

Wetlands International

Woodcock and Snipe Specialist Group

Newsletter No 25

December 1999

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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 *Lymnocyptes* 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 1999 an all time record of more than 3 000 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 (this issue). 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 more attention is now paid to bag statistics. First (not yet published) data concerning the Jack snipe (*Lymnocyptes minimus*) suggest this secretive species is much more numerous than commonly thought.

Meetings

The Coordinator joined the First Meeting of Contracting Parties to the African-Eurasian Waterbird Agreement (AEWA) in November 1999 in Capetown, South Africa, since snipes are now also subject of the AEWA. He will now represent the International Council for Game and Wildlife Conservation (CIC) in the Technical Committee of the AEWA.

Publications

Due to an information of our Joint Coordinator (New World) Dan McAuley the Proceedings of the Ninth American Woodcock Symposium held in 1997 in Louisiana will be ready for distribution in

2000.

Similarly, the urgently awaited Proceedings of the Fifth Woodcock and Snipe Workshop, held in May 1998 in Czempin (Poland) will be available within the first half of 2000. The delay of almost a year was caused by reasons beyond control of the editor.

Thanks to Dr. J. Shergalin, director of „Merktrans“, Estonia, we again received literature on woodcock and the snipes in the former USSR. Some of the papers translated by Merktrans are published in this issue. Especially interesting are aspects of the life history and population dynamics of the rarer species.

We also appreciate the activities of Mr. Gilles Avot (Paris) for the in the meanwhile incredible amount of scientific literature and quotations concerning woodcocks and snipes in the world he constantly provides to the WSSG.

The Proceedings of the Second and the Fourth Woodcock and Snipe Workshops (Fordingbridge 1982 and Saarbrücken 1992, respectively) are still available, while those of the First and Third Workshop are out of print.

Acknowledgements

In the name of the WSSG the Coordinator wants to express sincere thanks to the International Council of Game and Wildlife Conservation (CIC) and the CIC-German Delegation, for financial support received to produce and distribute our annual Newsletter and to enable the Coordinator to join relevant conferences.

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Some observations on woodcock (*Scolopax rusticola*) migration in Eastern Austria and Western Hungary in 1998

Philipp Meran

Spring migration: During a total of 42 outings (31 in the evening, 11 in the morning) the following migration pattern had been observed.

After an unusually warm February with temperatures raising up to 24°C in Graz first sporadic woodcocks were recorded on 20 February and in the Hungarian Pilis mountain on 23 February. The first bird was shot on 25 February near St. Georgen (Attergan, Austria), thus north of the Alps. On 1 March the winter returned by a long-lasting cold spell, which consequently caused a rather later migration of woodcocks (and other species) than average. Not before March 13 intensive migration started, which lasted until 30 April.

During spring 1998 a total of 92 woodcocks had been observed. The following table lists birds bagged mainly in Hungary 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)
20.3.	Ujvárfalva	6	1	ad.	♂	300	70	18.10 - 18.45
23.3.	Keresztur	4	2	ad., juv.	♂, ♂	307, 301	67, 75	5.10 - 5.23
23.3.	Ujvárfalva	7	2	ad.	♂, ♀	285, 326	73, 67	18.24 - 18.47
24.3.	Keresztur	5	2	juv., juv.	♂, ♂	259, 293	71, 68	4.52 - 5.15
25.3.	Ujvárfalva	6	1	ad.	♀	331	71	18.16 - 18.47
26.3.	Ujvárfalva	4	1	ad.	♂	257	70	4.58 - 5.17
27.3.	Ujvárfalva	3	1	ad.	♂	348	65	18.21 - 18.48
29.3.	Ujvárfalva	10	2	ad., juv.	♂, ♀	345, 364	70, 73	19.40 - 20.18
30.3.	Ujvárfalva	6	1	juv.	♂	304	67	19.45 - 20.12
4.4.	Untersberg	3	1	ad.	♂	270	70	20.02 - 20.19

Fall migration: In contrast to the previous fall, when a record number of woodcocks had been observed in my study area in Steiermark (Austria), the fall season of 1998 was rather poor. In spite of 42 outings, exclusively in the evenings between 2 October and 25 November only 31 birds were seen.

During the long lasting rains from 29 September to 11 October woodcocks may have passed unnoticed over the low clouds. The situation was different in transdanubian Hungary, where considerable numbers had been noticed in September and October. On 3 October, 15 birds had been flushed during a drive hunt in Nagybjom and 30 in lower parts of Austria (Innviertel). In the more mountainous Steiermark more observations were only made between 1 and 23 November. Migration may have been modified by the cold spell from the beginning of November and complete snow cover from 18 November even in the lowlands.

Only the following two woodcocks had been bagged and analyzed in Steiermark:

Date	Location	Number seen	Number bagged	Age	Sex	Weight (g.)	Bill length (mm)	Time of the day (h)
24.10.	Rosenkogel	4	1	ad.	♂	358	70	18.30 - 18.39
24.11.	Gasselsdorf	3	1	ad.	♂	302	64	16.50 - 16.59

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Wing sampling in Denmark - Season 1997/98

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. 282, edited by Ib Clausager provides the following results:

Common snipe (*Gallinago gallinago*)

411 wings have been submitted, 235 less than in the previous season. However, the age-ratio of 6.7 juveniles per adult was at the same level and thus again indicates a very successful breeding season in 1998. In contrast, the average age-ratio of the last 14 years was 3.7 juveniles per adult. As usual, almost half of the bag was obtained in the first half of September.

Jack snipe (*Lymnocyptes minimus*)

42 wings were obtained in 1998, thus slightly more than in 1997 (35). Most birds were taken in October, indicating a later fall migration than the Common snipe. Due to the lack of distinct age criteria no age-ratios could be calculated.

