / AD F and woodcock activity increased. Also, weights of captured birds increased during this time period. These age ratios were still low, but probably did not reflect the true age ratio of these populations. In 1999 at the FMWMA site, which is about 96 km south of the Champion site, woodcock activity was close to normal and the age ratio of birds captured was high (3.3 young / AD F). This was much higher than both the MNWR and Champion sites and nearly double the ratio of 1.8 at FMWMA in 1998.

**Fall Telemetry**

In 2000, we only radio-marked birds in Vermont. We marked 44 woodcock. The age ratio was similar to 1999 (1.6 vs. 1.8 young / Ad F). As of 30 November, 1 bird remained on the study area. Mortalities were less than previous years, with 5 mammalian predations and 2 caused by raptors. Except for a movement of 12 birds during early October, there were no large migrations of birds from the area. Birds seemed to "trickle out" from late October through November. Analyses of survival data will begin in December.

These are results from the 4th year of a 4-year study supported by the 1997 Webless Migratory Game Bird Research Program (U.S. Fish and Wildlife Service) and the USGS - Patuxent Wildlife Research Center, USFWS: Region 5, Moosehorn NWR, Erie NWR, and Migratory Bird Management Office, Maine Department of Inland Fisheries and Wildlife, Maine Outdoor Heritage Program, Pennsylvania Game Commission, Champion International Corporation, Dartmouth College, New Hampshire Fish and Game, Vermont National Guard, University of Vermont, Vermont Fish and Game Department, the Ruffed Grouse Society, and the Pennsylvania and New England chapters of Safari Club International.

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# Ruffed Grouse and American Woodcock Status in Michigan, 1999

Wildlife Bureau Report No. 3295, August 31, 1999
Scott D. Whitcomb, Allison P. Cartwright and C. Alan Stewart

Ruffed grouse (*Bonasa umbellus*) and American woodcock (*Scolopax minor)* are popular forest game birds that are pursued by about 120 000 Michigan hunters annually (Karasek 1999). Department of Natural Resources (DNR) surveys indicate that each hunter spends an average of 7 to 8 days hunting grouse and woodcock each year, adding up to almost a million days of recreation in Michigan annually. 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 and indicators of healthy forest ecosystems.

The DNR uses several surveys to monitor ruffed grouse and woodcock populations. Two valuable indicators of the grouse and woodcock population status come from hunter and research cooperators and spring breeding surveys. Cooperator surveys are based on a sample of hunters who record numbers of hours hunted and ruffed grouse and woodcock flushed each day. Data obtained from cooperating hunters are summarized as grouse or woodcock flushed per hour of hunting. Although final estimates of hunting effort and harvest come from a mail survey of randomly selected hunters, flush rate surveys from grouse and woodcock cooperators provide an early indicator of harvest and population changes. In addition, volunteer woodcock cooperators band about 1 500 woodcock annually. Their observations of woodcock broods can be used as an index to woodcock productivity.

DNR personnel and volunteers conduct spring breeding surveys along roadside routes. Listening stops are located along each route and are consistent from year to year. The number of ruffed grouse or woodcock heard during a fixed time interval is recorded at each stop. Because the timing of breeding and habitat preferences differ for the two species, two separate surveys are conducted. The DNR coordinates the ruffed grouse survey, while the United States Fish and Wildlife Service (USFWS) coordinates the national woodcock survey. Data for both surveys are summarized as the number of woodcock or grouse heard per survey route.

## Review of recent hunting seasons

In 1998, the number of woodcock flushed per hour by cooperators was higher in Zone 1 than it was in 1997, and the same as 1997 in Zone 2. However, in 1998, Zone 3 was lower than in 1997. Woodcock flush rates were highest in Zone 2, followed by Zones 1 and 3, respectively (Fig. 1). The number of woodcock flushed per hour by cooperators is reported by county. Woodcock flush rates have declined since 1988 in Zones 1 and 2, but have been relatively stable in Zone 3. Changes in woodcock flush rates over the course of the season differed among hunting zones. Average flush rates, as reported by cooperators, began to decline during the October 16 through October 31 period in Zones 1 and 2, but a decline was not evident until November in Zone 3. Seasonal changes in woodcock flush rates are most likely a result of changes in woodcock distribution and abundance associated with southward fall migrations.

## Spring breeding surveys

Results of woodcock breeding surveys are based on preliminary analysis of data from 92 survey routes. Michigan demonstrated a statistically significant decrease of 27.6% from 1998 levels in the index this spring ($P<0.01$). The breeding woodcock index also decreased in the entire central region (Ontario, Michigan, Wisconsin, Minnesota, Ohio, Indiana, Illinois), by 13.4% from 1998

levels. The decrease this year is in contrast to the short-term increase seen in 1998, and is more consistent with the state's long-term decline of 1.4% per year since 1968.

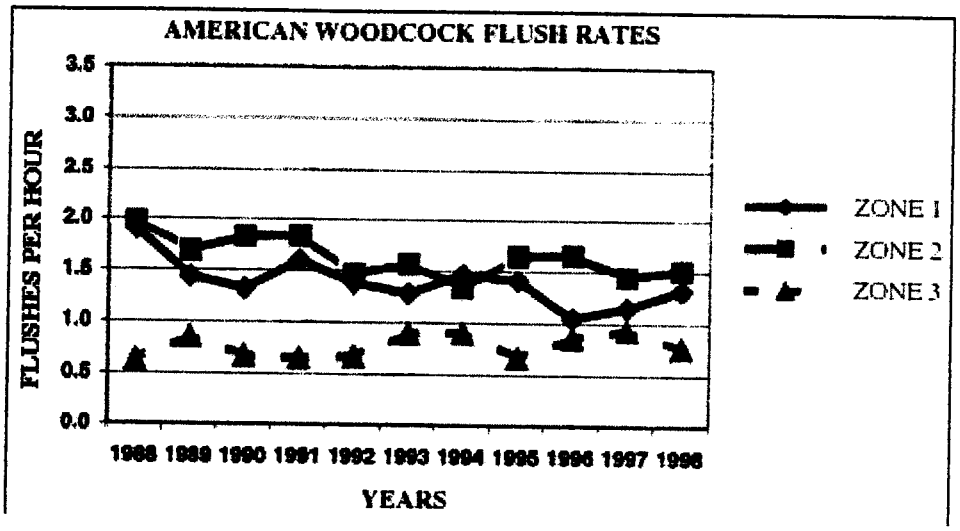


**Fig. 1: American woodcock flush rates reported by cooperating hunters, 1998-1998.**

The woodcock recruitment index of 1.6 immature woodcock per adult female was the same in 1998 as the long-term (1963-1997) state average. Woodcock banders in Michigan spent over 2 300 hours afield in 1999 and banded 1 471 chicks. The average brood size observed was 3.10, and there were 79.3 chicks observed and 63.6 chicks banded per 100 hours of search time. Although we have not examined data from past years, this information may be useful as an additional index of local woodcock production.

