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Wetlands International

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

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Editorial

Our Woodcock & Snipe Specialist Group has continued to develop in 2006. Many of the work are still in progress or just achieved and should give very important results in 2006 in terms of population management. For Woodcock, these are for example a genetics study in Portugal, effects of disturbance in France, a breeding survey in Great-Britain, behavioural ecology in a Mediterranean area in Italy, evolution of breeding habitat in Russia. Some publications on these topics could be available in the course of 2007.
Besides that, breeding and wintering Woodcock surveys are underway in Russia, France and Switzerland. Associations of Woodcock hunters and national Institutes are continuing to collect data on hunting bags in France, Italy, Ireland, Switzerland, Spain, Denmark, Sweden, Finland, Russia, Hungary. In this framework, relationships with the FANBPO (Federation of European Woodcock Hunter Associations) are always very strong. Meetings with dynamic Welsh and Irish representatives has shown us that an important "Woodcock activity" could be expected in these European regions in the coming years.

Research on snipes is also going on but unfortunately at a lower level than Woodcock research. A Common Snipe survey is continuing in Russia, to get an estimation on breeding numbers. A Snipes network was created in France, the aim of which is to develop ringing of Snipe species. A strong collaboration with CICB (French Snipes Hunter Association) should allow us to increase our knowledge on wintering numbers thanks to an analysis of hunting bags in 30 reference areas.
A great satisfaction for 2006 was to have a very pleasant contact with an Ecuadorian ornithologist specialised in snipes of South America. You will find his paper in this Newsletter and will surely be interested in it. This corresponds exactly to my wish to extend the WSSG to countries outside Europe and North America and to other Woodcock and Snipe species. Such initiatives must be encouraged.

Two important facts must also be mentioned.
Our North American colleagues organised the 10th American Woodcock Symposium in October 2006 at Roscommon, Michigan. About 100 participants attended the Symposium and 30 communications were presented. Thanks to the efficiency and kindness of Al Stewart (Department of Natural Resources in Michigan), this Symposium was a real success. American Woodcock populations seems to be still globally decreasing but everything is being done to stop this decrease through a dialog between researchers, hunters, administration, foresters and farmers, as a special session of the Symposium has proven. We are eager to read the Proceedings.
The 4th edition of Waterbird population estimates has been published. The most recent information on the conservation status of Woodcock and Snipe species are therefore available. Of course, the WSSG participated in this publication by providing information gathered by the members.

I wish you a very happy New Year and much success with your scientific work.

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A preliminary approach to the Snipes (*Gallinago*) of Ecuador, with remarks on their distribution in Ecuadorian IBAs and its conservation status

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The Snipe genus *Gallinago* is currently composed of 17 species distributed in Asia, Europe, Africa, and America (Banks *et al*. 2002, BirdLife 2006, Delany 2006, Remsen *et al*. 2006). Eight species of snipes inhabit America, including *Gallinago delicata*, *G. paraguaiae*, *G. andina*, *G. nobilis*, *G. jamesoni*, and *G. imperialis* (Fjeldså & Krabbe 1990, Ridgely & Greenfield 2001, BirdLife International 2006, Delany 2006, Remsen *et al*. 2006). Little has been written on the American species of *Gallinago*, and except for the North American *G. delicata*, all taxa are poorly-known in terms of their distribution, ecology, population trends, and conservation status (BirdLife International 2006, Delany & Scott 2002, Delany 2006). In fact, the most poorly known populations of woodcocks and snipes occur in Asia and South America (Delany 2006). Even the taxonomy of American *Gallinago* is controversial, and species limits are mostly based on anecdotal data (Meyer de Schauensee 1970, Fjeldså & Krabbe 1990, Sibley & Monroe 1990, Ridgely & Greenfield 2001, Remsen *et al*. 2006). Delany & Scott (2002) and Delany (2006) presented information on the population estimates and trends for all Snipes in the world, but data was available only for three (*Gallinago delicata*, *G. paraguaiae magellanica*, and *G. stricklandii*) out of eight American species. Current conservation assessments have classified two American snipes as threatened (*G. imperialis* and *G. stricklandii*), both under the Near-Threatened IUCN category (BirdLife International 2006, Delany 2006). Herein I present some considerations about the snipes of Ecuador, with emphasis on their distributional range, their relation to the Ecuadorian Important Birds Areas (IBAs), and their conservation status.

Material and Methods

Field records on various species of *Gallinago* were gathered from 1993 to 2006, while participating in surveys along Ecuador. Specimens were examined from the ornithological collection of the Museo Ecuatoriano de Ciencias Naturales, Quito, Ecuador (MECN). Literature records were compiled from published and trustworthy-unpublished sources, including the reports from the Neotropical Waterbird census coordinated in Ecuador by Aves&Conservación (BirdLife Ecuador), and from personal communications with different ornithologists (see acknowledgments). Nomenclature and sequence follow the proposal by the South American Classification Committee of the American Ornithologists' Union (Remsen *et al*. 2006). The geographic location and elevation of localities were determined using collector's field notes and revised in accordance with the 2000 physical map of the Republic of Ecuador (1:1’000 000) (IGM 2000), and NGA (2006). Classification of vegetation formations in Ecuador follows Sierra (1999). Information related to the Important Birds Areas (IBAs) of Ecuador follows Freile & Santander (2005).

Results and Discussion

Overview: Six species of snipes have been recorded in the Republic of Ecuador (Table 1, Figure 1). Three species have breeding populations in the country (Noble Snipe - *Gallinago nobilis*, Andean Snipe - *G. jamesoni*, and Imperial Snipe - *G. imperialis*); one species is a casual boreal winter visitant (Wilson's Snipe - *G. delicata*). The status of two species is currently uncertain due to the paucity of records (South American Snipe - *G. paraguaiae*, and Puna Snipe - *G. andina*). Three species inhabit the western and eastern most Andean highlands while four species occur in a small range on the extreme southeastern Andean highlands. Two species have most of their records in the lowlands on each side of the Andes (Table 1). All six species neither occur in sympatry at any locality nor do they all overlap at any elevation. The maximum number of snipes species found at a single locality was four (Cordillera Las Lagunillas), but two species per locality were regularly recorded. All resident highland species have similar elevational distribution ranges (Table 1). Two species (*G. nobilis* and *G. jamesoni*) have the broadest geographical ranges, distributed across the Ecuadorian highlands on both sides of the Andes. Hilty & Brown (1986) pointed out a consideration for Colombian populations of *G. nobilis* / *G. jamesoni* that seems also valid for Ecuadorian ones "[Noble Snipe is] partially sympatric with Cordilleran Snipe (= Andean Snipe) but its center of abundance is apparently lower". The Imperial Snipe *G. imperialis* occurs widely on the eastern slopes but in the western slopes it is apparently restricted to the northern part. *Gallinago nobilis* and *G. jamesoni* are species mostly found in grassland habitats, while *G. imperialis* is a species from forested habitats (in the timberline between montane forest and paramo). *Gallinago nobilis* is commonly found in wetland environments while *G. jamesoni* and *G. imperialis* are less tied to water and also inhabit areas far from it.

Gallinago imperialis is a rare species, whose populations are classified under the Near-Threatened IUCN category, both at global and national levels. *Gallinago nobilis* has suffered from drastic declines in several areas across its Ecuadorian distributional range, driven by habitat destruction and overhunting. The global population of *G. nobilis* is currently evaluated as Least Concern, but with considerations presented herein the Ecuadorian population is classified under the Near-Threatened IUCN category. *Gallinago jamesoni* is a fairly common species in Ecuador and its population, although it shows a declining trend, does not approach the thresholds for the population size criterion of the IUCN Red List. *Gallinago andina* and *G. paraguaiae* probably hold resident populations in Ecuador, but currently their population status is uncertain, thus both are better evaluated as Data Deficient at a national level until further information is acquired. *Gallinago delicata* is apparently present in Ecuador only in small numbers, as a vagrant species, and it is a Least Concern species both at global and national levels (Table 1).

Species	Status[1]	Distribution[2]	Altitudinal range (m elevation)	Conservation status in Ecuador[3]
Gallinago delicata Wilson's Snipe	CV	W lowlands	750 - 1300	LC
Gallinago paraguaiae South American Snipe	U	E lowlands	250 - 300	DD
Gallinago andina Puna Snipe	U	Extreme SE highlands	3300	DD
Gallinago nobilis Noble Snipe	RB	W & E highlands	2900 - 4100	NT
Gallinago jamesoni Andean Snipe	RB	W & E highlands	2800 - 4400	LC
Gallinago imperialis Imperial Snipe	RB	NW & E highlands	2700 - 3800	NT

Table 1: *Snipe species (Gallinago spp.) that occur in the Republic of Ecuador, with population status, distribution, and altitudinal range. [1] CV = casual boreal winter visitant; U = uncertain; RB = resident / breeding population. [2] W = western; E = eastern; SE = southeastern. [3] LC = Least Concern; DD = Data Deficient; NT = Near Threatened.*

Species Accounts

<u>*Gallinago delicata* - Wilson's Snipe</u>

This species occurs in Ecuador as a casual boreal winter visitant. *Gallinago delicata* was first reported in Ecuador by Orces (1944) based on a specimen (now apparently lost) from Mapoto, province of Tungurahua, collected in October 1939. There is only one additional confirmed record, at Mindo, province of Pichincha, between December 1997 and January 1998 (1997 Christmas Bird Count data – L. Miller pers. comm., Ridgely & Greenfield 2001). Besides, a new record has been reported: one individual of *Gallinago* was observed on the 2nd of November 1998 on a wet open pasture next to a shallow cattle-pond in Hacienda La Joya (00°05'N, 78°59'W, 750–800 m elevation), near San Vicente de Andoas, c. 7 km E (by road) from Pedro Vicente Maldonado, province of Pichincha. Based on the plumage, date, and west-location, this individual was identified as *G. delicata*, thus extending the species altitudinal migratorial range in Ecuador to c. 750 m elevation (previously reported between 1200 and 1300 m elevation, Ridgely & Greenfield 2001). This species was previously considered as a subspecies of the Common Snipe, *G. gallinago*, but it is herein treated as a separate species following Miller (1996), Banks *et al.* (2002), and Remsen *et al.* (2006), among others. This treatment is not followed by the BirdLife Taxonomic Working Group because the morphological differences are limited, and it favors non-recognition of a species-status pending further research (BirdLife International 2005).

Present records of *Gallinago delicata* locate the species in at least two Ecuadorian IBAs, the Río Caoni IBA (EC040), and the Mindo y Estribaciones Occidentales del Volcán Pichincha IBA (EC043). Since the species is apparently only a vagrant in Ecuador, those IBAs would not hold representative numbers of *G. delicata*. However, the extensive deforestation in western Ecuador, and the subsequent creation of grass fields and pastures that get partially damp during the rainy season (at the same time as the migration of *G. delicata*) could be increasing the availability of habitats for the migrant *G. delicata* in western Ecuador (the species was reported as regular in western Colombia, Hilty & Brown 1986).

<u>*Gallinago paraguaiae* - South American Snipe</u>

This species is known from records in northern Amazonian Ecuador, including Limoncocha, Zancudococha, and Cuyabeno (Ridgely & Greenfield 2001). It is currently unknown whether the species is a wanderer with no resident populations in the country or whether it breeds in Ecuador. Three additional observations corresponding to *G. paraguaiae*, based on the plumage, date, and east-location, have been reported: one individual observed amidst the shore vegetation on the Laguna Grande, Cuyabeno Reserve, province of Sucumbíos, on 23 March 1999; one individual foraging on a flooded grass field next to the Pompeya-Iro road (00°40'S, 76°24'W, c. 250 m elevation), province of Orellana, on July 1999; and two individuals observed on a flooded grass field next to the Comuna Nueva Juventud (c. 00º05'S, 76º12'W, 290 m elevation), province of Sucumbíos, on 16 July 2000. Present records of *G. paraguaiae* locate the species in at least two Ecuadorian IBAs: the Reserva de Producción Faunística Cuyabeno IBA (EC091), and the Gran Yasuní IBA (EC093). If the species is eventually found to have a breeding population in Ecuador, the Cuyabeno IBA (EC091) would be important for its conservation in Ecuador due to its large wetlands system.

<u>*Gallinago andina* - Puna Snipe</u>

This species remains known in the country from a single sighting at the Cordillera Las Lagunillas, province of Zamora-Chinchipe, on 27 October 1992 (M. B. Robbins in Ridgely & Greenfield, 2001). The status of *G. andina* in Ecuador is currently uncertain. The species is otherwise known from extreme northern Peru (reported from Cruz Blanca, Huancabamba Depression region, Parker et al. 1985) south of northern Chile and northern Argentina (Fjeldså & Krabbe 1990). Several other species, whose distributional range is from Peru to the south, are known in Ecuador only from the Cordillera Las Lagunillas, e.g., the Andean Hillstar, *Oreotrochilus estella* (Trochilidae), and the Andean Flicker, *Colaptes rupicola* (Picidae) (Ridgely & Greenfield 2001). The Cordillera Las Lagunillas is part of the Bosque Protector

Colambo-Yacuri IBA (EC086), an area that would be important for the conservation of *G. andina* in Ecuador if it holds a breeding population.

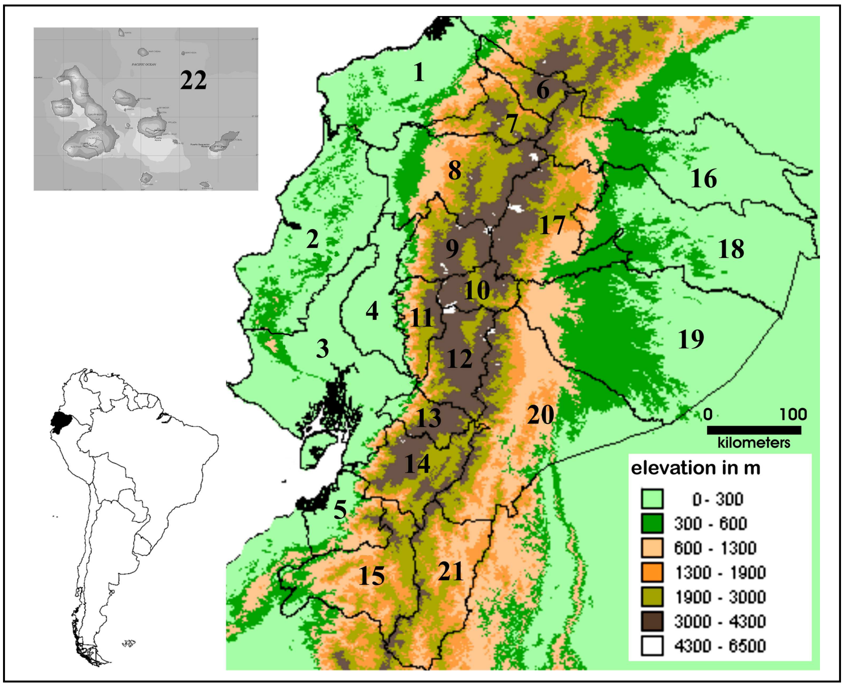

Figure 1: *Map of the Republic of Ecuador showing its general location in America (South America lower-left insert, Ecuador in black); and its political division (in Provinces): 1 = Esmeraldas, 2 = Manabí, 3 = Guayas, 4 = Los Ríos, 5 = El Oro, 6 = Carchi, 7 = Imbabura, 8 = Pichincha, 9 = Cotopaxi, 10 = Tungurahua, 11 = Bolívar, 12 = Chimborazo, 13 = Cañar, 14 = Azuay, 15 = Loja, 16 = Sucumbíos, 17 = Napo, 18 = Sucumbíos, 19 = Pastaza, 20 = Morona-Santiago, 21 = Zamora-Chinchipe, and 22 = Galapagos (insular province, upper right insert in grayscale as no Snipes occurs there).*

<u>*Gallinago nobilis* - Noble Snipe</u>

Locally uncommon to rare in wetlands and adjacent grass fields across the Andean highlands of Ecuador between 2900 and 4100 m elevation. The species is distributed in the provinces of Carchi (e.g., Páramo de El Angel, río Bobo drainage, Santa Marta valley), Imbabura (e.g., Mojanda lagoons, Yahuarcocha lagoon), Pichincha (e.g., Yanacocha, Pasochoa, El Chaupi, Volcán Pichincha), Napo (e.g., Páramo de Guamaní – Papallacta, Antisana), Cotopaxi (e.g., Cotopaxi volcano especially in the Limpiopungu lagoon, Los Anteojos lagoon), Chimborazo (e.g., Atillo lagoons), Tungurahua (e.g., Pisayambo lagoon), Cañar (lake in paramo near Cañar), Azuay (e.g., Bestíon, Páramo de El Cajas), Loja (e.g., Acanamá, Cordillera de Cordoncillo), and Zamora-Chinchipe (e.g., Cajanuma) (Chapman 1926, Robbins *et al.* 1994, Cresswell *et al.* 1999, Ridgely & Greenfield 2001, Santander & Muñoz 2005, N. Krabbe pers. comm. 2006, Aves&Conservación – 2005/2006 Neotropical Waterbird census data, MECN catalog data, D. F. Cisneros-Heredia pers. obs.). *Gallinago nobilis* occupies the following vegetation formations in Ecuador: lacustrine grasslands, high-montane evergreen forests, herbaceous paramos, *Espeletia* paramos, and shrubby paramos. The species has been declining over the last years. In the last 30 – 40 years, between 20 – 65% of the habitats of *G. nobilis* have been desiccated, transformed into agricultural lands, or suburban areas (Sierra *et al.* 1999). The species is commonly hunted across its range, both by local indigenous people and by sport hunters, and in some areas over-hunting and habitat degradations are decimating local populations. The population of *G. nobilis* in the surroundings of La Mica lagoon, in the Antisana volcano slopes, has declined markedly over the last 13 years. During a five-day sampling in July 1993, a mean of 3.0 individuals / hour-person were found around the lagoon and as far as 500 m on the adjacent grasslands. During the same period, at least 12 snipes were killed by sport hunters in the area. In August 1997 a lower mean value was recorded (1.9 individuals / hour-person). In the late 90's, a dam was built to create a reservoir in the lagoon, increasing the lagoon size from 1.8 to 3.6 km2, flooding c. 180 hectares of the surrounding wetlands and grasslands (Muñoz & Olmedo 2001).