Woodcock (*Scolopax rusticola*)

439 wings, 126 more than in the previous season had been submitted in 1998. The age-ratio of 2.6 juveniles per adult indicates a higher reproductive success than the average over 13 years (2.1). Most birds had been bagged in first half of November.

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Les activités de Réseau Becasse en France - Saison 1998/99

Francois Gossmann, Claudine Bastat-Lequerré et Yves Ferrand

Quelques informations sur le baguage des bécasses en 1998-99

A ce jour, nous avons connaissance de 3178 bécasses baguées par le réseau au cours de la saison 1998-1999. D'ores et déjà, un nouveau record est établi!

Depuis quatre saisons, le nombre d'oiseaux bagués flirte avec les 3 000. Peut être avons-nous atteint notre vitesse de croisière ? La quasi-totalité des départements participent désormais à ce travail et les équipes ont gagné en expérience. Parmi les 72 départements qui nous ont transmis leurs données, 9 ont marqué plus de 100 bécasses, 13 en ont marqué entre 50 et 100 et 50 ont marqué moins de 50 oiseaux.

Les tableaux de chasse de la Bécasse (*Scolopax rusticola*) à la croule en Russie

(Résumé de la report durant le Vème Symposium sur la Bécasse et la Bécassine
Mai 1998 – Czempin, Pologne)

S. Fokin, Y. Blokhin (Laboratoire de la chasse et des territoires en réserve de Russie - Moscou)

La forêt russe constitue une zone de prédilection pour la reproduction de la bécasse. Dans le cadre de l'étude de la croule, en collaboration avec l'Office national de la chasse (France), 315 soirées de recensement sur 92 points différents ont été réalisées dans plusieurs régions de Russie européenne de 1993 à 1997.

La date moyenne du début de la croule coïncide avec l'arrivée des oiseaux dans ces différentes régions. Il y a trois pics d'activité selon les observations faites dans les régions de Vladimir, Smolensk et Yaroslav: mi-avril, début mai et autour du 20 juin, les deux premiers pics correspondant à la migration des bécasses. Les croules les plus intenses ont été enregistrées sur les sites forestiers les plus appropriés à la nidification. La durée de la croule évolue de 5 à 27 minutes en début avril, pour atteindre 102 à 159 minutes en juin. La croule s'achève en moyenne vers le 20-25 juillet en Russie centrale.

La bécasse est un gibier prisé en Russie, particulièrement au printemps. La chasse à la croule est une pratique ancienne. Nous avons essayé d'estimer le prélèvement total de bécasses pour toute la Russie en 1996 et 1997 à partir de formulaires distribués par le département russe de la chasse dans 70 régions de Russie. La chasse à la bécasse a duré 47 jours en 1996 et 45 en 1997. Elle s'effectue par périodes de 10 jours, débutant plus tôt au sud et à l'ouest et plus tard pour les régions situées plus au nord et à l'est. Les oiseaux ne sont chassés qu'à la croule le soir.

Le prélèvement total réalisé en Russie à cette période est estimé à 148 000 bécasses en 1996 et 144 000 en 1997. Le prélèvement le plus important est réalisé en Russie centrale, dont 55 % dans la région de Moscou (24 000 oiseaux en 1996 et 19 000 en 1997). Des prélèvements importants sont également réalisés dans d'autres régions: Nizny Novgorod (10 000 en 1996 et 14 000 en 1997) et Yaroslav (13 000 en 1996 et 11 000 en 1997).

Au cours de ces deux printemps, chaque chasseur préleva en moyenne 0,8 bécasse. Seuls 14 % des chasseurs russes participent à la chasse à la bécasse. Ils considèrent que leurs prélèvements ont peu d'impact sur le succès de la reproduction des populations de bécasses en Russie.

Le point des recherches sur la survie des bécasses à partir des données de reprises de bagues obtenues par le réseau ONC de 1983-84 à 1997-98

Giacomo Tavecchia (Laboratoire de biologie des populations du Centre d'écologie fonctionnelle et évolutive du CNRS)

Les techniques modernes d'analyse des données issues des études de suivi individuel permettent la modélisation et l'estimation des paramètres démographiques dans les populations naturelles.

Accéder à de tels paramètres est fondamental pour comprendre les mécanismes responsables des changements des effectifs des populations. De telles méthodes sont particulièrement utiles pour la gestion des populations. Elles sont de plus en plus employées, en particulier pour le suivi des espèces gibier pour lesquelles l'impact de la chasse doit être mesuré et éventuellement adapté.

Pour ces espèces, l'analyse de la survie annuelle est faite essentiellement à partir des reprises de bagues renvoyées par les chasseurs. Elle se base sur deux probabilités: le taux de survie annuelle (la probabilité qu'un oiseau survive d'une année à l'autre) et le taux de reprise de bagues (la probabilité que les bagues soient renvoyées).

Dans un premier temps, seule la survie des adultes a été estimée. Un total de 912 reprises a été analysé, provenant de 5884 individus adultes bagués sur tout le territoire national entre 1983 et 1997.

Une analyse globale a tout d'abord été menée afin d'estimer une valeur de survie adulte annuelle à l'échelle du pays. Cette analyse a montré une variabilité de la survie annuelle. Les valeurs fluctuent entre 0,43 et 0,65, avec une moyenne se situant à 0,56. Le taux de reprise annuel moyen (calculé à partir du taux de retour de bagues) est égal à 0,18 pour les reprises directes (oiseaux tués dans la saison de baguage) et à 0,23 pour les reprises indirectes.