### 1999 woodcock hunting forecast

With woodcock breeding indices similar to 1997 levels and 27.6% below 1998 levels, we anticipate a reduced woodcock harvest in 1999. In addition, Federal framework for woodcock hunting mandates that the season open on the Saturday closest to September 22 each year. This year the opening date is September 25th, thus harvest may be reduced due to this later starting date. It is possible that Michigan hunters will take 450 000 grouse and 150 000 woodcock this fall, if brood rearing conditions remain favourable. While good numbers can be found in all parts of Michigan, the highest densities of ruffed grouse and woodcock are located in the northern two-thirds of the state.

### Banding report

According to the Michigan Woodcock Banders Newsletter the following numbers of woodcock had been banded in spring 1999:

| | |
|---|---|
| Total | 1610 |
| Chicks | 1473 |
| Hens | 128 |
| Males | 9 |

This was achieved by 67 banders in a total of 2 409 hours.

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# Phylogeography and mating system of American Woodcock (*Scolopax minor*)

Heather Lee Ziel

This is an Abstract of the Thesis Presented in Partial Fulfilment of the Requirements for the Degree of Master of Science (in Ecology and Environmental Science), University of Maine, Orono, August, 2000.

Phylogeography is the study of the geographic distribution of genetic lineages. Phylogeographic studies of several species of birds, including shorebirds, have found population structure in some species but not in others. The American Woodcock (*Scolopax minor*) is an unusual shorebird that inhabits early succesisonal forests and fields rather than the shore. Woodcock are distributed throughout the eastern United States and Canada. Woodcock use two relatively distinct migration routes between breeding and wintering areas.

I used molecular genetic analysis of mitochondrial DNA (mtDNA) sequences to study the pnylogeographic patterns of population structure and gene flow throughout the range of American Woodcock. I obtained wing samples from states and provinces throughout the primary woodcock breeding range. I sequenced two regions of the mtDVA, the variable 5' domain of the control region and the ND6 gene. I used the polymerase chain reaction (PCR) to amplify both regions, and direct sequencing was done on an ABI Stretch Automatic Sequencer. I used neighbour-joining analysis and maximum likelihood analysis to examine relationships among haplotypes based on sequences. I used Analysis of Molecular Variance (AMOVA) to analyze the hierarchical population structuring of genetic variation.

American Woodcock do not exhibit phylogeographic population structure. Analysis of mtDNA sequences revealed high amounts of variation that is not structured among populations, neither shared nor unique haplotypes were restricted to any geographic region. Hierarchical analysis of molecular variation revealed that only 1.15% of the variation was due to differences between flyways, essentially none (-0,40%) was due to variation among states and provinces, and the majority (99.25%) was due to variation among individuals within populations.

Mating systems are often distinguished by the spatial and temporal distribution of resources and the degree to which mates can be monopolized. The amount of parental care that each sex provides also has a strong effect on mating systems. Based on behavioural observations, the mating system of American Woodcock has been variously described as monogamous, a dispersed lek, or resource defence polygyny. Male woodcock perform elaborate mating displays that attract females to their display sites where copulations occur.

I used two microsatellite markers, developed for ruffs (*Philomachus pugnax*), to assess paternity in American Woodcock. Microsatellite loci were amplified with PCR and sequenced on an ABI 377 automatic sequencer. In three years, we collected blood samples from 21 females and broods (68 chicks) and 90 males. I found no evidence of multiple paternity within broods, paternity in all broods could be explained by on father. I identified possible fathers for ten broods. Three broods were found at the singing site of the putative father; five broods were found next to a neighbouring male to the possible father; and two broods were found far from the singing site of the possible father. Genetic techniques used to study paternity in woodcock suggested that the mating system is similar to a promiscuous, exploded lek.

# Receiver recorder system monitors passage of radio-tagged American woodcock at Cape May, New Jersey.

Michael Haramis, Daniel McAuley and Bruce Luebke

Concern over the long-term decline of the American woodcock (*Scolopax minor*) has led USGS Patuxent Wildlife Research Center's Northeast Field Station to conduct studies to determine the magnitude of natural and hunting-related mortality at three sites in New England (see McAuley *et al.* this issue). These studies have employed conventional radio telemetry methods on a large scale to determine period survival and identify sources of mortality. The radio tagging of 175 woodcock in fall 1998 and 194 in fall 1999 at two sites in Maine and one in Vermont presented a unique opportunity to monitor passage of individual birds during migration down the Atlantic Coast. Ground surveys conducted in 1998 at Cape May, New Jersey, a location known to often harbor good numbers of fall migrant woodcock, turned up 5 radio-tagged individuals. Migration time for these individuals. Migration time for these individuals varied from 4 to 24 days. In fall 1999, we used a receiver recording system developed for sora (*Porzana carolina*) migration studies (see Haramis and Kearns, WMGBRP Projects Abstracts 1999) to more effectively monitor nocturnal passage of woodcock at Cape May. This system was set up to detect woodcock passing in flight and thus provide maximum line-of-sight range. We estimated this range to be about 20 miles. To optimize our range, we placed our antenna and receiving system well above tree canopy in a 120-foot fire tower adjacent to the Cape May National Wildlife Refuge. A scanning receiver was employed at a 4 second scan to cover the 100+ frequencies assigned to radio-tagged woodcock. This system was operated from 6 PM to 6 AM each night from 29 October until 3 December, missing only 5 of the 36 nights during this period.

Woodcock began leaving Maine sites on 27 October, but most birds left Maine and Vermont between 12 and 18 November. Twenty-one woodcock were captured by the monitoring station with passage occurring in two distinct waves of migration. Five woodcock were recorded the two nights of 6 – 7 November and 16 woodcock were detected passing over a 4-night period 27 – 30 November. Three woodcock were recorded on two different nights indicating they stopped over at Cape May before continuing passage across Delaware Bay. Woodcock were recorded 25 instances with durations ranging from 8 to 73 minutes: the average detection time was 31.6 minutes, well above our maximum scan time of 6.7 minutes for 100 frequencies. Twenty of 25 detections (80 %) occurred in the 8-hour late-night segment from 8 PM to 4 AM. Woodcock required from 8 to 18 days to cover an estimated 580 miles from Moosehorn National Wildlife Refuge in northeast Maine, to Cape May, New Jersey. Pending funding, this study will be expanded and continued in 2001.