Between October 1999 and December 2000, only 4 snipes, probably *G. nobilis*, were observed in the lagoon area (Muñoz & Olmedo 2001). In October 2006, almost 6 years after the construction of the dam, several areas of wet grasslands have been recovered especially towards the northeastern side of the lagoon, yet only one individual of *G. nobilis* was observed after a 6 hour-survey, and one dead individual, killed by gunfire, was found on the side of the lagoon. In the paramos of El Angel (province of Carchi) and Guamaní (provinces of Pichincha and Napo), and in the Mojanda lagoons (province of Imbabura), similar patterns of population decline have been observed, probably driven by over-hunting and burning of large areas (especially in El Angel and Mojanda). There is a fairly stable large population of *G. nobilis* in the Limpiopungu lagoon, Cotopaxi volcano; where hunting, burning, and other significant habitat alterations are forbidden because it is part of the Cotopaxi National Park (Ridgely & Greenfield 2001, pers. obs.). In the Yanacocha area, a private protected area, the population of *G. nobilis* is small and local but apparently stable; during surveys in December between 1996 and 2002 (1 day-surveys, usually during the Christmas Bird Counts), between 1 and 5 individuals were observed. Ridgely & Greenfield (2001) reported that the species was apparently declining but did not consider it as a threatened species. The Red Data Book of the Birds of Ecuador (Granizo *et al*. 2002) did not include *G. nobilis* as a threatened species in the country. However, the declining trend of *G. nobilis*, at least in Ecuador, seems to be greater than previously estimated, and although it does not seem to qualify under a threatened category, *Gallinago nobilis* may deserve a Near-Threatened status.

Since *Gallinago nobilis* is considered as a biome-restricted species (to the Northern Andes), several Important Bird Areas where it occurs are classified under the IBA criteria A3. Also, some IBAs seem to maintain important populations of the species, and also qualify under the IBA criteria A4i. For criteria A4i, the critical biogeographic level of *G. nobilis* was established in 250 individuals by Boyla & Estrada (2005) based on a population estimate of 10.000 to 25.000 individuals. Yet, the critical biogeographic level of *G. jamesoni* (as *G. stricklandii jamesoni*) was established in 100 individuals, with a population estimate of less than 10.000 individuals. *Gallinago nobilis* inhabits an area from southwestern Venezuela to southern Ecuador, while the distributional range of *G. jamesoni* is from western Venezuela to western Bolivia (Ridgely & Greenfield 2001). Those population estimates thus seem to be over and under-estimated, respectively, and a critical biogeographic level of 100 individuals for *G. nobilis* (population estimate c. 10.000 individuals, declining trend) seems more adequate under current circumstances. The following IBAs are classified under the criteria A3 and A4i (underlined) for *G. nobilis*: <u>El Angel-Cerro Golondrinas (IBA EC036)</u>, <u>Reserva Ecológica Cotacachi-Cayapas (EC037)</u>, Intag-Toisán (EC038), <u>Mindo y Estribaciones Occidentales del Volcán Pichincha (EC043)</u>, Reserva Ecológica Los Illinizas y Alrededores (EC045), Estación Biologica Guandera-Cerro Mongus (EC046), <u>Reserva Ecológica Cayambe-Coca (EC049)</u>, <u>Reserva Ecológica Antisana (EC052)</u>, Refugio de Vida Silvestre Pasochoa (EC053), <u>Parque Nacional Cotopaxi (EC055)</u>, <u>Parque Nacional Llanganates (EC056)</u>, <u>Parque Nacional Sangay (EC061)</u>, Yanuncay-Yanasacha (EC064), Acanamá-Guashapamba-Aguirre (EC068), <u>Parque Nacional Podocarpus (EC085)</u>, and <u>Bosque Protector Colambo-Yacuri (EC086)</u>.

<u>*Gallinago jamesoni* - Andean Snipe</u>

The most frequently recorded and probably the most abundant snipe in Ecuador. It is distributed across the Andean highlands in different habitats, including paramo (wet or dry), bogs, pastures, and shrubby and woodland areas between 2800 and 4400 m elevation (Ridgely & Greenfield 2001, pers. obs.). The species is distributed in the provinces of Carchi (e.g., Paramo de El Angel, Cerro Mongus), Imbabura (e.g, Mojanda lagoons), Pichincha (e.g., Pasochoa, Yanacocha, Volcán Pichincha, San Marcos lagoon), Napo (e.g., paramo de Guamaní – Papallacta, Antisana), Cotopaxi (e.g., Cotopaxi volcano slopes, Los Anteojos lagoon), Chimborazo (e.g., Chimborazo volcano slopes), Tungurahua (e.g., Cordillera de los Llanganates), Cañar (e.g., Mazar), Azuay (e.g., Illincocha, Mazar, Guagualoma, Bestion), Loja (e.g., Acanamá, Cordillera Las Lagunillas), Zamora-Chinchipe (e.g., Cajanuma), and

Morona-Santiago (paramos de Matanga) (Chapman 1926, Robbins *et al*. 1994, Cresswell *et al*. 1999, Ridgely & Greenfield 2001, Santander & Muñoz 2005, N. Krabbe pers. comm. 2006, G. Buitrón-Jurado pers. comm. 2006, Aves&Conservación – 2005/2006 Neotropical Waterbird census data, MECN catalog data, D. F. Cisneros-Heredia pers. obs.). The lower elevation reported by Ridgely & Greenfield (2001) for *G. jamesoni* was 3100 m; however, there are two specimens of *G. jamesoni* deposited at the MECN collected at the city of Quito on 17 September 1996 (MECN 7002, female) and 12 March 1999 (MECN 7452), at 2800 m elevation, thus increasing the lower elevational range of the species.

Gallinago jamesoni is widely sympatric across its range with *G. nobilis*. The records from the Cordillera Las Lagunillas (N. Krabbe unpubl. record) suggest its possible sympatry with *G. andina*. *Gallinago jamesoni* occupies the following vegetation formations in Ecuador: herbaceous paramos, *Espeletia* paramos, shrubby paramos, lacustrine grasslands, and high-montane evergreen forests. *Gallinago jamesoni* is markedly less tied to wetland environments than *G. nobilis*, thus having a larger occupancy area. There are no estimates for the population of *G. jamesoni* in Ecuador, and while it suffers (like *G. nobilis*) from over-hunting and habitat destruction, its wide distribution, abundance at some localities, and adaptability to secondary habitats suggest that its population is not threatened. The species is fairly common and recorded periodically at the paramos of the Antisana and Cotopaxi volcanoes, and at Yanacocha, a private protected area, the population is small and local but apparently stable; during surveys in December between 1996 and 2004 (1 day-surveys during the Christmas Bird Counts), between 2 and 6 individuals were observed. Freile & Santander (2005) and Boyla & Estrada (2005) treated *jamesoni* as a subspecies of *G. stricklandii*, and as such considered it as a Near-Threatened species; but currently BirdLife International (2006) recognizes them as separate species, and *G. jamesoni* as non-threatened. The Red Data Book of the Birds of Ecuador (Granizo et al. 2002) did not include *G. jamesoni* as a threatened species in the country.

Gallinago jamesoni is found in all IBAs across the Ecuadorian highlands, and some apparently qualify for criteri A4i. The critical biogeographic level of *G. jamesoni* (as *G. stricklandii jamesoni*) was established in 100 individuals, with a population estimate of less than 10.000 individuals by Boyla & Estrada (2005). Yet, based on considerations presented in the *G. nobilis* account, a critical biogeographic level of 250 individuals for *G. jamesoni* (population estimate 10.000 – 25.000 individuals, declining trend) seems more adequate. *Gallinago jamesoni* occurs in the following Ecuadorian IBAs (those classified under criteria A4i are underlined): Bosque Protector Molleturo Mullopungo (EC032), <u>El Ángel-Cerro Golondrinas (EC036)</u>, <u>Reserva Ecológica Cotacachi-Cayapas (EC037)</u>, Intag-Toisán (EC038), <u>Mindo y Estribaciones Occidentales del Volcán Pichincha (EC043)</u>, <u>Reserva Ecológica Los Illinizas y Alrededores (EC045)</u>, <u>Estación Biologica Guandera-Cerro Mongus (EC046)</u>, <u>Reserva Ecológica Cayambe-Coca (EC049)</u>, <u>Reserva Ecológica Antisana (EC052)</u>, Refugio de Vida Silvestre Pasochoa (EC053), Volcán Atacazo (EC054), <u>Parque Nacional Cotopaxi (EC055)</u>, <u>Parque Nacional Llanganates (EC056)</u>, Corredor Ecológico Llanganates-Sangay (EC057), <u>Parque Nacional Sangay (EC061)</u>, <u>Bosque Protector Dudas-Mazar (EC062)</u>, <u>Cajas-Mazán (EC063)</u>, <u>Yanuncay-Yanasacha (EC064)</u>, Acanamá-Guashapamba-Aguirre (EC068), <u>Parque Nacional Podocarpus (EC085)</u>, <u>Bosque Protector Colambo-Yacuri (EC086)</u>, Reserva Comunal Bosque de Angashcola (E087).

<u>*Gallinago imperialis* - Imperial Snipe</u>

Locally rare to fairly uncommon species that occurs along and below the timberline in highlands of Ecuador, between 2700 and 3800 m elevation. *Gallinago imperialis* was originally described by Sclater & Salvin (1869) from a specimen collected in the vicinity of Bogota, Colombia. The species remained known from a single additional specimen, until it was rediscovered in 1967 at the Cordillera de Huancabamba, central Peru (Terborgh & Weske 1972). In 1990, the species was recorded for the first time in Ecuador, at Yanayacu, in the northwestern slopes of the Pichincha volcano (Krabbe 1992), and later the species was found to be continuously distributed along the entire eastern Andean slopes of Ecuador, and along the northwestern slopes south to the Illinizas volcanoes (Krabbe *et al*. 1997, Krabbe 1998). There are records of *Gallinago imperialis* in the provinces of Carchi (e.g., Cerro Mongus), Imbabura (e.g., Intag), Pichincha (e.g., Yanacocha, Corazón volcano, Pichincha volcano), Napo (e.g., below Oyacachi), Tungurahua (e.g., Cordillera de Los Llanganates), Loja (e.g., Acanamá), Zamora-Chinchipe (e.g., Cajanuma, Cerro Toledo, Cordillera Las Lagunillas, Tapichalaca), and Morona-Santiago (paramos de Matanga) (Krabbe 1992, Poulsen 1993, Krabbe *et al*. 1997, Ridgely & Greenfield 2001, N. Krabbe pers. comm. 2006, D. F. Cisneros-Heredia pers. obs.). *Gallinago imperialis* occupies the following vegetation formations in Ecuador: cloud montane forests and high montane evergreen forests; occurring inside the forests but also on the borders and adjacent bogs. The habitat of the species in the western slopes of the Andes has drastically declined over the last years. In the last 30 – 40 years, between 33 – 53% of the habitats of *G. imperialis* have been transformed into agricultural lands, suffering from burning and grazing (Sierra *et al*. 1999). At Corazón volcano, habitat destruction has reduced the population significantly, and it is probably extirpated. At Yanacocha, a private protected area, the species is regularly recorded, and probably holds a healthy size population; during surveys in December between 1996 and 2004 (1 day-surveys during the Christmas Bird Counts), between 2 and 10 individuals were observed. *Gallinago imperialis* is considered as a Near-threatened species (BirdLife International 2006). Although Granizo *et al*. (2002) did not list the species under any IUCN category (even NT), the species should certainly be classified as Near-Threatened in Ecuador, as suggested by Ridgely & Greenfield (2001).

There are records of *G. imperialis* at the following IBAs (criteria A1, IBAs where *G. imperialis* was not listed by Freile & Santander [2005] are underlined): Reserva Ecológica Cotacachi-Cayapas (EC037), Intag-Toisán (EC038), Mindo y Estribaciones Occidentales del Volcán Pichincha (EC043), Reserva Ecológica Los Illinizas y Alrededores (EC045), Estación Biologica Guandera-Cerro Mongus (EC046), Reserva Ecológica Cayambe-Coca (EC049), Reserva Ecológica Antisana (EC052), Parque Nacional Llanganates (EC056), Parque Nacional Sangay (EC061), Acanamá-Guashapamba-Aguirre (EC068), Parque Nacional Podocarpus (EC085), Bosque Protector Colambo-Yacuri (EC086), and Reserva Tapichalaca (EC088).

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Autumn hunting bags of Woodcock, Common Snipe and other waders in the Moscow Region

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In the last few years in the Moscow Region, as in other regions of Russia, hunters were given "personal licenses" (PL) for all sorts of game birds including waders, separately in spring and summer-autumn periods. PL is an official form which is not only required for hunting but also for the census of different game species hunting bags. In a PL form, space is provided for the hunter to register data on his bag : shot species and date of shooting. The process of data collection and analysis has been described previously (Blokhin & Fokin 2005; Blokhin *et al.* 2006). All information on hunters' hunting bags is finally summarized by state hunting management structures for each region.
As a result of the initial generalization of PL data made by hunting management officials, a substantial part of the information coming from hunters is lost. Summary tables' data on game bird hunting bags become of little use for further statistical treatment and analysis. Besides, we have doubted the reasonableness of data treatment in regions, generalized in summary tables (Blokhin *et al.* 2002, 2005, 2006).

Material and methods

In total, 20,290 PLs were analysed to estimate hunting bags in the Moscow Region. They made up 60% of the number of PLs given for game bird hunting by the Moscow Hunters and Fishermen Society (MOOiR) which is the first-rate hunters association in Russia, and some other hunters societies, in the summer-autumn 2005 hunting season.
The popularity of hunting is determined by the rate of the total number of PLs returned by hunters for all game bird species, and the number of PLs with information on a specific game species. We should note that hunters are not given specific PLs for Woodcock, Great Snipe or Common Snipe, but they receive general PLs which include other game birds. As a result, a problem arises: many hunters receive such licenses but do not hunt waders, preferring for instance ducks, hazel grouse or other game birds, and this is mostly not recorded in PLs. Thus, we only know how many PLs are purchased for the right to hunt waders and the number of PLs returned by hunters. Therefore, we do not know the proportion of hunters who received special game birds PLs but really hunt waders and how many of them did not bag any Woodcock or Common Snipe.

In summer-autumn 2005 hunting season, a hunter purchased from 1 to 8 game bird PLs for different numbers of days. But the overwhelming majority of hunters purchased only one license for the season. However, we have no precise information about this . That is why the average individual bag was estimated for one PL on the basis of the total number of PLs we processed for each wader species, and the total number of waders shot with these licenses for each specific species. The total bag for each wader species was calculated on the basis of the average bag index per single PL and the total bag per each category of PL.

Results and discussion

Species composition of shot waders

In autumn, hunting is allowed in Russia for many wader species except for example those included in The Federal or Regional Red books. In the Moscow Region, 35 wader species can be observed among which only 13 species are allowed to be hunted. However, even among these 13 species, only 5 are relatively common: *Vanellus vanellus*, *Tringa ochropus*, *Gallinago gallinago*, *G. media*, *Scolopax rusticola*. The other waders are rare: *Pluvialis squatarola*, *Tringa glareola*, *Lymnocryptes minimus*, or accidentally present migratory birds: *Eudromias morinellus*, *Arenaria interpres*, *Tringa erythropus*, *Limosa lapponica*, *Numenius phaeopus*. PLs are written out for different species and groups of game bird including waders, such as “Woodcock”, “Common Snipe”, “Great Snipe”, “Curlew”, “other waders”, “marsh-meadow game bird”. In the group “marsh-meadow game bird”, not only are all other wader game species included, but also Quail and Corncrake for instance. During summer-autumn hunting, Woodcock is allowed to be shot with PLs given for “pine forest game bird”, which includes Hazel Grouse .

Among waders shot in 2005, hunters commonly reported Common Snipe (74.8%) and Woodcock (20.4%), rarely Great Snipe (4%) and Jack Snipe (0.8%) (Figure 1).