Ces variations annuelles pourraient être dues autant à l'influence de conditions météorologiques particulières qu'à une hétérogénéité spatiale des valeurs de survie. Pour vérifier cette dernière hypothèse, les données ont été séparées en fonction de la zone de baguage des individus. Le territoire national a été divisé en quatre régions principales. Trois régions correspondent aux zones

côtières Manche Atlantique (Nord-Pas-de-Calais et Normandie, Bretagne et Pays de la Loire, Poitou-Charentes et Aquitaine), la quatrième comprenant le reste du territoire national.

Les résultats ont mis en évidence des évolutions différentes des valeurs de survie selon la région considérée. La région Poitou-Charentes et Aquitaine, en particulier, est la seule pour laquelle les survies varient au cours de la période d'étude. Pour les autres régions, elles sont constantes. Si une hétérogénéité spatiale peut en partie expliquer les variations annuelles des valeurs de survie mises en évidence pour le territoire national pris dans son ensemble, l'influence des conditions météorologiques reste encore à vérifier.

Une autre analyse a été faite afin d'évaluer les variations de la survie au cours de la saison de chasse. Dans la mesure où l'analyse précédente n'avait pas mis en évidence de différences significatives de la survie annuelle pour les régions Nord-Pas-de-Calais et Normandie, Bretagne et Pays de la Loire, les données recueillies dans ces deux régions ont été cumulées. La nouvelle analyse a montré que le taux de survie, calculé pour un intervalle de temps de quinze jours, reste constant pendant la saison de chasse (0,937). Cette valeur sera utilisée dans une étape ultérieure comme survie instantanée et permettra l'estimation et la modélisation du taux de survie adulte en dehors de la saison de chasse.

Reste à analyser les reprises des individus bagués jeunes qui représentent l'essentiel du jeu de données: 2699 reprises à partir de 11255 individus bagués sur tout le territoire.

SUMMARY (by HK)

Activities of the woodcock - network in France 1998/98.

Ringling in France: During this period a total of 3 178 woodcock had been ringed by the members of the ringling network. This means an all time record number so far! Of the experts having worked in 72 departments, nine had ringed more than 100 woodcocks, 13 between 50 and 100, and 50 less than 50 birds.

Studies in Russia: In close cooperation with the Russian colleagues observations on roding woodcocks had been conducted during the period 1993 - 1997 on 315 evenings at 92 different points in various regions of the European part of Russia. In the regions of Vladimir, Smolensk and Yaroslavl three peaks of roding activity had been documented: mid-April, beginning of May and around 20 June, of which the first two coincided with the arrival of the birds. Roding was most intense near the nesting areas. Birds were roding between 5 and 27 minutes in the beginning of April and 102 to 159 minutes in June. In central Russia roding terminated on average around 20 - 25 July.

Hunting roding woodcocks in spring has a long tradition. In order to quantify these activities forms had been distributed to the hunters in 70 Russian regions (earlier in the south-western and later in the north-eastern parts). Consequently, in 1996 hunting took place on 47 days, and in 1997 on 45

days, but only during the evening flights. The total bag was estimated as 148 000 woodcocks in 1996 and 144 000 in 1997. Most birds were harvested in central Russia, of them about 55% in the region of Moscow (24 000 in 1996 and 19 000 in 1997). Only 14% of the Russian hunters participated in woodcock hunting. The average bag per hunter was 0.8 woodcocks. There are no indications of a negative impact to reproduction by this kind of harvest.

Analysis of recoveries of woodcocks ringed between 1983/84 and 1997/98: Of a total of 5 884 woodcocks ringed in France as adults 912 had been recovered. The direct recovery rate (birds ringed and recovered the same season) was 0.18, indirect recovery rate 0.23. The annual survival rate fluctuated between 0.43 and 0.65, on average 0.56. There were considerable regional variations. Survival rates during 15 day periods (0.937) were constant during the hunting season. Next step of analysis will concern 2699 recoveries of 11 255 woodcocks ringed as juveniles.

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Les activités de Club National des Becassières (CNB) en France.

Compte-rendu de la saison bécassière (*Scolopax rusticola*) 1998-1999

La saison écoulée qui, comme on le verra par la suite, ne peut pas être classée comme mauvaise, laissera vraisemblablement pour la plupart d'entre nous le souvenir d'une saison dichotome. Une migration tardive, centrée sur la 3^{ème} décennie de novembre, mais dont l'intensité, d'un rare niveau, aura permis de confirmer l'importance du cheptel migrant. Une fin de saison plutôt morose pour la majorité, en comparaison des plaisirs de la phase migratoire.

L'ICA annuel national à 1,28 est en augmentation par rapport à la saison précédente. Il est d'ailleurs supérieur à l'ICA moyen des six dernières saisons (1,25). Diminué de la contribution des mois de janvier et février, il se situe à un niveau très correct (1,35), le plus élevé des trois dernières saisons.

Cet ICA s'inscrit dans les variations inter annuelles que tous les chasseurs qui tiennent leurs statistiques ainsi que les départements qui ont précédé les synthèses nationales dans ce domaine, connaissent. Cette année qui suit une année moyenne est plutôt bonne.

Ces éléments sont plutôt positifs mais ils n'enlèvent en rien à l'obligation qu'il y a de mettre en place le PMA et les heures limites de chasse à terre du petit gibier.