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# On Woodcock and Snipes in the former USSR

Thanks to the political changes we have now access to the colleagues working in the main breeding range of all four species. Most of their publications are in Russian only. But the translation bureau "Merktrans" of J. Shergalin in Estonia provided an extensive list of literature of this century, and also translated the following articles I had selected for this issue. This series will be continued during the next years.

> Copies of original Russian publications as well as translations from Russian into English can be ordered by
>
> Dr. J. Shergalin, Merktrans,
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These publications provide insight in the efforts of our colleagues in Eastern Europe to investigate abundance and breeding biology of woodcocks and snipes in their main breeding range. Due to the vastness of the "study areas" some of the results are of course rather sporadic, but nevertheless add to the mosaic of our knowledge.

**Zinov'yev, V. I. (1980): Birds of the forest zone of the European part of the USSR (Charadriiformes). Kalinin, 1980. Kalinin State University.**

**Jack Snipe** (*Lymnocryptes minimus* Brun.). In the region it is found nesting in the Lapland Nature Reserve and in the regions (oblasts) of Kaliningrad (now Tver), Novgorod, Smolensk, Tula, Yaroslavl, Vologda and Ryazan, in the northern and central regions of the Volga-Kama Territory (Tischler 1914; Petrov 1885; Vladimirskaya 1948; Sabaneev 1868; Grave 1935). In the Kalinin Region it was found nesting near the village Chernaya Gryaz, near the Pudoro Lake, in the Central-Forest Nature Reserve, near the Ivan'kovskiy water reservoir, in the vicinity of the town Kalinin and in a number of other sites (Menzbier, 1895; Konchits, 1937; Statistical sketches..., 1873; D'yakov, 1878; Johansen, 1894; Buturlin, 1902; Bianki, 1922; Grave, 1933; Tret'yakov, A., 1940). Probably, it is nesting in the western regions of the UkrSSR [Ukraine] and the Komi ASSR (Strautman, 1963; Teplova, 1957).

It is nesting in swamped habitats. In the Pskov Region on the Melkolistvenskoe swamp a fresh clutch of 4 eggs was found on 25/V 1894, and a large unfledged chick was caught on 5/VII. In the Novgorod Region a clutch in the early stage of incubation was discovered 3/VI. In the Leningrad (now-St. Petersburg) Region a female with egg ready for laying was shot on 27/V, and a unfledged chick at the middle of June. Young birds with undeveloped wings were shot in the Vyshnevolotskiy district of the Kalinin Region on 16/VII. In the Yaroslavl Region broods of unfledged young were observed in the middle of July, in the Vitebsk on 20/VI 1924. On the Ivankovskoe water reservoir an unfledged chick was found on 2/VII, and a female, attracting anybody's attention away from its nest on 20/VI, and paired birds on 13/V. On the Moskovskoe [Moscow] Sea on average 0.01 birds per 10 km strip counts were observed during the nesting period(Zarudnyi, 1910; Kozlova, 1962; Menzbier, 1900; Gladkov, 1868; our data). In Byelorussia, the Pskov, Leningrad, Tambov Regions and the Volga-Kama Territory spring migration was observed in April and the beginning of May. In the Kalinin Region on the Ivan'kovskoe water reservoir the first migrants appeared on 17/IV in 1963. In 1967 at the same place migration was observed from 15/IV till 2/V. Fall migration starts at the end of July to the first decade of August and was especially pronounced at the end of September and in October. The last migrants in the

Ukraine were registered on 3/XI, in Byelorussia on 31/X, in the Volga-Kama Territory on 7-23/XI. On the Ivan'kovskoe water reservoir autumn concentrations ["vysypki"] of Jack Snipes in 1963 were observed on 26/IX-16/X, in the Likhoslavlskiy district on 17/IX, 1967. In the Novotorzhskiy uezd [district] of the Tver Province in 1879 mass migration was observed on 12/X. Single birds were recorded later. For example near Moscow at the unfrozen stream a pair of birds was shot on 24/XII (Kozlova, 1962; Khlebnikov, 1889; K.Nikolai, 1879; Vavilov, 1873; our data). The usual habitats of the Jack Snipe in autumn are dry shallow waters, "mochazhiny" (wet glades) and so-called "rusty" sites with scarce marsh vegetation.

The Jack snipe was an object of sport hunting. However, already at the end of the last century it was quite a rare hunting trophy. For example, only 1-2 birds were bagged along the Mologa river in October on a 3-4 km strip census. At the present time in the Kirov Region Jack Snipe make only 2,3-4,6 % of the total bag of waders. The average bag per hunter was 3 birds in the Moscow and Kalinin Regions, and 4.5 birds in the Kirov Region (Funtikov *et. al*, 1915).

Diet of the Jack snipe: Molluscs (74,8%), water larvae of insects (11,6%), seeds and vegetative parts of plants (13,6%) found to be the most common diet of Jack snipe near the Moscow Sea in autumn (tabl. 1).

| | |
|---|---|
| Water insects (larvae) | 11,6 |
| *Odonata* | 3,3 |
| *Chironomides* | 8,3 |
| Molluscs | 74,8 |
| **Planorbidae** | 10,0 |
| *Bitinia* | 19,4 |
| *Sphaerium* | 45,4 |
| Seeds of plants | 11,2 |
| **Potamogeton lucens** | 0,3 |
| *Carex rostrata* | 1,3 |
| *Fagoporum esculentum* | 0,3 |
| **Menyanthes trifoliata** | 9,3 |
| Vegetative parts of plants (undetermined) | 2,4 |
| Gastrolithes (sand) | + |

**Table 1:Diet of the Jack snipe in September and October (% volume of five stomachs analyzed).**

In Jack Snipes, shot on the Ivankovskoe water reservoir, 6 *Helminthes* species had been found (Zinov'yev, 1971a), of which one (*Euparyphium gracilis*) has been discovered for the first time (Zinov'yev, 1969).

Measurements: of 2 females and 2 males, collected at the Ivan'kovskoe water reservoir on 26/IX and 16/X 1963 the following measurements (in mm) had been taken:

Male: total length 205-210, wing 112-115, tail - 50-59, tarsus - 23-27, mean toe - 29, bill - 41, height of bill - 8, wingspan - 366-373 mm, weight - 45-50 g.

Female: total length - 195-210, wing - 119-125, tail – 52-56, tarsus - 22-25, mean toe - 30-35, bill - 40, height of bill - 8, wingspan - 352-360 mm, weight - 60 g.