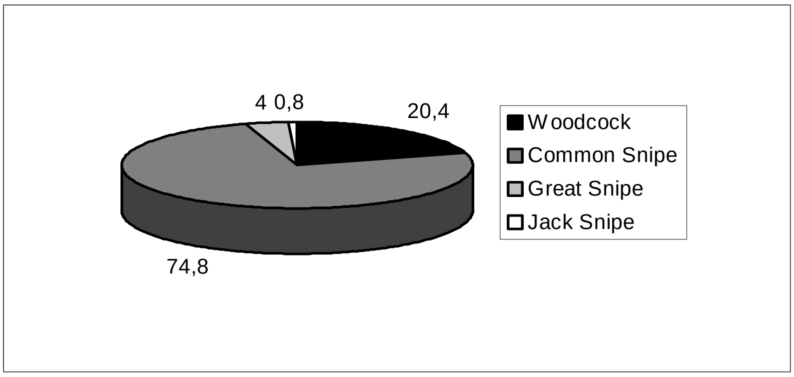


Figure 1: *Distribution of different waders species in autumn hunting bags in Moscow region (%).*

Hunting periods and wader bag limits

In 2005, summer-autumn hunting for Common Snipe (and also for one more representative of marsh-meadow game: Corn Crake) opened late, on the 13 th of August 2005, and only for pointer owners. For the other hunters, wader hunting was allowed from the 20th of August to the 30th of November. Moreover, as in the previous years, hunting was closed two days a week before the 15th of September. For a 2005 hunting season duration of 100 days, the average hunting time for a wader hunter ((and, from the same PLs, for other game birds) was 4.18 ± 0.09 days per 1 PL. The maximum was 40 days (n = 1,394). However, it is very likely that hunters spent substantially less time than indicated for wader hunting, but from PLs it is impossible to estimate how much time exactly they spent. This results from the fact that hunters purchase PLs for different sorts of game birds, including waders, and never take PLs to shoot only waders.

In autumn 2005, marginal hunting bag rates per hunter and per hunting day were as follows: Woodcock: 5, Common Snipe, Great Snipe, Curlew, “other waders” (without any species indication): 10 birds each.

Individual hunting efficiency and bag size

95% and 87% of Woodcock and Common Snipe hunters who had respectively PLs for these game birds, did not succeed to shoot it (but the majority, probably, did not hunt at all) (Figure 2). 85% and 73% of Woodcock and Common Snipe “successful” hunters respectively shot at most 1 to 3 birds (Figures 3 & 4). The maximum individual bag per season was made up of 13 woodcocks, 36 common snipes, 23 great snipes. The average bag for each species was 0.13 ± 0.01, 0. 44 ± 0.02 and 2.78 ± 0.69, respectively (Figure 5).

According to our estimation, the autumn hunting bag in the Moscow Region is made up of about 3,100 common snipes, 1,200 woodcocks, 600 great snipes and 900 “other” waders (probably including also Great Snipe, Jack Snipe and others). Moreover, according to hunting inspectors data, 9 Curlew were shot in the Moscow Region. Information on Great Snipe and Jack Snipe are the least reliable, because PLs rarely included records of shot great snipes, and no PL at all was written out with a shot Jack Snipe. These species were thus probably hunted with PLs that allowed to shoot Common Snipe and “other” waders.

Among various game birds most often shot by hunters in autumn (n = 21,845), Common Snipe ranks in the 7th place after Mallard, Teal, Garganey, Corncrake, Hazel Hen and Coot. Woodcock and all the other waders are not included in the first ten species.

A comparison of our own estimations with those given by the official methods provided by the hunting inspectors department, revealed that the official data for almost all game species are understated by 3.1 times for Great Snipe, by 2.6 for Woodcock and by 2.1 times for Common Snipe and other waders.

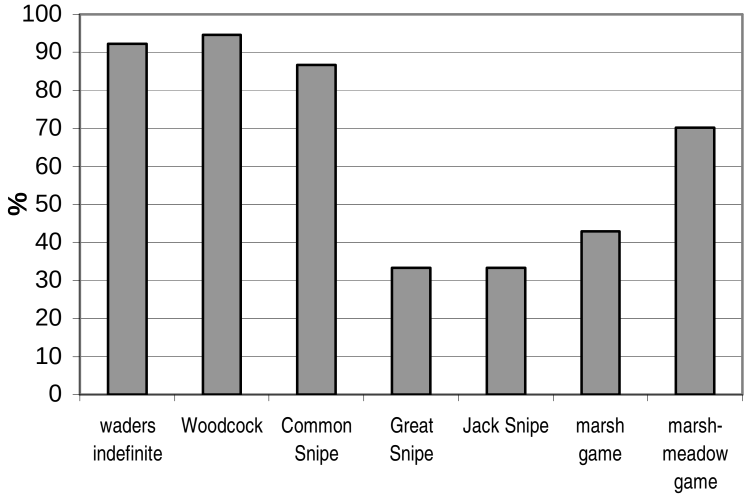


Figure 2: *Proportion of PLs in which no shot waders (different species) and marsh game birds are mentioned for the 2005 summer-autumn hunting season in the Moscow region.*

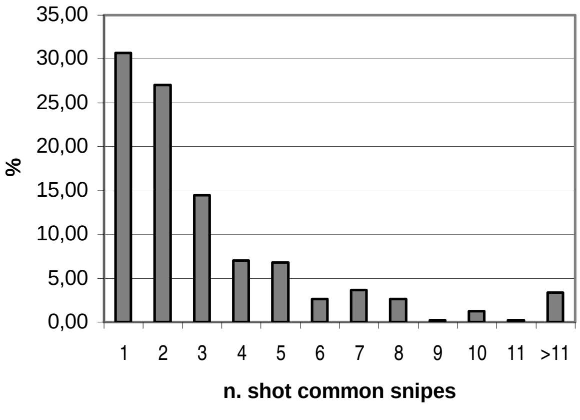


Figure 3: *Proportion of PLs in which at least one shot Common Snipe is mentioned for the 2005 summer-autumn hunting season in the Moscow region.*

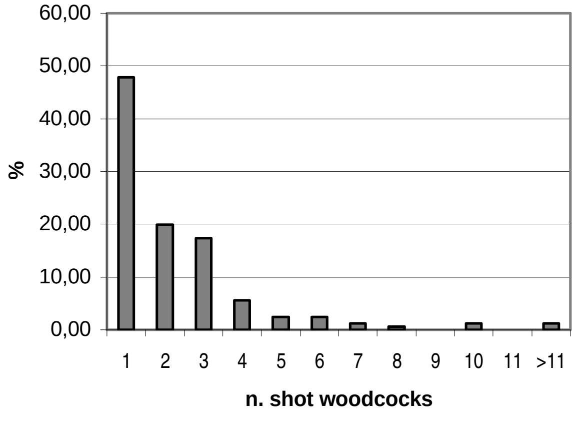
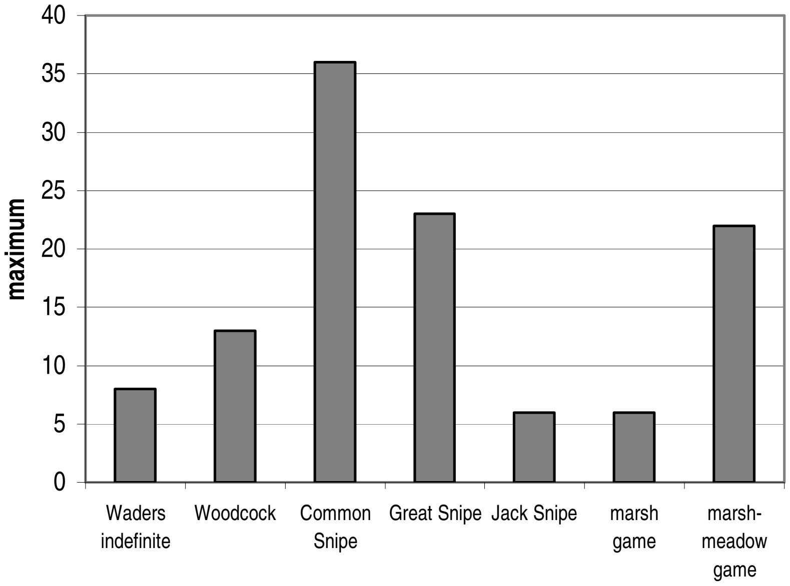


Figure 4: *Proportion of PLs in which at least one shot Woodcock is mentioned for the 2005 summer-autumn hunting season in the Moscow region.*



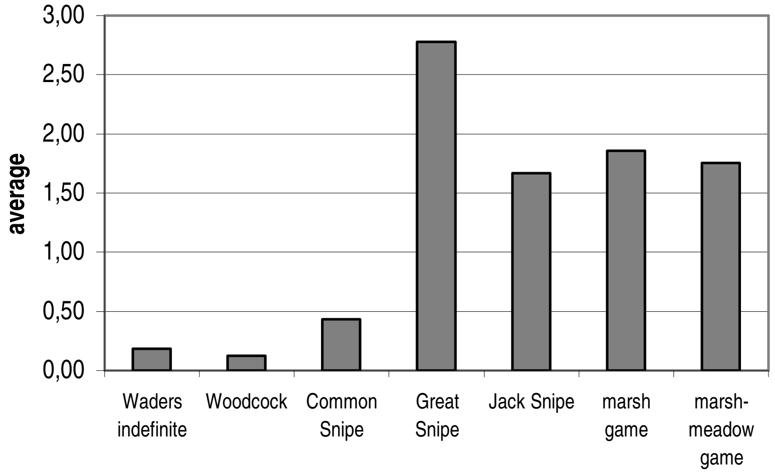


Figure 5: *Maximum and average in waders (different species) and marsh game birds hunting bags / PL for the 2005 summer-autumn hunting season in the Moscow region.*

Conclusion

Our analysis leads us to determine the species composition of shot waders and suggests a really low individual hunting efficiency for game birds and a low individual hunting activity in the Moscow Region. Very similar results can be found in spring and autumn hunting seasons in terms of average bag for 1 PL, average hunting time, etc. Experience reveals that the low hunting efficiency is not only due to low numbers of waders or their low availability, but to a great extent explained by the fact that these small game birds should be of no interest at all for many hunters. To the number of PLs given, the majority of hunters registered in MOOiR did not hunt at all, either waders or other game birds. Those who hunted, spent 4 days per season on average hunting, which made up only 4% of the autumn hunting duration.

On the whole, from PLs it was possible to determine some important statistical hunting parameters for different bird species and their bag sizes (only roughly). We were also able to compare the obtained information with the official statistical data (on the basis of which monitoring of game bird bags is carried out), and to improve the quality of the initial information. In particular, a difference in estimations of bag sizes for several game species could be explained by different approaches to the interpretation of PLs data, different methods of calculation and extrapolation of this information.

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Woodcock spring hunting in Russia in 2006

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Spring hunting of roding Woodcock is very popular in the forest areas of Russia. It corresponds to an old tradition as in other Eastern European countries. For the last 100 years, Woodcock spring hunting in Russia was forbidden only in 1929 and during a short period at the beginning of the 1960's.
Spring hunting was again forbidden in 2006 in several Russian regions (oblasts) owing to avian influenza. All spring hunting was forbidden in 43 regions and Woodcock spring hunting was forbidden in 62 regions. Therefore, roding Woodcock hunting was officially allowed only in 23 regions (Table1).
In some forest-taiga regions, only *Tetrao urogallus* and *Tetrao tetrix* hunting on the leks was opened. Traditional spring hunting of males ducks was opened only in 7 regions (Orel, Irkutsk and 5 regions of Far East). Finally, Geese spring hunting was opened in 16 regions.

Hunting periods

The spring hunting season started on the 1st of April in Orel region (Central area) and ended on the 29th of May in the northern area (Komi Republic). In European Russia, where Woodcock hunting was allowed, the total duration of the hunting season in spring 2006 was 59 days. This is almost 2 weeks less than in the previous years. Remember that Woodcock hunting is only allowed for periods of 10 continuous days in a given region.
In te Asian part, spring woodcock shooting started on the 1st of May in one of the southernmost regions of eastern Siberia (Bouriatia). At Sakhalin Island and in 2 regions of East Siberia, shooting was allowed on May the 5th – 7th. Hunting duration was 17 days in Irkutsk (2 periods), 15 days in Bouriatia and at Sakhalin (2 periods) and 10 days in Krasnoiarsk (1 period).

Number of licenses

In spring 2006, hunters of 19 European Russia regions were awarded about 95,700 licenses for Woodcock shooting – more than twice less than in the previous year. Many licenses were issued in North (45,600 - 47.6%), Central (20,200 - 21.1%), and Volga-Viatka (about 14,700 - 15.4%) areas. Few were issued in Ural (8,000 - 8.4%), North-West (4,400 - 4.6%), and Volga (2,800 - 2.9%) areas.
The greatest numbers of hunters, who received licenses for roding hunting were registered in the Arkhangelsk (15,900) and Vologda (15,600) regions, then in the Nizhni Novgorod (9,400), Yaroslavl' (6,200), Kirov (5,400), Ivanovo (3,600) and Moscow (3,300) regions. In most regions the numbers were quite similar to that of the previous years, however for the Moscow region, the figure was ten times less. In fact, many hunters of the Moscow region were afraid of avian influenza.

Woodcock hunting bags

The majority of woodcocks were shot in the Central Area (45,700 birds - 44%). In the north-western, Volga-Viatka and northern areas, the numbers of shot woodcocks were 10,200, 17,400, and 19,500 respectively (in total about 45% of the total number of shot birds). In the Ural and Volga areas, numbers of shot woodcocks were significantly less [7,500 (7%) and 3,700 (7.2%), resp.] However, both absolute and relative numbers of shot woodcocks increased in these areas.
More than 10,000 woodcocks were shot in the Moscow (22,700), Vologda (13,300), Nizhni Novgorod (11,200) and Yaroslavl' (10,300) regions; 8,900 in the Sakhalin, 6,900 in Novgorod, 6,200 in Kirov, and 3,200-4,000 in each of the Arkhangelsk, Pskov, Briansk, Ivanovo and Penza regions.
In European Russia, 1.09 woodcocks in average were shot per license. This is significantly more than in the previous years. The higher values are observed in the North-West (2.32), Central (2.27), Volga [Penza (1.33)] and East Siberia (1.52) areas. The lower ones appear in the North (0.43), Ural (0.93) and Far East (Sakhalin - 0.91) areas.
Hunters in the Moscow region were the most successful (6.82 shot woodcocks per license). Such a high value is registered for the first time and is probably related to the prohibition of duck shooting and consequent changes in game statistics. Novgorod is in the second position (2.72), followed by Irkutsk [2.33 (an unexpectedly high result for Siberia] and Briansk (2.03). In 2 regions, the mean bag exceeds 1.5 woodcock per license [Pskov (1.79), Yaroslavl' (1.67)]. Yaroslavl' was in the second position in 2005 (1.52). In 4 other regions the mean bag exceeds 1 woodcock per license [Tcheliabinsk (1.39), Penza (1.33), Nizhni Novgorod (1.20), Kirov (1.15)]. In previous spring hunting seasons, Tcheliabinsk hunters were usually leaders (2.32 in 2005).

In spring 2006, a special questionnaire form called "Individual card of roding Woodcock hunting" was distributed to hunters in the Moscow and Ivanovo regions. We collected and analyzed 123 such forms. 37.3 % respondents attended roding only one day out of the 10 allowed, 79.7 % hunted 2 to 5 days, and 12.7 % during all the 10-day spring hunting period. The opinion of 49.5 % was that roding activity was worse compared to previous years, and for 36.7 % it was better (n = 109). 20.3 % hunters didn't shoot any woodcocks in spring 2006. Successful hunters shot 2.4 woodcocks in average (2.43 $\pm$ 0.17). The maximal spring bag was 15 woodcocks for one hunter. Losses of wounded birds accounted for 23.7 % of shot birds, i.e. 0.61 $\pm$ 0.08 woodcock lost per hunter.

Final estimation of Woodcock spring bag size in European Russia in 2006 is 104,100 birds. This bag size is significantly less than the estimations of the 1996-2005 period: between 140,000 and 165,000 woodcocks. The total size of the hunting bag in all of Russia was around 114,000 woodcocks, including the Asian part. Of course, this is less than usual, because hunting was forbidden in most regions. On the opposite, individual bag size is much larger than in the previous years in the most of regions. An explanation could be the wide-scale restrictions of waterfowl shooting due to the risk of avian influenza. Thus, hunters received licenses only for woodcock shooting, and therefore the bag size reflects the shooting results of a greater number of “woodcock specialists”, a part of them being usually only duck hunters.