Après l'habituel petit passage pré migratoire de la mi-octobre, qui n'a rien eu de particulier si ce n'est peut être sa précocité, la saison a été lente à démarrer (ICA d'octobre le plus faible depuis trois ans). Que ce soit sur les terrains réceptifs ou les autres, il a fallu attendre la mi novembre pour voir se dessiner des mouvements importants. A partir de cette date, les passages ont été soutenus sur les trois semaines suivantes (deux dernières de novembre et première de décembre). Il est même sûr que certains secteurs ont connu à ce moment, en particulier la 3^{ème} décennie de novembre, un flux migratoire digne des meilleures années, l'ICA correspondant à 1,91 le montre. Le coup de froid qui s'abattait sur le centre et Nord Europe, et qui touchait l'Est de la France, y est certainement pour quelque chose. Après cet émerveillement passager, les zones de montagne ou de semi montagne ont été désertées jusqu'à la fin de la saison. Les intempéries successives, froid et neige, qui ont agrémenté le reste de la saison, ont vidé les zones les moins accueillantes des migratrices à regret. Ces dernières ont alimenté des secteurs plus tempérés, Bretagne, Val de Loire, piémont pyrénéen, Aquitaine, zones du Sud Est les moins concernées par la sécheresse, pour lesquels la fin de saison a été moins terne.

Cet ensemble donne donc au global une saison assez bonne, comme le montre la carte de France des ICA. A noter toujours des disparités importantes entre départements, mais qui, pour ce qui concerne la phase migratoire ont été moins marquées, de par la concentration temporelle du flux. Les intempéries ont, par contre, plus différencié les secteurs en fin de saison.

La brièveté de l'excellente période dans certains secteurs, par rapport au vide du reste de la saison, laisse des appréciations qualitatives toujours difficiles à estimer. Les ICA calculés, même dans ces départements, montrent l'intensité de la migration qui a fait pendant aux chiffres plus faibles du reste de la saison.

Le bilan présenté résulte de l'exploitation de 878 relevés individuels dont un nombre de plus en plus important a été utilisé et transmis par les sections départementales. 81 de ces relevés n'ont pu être exploités.

Les chiffres présentés ci après résultent donc de l'analyse de 797 relevés exploitables, soit une baisse de moins de 1% par rapport à l'an dernier, qui ont permis de recenser:

28063 sorties de 3,5 h (98222 h. au total)

35861 bécasses levées (ICA = 1,28)

11430 bécasses prélevées (ICP = 0,41)

Le becassier moyen aurait donc réalisé 35 sorties, lui permettant de lever 45 oiseaux différents, et d'en prélever 14.

Concernant les relevés, l'objectif qu'avait fixé R. Bécanne, et qui n'avait pas été atteint l'année passée, ne l'a pas été pour celle-ci. Il est important de pouvoir justifier nos propos sur la réalité du cheptel bécassier. L'analyse des CR y contribue pour une part non négligeable. Il vous appartient de faire le nécessaire pour aider le CNB dans ce domaine. Le fait de retrouver les mêmes noms, d'une année sur l'autre sur les CR, laisse prévoir d'une bonne reproductibilité inter annuelle de l'échantillonnage. Il est important aujourd'hui, d'assurer une bonne fiabilité dans la répartition géographique et dans le nombre représentatif de chaque département. Une valeur de 25% de clubmen par département renvoyant leur CR serait un minimum. Un objectif de 30% serait à atteindre.

SUMMARY (by HK)

Report on the woodcock season 1998 - 1999.

This report (61 pages) issued annually by the national club of woodcock hunters provides an overview on migration phenology, abundance and harvest data of woodcocks in France. It is based on 878 forms remitted by hunters of 20 departments of which 797 were evaluated.

Migration peaked by the end of October 1998, thus earlier than in previous years. The index of abundance (ICA) did not differ significantly from those of previous years (1993/94 to 1997/98) thus suggesting a more or less stable woodcock population wintering in France.

The data on the forms comprised 28 063 outings of 3.5 hours, thus a total of 98 222 hours spent for woodcock hunting. During this time 35 861 woodcocks had been flushed, of which 11430 were shot. The average woodcock hunter thus was out 35 times, flushed 45 birds and shot 14. It is intended to extend these investigations to all French départements and to involve up to 30% of the woodcock hunters of each department.

Diagnose des Echantillons sex-ratio age-ratio repartition spatio - temporelle des Oiseaux

Recueil des Informations Bagueage obtenus par le CNB avec le concours de l'ONC Saisons 1997/98 et 1998/99

SUMMARY (by HK)

Samples of woodcocks harvested by members of the national club of woodcock hunters (CNB) are analyzed for weight, age-ratio, sex-ratio and stage of moulting.

In 1997/98 the sample comprised 5 358 birds, of which 31% were adults and 69% juveniles. In both categories females predominated (55% and 57%, respectively). During fall and winter females were only slightly heavier (316 g) than males (311 g). The results of 1998/99 (sample 5 838) were similar, but the ratio of juveniles (74%) was higher than in the previous year.

The moult stage is given for each decade of the hunting season from 1 October to 28 February. After October sex-ratios and age-ratios were more or less constant over this period.

Apart from these national averages data for all the departments included in the survey (89 in 1997/98, 96 in 1998/99) are presented.

The volume of 1998/99 also includes a list of 100 recoveries (45 direct, 55 indirect) of woodcocks ringed in France and Russia, with information on ringing and recovery dates, distances and time lag between ringing and recovery.

Migration et Reproduction de la Becasse (*Scolopax rusticola*)

SUMMARY (by HK)

In order to provide data on the question of the onset of the reproductive period of the woodcock in spring testes of 52 males collected in France from December 11, 1998 until March 11, 1999 have been analyzed. The volume (calculated from length and width) of the testes increased slightly from mid-January to the beginning of March, but only one reached 1 000 mm³. In contrast, the testes volume of 8 males collected in Estonia during the reproductive period varied between 2 000 and 6 000 mm³.

Similarly, the ovaries of 44 females collected in France during the same period were investigated for size (< or > 3mm) and number of follicles. During February the number of follicles larger than 3mm diameter increased from one to five. No female had been obtained from the reproductive period.