**Great Snipe** (*Gallinago media* Lath.). Of the waders of the forest zone the fate of the Great snipe is most interesting. In the past, and in some sites in the present century the Great snipe was numerous and bagged in the huge numbers. So, in the area between the Mologa and Sheksna Rivers a hunter bagged up to 600 bird pairs in the spring season (Isakov, 1949). In the Novgorod

Province it often happened that up to 1 000 birds were bagged by one trapper (hunter) (Khlebnikov, 1889). In the Smolensk Region poachers bagged up to 40 Great Snipes on leks during one hunt (Grave, 1933). A lot of birds were in Mordovia (Zhitkov, Buturlin, 1906) and Ostashkovskiy uezd of the Tver Province (Brief description... 1847). Exploitation (shooting on leks, catching with nets) and, obviously to a greater extent, melioration and ploughing up of the main habitats, resulted in a sharp decline of bird numbers. Presently in all above-mentioned sites, and also in the Gorkiy [now-Nizhniy Novgorod], Moscow and a number of other regions it is now a rare species. It is common only on the Rybinskoe water reservoir and in the Oka Nature Reserve, where still are leks found with 30-60 birds (Turov *et. al*, 1949; Alekseev, 1956; Karpovich, 1962). In the nesting habitats of the Oka Nature Reserve on average 6,5 and on the Moscow Sea 0,3 Great snipes were counted per 10 km strip census.

The spring passage of the Great Snipe in the Pskov, Smolensk, Moscow, Kalinin (presently - Tver'), Ryazan, Kirov (presently - Vyatka), Yaroslavl Regions and Byelorussia is beginning usually during the second half of April and is lasting sometimes till beginning of June (Zarudnyi, 1910; Razevig, 1877; Gladkov, 1868; Ptushenko, Inozemtsev, 1968; our data). They begin to lek within 5-6 days after arrival. Leks are located on dry, tussocky, plots of meadows, covered by grass. The courting displays are lasting from the first to the third decade of June. They are nesting on peat bogs, in wet shrubs, sometimes on the meadows. In the Kirov (now Tver') Regions nests are found 200-400 m from a lek (Zlobin, 1979). According to our observations, the nest is built in a natural depression on a hummock. Nest material are stems of last-year grasses, the diameter is about 80-100 mm, the depth of the tray 30-40 mm. The birds start egg-laying in Byelorussia, Moscow and Kalinin Regions during May. In the Leningrad (presently St.-Petersburg) and the Novgorod Region incubated clutches were discovered by mid-June, in the Darwin Nature Reserve by 30/VII, in Ukraine till 11/VIII. In the Kalinin (Tver) Region we found complete clutches between 10-29/V. Incubation starts after the last egg is laid and lasts for 22-23 days. In the Moscow and Kalinin Regions chicks hatch in June. In the Darwin Nature Reserve a non-fledged chick was caught on 25/VII, in the Pskov Region on 20/VIII. Fledged birds have been observed in Byelorussia, Leningrad, Novgorod, Kalinin and Moscow Regions in the second half of June. Fully feathered young birds were shot in Bashkiria on 23/VIII (Fedyushin, Dolbik, 1967; Khlebnikov, 1889; Strautman, 1963; Lugovoi, 1975; our data).

Fall migration is observed during the second half of August and September. In the Novotorzhskiy uezd of the Tver Province mass migration was observed at mid-September (K.Nikolai, 1879), in the Rzhevskiy in the second decade of August (Davydov, 1896) and near Korchevskiy at the end of August (Razevig, 1877). The last birds in the Moscow Region are recorded on 17 and 18/X, in Kalinin on 19-25/IX, in Byelorussia on 6-23/X (Pavlov, 1879; Filatov, 1915; Spangenberg, Oliger, 1949 *et. al*).

In stomachs of September birds we found *larvae* of *Chironomidae* (90%), small *Dytiscidae* (5%) and seeds of Carex sp. (5%).

Great snipes make up to 25-54 % of the total wader bag of the Kirov Region. On average 15 birds per hunter were shot in the Moscow and Kalinin Regions, in the Kirov Region and 7 in the Kirov Region (Zlobin, 1973).

One female of the Tver Region, shot on 25/IX 1963 was measured (in mm): Total length 285, wing 130, tail 76, tarsus 40, mean toe 39, bill 62, height of bill 8, wing span 455, weight 200 g.

**Woodcock** (*Scolopax rusticola* L.). The Woodcock is well known as object of fascinating sport hunting. Woodcock start roding about 5-10 days after arrival when the mean-daily temperature raise up to +5°C, and the first snow-free patches appear. In the Leningrad (presently Sankt Petersburg), Vologda, Pskov, Moscow, Yaroslavl Regions, in the Darwin Nature Reserve and Mordovia, and also in the Karelia and the Smolensk Region this is the case in April. In different districts of the Kalinin Region the first birds were recorded between 6/IV and 4/V (Kuz'min, 1967; Kuznetsov, 1947; Grave, 1935; Grzhibovskiy, 1912; Vildermet, 1842; our data). The courting displays are lasting till 11 and 14/VII. Testicles of males, shot in May, measured 34 by 12 mm.

Woodcocks are roding in the evening and in the morning. In Verkhnevolzh'ye (upper parts of the Volga River) in April and May roding starts at 20 hours 15 minutes - 20 hours 25 minutes and ends in clear warm weather at 22 hours 10 minutes --22 hours 20 minutes, in cloudy cold weather at 21 hours - 21 hours 15 minutes. In June roding starts at 21 hours 40 minutes - 22 hours 10 minutes and lasts sometimes till 23 hours 10 minutes. Roding is most intense in cloudy windless evenings. During cold periods roding stops, but not always. So, on 27/IV 1978 near the Kalinin city, in spite of snowing and temperature below 0°C, 14 birds passed through. In the morning roding is short. Birds are roding over swampy habitats and prefer low, scattered stands of deciduous and mixed forests, alternating with glades and cuttings.

In Byelorussia, Leningrad, Pskov, Moscow Regions the first birds appear at the end of March, in Ukraine at mid-March. In other districts they show up in April. Just after arrival Woodcocks first concentrate at forest edges, later they move into the forests as soon as snow melt allows.

The number of roding birds is subject to considerable variation. In the first half of the last century near the Tver' city shooting of two birds per hunter per evening was considered successful. At the beginning of the the current century near the Seliger Lake the relevant figure was a maximum of four birds. In the Bezhetsk uezd of the Tver' province a good hunt provided 10 shots per evening.

At the present time in the Leningrad region it is possible to observe roding of 7-15 birds, near Moscow 5-8, in Tula on average 5,4-8,2, Kirov 3,2. In the Kalinin (Tver) Region in vicinity of the Ivantsevo village in April 1978 10 to 14 birds passed through per evening, in the region of the Ivankovskoe water reservoir in 1968 8-10, in other sites 3-20. During most intensive roding the number of birds may increase up to 40 (Vildermet, 1842; Shitz, 1912; Tyulin, 1914; Yevgenov *et.. al*, 1973; Bakeev, 1973; our data).