Table 1: *Woodcock spring hunting in Russia in 2006 (according to official information of Russian Ministry of Agricultural).*

Official Number	Russian Region (oblast)	Period of hunting*	Hunting bag (thousands woodcocks)	Federal regions
1	KARELIA	30.04-15.05	1,93	North-West
2	KOMI	05.05-29.05	0,35	
3	ARKHANGELSK	30.04-16.05	4,0	
4	VOLOGDA	29.04-10.05	13,2	
5	KALININGRAD	forbidden	0	
6	ST-PETERSBURG	forbidden	0	
7	MURMANSK	forbidden	0	
8	NOVGOROD	29.04-08.05	6,85	
9	PSKOV	29.04-08.05	3,36	
10	BELGOROD	forbidden	0	Central
11	BRIANSK	14.04-23.94	3,28	
12	VLADIMIR	forbidden	0	
13	VORONEZH	forbidden	0	
14	IVANOVO	22.04-01.05	3,24	
15	KALUGA	forbidden	0	
16	KOSTROMA	22.04-01.05	6,0	
17	KURSK	forbidden	0	
18	LIPETSK	forbidden	0	
19	MOSCOW	14.04-30.04	22,7	
20	OREL	01.04-23.04	0,3	
21	RYAZAN'	forbidden	0	
22	SMOLENSK	forbidden	0	
23	TAMBOV	forbidden	0	
24	TVER'	forbidden	0	
25	TULA	forbidden	0	
26	YAROSLAVL'	22.04-01.05	10,3	
27	BASHKORTOSTAN	forbidden	0	Volga
28	MARI-EL	forbidden	0	
29	MORDOVIA	forbidden	0	
30	TATARSTAN	forbidden	0	
31	UDMURTIA	28.04-08.05	1,85	
32	CHUVASHIA	forbidden	0	
33	KIROV	22.04-08.05	6,18	
34	NIZH. NOVGOROD	21.04-07.05	11,19	
35	ORENBURG	forbidden	0	
36	PENZA	15.04-24.04	3,74	
37	PERM	29.04-14.05	3,63	
38	SAMARA	forbidden	0	
39	SARATOV	forbidden	0	
40	ULIANOVSK	forbidden	0	
41	KOMI-PERM AO	29.04-14.05	0,29	
42	ADYGEA	forbidden	0	South
43	DAGESTAN	forbidden	0	
44	INGUSHETIA	forbidden	0	
45	KABARDINO-BALKARIA	forbidden	0	
46	KALMYKIA	forbidden	0	
47	KARACHAEVO-CHERKESSIA	forbidden	0	
48	NORTH OSETIA	forbidden	0	
49	CHECHNIA	forbidden	0	
50	KRASNODAR	forbidden	0	
51	STAVROPOL'	forbidden	0	

52	ASTRAKHAN’	forbidden	0	
53	VOLGOGRAD	forbidden	0	
54	ROSTOV	forbidden	0	
55	KURGAN	forbidden	0	**Ural**
56	EKATERINBURG	forbidden	0	
57	TUMEN’	forbidden	0	
58	CHELIABINSK	26.04-05.05	1,73	
59	KHANTY-MANSISK	forbidden	0	
60	YAMALO-NENETSK	forbidden	0	
61	BURIATIA	forbidden	0	**Siberia**
62	ALTAI REPUBLIK	forbidden	0	
63	TYVA	forbidden	0	
64	KHAKASSIA	forbidden	0	
65	ALTAI KRAI	forbidden	0	
66	KRASNOJARSK	05.05-14.05	0,25	
67	IRKUTSK	06.05-22.05	0,90	
68	KEMEROVO	forbidden	0	
69	NOVOSIBIRSK	forbidden	0	
70	OMSK	forbidden	0	
71	TOMSK	forbidden	0	
72	CHITA	forbidden	0	
73	TAIMYR	forbidden	0	
74	UST’-ORDYNSKY	forbidden	0	
75	EVENKIA	forbidden	0	
76	PRIMORIE	forbidden	0	**Far-East**
77	KHABAROVSK	forbidden	0	
78	AMURSKAYA	forbidden	0	
79	KAMCHATKA	forbidden	0	
80	MAGADAN	forbidden	0	
81	SAKHALIN ISLAND	12.05-21.05	8,88	
82	JEWISH REPUBLIC	forbidden	0	
83	KORIAKSKY	forbidden	0	
84	CHUKOTKA	forbidden	0	
85	YAKUTIA	forbidden	0	
Total			**114,09**	

* Total period of hunting, including all districts of this region. In every district hunting season opened only during 10-days period and sometimes less.

Some results of Woodcock survey during 2006 in Belarus.

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This year the APB-Birdlife Belarus (NGO Akhova Ptushak Belarusi) and the Institute of Zoology continued the monitoring survey of woodcock on the territory of Belarus. Roding census took place at 60 listening points located in 10 squares (12x12 km) during May – June. Censuses were carried out during 120 minutes at dusk. Woodcock ringing and night counts were undertaken during autumn migration.

During the breeding season roding males were recorded in all listening points. In total 627 contacts with roding males were registered at 60 census points. The average number of woodcocks was 10.5 per 2 hours. Maximum contacts at one point were 35. The occupation rates of the high and low abundance sites were 0.717 and 0.283 respectively. Values of high abundance sites and the average number of contacts were less than in 2005. The data collected in 2005-2006 are presented in Table1.

Woodcock ringing and the study of their migration were carried out in the Berezinsky Reserve vicinities. The study period was 15 September – 31 October. This autumn season was very droughty and a few feeding birds were observed during night trips. Duration of a night trip was about 2 hours. We recorded 172 feeding birds during 40 night trips and 46 woodcocks were caught and ringed. Passage dynamics according to records of nocturnal contacts is given in Figure 1. Age ratio (juv/ad) among caught woodcocks was 1.3 and thus 56.5% caught birds were juveniles. Passage dynamics of Woodcock and age-ratio of caught birds according to grouped observations by five-day periods are presented in Figure 2. The main peak of passage was observed in the first and second five-day periods of October.

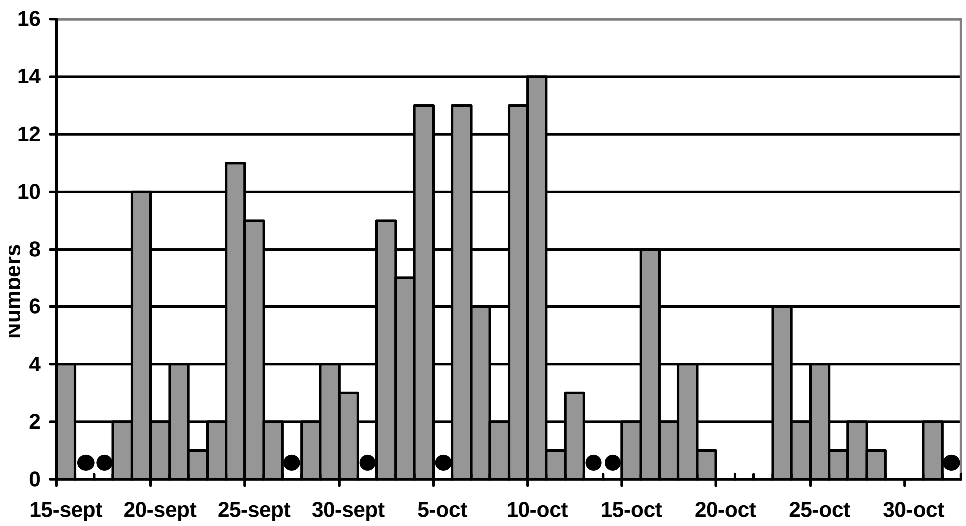

Figure 1: *Passage dynamics of Woodcock according to records of nocturnal contacts in vicinities of the Berezinsky Reserve in 2006. The black dots indicate days without counts.*

Year	2005	2006
N. listening points	60	60
High abundance sites	0.867	0.717
Low abundance sites	0.133	0.283
Average number of contacts	11.6±6.91	10.5±7.56

Table 1: *The proportion of high and low abundance sites, the average number of contacts during two-hour counts.*

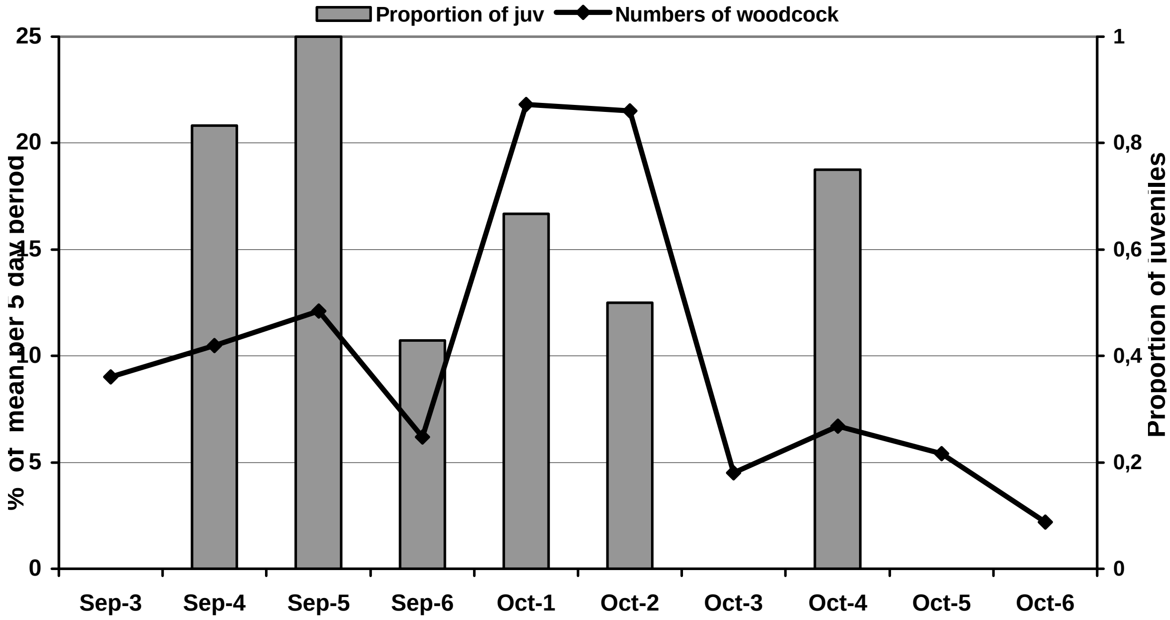

Figure 2: *Passage dynamics of Woodcock and age-ratio of caught birds. Data grouped in five-day periods.*

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Spread of the Woodcock *Scolopax rusticola* to Finnish Lapland

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Historical review

The spread of the Woodcock *Scolopax rusticola* to northern Finland has been documented by Merikallio (1958) and von Haartman *et al*. (1963 – 1972). The local bird faunas by Rauhala (1980, 1994) for the Kemi – Tornio area and Seppänen (1999) for Kuusamo provide a more detailed local picture.

As far as one is able to trace back in our ornithological history the Woodcock seems to have been present in the area between the cities of Oulu and Tornio on the shores of the Bothnian Bay. The earliest record from Lapland, the northernmost Finnish province, was made in the municipality of Simo in 1906. In 1944 3 – 4 roding males were seen at Kemi, Ruonanoja. In the late 1950s the range of the Woodcock encompassed the shores of the Bothnian bay up to Tornio, but according to Merikallio (1958) the species had recently increased markedly there. At Alatornio the Woodcock was recorded breeding in 1952. According to Rauhala (1980, 1994) it seems that the old population estimates from the Kemi – Tornio area had been too cautious. Nowadays the Woodcock is a scarce breeder there, with the observations concentrating on the coast. In 1994 the local population was estimated at 300 "pairs".

At Kuusamo the first Woodcocks were recorded in 1962 and 1963, the following ones in 1970 (2), 1971 (1), 1975 (2) and 1978 (1). In 1983 at least five birds were recorded, from 1984 there is a mention that a probable Woodcock has been recorded roding already "for years", and from 1986 there is one observation. As from the year 1988 the numbers recorded have increased markedly (Seppänen 1999).

From the area of the Lapland Ornithological Society the first observation was made at Kittilä in 1929 and the next one at Rovaniemi in 1937. At Rovaniemi Woodcocks were observed in the summers of 1954 and 1956 (3), and twice in the autumns in the years 1954 – 1955. In addition to this we have Veikko Salkio's very general mention of the Woodcock being "regular" (1 – 2 pairs) in the Pyhätunturi National Park on the border between the Kemijärvi and Pelkosenniemi municipalities. These observations indicate that the Woodcock began to colonise the Rovaniemi area at the Arctic Circle in the 1950s and that the species was spreading along the River Kemijoki up to Pelkosenniemi. With very few local birdwatchers, this spread has been poorly documented.

Recent spread to Lapland according to published data

The conquest of Lapland (here defined as the area of the Lapland Ornithological Society, excluding the Kemi – Tornio area, and the adjacent municipality of Kuusamo at the north eastern corner of the province of Oulu) started around 1970. The first Woodcock record at the Värriö Subarctic Research Station was made in the late summer of 1970 and a roding bird was recorded there in June 1971. The next ones were observed in 1981 and 1985 (Pulliainen & Saari 1991).

During the 1974 – 1979 atlas period the Woodcock was fairly common in the Kemi – Tornio area, it had reached Pello, and in the vicinity of Rovaniemi there were three occupied bird atlas squares, and an outlying point at Salla, two at Enontekiö and one at Utsjoki (Hyytiä *et al*. 1983). The distribution was not markedly different from that mapped by Merikallio (1958) two decades earlier.

In the 1986 – 1989 atlas (Väisänen *et al*. 1998) the Woodcock seemed to have gained somewhat more terrain in southern Lapland along the River Tornionjoki and around Rovaniemi. From western Lapland there were a couple of occupied atlas squares even further north. From Enontekiö there was a new occupied atlas square, likewise at Utsjoki and from a new municipality, Inari. During one decade, little new territory was gained to the north.

According to the " wildlife triangle" data, the autumn distribution seemed to be somewhat wider than during the atlas periods. This may be due to a somewhat later observation period. In 1989 – 1995, the edge of Woodcock distribution was along the River Tornionjoki, and around the River Kemijoki up to the latitude of Rovaniemi. Differing from the data in the bird atlases there were a couple of more northern areas of occurrence around Sodankylä and Kittilä. The autumn population density was however only of the magnitude 0.1 – 0.5 birds per square km of forest (Lindén *et al*. 1996).

Recent spread according to the available data

The recent spread of the species has been followed from about the beginning of the 1970s around Lapland. From the Värriö Subarctic Research Station we have data from 1968 onwards (Saari *et al*. 1999), the faunistic reports of the Ornithological Society of Lapland have been published from 1973 onwards in the magazine "Kokko". From Inari-Lapland we have the data published by Karhu & Osmonen (2000). From Sodankylä we have data provided by Ossi Pihajoki as from 1976 at about the same time as Jorma Halonen started to collect Woodcock observations from the whole of Lapland with an emphasis on the Pello area and its surroundings. Through these available data sets we are able to get a fairly reliable picture of the spread of the Woodcock in Lapland even if it seems abundantly clear that the observations have not all been reported. This is most probably true for at least some municipalities in southern central Lapland (i.e. Ranua and Posio), where the ornithological activity is rather low. However, the distribution at the limits of the range is better covered. These data have been collected up to the end of the year 2002.

According to the faunistic reports it seems that the species has been increasing since the 1970s: according to the 1973 – 1982 report (Jokimäki & Punnonen 1985) the species was regularly seen at Rovaniemi and Pello since 1977, but breeding was not confirmed. In central Lapland Woodcocks were scarcer, and from northern Lapland there were four observations (five birds) at Enontekiö and single observations from Inari and Utsjoki.

In the report covering the years 1983 – 1989 (Jokimäki 1992) birds were reported from central Lapland at Sodankylä, Savukoski and Pelkosenniemi, one in each. According to the 1990 – 1995 report (Rahko & Jokimäki 1998) several Woodcocks were recorded annually in southern Lapland, the species was rarer in central Lapland but was already seen every spring in Sodankylä and over ten roding woodcocks were observed in the summer 1994 at Pelkosenniemi, Vuotos, near the River Kemijoki. During the breeding season Woodcocks were seen at Kemijärvi (2), Pello (9), Ranua (1), Rovaniemi (10) and Savukoski (1).

Observations of woodcocks from different municipalities (map in page 28)

This is a summary of Woodcock observations from each municipality within the territory of Lapland Ornithological Society. These observations have mainly been provided by Jorma Halonen, but include also a few observations found in the literature or archives. Observations mentioned in the faunistic reports are not all necessarily here, since the details have not been sent to Jorma Halonen by original observers.

Ylitornio

From Ylitornio there are nine observations since 1993. Breeding has not been confirmed although it is probable as two birds were observed there through the summer 2002 at Raanujärvi. This area is less studied than Pello which lies further north and thus the relatively few observations at Ylitornio are probably due to less intensive field work there.

Pello

The Woodcock situation at Pello is perhaps best known. The species has been observed there almost annually since 1976: during the 1976 – 1993 period the annual totals ranged between 0 and 6 birds, in 1994 there were already 19 observations and since 2000 the annual numbers have permanently been above ten; in 2002 as many as 33. The first breeding was confirmed in 2002 with a brood at Raanujärvi, Yliperä on 4 June and a nest with four eggs at Alposjärvi on 24 June which had hatched by 7 July.

Rovaniemi

Rovaniemi, as the capital in the province Lapland, holds the largest numbers of bird watchers in the area and is also historically the best studied municipality. The first "modern" observations from Rovaniemi are dated to 1977, when the species was recorded during the breeding season at Viirinkangas, Koivusaari and Korkalonvaara; and in the autumn at Nivankylä. Roding was observed at Viirinkangas and Korkalonvaara. One bird was recorded at Pekkala in 1981, as a "new" species at Vanttauskoski in 1983, at Palojärvi and Ojanperä in 1984, at Saarikylä in 1985, at Sonka in 1995 and at Meltaus in 1997. Nesting was confirmed at Porokari near Lohiniva on 24 July 2002 when a female with young was seen. In the same year also another brood was also reported from Rovaniemi.

Kemijärvi

The species has been reported from Kemijärvi since 1987. After this year the species has been reported in five years, but all the observations have probably not been reported.

Pelkosenniemi

Disregarding the mention of the Woodcock being a regular species in the Pyhätunturi National Park in 1950 – 1977, the first birds seen at Pelkosenniemi were located in 1988, the next ones in 1993. But in 1994 the species was very abundant: it was recorded "daily" with up to 9 – 10 birds seen on the best evenings. The population of the Vuotos area was estimated at 20 "pairs". It seems probable, that the observations from the Pelkosenniemi area have not all been reported since then.

Salla

In addition to the unspecified observation during the first atlas period in the 1970s Woodcocks have been recorded only four times between the years 1987 – 1997 (but see the data from the Värriö Subarctic Research Station).

Savukoski

There are only two records from Savukoski, but the species seems to have been overlooked: one bird was seen in November 1991 and the species bred successfully in 1992. Some records of the species at the Värriö Subartctic Research Station have been made in Savukoski.

Värriö Subarctic Field Station

The observations made at the Research Station are either from Salla or Savukoski, the research station being on the Salla side but only 1 km away from the Savukoski border and the observations are thus best treated in their own category, especially as fieldwork has been carried on regularly since the end of the 1960s. Up to 1985 only four observations were made (Pulliainen & Saari 1991). In the years 1990 – 1993 the Woodcock was recorded annually, but in both 1990 and 1991 the remains of two Woodcocks were found in the nest of the local Gyr Falcon *Falco rusticolus*. Roding Woodcocks are presumably very easy prey for the falcon which may hinder the spread of the Woodcock in the area.