Apart from the size five stages of reproductive performance of the gonads have been considered for both sexes. The findings suggest that none of the males and hardly any of the females investigated may have been in breeding condition by the end of February.

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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 fall 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 woodcock survival study has progressed as planned. This year is the final field season on all study sites, except in Vermont, where we will have 1 more field season. We again monitored woodcock on 3 sites in Maine, 1 in New Hampshire, 1 in Vermont, and on 2 sites in Pennsylvania.

Spring Monitoring

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. This year (1999) phenology was normal with hot, dry weather throughout the nesting and brood season. In April and May, the equivalent of 12 Singing Ground Surveys (SGS) were completed at MNWR; 110 males were recorded. This number was slightly greater than the 105 heard in 1998, and the 92 heard in 1997, but below the 120 recorded in 1995. We conducted 18 SGS on

Champion International Corp. land and recorded 127 males, which is slightly less than the 132 males in 1998, but still greater than the 109 counted in 1997.

The loss of Greg Sepik caused our field efforts in spring to be reduced at MNWR. We captured 8 males and 3 females at MNWR and 49 males and 11 females at the Champion site. The age ratios was 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. The peak of the woodcock hatch was close to the historical average for MNWR. During May and June we searched for broods for 34.2 hours with a pointing dog 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 are a true index of this 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/h 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, at the Frye Mountain Wildlife Management Area, ME (FMWMA) personnel MDIFW recorded 20 singing males in April. Fourteen singing males were captured. The age ratio was skewed toward SY (9 SY vs 5 ASY), which differed from the other sites in Maine. No brood work was done at FMWMA.

During spring 1999, MDIFW personnel recorded 29 singing male woodcock at FMWMA, which is a 45% increase over 1998. Seven singing males were captured (4 SY: 3 ASY). Two of the males had transmitters from 1998 that were still functioning. Subsequently MDIFW personnel scanned all frequencies and located 4 females with functioning transmitters. Two of these were located on nests, which successfully hatched. In addition, 1 male and 2 females with functioning transmitters were also located on the Champion site.

In NH in 1999, the equivalent of 7 singing ground routes were surveyed and recorded 36 males, a slight increase from the 33 heard in 1998. We searched for broods for 7.35 hours and located 3 broods, indicating low production, which was confirmed by few captures in August and September. Although moisture conditions were better in NH, we caught and radio-marked only 35 woodcock at the Dartmouth College site, the age ratio was less than 1 (0.82 young/ adult female).

Although singing ground surveys were run at the other sites, data are not available at this time.

In Maine, near drought conditions prevailed over parts of the state during the summer, although occasional storms in July provided some moisture. We initiated radio-marking of woodcock at MNWR on 13 August and at the Champion and FMWMA sites on 23 August. At the start of the season, woodcock activity was low at the MNWR and Champion sites and capture rates there 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 are still low but probably don't reflect the true age ratio of these populations. 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 1997, we radio-marked 99 birds in Maine (30 at MNWR and 69 on commercial timber land). At MNWR, 11 were censored, 1 was killed by a predator, and 18 migrated. On the Champion site, 12 were censored, 9 were killed by predators, 6 were shot, and 42 migrated. Survival rate was 0.917 (range 0.767 - 1.00) at MNWR and 0.614 (0.421 - 0.807) at the Champion site.

Table 1. Sample sizes, fates and Kaplan-Meier Survival estimates for American woodcock radio-marked at Moosehorn NWR (MNWR), forest land in Hancock County, ME (Champ), Frye Mt. Game Management Area, Ethan Allen Firing Range (VT), Second College Grant (NH), Pennsylvania Game Commission's Game Land 314 (PA-314), and Erie NWR (PA-Erie) during fall 1998. (CI = Limits of the 95% Confidence Interval)

Site	n	Predation	Shot	Starve	Censor	Survival Rate	Lower CI	Upper CI
MNWR*	63	8	2	0	15	0.738	0.610	0.877
Champ	67	10	9	0	8	0.627	0.507	0.747
Frye Mt.	43	7	2	0	3	0.750	0.613	0.886
VT*	45	13	0	0	6	0.574	0.342	0.806
NH	31	4	0	0	6	0.858	0.725	0.990
PA-314	57	8	5	0	14	0.539	0.300	0.778
PA-Erie*	49	5	0	3	15	0.764	0.637	0.891

*Sites closed to hunting.

In 1998, we radio-marked 355 woodcock at 7 sites in 4 states (Table 1). Three sites were closed to hunting: MNWR, ENWR, and the VT National Guard Site. Survival rates varied among sites but did not seem related to whether hunted or not (Table 1). The highest survival rate was at the Dartmouth College (NH) site, which was open to hunting, while one of the lowest survival rates was at the VT site, which was closed to hunting. Predation was the major cause of mortality. Predators included weasels (*Mustela spp.*), raccoons (*Procyon lotor*), and raptors. Pennsylvania experienced near drought conditions during the summer and early fall and at least 1 bird there died of starvation.

In 1998, hunting mortality occurred on 3 of the 4 hunted sites, but also on 1 of the non-hunted sites. Two birds moved off of MNWR and were shot. One was illegally killed before the start of the season and the other was killed legally. In 1997, 2 of the 6 hunting mortalities at the Champion sites were un-retrieved kills and in 1998, 1 of 9 hunting mortalities on the same site was an un-retrieved cripple.

On all sites most radio-marked woodcock remained on the study areas throughout the hunting seasons. Although a few (<4) birds left each site during the last 2 weeks of October, most birds migrated during the first 3 weeks of November.