The Woodcock is polygamous. It is nesting usually in swampy deciduous forests, however it does not avoid dry upland plots, including cleared spaces. The female builds a nest, located on a hummock, and always covered with a layer of stems of grass, fern, twigs of young deciduous and coniferous trees. The mean diameter of the nest is about 112 mm, the depth of tray 30 mm. The female incubates for 23 days. The main colour of the eggs is grey yellowish. The surface and deep linelets are brown, olive coloured. Sizes of eggs: 43,6 by 33,6 mm, weight 19-21 g. Complete clutches in the Ukraine, Leningrad, Pskov, Kalinin, Novgorod, Kirov, Moscow Regions, Darwin Nature Reserve, Bashkiria and Byelorussia were found from April till July. Downy chicks are observed from May till the first decade of August, fledged juveniles are seen in July and August (Voronov, 1892; Strautman, 1963; Zarudnyi, 1910; Filatov, 1915; Lugovoi, 1975 *et. al.*).

Fall migration starts at the end of August to September and lasts until October and mid-November. In this period during day-time considerable concentrations, so called "vysypki" are found in staging areas. In the Yaroslavl Region they are recorded around the 25/IX, in the Kalinin Region on 12/X. At other times the numbers are lower. For example, in the Kineshemskiy game reserve of the Ivanovo Region in autumn 1970 an average of 1,3 birds per 100 ha of proper habitats were counted during the second half of October-beginning of November. They spend the winter in Northern Italy, southern France and on the Balearic Islands (Gavrin *et al*, 1977; Teplova, 1957; Plesskiy, 1977; our data).

In spring the diet of birds collected near the Ivankovskoe water reservoir (Table 2) consisted mainly of *Coleoptera* (48,3%) and parts of plants (29,3%), in September of *Tabanus sp. larvae* (80%).

| Diet species | April-May (n = 7) | September (n =3) |
|---|---|---|
| Insect larvae | 8,9 | 80,0 |
| *Tipulidae* | 8,9 | - |
| *Tabanus sp.* | - | 80,0 |
| *Coleoptera* | 48,3 | 12,0 |
| *Myriapoda* | 1,1 | |
| Vegetative parts of plants | 29,3 | |
| Seeds of plants | 12,4 | 8,0 |
| *Convolvulus arvensis* | 3,3 | |
| *Melilotus albus* | 2,8 | |
| *Avena fatua* | 2,8 | |
| *Rubus idaeus* | - | 3,0 |
| *Fagoporum esculentum* | - | 3,0 |
| *Carex sp.* | 0,5 | 3,0 |
| Indefinite | 3,0 | |
| Gastrolithes | + | + |

**Table 2:Diet of the Woodcock in spring and fall (% volume).**

In the region of the Kuibyshev water reservoir they are feeding on *Oligochaeta*, molluscs, *Myriapoda* and insect *larvae*. 4 *Helminthes* species were discovered in Woodcocks from the Kalinin (Tver) Region (Zinov'yev, 1971a).

In the beginning of the XX century in the Orekhovo-Zuevo uezd of the Moscow Province Woodcock were shot intensively for the market (Shibnev, 1927). Now it is only subject of sport hunting. In the Kalinin Region 22% of hunters interviewed are hunting Woodcock. The average hunter takes 3,6 birds per year, and in 1960 a total of 31 400 birds were shot (Ivanov *et. al.*, 1965, Sapetina, 1965). Ringing data revealed a maximum life span of 20 years. In England the annual mortality rate for adult birds was calculated as 41%.

Measurements: 7 males, collected in the Kalinin, Moscow, Pskov Regions between 27/IV and 5/V and on 10/IX measured (in mm): Total length 336-380, mean 360, wing 194-210, mean 203, tail 81-99, mean 89, tarsus 30-35, mean 32, mean toe 38-44, mean 41, bill 67 78, mean 72,5, height of bill 12-19, mean 15,5 mm, weight 263 300, mean 286 g.

**Common Snipe** (*Gallinago gallinago gallinago* L.). Common nesting wader of the forest zone. In the past it was seen in large number. So, in the area between Mologa and Sheksna rivers up to 500 pairs were shot per gun during spring hunting with hunter's whistle. Snipes were game birds in eastern regions of the Moscow Region too. At present, during the nesting period an average of 1.4 birds per 10 km strip census were counted in the Darwin Nature Reserve, 1,4-6,0 in the vicinity of Moscow town, 4,7 in the Oka Nature Reserve, 3,3 on the Medveditse River, 0,9 - 1,6 near the Ivan'kovskiy water reservoir. At the latter place numbers increased in July-August up to 22,1 birds per 10 km strip census (Kartashev, 1973; Ptushenko, Inozemtsev, 1968, our data). Snipes arrive several days later than Woodcock at nesting sites. They fly single at nicht. At daytime they are staying on meadows, open plots of forest bogs, swamped glades, edges of forests. In Ukraine, Byelorussia, Pskov Region, Tambov, Kaluga, Smolensk Regions, near Alatyr teh first birds arrive in March-April, while in the Kandalaksha, Pechora-Ilych, Lapland Nature Reserve they are first seen during the second and third decade of May. In the Kalinin Region the first birds were registered on 24/IV 1900, 12/IV 1930, 15/IV 1932, 16/IV 1964, 1/VI 1966, 10/IV 1967, 31/III 1968, 11/IV 1975, 20/IV 1977. In the Smolensk Region snipes start displaying around 3-8/IV, in Verkhnevolzh'ye (Upper Volga area) on 24/IV, in the Darwin Nature Reserve on 21 - 26/IV, and it lasts till 20/VII (Grzhibovskiy, 1912; Spangenberg, Oliger, 1949; Baikov, 1901; Galakhov, 1949; our data). In early spring the display flights are observed during all day, while in the summer period in the morning and evening. On the Moscow Sea, on 15-

22/V 1963 the evening display started at about 21 hours and terminated at 22 hours 20 minutes. In a male, shot near the Ivan'kovskoe water reservoir on 24/IV 1964, the testicles measured 13 by 7mm, and the largest follicles in a female 23,5 by 20,2; 17,6 by17,0; 14,0 by 14,0; and 8,0 by 8,0 mm. They are nesting on swamped forest glades, wet cleared spaces, tussocky meadows and moss swamps. Females build their nest usually on a hummock 10 to 40 cm high, within sedge, under cover of shrubs or willow, alder-tree, sometimes near the trunk of a tree or between fallen trees, twigs and branches. Stems and leaves of meadow and swamp grass are used as nesting material. The mean diameter of the nest is 118 mm, depth of tray 40 mm. In different parts of the breeding range clutches were found from 4/VI (Byelorussia) to 23/VII (Darwin Nature Reserve) (Strautman, 1963, Fedyushin, Dolbik, 1967; Lugovoi, 1975; our data).