Sodankylä

According to Ossi Pihajoki Woodcocks have been observed regularly during the springs and autumns since 1977 when he himself arrived in the area. Despite this the first specified observation is dated to the year 1983. Since the year 2000 the species has established itself in the area. A brood with small young were seen there between 19 and 27 August. Woodcock probably also bred at Raudanjoki in 2002. During that year a total of six individuals were heard at different sites in Sodankylä on 7 July.

Kolari

Woodcocks have been recorded at Kolari nine times since the year 1993. Breeding was confirmed in 1996 when an adult and four young were seen at Hietanen.

Kittilä

There is an old observation from 1929, the following one was made in 1977. It seems obvious that the observations have not all been reported, since with the record from 2002 there is a mention that the species has been recorded in central Kittilä since 1996.

Muonio

The only observation reported from Muonio : one bird on 29 May 1996 at Kihlanki.

Enontekiö

From Enontekiö, the northwestern "arm" of Finland five observations have been reported between 1975 and 1998. It is a well studied area from the 1950s onwards. These observations may relate to the population in northern Norway, where the Woodcock is a regular species on the coast.

Inari

The first record from Inari was made in April 1982. In the 1980s there were four observations, in the 1990s nine and one in the year 2000. The annual maximum was three observations (in 1993).

Utsjoki

There were two observations from Utsjoki in the 1970s, one unspecified observation in the atlas period 1986 – 1989, and six observations of about 11 birds in the 1990s. The Utsjoki area has been well surveyed for birds for decades. The birds recorded in the 1970s may be from the Norwegian population.

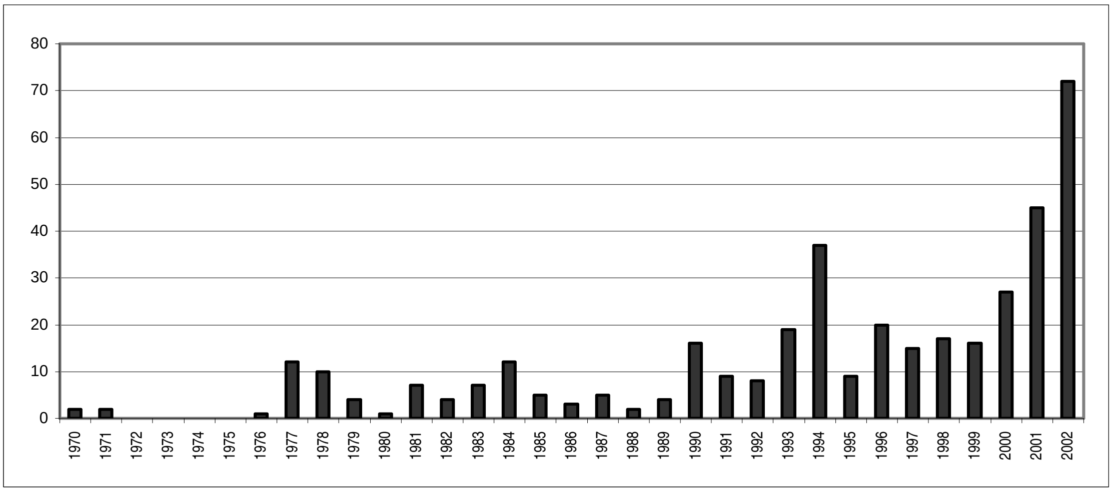

Figure 1: *Distribution of the number of annual Woodcock observations in Finnish Lapland from 1970 to* 2002.

Summary of the 1970 – 2002 observations

The summary of the observations is seen in Table 1. and Fig 1. An increasing trend is seen: in 1970 – 1979 there were specified records of 31 individuals, in 1980 – 1989 of 50, and in 1990 – 1999 already of 166. The number of birds recorded had thus increased 5.4-fold. The first three years of the 21st century indicate that the increase is continuing: the annual average of observations was 47.7 birds compared to that of 16.6 during the 1990s. No change in bird watching intensity can account for this. Lapland has been well surveyed since the 1970s, but although an increase in the number of bird watchers seems obvious, this cannot account for such a big change. The numbers rose abruptly in 1994; at least that year the species was abundant. It is also probable that after a year with high abundance, the number of birds reported decreases as the species is not considered "interesting" any more. No special study of the Woodcock was made in the area that could explain high numbers of Woodcocks in any one of the years.

The arrival and departure dates are shown in Table 2. The arrival dates ranged between 17 March and 8 June, the median being 9 May (n=28), but the species has been so rare for much of the time, that the arrival dates may be unrepresentative for some years. With a small population size, very early birds are unlikely to be seen, especially when the number of bird watchers is low. The last observations in the autumn range between 6 September and 30 November, the median being 10 October (n=19).

Locality\year	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**
Rovaniemi	0	0	0	0	0	0	0	9	3	0	1	2	0	2	8	2	1	2	0	1
Pello	0	0	0	0	0	0	1	0	6	3	0	4	3	4	3	2	1	1	0	2
Kittilä	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Kolari	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ylitornio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Muonio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inari	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0
Utsjoki	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Enontekiö	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
Sodankylä	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Värriö TA	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
Salla	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Savukoski	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pelkosenniemi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Kemijärvi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	**2**	**2**	**0**	**0**	**0**	**0**	**1**	**12**	**10**	**4**	**1**	**7**	**4**	**7**	**12**	**5**	**3**	**5**	**2**	**4**

Locality\year	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**00**	**01**	**02**	**Total**
Rovaniemi	0	0	0	0	0	1	0	1	0	1	0	5	12	51
Pello	6	6	1	6	19	4	9	9	9	7	14	23	33	176
Kittilä	0	0	0	0	1	0	1	1	0	0	0	0	3	8
Kolari	0	0	0	1	1	0	5	1	0	2	0	2	3	15
Ylitornio	0	0	0	2	0	0	0	1	3	1	0	1	3	11
Muonio	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Inari	2	0	0	3	0	1	1	1	0	1	1	0	0	13
Utsjoki	0	0	3	3	3	1	1	0	0	0	0	0	0	13
Enontekiö	0	0	0	0	0	0	0	0	1	0	0	0	0	5
Sodankylä	0	0	0	1	1	0	0	0	0	4	8	11	15	41
Värriö TA	8	2	1	2	0	0	0	0	0	0	0	0	0	17
Salla	0	0	0	0	2	0	0	1	0	0	0	0	0	4
Savukoski	0	1	3	0	0	0	0	0	0	0	0	0	0	4
Pelkosenniemi	0	0	0	1	10	0	2	0	0	0	3	3	0	20
Kemijärvi	0	0	0	0	0	2	0	0	4	0	1	0	3	12
Total	**16**	**9**	**8**	**19**	**37**	**9**	**20**	**15**	**17**	**16**	**27**	**45**	**72**	**391**

Table 1: *Detail of observations*

Year	Arrival	Departure
1971	no data	19.09.
1972	no data	no data
1973	no data	no data
1974	no data	no data
1975	02.05.	no data
1976	24.04.	no data
1977	17.05.	03.10.
1978	19.05.	no data
1979	03.05.	no data
1980	18.04.	no data
1981	10.05.	12.09.
1982	25.04.	no data
1983	06.06.	06.09.
1984	19.05.	30.11.
1985	30.05.	no data
1986	08.06.	25.09.
1987	30.04	04.11.
1988	24.05.	17.09.
1989	02.06.	06.11.
1990	14.05.	10.10.
1991	12.05.	03.11
1992	29.05.	no data
1993	10.05.	19.09.
1994	24.04.	04.10.
1995	09.05.	12.10
1996	05.05.	no data
1997	09.05.	19.11.
1998	27.03.	no data
1999	17.03.	08.10.
2000	07.05.	03.11.
2001	27.04.	20.10.
2002	27.04.	18.10.

Table 2: *The arrival and departure dates for Woodcocks to Finnish Lapland in 1971 – 2002.*

Discussion

The data show that the Woodcock has been increasing in Finnish Lapland from the second half of the 20th century onwards. Around the mid-1950s the species reached the Arctic Circle, but the increase seemed modest and the documentation was hampered by the small number of bird watchers in the area. A second wave of increase started in the beginning of the 1970s, but it was still quite modest. Now the number of bird watchers has increased at least partly due to the activating effects of the atlas censuses. A notable increase was recorded in the mid-1990s and the trend has continued to the early years of the 21st century. Climate change could be a reason for the expansion, but it is not clear whether the northern climate has changed or it is an effect of more favourable wintering conditions or favourable conditions during the migration. The first year of the third Finnish bird atlas (in 2006) shows that the range has been expanding in the north since the 1980s (see www.lintuatlas.fi)

In Sweden a comparison between the data provided by Holm (1970) and Hagemeier & Blair (1997) indicate a notable extension in range during the later part of the 20th century. The first observations from the province of Norrbotten are from the turn of the 19th and 20th centuries. The distribution in Sweden seems to go further north than in Finland. Within Finland the limit of the range runs rather steeply southeast from around Tornio to Kajaani along a so called "continental axis" north of which a more continental climate prevails (see Väisänen *et al*. 1998).

In Norway the Woodcock is distributed from the southern coast to Alta in the province of Finnmark, although owing to observation difficulties its present distribution there is not exactly known (Gjershaug *et al*. 1994). In any case the distribution goes further than in Finland, supposedly owing to a more favourable climate on the Atlantic coast. During the Norwegian bird atlas survey Woodcocks were recorded in nine bird atlas squares in Finnmark in 1977 – 1986. From 1993 onwards the local rarities committee has accepted the following Woodcock records: 1993 (3), 1994 (7, including a nest record at Alta), 1995 (5), 1996 (2), 1997 (15), 1998 (c.10) and 1999 (c.15, when several pairs were thought to breed at Kvalsund, Rappersfjordbotn) (Morten Günther, in litt.). Morten Günther himself observed 3, 4, and 8 individuals, respectively, in 2000 – 2002, in Finnmark. According to Karhu & Osmonen (2000) the numbers of Woodcock have increased in the Paatsjoki (Pasvik) area in eastern Finnmark recently and the species breeds there probably annually.

From the Kola Peninsula in the Lapland Preserve Semenov-Tjan-Shanski & Giljazov (1991) report only three observations of the Woodcock, but I do not have more recent data. This area is an inland site and the possible spread along the coast is thus not felt there.

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Location of Finnish Lapland and municipalities where woodcocks were observed.

News from……. PORTUGAL

Eurasian Woodcock ringing in Azores archipelago (Portugal)

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The Azores archipelago, located in the North Atlantic Ocean (36-39º N, 25-31ºW), comprises nine main islands of volcanic origin, roughly divided into three distinct groups (Figure 1). Since December 2000, with some interruptions, we are developing some studies on Eurasian woodcock (*Scolopax rusticola*) populations at the islands of Pico and S. Miguel (Machado et al., 2002, 2006; Gonçalves & Machado, 2004), in cooperation with the regional hunting administration - *Direcção Regional dos Recursos Florestais*. The main objective is to collect basic data on the biology and ecology of these insular populations in order to contribute to their hunting management and conservation.

S. Miguel island, located in the oriental group (see Figure 1), is the largest (760 km^2) and the most populated of the archipelago. Hunting of woodcocks has been forbidden in this island for more than two decades, due to an apparent decrease in its population. Pico island, in the central group, is the second largest in the archipelago (433 km^2) and woodcock hunting was never stopped.

Birds' nocturnal capture and ringing, during autumn and winter, was initiated in 2000 in Pico island and in 2003 in S. Miguel island. Birds were captured using the method developed by Gossmann *et al*. (1988): birds are spotted at night in the pastures with a spotlight and caught with a hand net. The objectives were to have birds (besides those captured during the hunting season in Pico island) for biometric studies and blood samples for a genetic study that is still underway, and to see whether recoveries could provide more information about birds movements. For this latter purpose, the juveniles observed and captured by hand during the breeding season were also ringed. Therefore, ringing is being done according to opportunities and not with the main purpose of ringing a maximum number of birds each year. The Portuguese Ringing Center (*Instituto de Conservação da Natureza*) supplied the metal rings.

The age of fullgrown birds was determined by the analysis of the wing moult stage (Clausager, 1973).

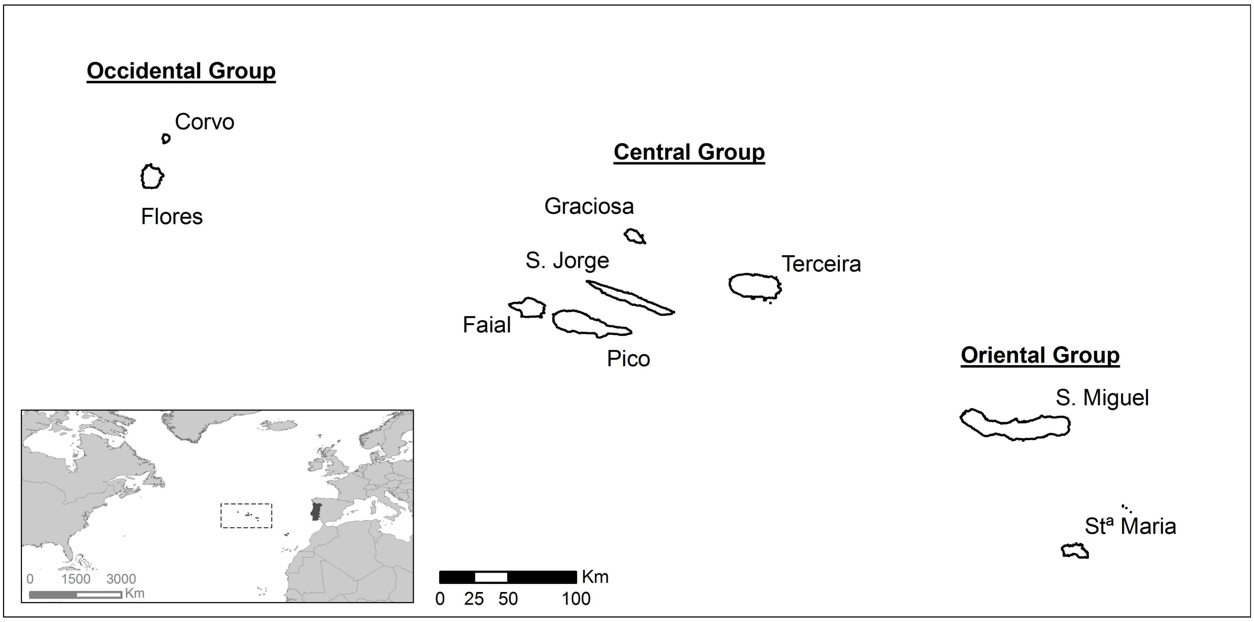

Figure 1: *Location of the archipelago of Azores (Portugal) and the relative position of its islands.*

Ringing results

From 2000 to 2006, a total of 65 birds were ringed in the archipelago (Table 1):
- 51 birds in Pico island: 18 adult birds, 13 young birds and 20 juvenile birds;
- 14 birds in S. Miguel island: 8 adult birds and 6 young birds.

Among fullgrown birds, the percentage of adult birds seems high in both islands (Pico: 58%, 18/31; S. Miguel: 57%; 8/14), compared to values normally observed in the European continent (e.g. Iljinsky *et al*., 2002; Gossman & Ferrand, 2004; Spano & Galli, 2002), but do not differ from values obtained during the hunting season in Pico island (Gonçalves & Machado, 2004; Machado *et al*., in prep.) This can be attributed to a higher survival rate in the Azorean archipelago and a simultaneous low hunting pressure in the case of Pico island. However, another factor can contribute to this result: adult birds can be more numerous in areas with better conditions (abundant food and cover), while young birds occupy poorer, marginal areas (Fadat, 1995); for ringing, we may be searching places where adult birds are found in higher numbers (hunters in Pico could be doing the same).
Until now, only four recoveries were registered (Table 2). Three birds ringed in Pico island were recovered also in the island, by hunters, during the hunting season. All the birds were shot near the place they were ringed, after less than one month to almost two years. One bird ringed in S. Miguel island was recovered in France, also during the hunting season.

Discussion on the French recovery

The Eurasian woodcock, despite being a migratory species in most of its distribution area, is considered to be a resident breeding species in the archipelago of Azores (Godman, 1870; Hartert & Ogilvie-Grant, 1905; Chavigny & Mayaud, 1932; Bannerman & Bannerman, 1966; Ferrand & Gossmann, 2001). The distance between the eastern island of the Azorean archipelago (Santa Maria) and the nearest point on the European continental coast (Cabo da Roca, also in Portugal; França *et al*., 2003) is approximately 1600 km which represents a great distance to fly above water. The number of woodcocks ringed in Azores is very small when compared to the millions of woodcocks that, in Eurasia, migrate each season. Therefore, the recovery in France of a bird ringed in S. Miguel is an exceptional event, but proves, for the first time, that woodcocks actually migrate between the Azorean archipelago and the European continent. The bird was probably born in the European continent and was ringed in the Azores during its first winter; later it returned to the continent and was shot there during the autumn.