In 1999 we radio-marked 416 woodcock at all sites (Table 2). The same 3 sites were again closed to hunting. Survival rates for 1999 are not available at this time. Numbers of mortalities were similar to 1998 (Tables 1 and 2) at MNWR and FMWMA but considerably fewer on the Champion site in Maine. At the sites in VT and PA mortality rates were similar to the previous year, but in NH mortality doubled. Woodcock were shot on all 4 of the hunted sites and 1 of the non-hunted sites (ENWR) (Table 2). In Maine, pipeline construction on the Champion site reduced hunter activity around a portion of the study area where hunting mortality had occurred in previous years, although few radio-marked birds used this area this year. Only 1 bird was shot at the Champion site, which differed from the previous 2 seasons when 6 were shot in 1997 and 9 were shot in 1998; also although more birds were radio-marked (62 vs. 45) at Frye Mt. WMA in 1999 only 1 bird was shot compared to 2 shot in 1998. The NH site had 5 hunting mortalities compared to none in 1998 and the PA site had 6 shot this year compared to 4 in 1998. None of the shot birds were unretrieved kills or crippled birds.

Table 2. Sample sizes and fates for American woodcock radio-marked at Moosehorn NWR (MNWR), forest land in Hancock County, ME (Champ), Frye Mt. Game Management Area, Ethan Allen Firing Range (VT), Second College Grant (NH), Pennsylvania Game Commission's Game Land 314 (PA-314), and Erie NWR (PA-Erie) during fall 1999.

Site	n	Predation	Shot	Starve	Censored Mortality	Slipped Radio	Migrated	On site 11/19/99
MNWR*	72	8	0	0	2	9	40	12
Champ	66	4	2 ^a	0	3	1	55	2
Frye Mt.	62	10	1	0	0	8	35	5
VT*	56	17	0	0	4	3	30	0
NH	35	6	5 ^a	0	2	1	17	0
PA-314	67	8	6	0	5	13	27	8
PA-Erie*	58	7	1	1	6	9	17	17

*Sites closed to hunting.

^a includes 1 bird shot after it migrated from the study area

On all sites, radio-marked birds remained on the study areas after the hunting season ended. In Maine, the first birds migrated on 27 October when 11 birds left MNWR, 21 left the Champion site, and 7 left Frye Mt. Birds also migrated from the VT and NH sites at about the same time period. Most of the remaining birds left ME, VT, and NH between 6 and 11 November. As of 19 November, in Maine, 12 birds were still at MNWR, 2 at the Champion site, and 5 were on Frye Mt WMA, in PA, 17 were still being followed at ENWR and 8 at SGL-314. In VT and NH, which received snow in early - mid November, all birds had left the study sites.

These are results from the 3rd year of a 3-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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Woodcock (*Scolopax minor*) ringing in Michigan (USA) in 1997

Anonymus

The Michigan Woodcock Banders' Newsletter No. 32 (April 1998) provides the following information:

In this state of the US, part of the main breeding range of the American Woodcock, 1 607 birds had been ringed in 1997, namely

1466 chicks

130 hens

11 males

(Explanation of the reviewer: In contrast to *S. rusticola*, *S. minor* may be sexed by external criteria of the wing feathers).

101 ringers spent a total of 2 431 hours to find 722 broods (3.36 hours per brood). On average, 15.9 woodcocks were ringed per ringer. Manpower and success was almost the same as in the two previous years.

Hens rearing chicks are usually found with pointing dogs and caught by a net with a long handle.

The Newsletter includes some reports of experienced ringers with interesting information, and a list of 39 recent recoveries.

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On the effects of human disturbance on a brooding woodcock (*Scolopax rusticola*)

Herby Kalchreuter

The following observations were made at the nest of a woodcock located in the Higher Black Forest near Bonndorf, SW-Germany, 850 m NN. The nest was a light depression in the moss between low *Vaccinium myrtillus* vegetation and close to a medium-aged fir tree.

On 13 July 1999 at about 5 p.m. a hiker wanted to lean his mountain-bike against this tree and by doing so he unfortunately smashed one of the four eggs with the front-tyre of his bike. The brooding female was sitting extremely tight and therefore flew off only when it was almost touched by the tire. According to the description of the embryo the eggs must have been brooded for about two weeks.

On 15 July the hiker wanted to observe the brooding woodcock with binoculars from a distance. However, the bird was so perfectly camouflaged that he couldn't detect it. Coming closer and closer he flushed the woodcock on a distance of only one meter. When flying off, it released excrements that dirtied one egg. The three eggs had been placed correctly, and the remnants of the smashed egg were removed.

Six days later, on 21 July, the hiker returned again with more care, but the female must have given up brooding. The three eggs were cold.

In the meanwhile, after I was informed, we went there in the evening of July 23 to find the same situation. The eggs were cold, so the bird must have definitely given up this clutch. We opened one egg and found a slightly rotten embryo, that was however much bigger and more developed than the one inspected ten days before. Obviously, the bird had continued brooding even after the second disturbance. There is no evidence for the reason why the woodcock had finally given up brooding. Predation, at least on the nest, is unlikely, because in this case the eggs would have been taken as well.

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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

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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.

Noskov, G.A., Zimin, V.B., Rezvyi, S.P., Rymkevich, T.A., Lapshin, N.V., Golovan, V.I. (1981): Birds of the Ladoga ornithological station and its environs. // Ecology of birds of Priladozh'ye. Edited by G.A. Noskov. L., Leningrad Univ. 1981. Pp.3-252. (4 wader species on pp. 28-29).

Jack Snipe (*Limnocryptes minimus* Brunn). The Jack Snipe is common during spring and autumn migration. In spring, it arrives in the middle of April (earliest date 14 April 1977). The spring migration is completed by the second half of May. After arrival it is displaying on the moss marshes, where it is breeding probably too. Autumn migration starts in the middle of September till 10th of November.