The main colour of eggs is olive with light-brown spots. The outer spots are dark-brown or black. 46 eggs of the Kalinin Region measured on average 39,6 by 28,3 mm, the weight was 15,6 g. Incubation lasts on average 20 days. During this time the female is feeding up to 13 times per day. In the Podmoskov'ye area (around the Moscow city) hatching chicks were seen on 24/V, fledglings on 20/VI; most birds were fledged between 10 and 20/VII. In the Minsk Region downy chicks were registered on 19/V, in the Kalinin Region from 30/V-4/VI to 17 - 28/VII, in the Pskov, Kaluga, Gorkiy (now-Nizhniy Novgorod) Region, Karelia and Kandalaksha Nature Reserve - in June, on the Volkhov River on 27/VII. In the Volga-Kama Territory unfledged chicks were recorded till 18/VIII (Ptushenko, Inozemtsev, 1968; Zinov'yev, 1970; Plesskiy, 1977; Neifeldt, 1958; Shnitnikov, 1913 *et. al*).

Fall migration lasts from the end of July till October. The last Snipes in Ukraine were registered on 12/XI, in Byelorussia on 8/XI, in the Darwin Nature Reserve on 20/X, in the Kalinin Region on 5/XI, in Pskov on 9/XI and in Mordovia on 13/XII 1966 (Strautman, 1963; Fedyushin, Dolbik, 1967; Zarudnyi, 1910; Lugovoi, 1975; our data). The first light frosts at night initiate main departure. Common snipes spend the winter in southern Europe, on the British Islands, in Africa, Arabia, India and Indian-China (Lebedeva, 1965).

The diet of snipes near the Ivan'kovskoe water reservoir in April-May consists of water insects (31%), *Tipulidae larvae* (24%) and parts of plants (27,4%). In July-August the diet consists of water insects (7,7%), molluscs (2,2%) and fish (1,1%). In September-October the portion of insects *larvae* is increasing (37,7%) and seeds of grass too (42,5%). In general, the animal portion of the snipe's diet consists of *larvae* of insects (27,8%), insects (11,6%), while the vegetative part consists of seeds and vegetative parts of *Carex* sp., *Polygonum amphibium* L. and *Potamogeton sp.* (Table 3). In birds of the Ivan'kovskoe water reservoir 24 *Helminthes* species had been discovered (Zinov'yev, 1971a).

Snipes provide fascinating sport hunting. According to our data, snipes represent 6 – 7% of the total bag of waterfowl and game birds in the Kalinin Region. In the Moscow and Kalinin Regions the average bag per hunter are 15-16 snipes per season, in the Kirov Region 23 birds (Pavlov, 1973).

Measurements: 19 males and 22 females, collected in the Kalinin, Novgorod, Vologda Regions on 3/IX-25/X 1963, 24/IV-23/VIII 1964, 24/IV 1967 were analyzed (extremes, average, in mm).. Male: total length 261-296: 277,3, wing 135-151: 139,8, tail 52-66: 59,1, tarsus 33-38: 35,1, length of bill 63-72: 66,5, wing span 416 - 452: 437,6, weight 70-150: 103,8 g. Female: total length 265-295: 279,7, wing 133-146: 138,4, tail 42-66: 58,5, tarsus 35-37: 35,7, wingspan 436-445: 439,5, length of bill 62,7-77: 69,1, weight 80-150: 104,6.

| Food items | April – May | June -August | September - October | Total |
|---|---|---|---|---|
| Insects larvae | 24,0 | 19,0 | 37,7 | 27,8 |
| *Chironomides* | - | 6,4 | 2,8 | 4,0 |
| *Phrygtnea striata* | - | 3,8 | 9,4 | 5,8 |
| *Odonata* | - | - | 5,1 | 2,2 |
| *Tipulidae* | 24,0 | 3,3 | 9,4 | 8,5 |
| *Donaciinae* | - | - | 5,5 | 2,5 |
| Indefinite | - | 5,5 | 5,5 | 4,8 |
| Terrestrial insects | 31,0 | 17,1 | - | 11,6 |
| *Chrysomelidae* | 1,4 | - | - | 0,2 |
| *Carabidae* | 9,1 | 5,5 | - | 3,9 |
| *Staphilinidae* | 8,0 | 2,1 | - | 1,9 |
| *Curculionidae* | 3,7 | 2,1 | - | 1,3 |
| *Diptera* | 6,9 | 6,2 | - | 3,7 |
| *Lepidoptera* | - | 0,3 | - | >0,1 |
| Indefinite | 1,9 | 0,9 | - | 0,6 |
| Water insects | - | 7,7 | 4,5 | 5,5 |
| *Small Dytiscidae* | - | 5,5 | 4,5 | 4,4 |
| *Corixidae* | - | 2,2 | - | 1,1 |
| *Hyrolychaeta (Hirudinae)* | - | - | 5,5 | 2,4 |
| *Haemopis sanguisuga* | - | - | 5,5 | 2,4 |
| *Araneiformes* | - | - | >0,1 | >0,1 |
| *Hydrachnellae* | | | >0,1 | >0,1 |
| Molluscs | - | 2,2 | 1,1 | 1,5 |
| *Sphaerium* | - | - | 0,9 | 0,4 |
| *Planorbidae corneum* | - | - | 0,2 | 0,1 |
| Indefinite | - | 2,2 | - | 1,0 |
| Fish | - | 1,1 | - | 0,5 |
| *Rutilus rutilus* | - | 1,1 | - | 0,5 |
| Seeds of plants | 17,6 | 12,1 | 42,5 | 26,8 |
| *Polygonum amphibium* | - | 1,9 | 10,2 | 5,5 |
| *Polygonum crispus?* | 0,2 | - | - | >0,1 |
| *Polygonum convolvulus* | - | - | 0,2 | >0,1 |
| *Carex rostrata* | 4,4 | 1,6 | 6,8 | 4,5 |
| *Carex sp.* | 9,4 | 1,0 | - | 1,5 |
| *Poaceae (Gramineae)* | 0,2 | - | - | 0,1 |
| *Scirpus lacustris* | 2,3 | 2,3 | 5,2 | 3,5 |
| *Ranunculus* | 0,2 | 0,1 | - | >0,1 |
| *Lathyrus pratensis* | - | - | >0,1 | >0,1 |
| *Stachys palustris* | - | - | >0,1 | >0,1 |
| *Manyanthes trifolium* | - | - | 1,5 | 0,6 |
| *Nymphaea alba* | - | - | 2,3 | 1,7 |
| *Potamogeton pectinatus* | - | 2,4 | 4,3 | 3,1 |
| *Potamogeton perfoliatum* | - | - | 3,7 | 1,6 |
| *Potamogeton sp.* | - | 0,4 | 4,2 | 2,0 |
| Indefinite | 0,9 | 2,4 | 3,9 | 2,7 |
| Vegetative parts | 27,4 | 40,8 | 8,7 | 23,9 |
| *Lemna* | - | 0,4 | - | 0,2 |
| *Fagoporum esculentum* | - | 4,1 | 2,2 | 2,7 |
| *Poaceae (Gramineae)* | 8,2 | 6,7 | - | 2,4 |
| *Potamogeton sp.* | - | 14,2 | 3,2 | 8,2 |
| *Carex* | 8,6 | 10,3 | 2,1 | 6,4 |
| Indefinite | 10,6 | 5,1 | 1,2 | 4,0 |
| Gastrolithes | + | + | + | + |