Year	Month	Pico island				S. Miguel island			
		Age classes			Total	Age classes			Total
		Adult	Young	Juvenile		Adult	Young	Juvenile	
2000	December	1	2		**3**				
2001	April			4	**4**				
	May			4	**4**				
	June			2	**2**				
	July			1	**1**				
	November	17	9		**26**				
2002	May			4	**4**				
	July			2	**2**				
	September		2		**2**				
2003	January					1			**1**
	March			3	**3**				
2004	January					2	2		**4**
2005	January					2	1		**3**
2006	January					2	1		**3**
	October					1	1		**2**
	November						1		**1**
Total		18	13	20	**51**	8	6	0	**14**

***Table 1**: Ringing data from birds ringed in Pico and S. Miguel islands (Azores, Portugal). Age classes: adult - one year or more of age; young - fullgrown bird less than one year of age; juvenile - not flying juvenile.*

Ringing data			Recovery data	
Date	**Local** (municipality - island)	**Age class**	**Date**	**Local** (municipality - island)
24-04-2001	Madalena - Pico	Juvenile	27-01-2002	Madalena - Pico
12-11-2001	Madalena - Pico	Young	29-11-2003	Madalena - Pico
29-09-2002	S. Roque - Pico	Young	12-10-2002	S. Roque - Pico
21-01-2005	Povoação - S. Miguel	Young	10-10-2005	Dornes - Nièvre (France)

***Table 2**: Recovery data from birds ringed in Pico and S. Miguel islands (Azores, Portugal). All the recoveries were made during the hunting season. Age classes: young - fullgrown bird less than one year of age; juvenile - not flying juvenile.*

Preliminary results from genetic studies pointed to a restriction in the gene-flow between the Atlantic islands (archipelagos of Azores, Madeira and Canaries) and the continent, between the archipelagos and even among islands of the same archipelago (P. Cardia *et al*., unpubl. data). The Azorean archipelago stretches over more than 600 Km (see Figure 1): the occidental group (Flores and Corvo) is separated from the central group (Faial, Pico, S. Jorge, Graciosa and Terceira) by a channel 230 km wide; Terceira is separated from the eastern group (S. Miguel and Santa Maria) by a passage 140 km wide (Bannerman & Bannerman, 1966; França *et al*., 2003). Taking also into account the fact that, to our knowledge, an increase in the number of woodcocks seen during autumn and winter, by comparison with other seasons, was never reported, and that among the birds ringed in Pico (whose numbers are higher than those ringed in S. Miguel), none was recovered outside the island, we think that the number of birds that can reach annually the Azorean archipelago, coming from the European continent for wintering, is actually very small. The western group (where S. Miguel island is included) will present a greater chance of an

event of this kind, but its annual frequency is unknown. Birds born in the archipelago most probably stay there all the time.
This pattern of occurrence, concerning the continental migratory woodcocks, should be comparable to that presented by other migratory bird species, that winter in very small numbers in the Azorean archipelago, coming from the European continent, and do not breed in the archipelago, like Jack snipe (*Lymnocryptes minimus*) or Lapwing (*Vanellus vanellus*) (Hartert & Ogilvie-Grant, 1905; Bannerman & Bannerman, 1966; pers. observ.).

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Simultaneous census of Woodcock *Scolopax rusticola* in a border region: an applied case for the determination of roding areas across France and Switzerland

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Introduction

Monitoring of woodcock populations based on simultaneous census, as described by Mulhauser (2002), provides a complementary approach to a large-scale survey, which is carried out at listening points according to proven methodology (Ferrand 1989) and is commonly applied in many European countries (Gossmann & *al*. 2005, Estoppey 2003, Machado & *al*. 2006). However, the main purposes of simultaneous census are to determine the surface of the roding area and to locate the center(s) of woodcock display activity. This amount to drawing up the cartography of breeding areas.

The success of such a method depends on a good sampling plan and requires many observers and an important preliminary organization. An exercise was carried out in a French-Swiss experimental roding area in Jura during June, 2006. Census results across a border are interesting to expose, given that such regions are often problematic to studies on much wandering species.

Study area

Located in the central part of the Jura arched chain, the whole study region is made up of 4 administrative entities : from west to east, Joux de Jougne (Jougne commune, Doubs Department, FR), Bois de La Joux (Les Hôpitaux-Vieux commune, Doubs Dpt.), Joux de La Limasse (Baulmes commune, Canton Vaud, CH) and Combe des Chédys (L'Auberson commune, Vaud).
The surface area of the forested massif corresponds to some 10 square kilometers (Figure 1). Its southern edge is made up by The Côte d'Angle, a slope forest which extends from Jougne village (Doubs dpt.) to the Aiguillon pass (Vaud). The highest point is above the pass, at 1320 meters, between Baulmes and L'Auberson communes. The 1130 m. height represents the lower limit in the south-western and north-eastern parts of this basin-shaped forest.

The most widespread vegetal association is beech-fir formation (*Abieti-Fagetum typicum*). On slopes and north-facing areas, it is sometimes succeeded by subalpine beech woods (*Aceri-Fagenion*). In small cold basins, mostly in France, it is completed by beech wood with fir tree and fern (*Abieti-Fagetum polystichetosum*) and by calciphilous silver fir forests (*Adenostylo-Abietetum)*, with a good presence of overlaying blueberry, particularly in Corbet wood (L'Auberson, CH). In high Bois de La Joux and northern Joux de La Limasse, most fields are occupied by wooded pastures.

Methods

Sampling plan

In the whole studied massif, 50 stations were predefined (Figure 1). Usually these are 500 m equidistant from each other. Ideally, the sampling grid should look like a honeycomb weave to fulfill equidistance requirement, but the final point choice is motivated in field by both topography and plant cover. Indeed, bird-watchers will preferably stay in clearings, tracks or openings to make woodcock listening and watching easier. The aim is to occupy all points during the same evening. In the Jura Mountains, since the male roding activity is more intensive from mid-May to end June, the simultaneous census must take place at that time.

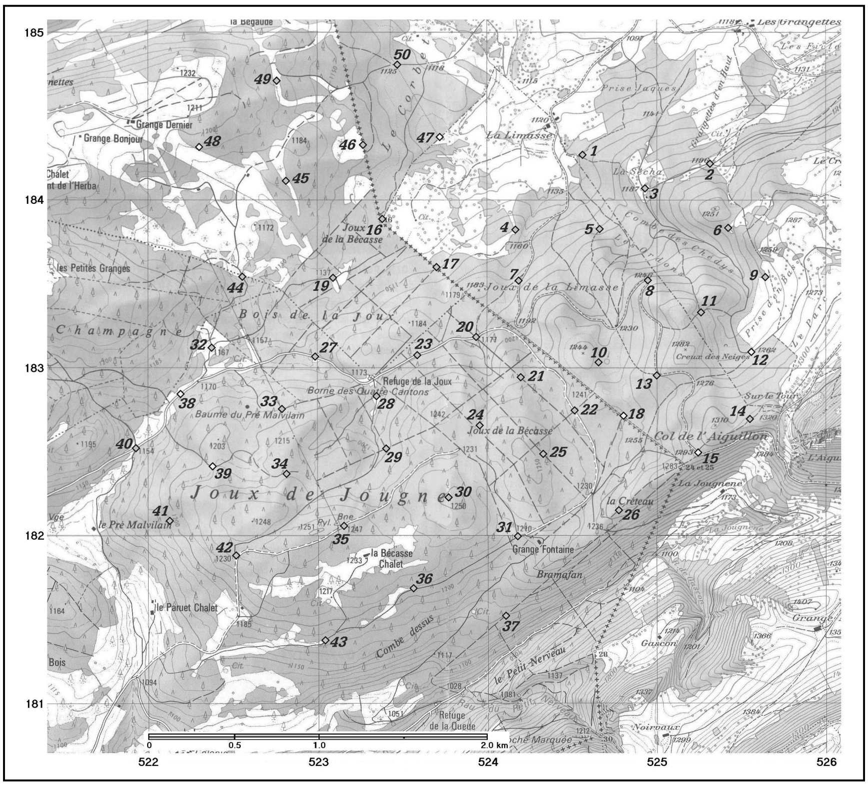

***Figure 1:** Location of the 50 stations in the study area.*

Census

This is conducted during sunset roding; the length was set to 115 minutes for the Jura chain. The beginning and the end of the census were delayed each week throughout the study time (30 minutes delay in 7 weeks).
During the roding, each observer records the contacts, their moment to the nearest second and the flight directions. This allows to know with satisfactory precision how many woodcocks are flying over the massif at the same time.

Song recording and analysis

In addition to defining the limits and center of the roding area, recordings of woodcock songs were performed to identify each individual bird, at two listening points about 1 kilometer apart on June, 7th. One of these stations was also monitored during the whole breeding season. Individual birds can be identified thanks to song characteristics inferred from sonograms, especially the length of "tsît" high-pitched call as well as the interval between two "tsît" calls (Ferrand 1989; Mulhauser & Zimmermann submitted). This allows to define how many males fly around the same area.

Outlining the roding area

The delineation of the roding area is depicted by the density map of contact registrations. Once the forest massif has been divided into 1 hectare squares, the average contact number ($\tilde{N}c$) is calculated by interpolation for all squares. The mean density values are given by the average contact number (Nc) for those stations (N_iS) located 400 meters around each 1 ha. square: $\tilde{N}c = \Sigma Nc_i / N_iS$

The 400 m. radius length is selected since it corresponds to a circle of about 50 hectares, which is well representative of the area covered during the evening by a roding woodcock (Ferrand, 1989).

The calculation used to obtain the contact density map is illustrated in Figure 2. A large series of average contact numbers is obtained. To make the map easier to read, these are grouped into 6 abundance classes (Table 1).

The null class indicates the woodcock absence and allows to figures out the border for the roding area. Tests performed on other roding areas in the Swiss Jura Mountains in 1999 and 2000 show that listening points in open zones located beyond 250 m. from a forest massif were not flown over by woodcocks in 95% of cases (Mulhauser 2002). Mostly, when the forest was overtaken, birds turned to come back to the roding area. The 5% remaining cases involved either birds close to the forest but far from the observer, or woodcocks actually regaining or leaving the roding area.

Class	Number of contacts	Abundance category
0	*Ñc* = 0	Absence
I	0 < *Ñc* ≤ 1	Very low
II	1 < *Ñc* ≤ 4	Low
III	4 < *Ñc* ≤ 12	Medium
IV	12 < *Ñc* ≤ 20	High
V	20 ≥ *Ñc*	Very high

Table 1: *Classification for the number of contacts Ñc and proposed abundance categories.*

Results

The roding area and its characteristics

The roding area in La Joux-La Limasse forest has been outlined from the simultaneous census organized on 7th June, 2006 based on some 40 listening points. However, a second survey on 5 additional listening points, carried out on 15th June, was needed to confirm the northern edge. Finally, over the 50 stations foreseen in the sampling plan, only 6 could not be watched. On the other hand, all bordering stations were watched, which is essential to delineate the roding area.

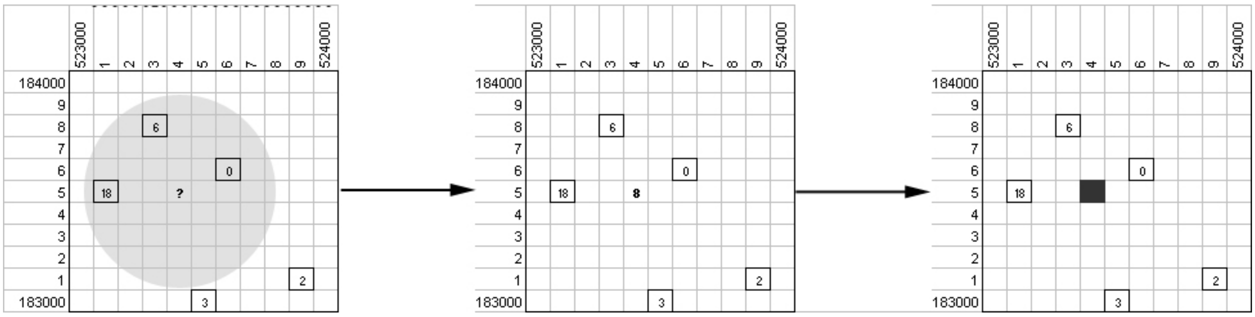

Figure 2: *Method of calculation to obtain the density map (see text).*

Sixteen points were not flown over by woodcocks, among which 13 in woodland borders (Figure 3). 7 were located in wooded pastures on the north-eastern edge of the massif, 3 in beech woods in the southern part, 2 in the slope forest on the south-eastern edge, and 1 on the lower limit of a non-wooded pasture (in the center of Figure 3).

The cartographic result is singular, since there is not one center of roding activity, but rather 4 converging spots, where the contact numbers are significantly higher, with a maximum of 18, 13, 12 and 11 contacts. The total surface area of roding display reaches 854 ha, with only 13 ha showing a high contact density (*Ñc* > 12).

Male individualization at two listening stations

During the simultaneous census, song recordings were conducted at both stations 10 and 24, 800 m. apart in the eastern and south-eastern converging zones. All the recorded contacts – 8 and 9 respectively – with their sonograms could be analyzed, thus leading to differentiate 5 and 3 individuals resp., among which only 2 birds were common at both stations (Table 2).

The woodcock designated as L was active above station 24, but did not fly over the other site, unlike male G which was omnipresent all the evening long. The remaining 6 contacts were ascribed to 4 birds, with 3 in early roding

(from 21h30 to 21h50) and another at the end (from 22h20 to 22h46).
Additional data indicate that for the whole breeding season, 13 distinct individuals were recognized in the eastern converging zone, that is at station 10 and on the surrounding spot (oral com. J.-L. Zimmermann).

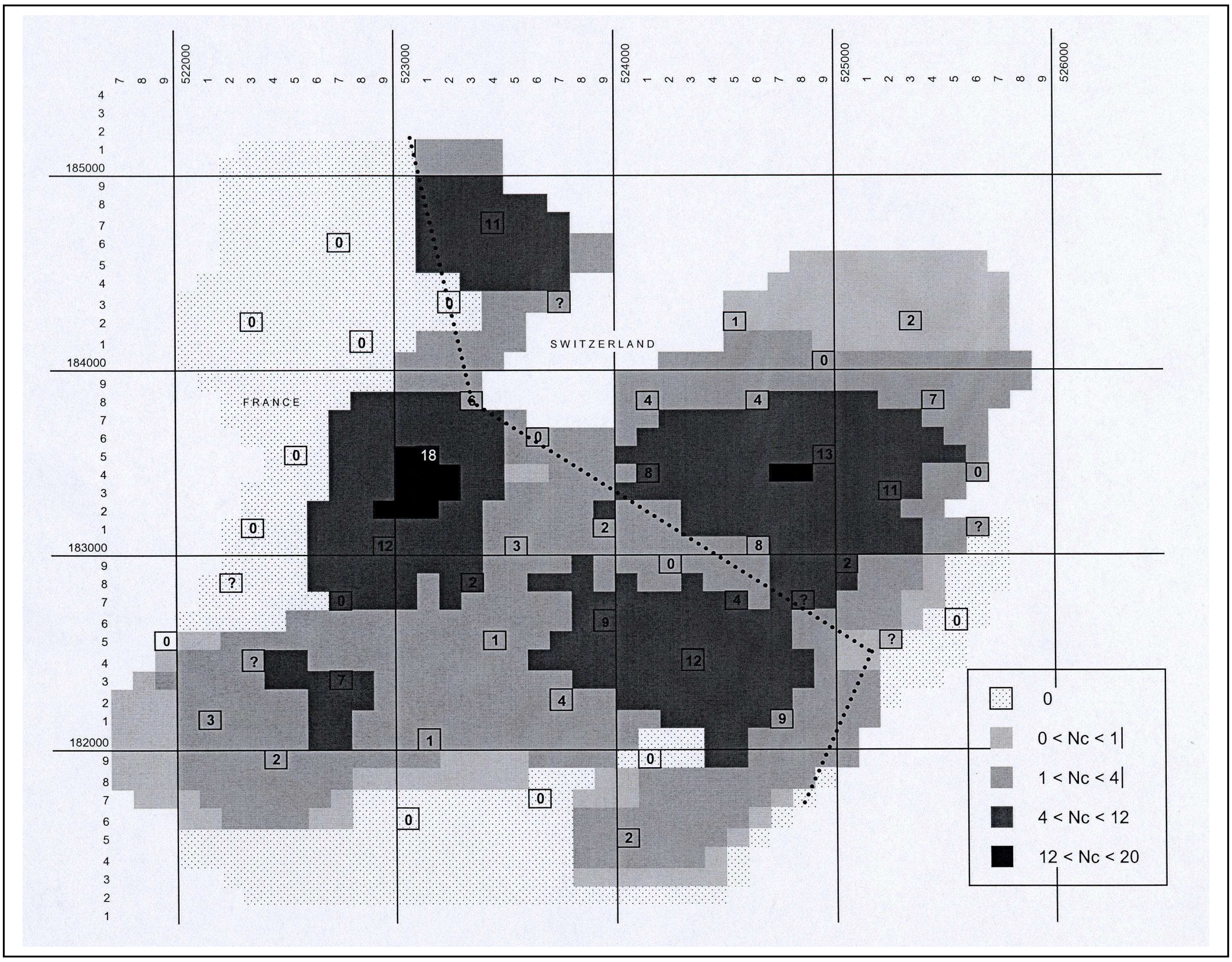

Figure 3: *Roding density in the study area (Nc = number of contacts).*

Contact Time	Male A		Male G		Male I		Male K		Male L		Male O	
Station	*24*	*10*	*24*	*10*	*24*	*10*	*24*	*10*	*24*	*10*	*24*	*10*
21h 31-21h35			⦿			⦿						
21h36-21h40									⦿			
21h41-21h45		⦿		⦿								
21h46-21h50		⦿	⦿					⦿				
21h51-21h55			⦿									
21h56-22h00				⦿					⦿			
22h01-22h05			⦿									
22h06-22h10				⦿								
22h11-22h15									⦿			
22h16-22h20												
22h21-22h25												⦿
22h26-22h30									⦿			
22h31-22h35												
22h36-22h40												
22h41-22h45												
22h46-22h50											⦿	

***Table 2:** Summary of roding males individual identification over stations 24 and 10, during the simultaneous census on June 7th, 2006 (GMT + 2). The dots correspond to a recorded contact of distinct woodcocks; the cell shading represents the range of area occupation by each male (time elapsed between first and last contact of recorded individual).*

Discussion and conclusion

The analysis of the results of the simultaneous census at both stations 10 and 24 allows to confirm that throughout the roding activity, stationary males fly over relatively small areas (40 to 50 ha), as already demonstrated by Ferrand (1989) and Hirons (1983). Only a male minority makes larger journeys, as also described by Hirons & Owen (1982).