Great Snipe (*Gallinago media* Lath.). Common, but unnumerous species during migration. In spring, it is occurring from the second half of April till the end of May. On 4 May 1973 a lek on a moss marsh was recorded. Autumn migration starts by the middle of August and lasts till the third decade of September. The common habitat during migration are coastal flood meadows.

Common Snipe (*Gallinago gallinago* L.). One of the most common wader species. In spring it is appearing during the second half of April and immediately starts displaying. Mass migration is observed by the middle to the end of April. The birds migrate at night and are feeding at day-time on coastal flood meadows, muds and river banks. Spring migration terminates around the 20th of May. By the first decade of May the local birds begin to nest. The favourite nesting habitats are wet (swamped) meadows in the mouth of the Svir River, near the villages of Gumbaritsy and Lakhta, but also in the moss marshes. In the majority of nests chicks are hatching at the beginning - middle of June. Already in the last days of June adult birds start their summer migration. At this time Snipe numbers are increasing in the coastal belt of the Ladoga Lake, where nocturnal migration, starting in the evening, is registered. Summer migration peaks during the second half of July, while in August intensity of movements is decreasing noticeably. From the beginning of September the autumn migration of young birds is going on with a peak in the first decade of October, and ending by November.

Woodcock (*Scolopax rusticola* L.) is common both, migrating and nesting. Spring migration starts by the middle of April. Woodcocks start roding when arriving and continue until the middle of July. Egg-laying starts in the first decade of May, and chicks are observed from the last days of May until the middle of July. Autumn concentrations of migrating birds ("vysypki") are recorded from the first decade of October, until the end of November.

Vorontsov, Ye. M. (1949): Birds of the Kama Priural'ye (area around the Ural mountains, Molotov Region). Gorkiy, Gorkiy Univ. Press. 113 p. (4 wader species on p.63).

Jack Snipe (*Lymnocyptes minimus* Brun.). The Jack Snipe is not a rare nesting bird of the Prikam'ye, but mainly seen during migration. According to our observations, the Jack Snipe is widely distributed in the north-western regions in marsh sites and extensive tussocky marshes of the river floods. In the collections of the museum there are specimens of August from the area around the town Molotov, while in our collections from Gainskiy district there are specimens of June.

Woodcock (*Scolopax rusticola* L.). The Woodcock is nesting all over Prikam'ye, but especially in the fir-lime-tree subzone. During spring migration the Woodcock is conspicuous, but in fall it disappears mainly unnoticed. This is probably, because migration and feeding takes place at night and,

moreover, the birds may stay solitary at that time. Woodcocks arrive between 10 April and 6 May. Fall migration starts in the second half of September.

Common Snipe (*Gallinago gallinago* L.) The Snipe is widely distributed, mainly in the forest regions of Prikam'ye. There are nevertheless contradicting statements. Dushin considered it a rare nesting species in wet birch forests. Sabaneev in his time (1874) thought, that Snipes are more seldom in the northern, than in the southern regions. According to Sabaneev however, Snipes were moving northwards from Siberia as a consequence of cutting forests, and replacement of coniferous trees by deciduous forests. He suggested, that Snipes had been ousted from their southern regions – occupied and altered by man – to the north. Spring migration of Snipes starts in the second half of April, quite conspicuous and in large numbers. Fall migration, however, starting in the beginning of September, is hardly noticed.

Great Snipe (*Gallinago major* G). The Great Snipe is a nesting bird of Prikam'ye but of course, is seen more seldom than the Common Snipe. This holds especially for the north-eastern corner of the region and the area left-side of the Kama River. Distribution of the Great Snipe is correlated with the flood of *carex* tussocky marshes. During spring migration from the first decade of May, Great Snipe is occurring everywhere, according to Sabaneev (1874), in the northern regions even more often than the Common Snipe. Kuklin noted a decrease of the Great Snipe during the last years.

Bibliography (reviewed by HK)

Braun, H.G. (1977): Auftreten und Durchzug der Bekassine (*Gallinago gallinago*), Doppelschnepfe (*Gallinago media*) und Zwergschnepfe (*Lymnocyptes minimus*) auf Helgoland. Ornith. Mitt. 29/10: 205 - 208 (in German).

A study on the phenology of spring and fall migration of the three snipe species stopping over at the island of Helgoland. 557 Common snipes recorded during 13 years revealed an extended fall migration from mid-July until the end of December in several waves. Spring migration was less pronounced with a peak around mid-April.

During 21 years only four single Great snipes had been observed.

On 64 days during 13 years a total of 97 Jack snipes had been recorded, most of them in fall between mid-September and the end of October. In spring, Jack snipes were observed from the end of March to the end of April.

Bruggink, J. G. (1998): American Woodcock. Harvest and Breeding, Population Status, 1997. Publication 1/23 of the U.S. Fish and Wildlife Service, Office of Migratory Bird Management. 7 pp.

Wing-collection and Singing-ground surveys were conducted to assess the population status of the American woodcock (*Scolopax minor*). The 1996 recruitment index for the Eastern Region (1.3 immatures per adult female) was 24% below the long-term regional average; the recruitment index for the Central Region (1.3 immatures per adult female) also was 24% below the long-term regional average. Daily hunting success in 1996 in the Eastern Region was the same as during the 1995 season (1.2 woodcock per hunter), but seasonal hunting success declined from 7.6 to 7.2 (-5%) woodcock per hunter in 1995 and 1996, respectively. In the Central Region, the daily success index decreased from 1.6 woodcock per hunter in 1995 to 1.4 woodcock per hunter in 1996 (-13%), and the seasonal success index decreased from 11.3 to 9.6 (-15%) woodcock per hunter. There were no detectable ($P > 0.1$) changes in the number of woodcock heard displaying during the Singing-ground Survey in 1997, although the survey suggested an increase of 6% in the Eastern Region and a decrease of 3% in the Central region. Trends from the Singing-ground survey during 1987-97 were negative (-3.6 and -4.4% per year for the Eastern and Central regions, respectively; $P < 0.01$). There were long-term (1968-97) declines ($P < 0.01$) of 2.5% per year in the Eastern Region and 1.7% per year in the Central Region.