**Table 3:Diet of Common snipes (% volume) in spring (n = 5), summer (n = 18) and fall (n = 18).**

# New Russian Publications on the Woodcock (*Scolopax minor*)

Fokin, S. Yu., Blokhin, Yu. Yu., Zverev, P. A., Dospekhov, A. A. 2001. Monitoring gnezdovoi ,populyatsii valdshnepa metodom uchetov na tyage (Monitoring of the nesting population of the Woodcock by method of counts during roding). // Aktual'nye problemy izucheniya i okhrany ptits Vostochnoi Evropy i Severnoi Azii (Actual problems of the study and conservation of birds of Eastern Europe and Northern Asia). Materials of International Conference. Republic of Tatarstan, 29 January - 3 February 2001. Kazan, "Matbugat jorty" Press. Pp. 607 - 608.

Il'inskiy, I. V., Pchelintsev, V. G. 2001. O territorial'nykh svyazyakh valdshnepa: po dannym koltsevaniya v Leningradskoi oblasti (On territorial links of the Woodcock: on the base of ringing in Leningrad Region). // Aktual'nye problemy izucheniya i okhrany ptits Vostochnoi Evropy i Severnoi Azii (Actual problems of the study and conservation of birds of Eastern Europe and Northern Asia). Materials of International Conference. Republic of Tatarstan, 29 January - 3 February 2001. Kazan, "Matbugat jorty" Press. Pp. 269 - 270.

Povarenkov, A. V. 2000. K izucheniyu tyagi valdshnepa v Smolenskoi oblasti (On the Woodcock roding in Smolensk Region). // Ornitologicheskie issledovaniya v Rossii [Ornithological investigations in Russia]. Issue 2. Ulan-Ude. Pp. 187 - 189. Table 1.

Povarenkov, A. V. 2000. K izucheniyu tyagi valdshnepa v Smolenskoi oblasti (On the Woodcock roding in Smolensk Region). // Chteniya pamyati professora V. V. Stanchinskogo [Conference (Lectures) in memory of Prof. V. V. Stanchinskiy]. Smolensk, Smolensk Univ. Press. Pp. 99 - 101. Table 1.

Povarenkov, A. V. 2000. Koltsevanie valdshnepa v Smolenskoi oblasti (The Woodcock ringing in Smolensk Region). // Chteniya pamyati professora V. V. Stanchinskogo [Conference (Lectures) in memory of Prof. V. V. Stanchinskiy]. Smolensk, Smolensk Univ. Press. Pp. 97 - 99. Table 1.

Translations can be ordered at: Dr. Jevgenii Shergalin, Sopruse pst. 175-58 Tallinn 13413 Estonia. Tel. (3725) 090684; Fax (3726)599351; E-mail: zoolit@hotmail.com.

# International Conference on "Migration and international Conservation of waders"

This conference, held in Odessa during 13 - 17 April 1992, was organized by the International Wader Study Group (WSG). The papers presented were published in 1998 as International Wader Studies 10 with the same title.

The following two studies concerned woodcock and snipe species exclusively (authors' abstracts):

Golovina, N. M. 1998. Status of snipe *Gallinago* spp. and woodcock *Scolopax rusticola* in the south-east of Western Siberia. International Wader Studies 10: 345 - 350.

This paper summarises available material from the region, including results of studies carried out in the Kemerovo region and neighbouring areas of Novosibirsk and Tomsk regions between 1979 1991. Four species of snipe (Common Snipe *Gallinago gallinago*, Swinhoe's Snipe *Gallinago megala*, Pintail Snipe *Gallinago stenura*, and Great Snipe *Gallinago media*) were recorded breeding in the Kuzbass industrial area. Jack Snipe *Lymnocryptes minimus* is said to have bred there in the past, but was only recorded on migration during the present study. The highest numbers of Swinhoe's Snipe and Pintail Snipe, which are forest species, were found in the boreal zone. Eight habitat types within the study area were used by Swinhoe's Snipe. Its densities varied from 2.0-5.0 pairs/km$^2$ in birch-aspen areas of forest steppe to 34.2-62.6 pairs/km$^2$ in industrial clear-fells in mountain boreal forests. Pintail Snipe is less numerous in the study area. Anthropogenic forest changes, mainly the creation of clear-fells of various ages, leads to an increase in the numbers and range of this species. Common Snipe and Great Snipe are widely distributed in the region. Their preferred habitats are marshy areas in river-valleys and on the shores of lakes, and swampy lowlands near ponds in forest-steppe and in the foothills of mountains. In such areas the number of Common Snipe varies from 6.0-9.0 pairs/km$^2$ in forest-steppe to 18 pairs/km$^2$ in mountain forests. Densities of Great Snipe in marshy areas of forest exceed six pairs/km$^2$. A lack of large marshy areas results in these species breeding on extremely small territories, so neither Common Snipe nor Great Snipe aggregate when breeding. In general, only one to three displaying birds are found at each display site, and only in a few sites are there as many as seven to 12 birds. Drainage and ploughing of marshy areas has led everywhere to a decline in the breeding numbers of these two species. Woodcock *Scolopax rusticola* were recorded throughout the study area, both breeding and on migration.

Serebryakov, V. V. & Grishchenko V. N. 1998. Routes and timing of Common Snipe *Gallinago gallinago* migration in the Ukraine. International Wader Studies 10: 394. Common Snipe *Gallinago gallinago* is a common and widespread breeding wader species in most of the Ukraine, except for the southern regions. The main winter grounds of the European population are situated in the southern part of western Europe and in Northern Africa (Gladkov 1951; Kistyakivsky 1957; Baumanis 1985). Most European ring recoveries are from areas situated south of the +2°C isotherm (Glutz von Blotzheim 1977). Because of this, knowledge about the migratory routes and migration phenology of Common Snipe is limited.

*Interesting information on these species is also found in some other articles:*

According to Gilyazov *Gallinago gallinago* was rather rare and did not breed in the Lapland Nature Reserve (Kola-Peninsula) at the end of the 19th century. In the 1930s it was already common, but breeding was not confirmed. Nowadays this species is one of the most common waders and breeding is regularly recorded.