The assumption that many woodcocks are well established in the study area can explain the outline of the density map (Figure 3). No single center with high density in the roding area can be determined, as has been observed in other Swiss Jura forests (Mulhauser 2002), but rather four "converging spots" each of which are occupied by distinct birds.

In conclusion, when studying an area across two countries, the simultaneous census provides an effective method to accurately delineate the surface area of roding woodcocks. Repeated at regular intervals, it allows to describe the demographic trend followed by the breeding birds, as the variation in superficy of roding area between censuses is assumed to reflect either a regression, a stability or a progression of the population size in the massif (Mulhauser 2002).

Acknowledgments

We wish to thank all the persons who took part to the simultaneous censuses, specially Caroline Allain, Marinette Bachmann, Thierry Bohnenstengel, Albert Capaul, Alain Chamouton, Jean-Pierre Cosandier, Carole Daenzer, Laurent Delafollye, Bernard Deniset, Xavier Denys, Vincent Gorgerat, Christophe Guinchard, Marianne Kurth, Jeanine Lovey, Alain Mabille, Mickael Mairot, Gilles Maréchal, Françoise Meister, Valentin Métraux, Dominique Michelat, Marie Monney, Cyrille Parratte, Didier Pépin, Xavier Perregaux, T. Poulleau, Jean-Claude Priot, Denise and Pierre-Alain Ravussin, Stéphane Regazzoni, Benoît Renevey, Stéphan Roulet, Philippe Roveretto, Michel Sauret, Fabien

Schneider, Françoise Walther, Emmanuelle and Glenn Yannic, Jean-Lou Zimmermann and other persons we have unfortunately ommitted.

The support in organizing the census by Mr. Emmanuel Renaud and Stéphane Regazzoni from the *ONCFS* (Doubs, France), Didier Pépin (Maison de la réserve de Rémoray, France) and Pierre-Alain Ravussin (Baulmes, Switzerland) was much appreciated. Thank you especially to Jean-Lou Zimmermann for the recordings of woodcock songs.

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News from……. GREAT-BRITAIN

Jack Snipe in Lanarkshire, Scotland 1994-2005

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This short paper summarises some results from a long-term ringing project on Jack Snipe (*Lymnocryptes minimus*), caught during the last twelve autumn and winter periods.

Introduction

Jack Snipe is recorded in wetlands throughout the Clyde area from late September to April every winter (Clyde Bird Reports). Numbers recorded typically peak in November and February with much smaller numbers in mid winter. Most site records are of less than five individuals ,but occasionally counts of ten to fifteen birds have been made.

Prior to this project there had been one other short-term study on Jack Snipe within the Clyde area, finishing in 1980. No recoveries or between winter retraps were generated from this study and none of the work was published.

Our project began in February 1994 and has continued annually ever since. As the project has developed we have spent increasing amounts of time in the field and have used ten different sites. The sites are similar in that they are situated on the urban fringe, are all small semi-natural wetlands (20-40acres) and are open to public access.

The aims of the project are to increase our knowledge of the passage and over winter numbers of Jack Snipe within the Clyde area, to hopefully generate ringing recoveries from wintering and breeding grounds and to establish site fidelity between winters.

Methods

All captures have been made using a 'drag net' method. A minimum of two persons are required but up to six have been used at any one time. Initially a 9m mist net was erected between two poles as normal but carried horizontally and placed onto the habitat. The ringers then walk over the top of the net, avoiding the front panel, aiming to flush sitting birds up under the net. The net is systematically moved and placed until all suitable habitat within the site has been thoroughly checked. Where possible, flushed birds are followed and another attempt to catch them is made. As it is impossible to know where all the birds are in the site, many birds were just missed, typically to the side or in front of the net, so as the project developed we increased the size of mist net used. In October 2000, we switched to a tougher nylon net (whoosh net from BTO) measuring 15mx8m. This immediately improved catch rate and numbers caught. This net was also added in 2001 with a third section of 4m along the trailing edge. Finally, a new black nylon net measuring 20mx20m was made available in October 2005, which is now as large as we can manage.

Catching effort has varied over time but since 2003 it has been consistent with virtually weekly visits from late October until the first week in April.

All trapped birds are fitted with a BTO ring, aged (see Results), weighed and measured, and then released back into the site either by being placed back into cover or released to fly away.

All ringing has taken place during daylight hours, typically starting at 9am. Although catch rate does vary according to weather condition, our best catches are made during windy days.

Results

Captures and capture rates

The following results are based upon a total of 260 captures of 216 individuals. This consisted

of 215 newly ringed and 1 control, generating 13 between winter and 31 same winter recaptures (Figure 1).
Capture rate has varied with the size of net used. Initially a catch rate of 25% was our best, gradually increasing with the larger net size and our increasing experience to 40-50% during 2002-2004, but with the 20m net used in 2005 the catch rate is now 63% on average. It is not unusual for us to catch all the Jack Snipes in the site, typically when fewer than ten are present. However, during peak passage periods many birds are flushed in groups and go uncaught, thus reducing the average catch rate.

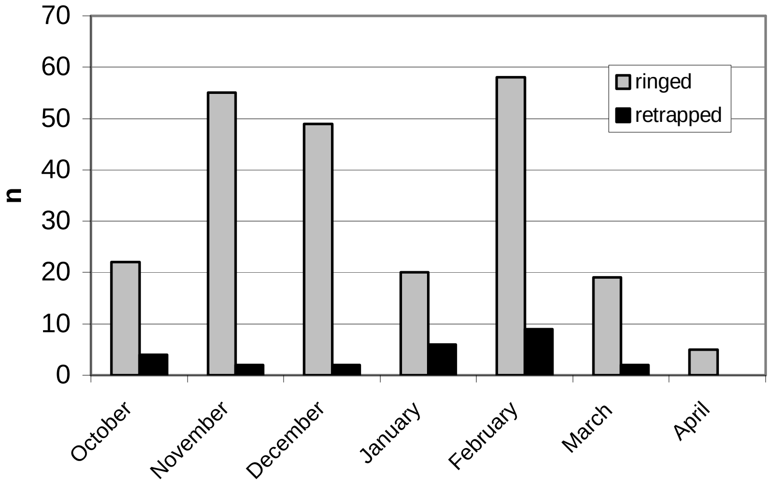

Figure 1: *Numbers of ringed Jack Snipe for each month and subsequent recaptures in the same winter period, in Lanarkshire from 1994 to 2005.*

Ageing of birds

Birds were aged according to the Holarctic Wader Guide (Prater *et al*. 1977) and then from our own experiences of known adult birds caught between winters. The best feature we find is the shape of the outer four tail feathers. In adult birds they are often broad and have rounded tips, in first winter birds these feathers are narrower and have more pointed tips [but not as pointed as shown in Prater *et al.* (1977)]. We also use the size and shape of the marks on the under-tail coverts. Adult birds typically have large round or elongated dark brown spots where as unmoulted juvenile feathers have only faint orange/brown lines or narrow spots. Some first winter birds show contrast between moulted and unmoulted under-tail coverts.

For both of these features it is still sometimes possible to have difficulty in ageing birds when caught singly. On the other hand, when multiple captures are made, permitting direct comparisons to be made, it is often possible to age all birds. Over time and with increased experience we find these features to be reliable and now confidently age virtually all birds.

We have found leg colour to be of little use as it both varies greatly between individuals of all ages and changes throughout the winter period.

The degree of gloss on the wing coverts is also of some use, since adults tend to be brighter, particularly in the late winter/early spring period. However, first winters are not always duller, especially early in the autumn. We have also caught three adult birds in suspended moult with varying numbers of retained primary and wing covert feathers.

Wing Lengths

Wing lengths range from 103 to 125 mm (n = 199 ; Figure 2). Information on wing lengths is included here for interest. Our results show a wider range than that in Prater *et al.* (1977) but we have no birds of known sex.

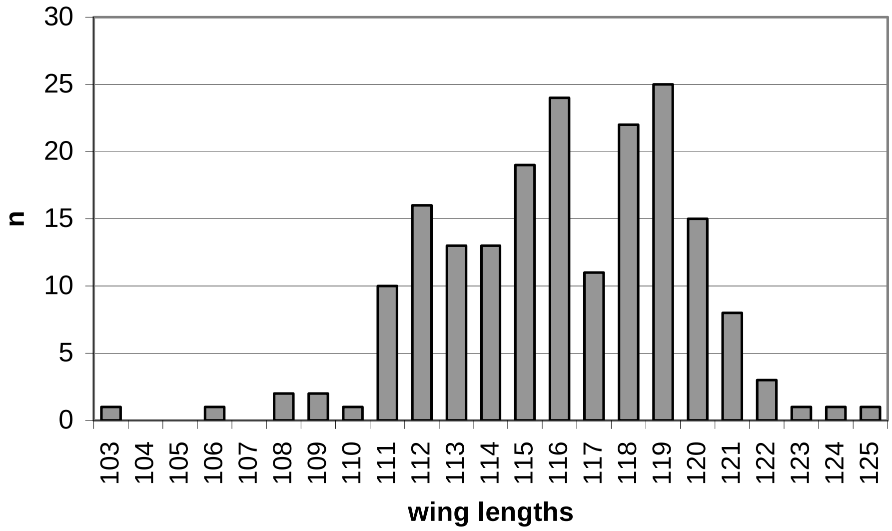

Figure 2: *Wing lengths of Jack Snipe caught in Lanarkshire from 1994 to 2005.*

Discussion

Autumn passage is known to begin here in September but due to other commitments we are unable to start on the Jack Snipe until mid October so some birds will go unrecorded.

Of the birds first caught in October 18% are retrapped again in the same winter (13-49 days), suggesting that some remain perhaps to regain condition or rest prior to onward migration. There is a definite passage period during November and early December with large numbers of birds moving through. Only 4% of new birds first captured during this period are recaptured later in the winter, suggesting a very rapid turnover of birds (less than 7 days). Indeed, of the four individuals this relates to, two may have been on return passage when recaught 85 and 126 days later. There then follows a more settled period in the mid-winter, from late December until the end of January, when not only are far fewer birds present but a much higher percentage are subsequently recaught (30%). These are birds that are in effect wintering at these sites, as some are recaptured several times until late March. February sees a rapid rise in the numbers present as the main return passage gets underway, and with 16% being recaught (7-28 days) it is a slower turnover than in the autumn period. This return passage tapers off during March with only very small numbers remaining into April.

Looking at site fidelity between winters. Out of 216 individual birds handled during the study a total of 12 (5.5%) have been recaught during subsequent winters. One bird was caught in three different winters, giving a total of 13 different between winter recaptures. All birds were caught at the same ringing sites, showing a strong site fidelity for some. However, one bird originally ringed in The Netherlands in April 2002 had clearly used a different return route, since it was caught in Glasgow in February and March 2004 and again in November 2005. We observed no movements between our own ringing sites. The timing of this between winter fidelity however is inconsistent, with only two birds recaught the same month as they were ringed. Birds ringed originally in February have been retrapped in all other months. This suggests that some birds use the sites in autumn or spring or during both passage periods.

With no recoveries away from our ringing sites, we are still unable to comment upon the final wintering or the breeding areas for our birds.

This project will continue and we hope that the increasing interest in this species throughout Europe will lead to more information being gathered on this much understudied bird.

Acknowledgments

I would like to thank all the other ringers for their help in catching these birds, often in very unpleasant weather conditions, as well as the land owners that gave permission to access the ringing sites and to Glasgow City Council for providing the new net.

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News from……. FRANCE

2005-2006 French Woodcock report

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Ringing results

Quantitative ringing results

In total, 4,539 woodcocks were ringed in France during the 2005-06 wintering season (Figure 1). This is the second best result since the founding of the French Woodcock network. Nevertheless, several problems disturbed this season: avian flu with accompanying measures to reduce the risks and strong snow falls in February-march which limited ringing trips. In spite of that, the catching effort was noticeable in the whole of France. The ringing results are particularly good in the north-western regions but also in some inner "departments" like Aube, Loiret and Charente. The catching success rate was 24%, very close to those of the last year (25%).

2004-2005 ringing season in numbers

N. *départements* :	87
N. ringing sites :	1,286
N. ringers :	337
N. nocturnal trips :	2,497
N. contacts :	20,234
N. ringed woodcocks :	4 539
Success rate :	24%
N. direct retraps :	110
N. indirect retraps :	180
N. direct recoveries :	308
N. indirect recoveries:	478
Annual direct recovery rate:	7%
Length of ring wearing time:	29 days

(27 days for direct recoveries <20 km; n=258)

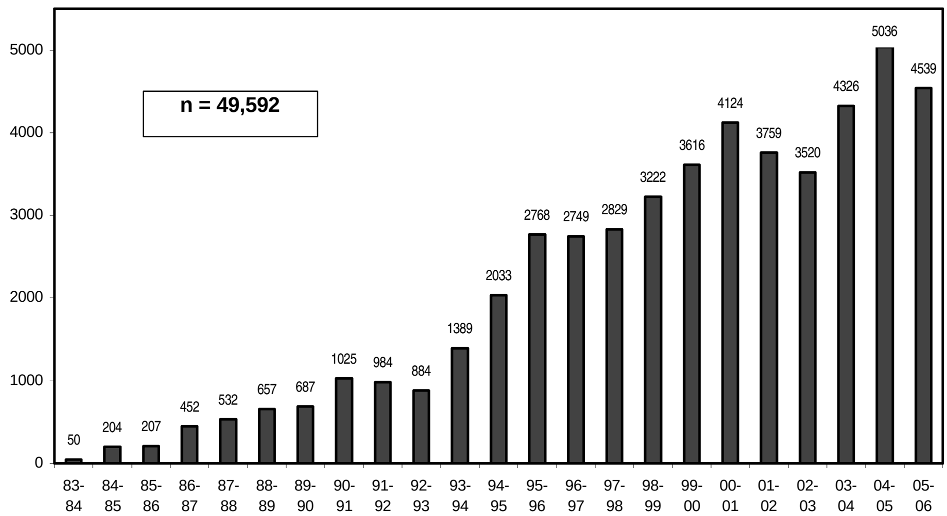


Figure 1: *Inter-annual fluctuations of ringing results.*

Phenology of migration

The preparation of migration in September-October in the north-eastern part of Europe occurred with an especially mild but very dry weather. Then a very cold weather was registered in these regions and pushed the birds to the wintering sites.
Since the end of October an important and early migratory wave reached the eastern part of France and particularly the mountainous areas. But the major migratory flow was registered in all French regions at the end of November – beginning of December. Consequently, the monthly fluctuation of catchings shows a peak in December (Figure 2).
Extremely cold air masses remained from mid-December to mid-February in the north and east of Europe. France, close to these European regions, was not in a cold spell situation although several hard periods must be noted: the last 10 days-period in December, the last week in January and a very cold and snowy period from the end of February to mid-March which probably delayed the spring migration.

Breeding success

As Fadat (1981)* has shown, the age-ratio is related to 2 factors : the breeding success and the hunting pressure. The second one is due to the faithfulness of birds to their first wintering site. Therefore, for a given breeding success and for a given hunting territory, the age-ratio could be low or high depending on the hunting pressure. Of course, if the breeding success is very high or very low, this will have an impact on the age-ratio value, especially in case of low breeding success. But for average values, it is extremely difficult to separate breeding success impact and hunting pressure impact.
To try to solve this problem we suggest not to use the proportion of juveniles in hunting bags or in ringing data but rather to use the number of juvenile woodcocks ringed per hour (JCH) during the ringing trips. The assumption is the following: the higher the breeding success, the higher the number of juvenile woodcocks ringed per hour.
If this assumption is true, spring-summers 2004 and 2005 must have been excellent in terms of breeding success as shown by the high values of JCH (Figure 3). This seems to correspond to our predictions according to weather conditions during the breeding period in Russia. In the same way, 2002 is clearly confirmed as a spring-summer with a poor breeding success. A comparison between the inter-annual variations of JCH and those of the number of juveniles shot per hunting trip could be useful to test our assumption.