Hoodless, A. (1995): Eurasian Woodcock (*Scolopax rusticola*). British Birds 88/12: 578 - 592.

This No. 195 of a long-running *British Birds* series of brief monographies provides an overview over the most recent results of research on several aspects of the woodcock's life history (i.e. dis-

tribution, migration, breeding biology, population dynamics, diet).

Müller, F. (1998): Möglichkeiten und Grenzen der Erhebung von Waldschnepfen. Allg. Forstzeit-schrift/Der Wald 1: 22 - 24 (in German).

Based on his observations in a 315 ha study area in the Rhön (Hessen, western Germany) the author discussed the possibilities to estimate densities and trends of roding woodcocks. He suggests to record individual differences in the song by sonograms to avoid double counts of the same birds. Because of the considerable costs this method may however only be applied on certain reference plots.

Nechaev, V.A. & Y. Fujimaki (1998): Present status of the Latham's snipe (*Gallinago hardwickii*) on Sakhalin. Res. Bull. Obihiro Univ. 21: 61-65.

Latham's Snipe *Gallinago hardwickii* were surveyed in the south part of Sakhalin for 17 years from 1971 to 1995. Snipe occur in southern Sakhalin and the northernmost limit of the present range is at approximately 49 N. One to five males were counted per 1-km transect. The whole population size in Yuzhno-Sakhalinsk and southward was estimated to be 500 breeding pairs in the late 1980s. Main habitats are grasslands and shrub-grasslands both in coastal and inland areas. Egg laying period ranged from early May to early June. Chicks hatched in late May to early June in most cases and in early July in late clutches. At present snipe do not need any protection measures because the breeding range has expanded northward and they are increasing in numbers.

Payevsky, V. A. & A. P. Shapoval (1998): Ringing efficiency of birds depending on their species, sex, age, season, and place of ringing. Ornithologia 28: 212 - 218.

List of ringing and recovery data of birds (mainly songbirds) ringed at the Biological Station Rybachy (Russia) during the period 1957 - 1984. The woodcock (*Scolopax rusticola*) obviously follows the Courish Spit (Kurische Nehrung) in fall and was caught there since the establishment of this station (formerly Vogelwarte Rossitten). 126 had been ringed during this period, of which 27 (21%) had been recovered later there or along the migration route to Estonia, Denmark, Helgoland and the UK.

Petelis, K. (1994): Spring migration of Woodcock (*Scolopax rusticola*) in the Sunskai Forest (Marjampole Distr., Lithuania) in 1981 - 1993, The Ring 16/1-2: 106.

The Sunskai forest (2 000 ha) is situated in the southern part of Lithuania in the argillaceous plain Suvalkija. The deciduous woodlands here and there are mixed with fir-trees. Spring migration was monitored annually in two constant plots from mid-March to the 10th of May. Woodcock migration in southern Lithuania starts usually in late March or early April. The migration reaches its maximum in early April when both local and northern breeding populations cross Lithuania, while later migrants are mostly of northern origin. Up to 1988 Woodcock hunting started from 25th of April and continued as long as 10th of May, thus only local birds were hunted. In 1989 on the basis of these

observations the beginning of hunting has been changed to the 1st of April. However, to preserve local populations of Woodcocks it is necessary to finish the hunting season on 25th of April.

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

Few information about morphometrics and body mass of Woodcock (*Scolopax rusticola*) are available, all of them obtained from individuals hunted. During five winter seasons (from 1992 to 1997) 421 Woodcock-individuals (39% adults, 22.8% early juveniles, 38% late juveniles) were caught, ringed, measured and their weight taken in a wintering area of Central Italy. Morphometric measures and weight were analysed concerning age class, year, and month of capture. Recoveries are also reported. Juveniles had shorter tails and wings compared to adults, but bill length did not differ. Birds weighted more in December and January. The birds seem to belong to the northeast Europe population and the recoveries of several individuals in subsequent winters suggests some winter site fidelity.

Winkler, R. (1999): Avifauna der Schweiz. *Der Ornithologische Beobachter*, Beiheft 10 (in German). Avifauna of Switzerland. (The four following species are described on pp 95 – 97).
Jack snipe (*Lymnocyptes minimus*)

Sparse migrant and winter visitor in the midlands. Fall migration occasionally in the first days of August, usually not before mid-September, peaking end October/beginning of November. Some observations point to continuous staging over the winter. Spring migration from February to the end of April.

Common snipe (*Gallinago gallinago*)

The total Swiss breeding population declined from about 33 occupied territories in 1977 to three in 1996. Regular migrant in fall from July to November, with peaks in August and beginning October. Regularly in winter, occasionally even in the Alps. Spring migration end of February with a peak end of March/beginning of April.

Great snipe (*Gallinago media*)

Irregular visitor. From 1950 to 1997 only about 50 proven records (list attached).

Woodcock (*Scolopax rusticola*)

Scattered breeding population, more common in the Jura, declining in the Swiss midlands since two decades. Regular migrant in fall from end of August, peaking by end of October. Single birds tend to winter regularly. Spring migration from end of February, with a peak in the second half of March and ending by mid-April.