Similar fluctuations of two other snipe species are described by Zubakin *et al.* for the Moscow region. *Lymnocryptes minimus* nested here at the border of its breeding range sporadically in the 19th century. From the 20th century there is only one indication for breeding in the 1930s. Lateron only displaying males (probably on migration) had been observed. Similarly, the breeding population of *Gallinago media* had sharply decreased by the beginning of the 20th century. Nowadays only about 100 - 150 males may display in this region, distributed at several leeks in three areas. Drainage of fens and grass/boggy habitats and the ploughing of flood plain meadows are considered the main reason for this decline.

Indications for breeding of both species in the north-east European Russian tundras, north ~f the Arctic Circle are provided by Morozov.

Short-term fluctuations in breeding densities of *Gallinago gallinago* according to changing water levels are described by Blokhin.

According to Ardamatskaya *Scolopax rusticola* rarely winters in his study area near Odessa (Black Sea), but is numerous on migration, especially in autumn. Spring numbers are lower, migration concentrates to the period 20 March to mid-April.

HK

# Bibliography (reviewed by HK)

Landry, P. & P. Migot, eds. (2000): Enquête nationale sur les tableaux de chasse à tir. Saison 1998/1999 (Bag statistics in France 1998/99). Faune Sauvage Cashiers Techniques No. 251 (in French), 216 pp.

This comprehensive documentation provides detailed information on bag statistics as well as social aspects of hunters concerning 22 game species. The results are compared with those of the last inquiry of 1983/84.

*Scolopax rusticola*

The Woodcocks bagged in France during the 1998-99 hunting season were estimated at 1 168 290 birds (+/- 2.3%). This is less than the estimation for the 1983-84 hunting season (1 321 000 woodcocks).

Several regional hunting bag inquiries allow to classify the national 1998-99 hunting seasons as "average". As regards to weather conditions, no major problem disturbed the wintering Woodcocks.

The 1998-99 hunting bag estimation puts the Woodcock at the 8th national rank among the species, or group of species concerned by the national inquiry. If we take only the unreleased species into account, the Woodcock occupied the 3rd national rank, behind Thrushes and Woodpigeons.

The Woodcock hunting bag was achieved by 20.4% of the hunters, i.e. about 300 000. A little bit less than 60% of the Woodcock hunting bag was accomplished by hunters who shot less than 10 birds. About 28 800 hunters shot more than 10 woodcocks per year and were considered to be specialists. Their total hunting bag amounts to some 500 000 woodcocks. At a national level, the average hunting bag of the hunters who shot at least one woodcock was 3.8.

74.1% of the woodcocks had been bagged in November and December.

The French Woodcock hunting bag represents 30 to 40% of the European hunting bag. France has the strongest hunting impact on Woodcock populations.

The hunting pressure has apparently been increasing over the last 15 years. The general feeling that hunting pressure is increasing has causede hunter representatives to set a bag limit for the Woodcock in 38 departments, mainly in the North-Western part of the country.

From a Woodcock population management point of view, the results of this hunting bag inquiry may be added to the set of indicators showing a relative stability of the European Woodcock population.

*Gallinago gallinago*

274 910 Common snipes had been harvested in 1998/99, thus probably less than half the number taken in 1983/84 (684 000, however including Jack snipes). Less interest in snipe hunting seems to be the main reason for the decreasing bags. While almost 9% of the French hunters had been out for snipes 15 years ago, only 1% did so nowadays. The average bag, however, was in the same order as previously (≈4 snipes/hunter/season).

*Lymnocryptes minimus*

For the first time Jack snipe bags had been documented in this country-wide inquiry, resulting in a total number of 49 640 bagged in 1998/99. This figure is in the order of the estimate for the total European population (i.e. Tucker & Heath 1994) and thus demonstrates, how the numbers of this extremely secretive species are always underestimated. 15% of the total snipe bag had been Jack snipes in France and 5% in Denmark. These data provides evidence for more realistic estimates of the size of the western palearctic population (probably more than 1 million).

Rouxel, R. (2000): Snipes of the Western Palearctic. Ed. OMPO. Publ. Eveil Nature, Saint Yrieix sur Charente, France. 304 p.

In this comprehensive monography on *Gallinago gallinago*, *G. media* and *Lymnocryptes minimus* the author summarizes the recent stage of knowledge on three secretive species. From his extensive search of literature it became obvious to what an extent hunters have contributed to the understanding of several aspects of their life cycle. Recovery data of ringed birds, thousands of wings of bagged birds as well as harvest statistics provided quantitative information on routes and phenology of migration, age- and sex specific moult patterns or population dynamics. Unlike in other waders, that are usually crowded in open habitats and therefore easily be observed, research on snipes requires this special methodology. Moreover some hunters reports and bag statistics dating back to the 19th century provide insight into the dynamics of range extension and frequency of these birds over many decades.

The main breeding ranges of all three species lie within the territories of the former USSR, mainly Russia. Therefore, this book is a valuable complement to those publications just confined to the territory of the European Union and thus to the western borders of the ranges, leading to false impressions on the overall conservation status. For example, nowadays only a tiny fraction of the more than 20 million Common snipes breeds in Western Europe. Destruction of habitats by agricultural activities is certainly the main reason for the species decline in this region.

The situation however not so clear in the other two species. There is no hard information on population trends of the most secretive Jack snipe. Bag statistics do not support the general assumption of a decline. Its total population may have always been in the order of one million, while local populations may have shifted due to other reasons than habitat changes alone. This holds even more for the Great snipe, for which the author presented evidence for shifts even of migration routes to the east. Long-term climatic changes may be involved in the dynamics of breeding ranges as well as migration routes.

These are just some of the many aspects on the biology of our snipes. The book concludes with detailed information on snipe habitats and advises for habitat management, ongoing projects and initiatives for future research.

Saari, L. (2000): Lehtokurppa (The woodcock, Finnish with brief English summary), 54 pp. Published by the Finnish Hunters Association (ISBN 952-9593-37-6).

For 25 years (1979 - 1999) the author has monitored *Scolopax rusticola* on the island Aasla in the southwestern Finnish archipelago. Over this period the number of roding birds was more or less stable. There was a loose positive correlation between woodcock numbers recorded in fall and the amount of rainfall in the preceding summer (May, June). Precipitation obviously also had some impact on the termination of the roding period, that varied considerably from year to year (between 16 June and 8 August). Arrival and departure of woodcocks was dependent of temperatures in March/April and October/November respectively.

The author added data on the woodcock bag in Finland (slight increase over this period) and published estimates of population sizes and bags in other European countries.