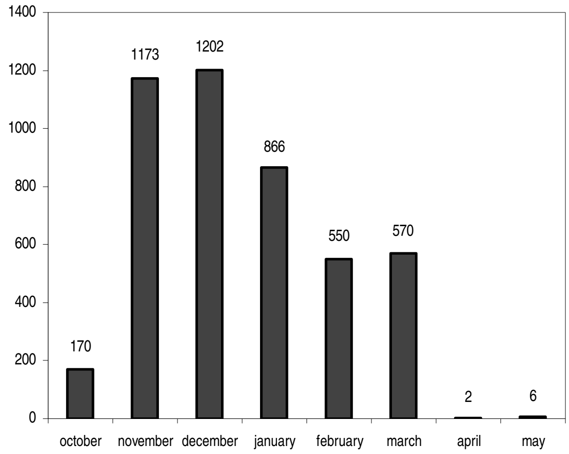


Figure 2: *Monthly fluctuations of catchings during the 2004-05 season.*

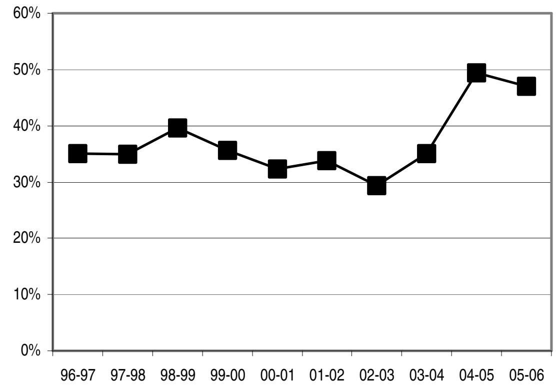


Figure 3: *Inter-annual variations of the proportion of juveniles in ringed woodcocks per hour.*

***Fadat C.** 1981. Age-ratio des tableaux de chasse de bécasses (*Scolopax rusticola*). Signification biologique et utilisation pour la bonne gestion des populations bécassières. Bull. mens. ONC, n° Sp. Scien. Tech., novembre 1981 : 141-172

Ring recoveries

In 2005-06, 20 Woodcock French rings were recovered in foreign countries:

- direct recoveries: 3 in Russia, 4 in Spain and 1 in Morocco
- indirect recoveries: 8 in Russia, 1 in Spain, 1 in Sweden, 1 in Croatia, 1 in Great-Britain

In 2005-2006, fewer recoveries were registered in Russia compared to previous years. This is probably due to restrictions in spring hunting in the context of avian flu. Indeed, spring hunting was forbidden in 2006 in 62 regions (Oblast), mainly in Siberia but also in European Russia : Leningrad, Vladimir, Ryazan, Smolensk, Tver, Tula regions where woodcock spring hunting is popular.

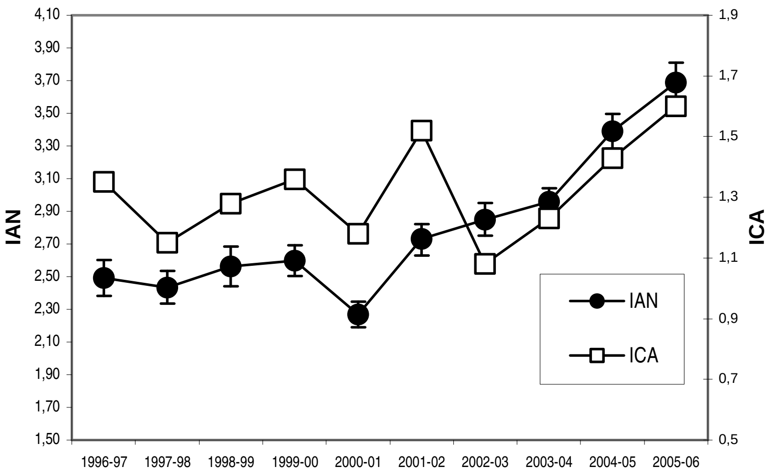


Figure 4: *Annual fluctuations of the number of contacts/h during ringing trips (IAN: nocturnal index of abundance) and hunting trips (ICA: hunting index of abundance; Source:* Club national des bécassiers*).*

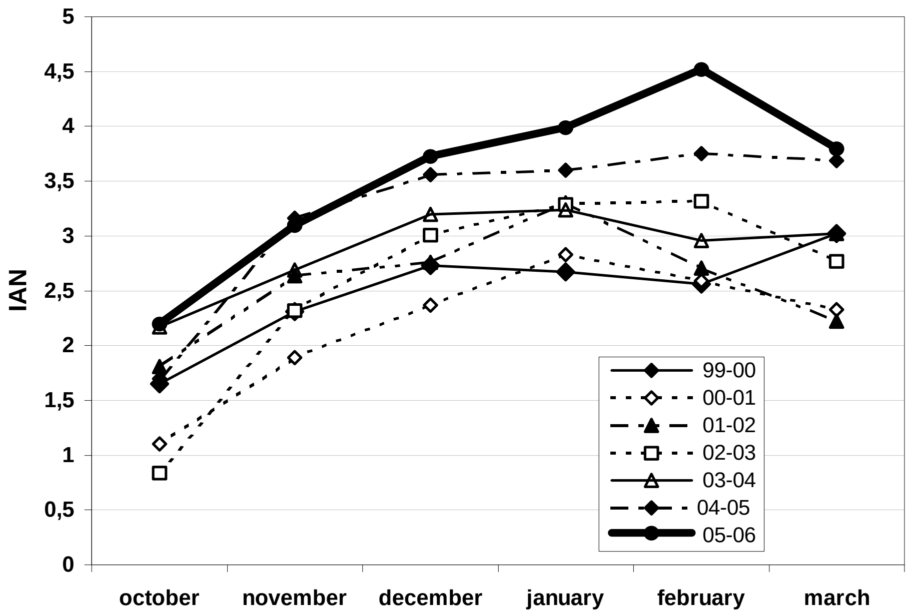


Figure 5: *Monthly fluctuations of IAN from 1999-00 to 2005-06.*

Monitoring of abundance in migratory and wintering period

Two indices allow to monitor Woodcock migratory and wintering numbers in France : the mean number of contacts/hour (IAN) registered during ringing trips and a hunting index [ICA : number of seen woodcocks / standardised hunting trip (duration = 3.5 hours)] collected by *Club national des bécassiers*.

Both indices are imperfect especially since they are not based on a sampling design. A relative homogeneity in terms of territory and of catching effort characterises the hunting index. This is not the case for ringers whose main objective is to optimise their ringing trips to mark as many woodcocks as possible. Consequently, they tend to search the sites where Woodcock abundance is the highest. On the other hand, the efficiency of hunters can vary from one year to another according to the quality of their pointing dogs when skilled ringers are equally efficient in finding woodcocks from one season to another. Joint use of the two indices seems to us the best way to estimate a trend.

In 2005-06, IAN was estimated from 20,300 contacts noted during 5,700 hours and ICA from a sample of a bit more than 1,000 hunters and 30,000 hunting trips. For this season, IAN amounts to 3.69 and ICA to 1.60 (Figure 4). These are the highest values of the last 10 year-period which confirm the high densities of migratory and wintering woodcocks during the 2005-06 season.

The trends of IAN and ICA show a significant increase for IAN (p-value < 0.0022; non-parametric Spearman test) but stability for ICA (p-value = 0.296). The increase trend of ICA is confirmed by a non-parametric Jonckheere-Terpstra test (p-value = 0.0001).

Of course, the IAN monthly fluctuations show that the 2005-06 values are above those of the last 6 years except in November (Figure 5).

Again in the 2005-2006 season, Woodcock migratory and wintering numbers were monitored in the course of the season. Data were collected every 10 days by electronic mail. The results show that the partial estimates are more and more close to the final values due to an increase in participation of ringers to this survey. During the 2005-2006 hunting season , 3 reports were published to inform administration, hunters and ringers on the Woodcock situation.

Roding results

In 2006, roding censuses took place in 57 *départements* and 865 listening points were visited.

National occupation rate

This rate corresponds to the % of listening points at which at least one roding male was observed (= positive site). In 2006, the value is 22.2 %. This is the highest value registered since 2000.

The high abundance sites ($1 \leq$ n. contacts < 5) represent 14.4% and low abundance sites (n.contacts $\geq$ 5) 7.8%.

Breeding population trend

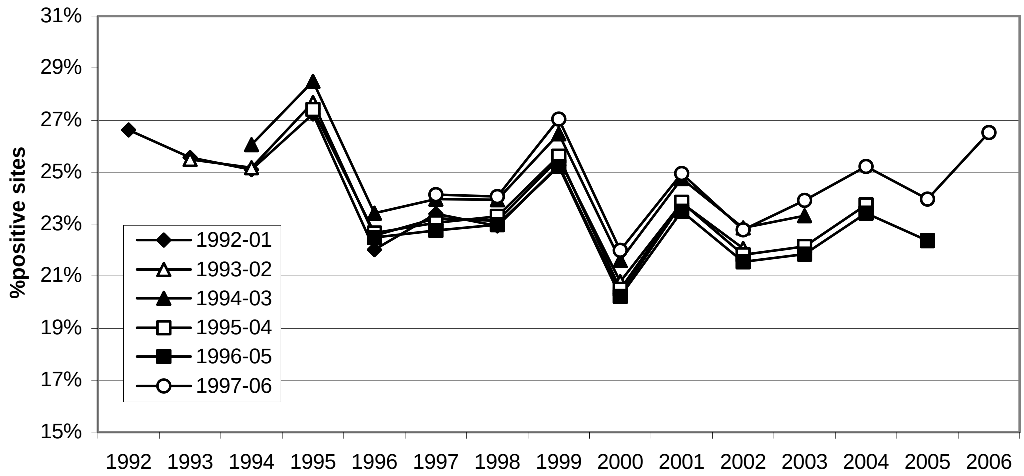
The population trend of the French breeding Woodcock population is analysed every year for the last 10-year period. In total, 49 *départements* censused roding woodcocks without interruption from 1997 to 2006. No trend is detected in the proportion of positive sites (p-value = 0.583 ; Cochran-Armitage test) but a a slight increase (p-value =0.098; Cochran-Armitage test) is noted in the trend of the proportion of high abundance sites in positive sites.

As for the estimation of breeding success we propose a new way to estimate the trend of breeding woodcocks in France. Indeed, we limit the analysis to the last 10 years to keep a spatial coverage as representative as possible of the core of the French breeding area. However, if we only take into account the last 10 years, the data collected previously are not used, which is not very satisfying. Therefore, we propose to analyse and to pool the data by 10 year- sequences in order to get information for a longer period. The figure 6 shows the variations of the 2 indices (positive sites and high abundance sites) for the last 10 year-periods and the table 1 gives the p-values of tests for every index.

Results show that after a significant decrease the proportion of positive sites tends to stabilise (p-values increase) and, in contrast, the proportion of high abundance sites tends to increase significantly (*p*-values decrease). The general pattern therefore remains the same : a reduced by now stabilised breeding area and, at the same time, a concentration of birds in this area. This can be interpreted as a relative stability of Woodcock breeding numbers in France during the 1992-2006 period.

period	1992-2001	1993-2002	1994-2003	1995-2004	1996-2005	1997-2006
p-value (positive sites)	0.009	0.015	0.026	0.079	0.71	0.58
p-value (high abundance sites)	0.55	0.57	0.52	0.116	0.033	0.0098

Table 1: *p-values of Cochran-Armitage tests for % of positive sites and for % high abundance sites / positive sites for the 6 available 10 year-periods.*



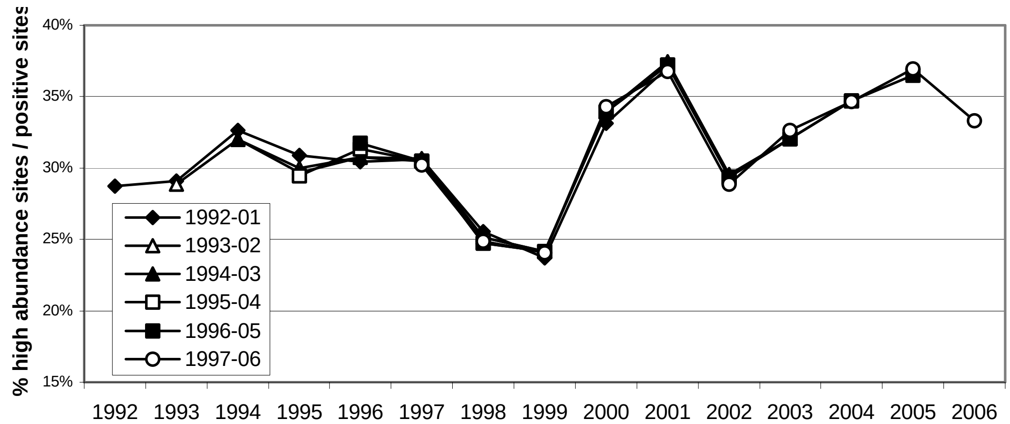


Figure 6: *Inter-annual variations of the proportion of positive sites and high abundance sites/positive sites for the 6 available 10 year-periods.*

Acknowledgments

This report is the result of an important field work carried out by members of the ONCFS/FNC Woodcock network. We thank all of them : professionals of ONCFS, *Fédération départementale des chasseurs* and volunteers. We also thank the *Club national des bécassiers* for allowing us to use the data collected by Club members.

Evaluation of the 2005/06 Woodcock hunting season in France

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During 12 years, members of the *Club national des bécassiers* (CNB; a French Woodcock Hunter Association) have collected information on the Woodcock hunting bags following the same protocol. The following data are gathered every year: information on hunting trips (date, place, numbers of seen and shot woodcocks), weight and sex from a sample of shot woodcocks and, finally, age from a wing collection.
In 2005/06, 1,022 CNB members participated in the wing collection. In total, 9,423 wings were analysed (from 9,993 wings received), 9,308 birds were weighted and 2,011 were sexed. The data were collected in the major part of the Woodcock wintering area in France (Figure 1).

Hunting index of abundance (ICA)

A hunting index of abundance (ICA) was defined as the number of different woodcocks seen during a hunting trip, the standardised duration of which was 3.5 hours (Cau & Boidot, 2005)
In 2005/06, ICA was estimated from the hunting trips of 983 Woodcock hunters. Its national annual value is 1.6 [29,683 trips, 103,982 hours and 47,457 woodcocks seen (12,354 shot)]. This value is the best registered since 1993/94 (Figure 2).

The variations of the ICA monthly values are presented in Figure 3. The 2005/06 ICA monthly values from October to December are clearly the highest ones obtained in the last 10 years.

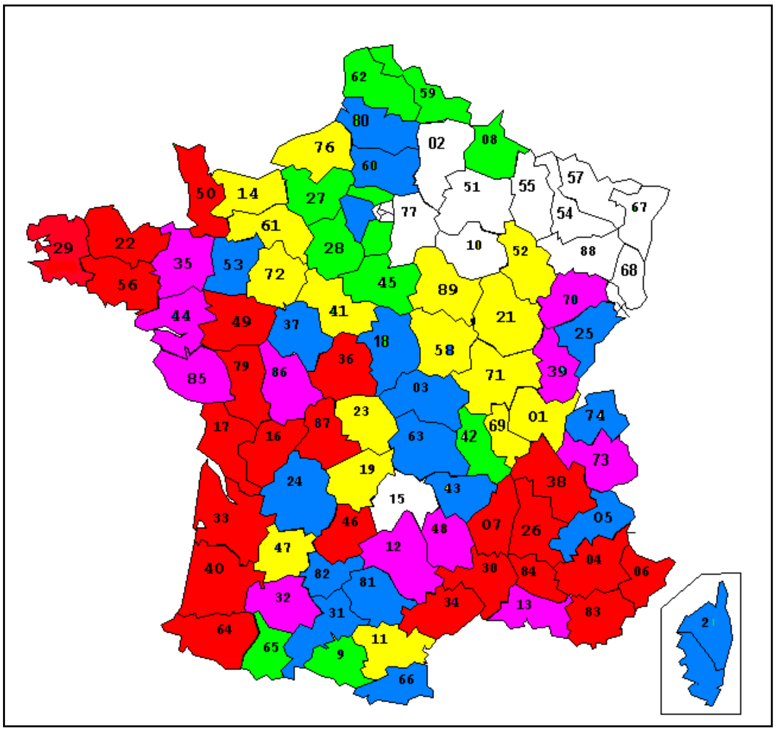
More precise information can be obtained with ICA 10-day period values (Figure 4). This shows that autumn migration was delayed in 2005/06 compared with the previous seasons. A peak was observed in the third decade of November whereas it was in the second decade of November in 2004/05. High values registered in October have to be mentioned. They reflect a relatively important migration wave at the beginning of the season, mainly observed in French mountainous areas. Finally, as usual, a slight decrease was observed until February.

An other index can also be estimated : the number of woodcocks shot during a standardised hunting trip or ICP. In 2005/06, ICP reached 0.42. This can be summarised as the following : in 2005/06 an “average” Woodcock hunter made 30 hunting trips, flushed 48 woodcocks and shot 13.

As in the previous years, the 2005/06 Woodcock hunting bags were mainly made in November (38%) and December (30%). In January, the bag taken represented 15% of the total, 8% in October and 9% in February.

Ratio juvenile/adult

For 2005/06, the proportion of juveniles in the French Woodcock hunting bags is estimated at 65% (n = 9,423). This value is lower than the 2004/05 value (73%) which was the highest one registered in the previous 10 years. As in 2004/05, the proportion of juveniles was at its maximum from mid-November to the beginning of December during the peak of migration, and then decreased until February (Figure 4).
In 2005/06, the proportion of juveniles that had moulted completely was 15.9% (975/6130) and the proportion of adults that had finished their post-nuptial moult is 42.5% (1401/3293).
[A mistake was made in the Newsletter 31 where the given proportions are for juveniles and adults which have **moulted completely** and not incompletely]



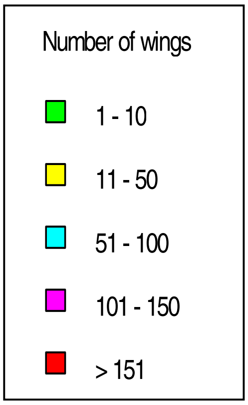


Figure 1: *Distribution of the number of Woodcock wings collected in every French* département *during the 2005/06 survey*. (*number = n° of the French* département).

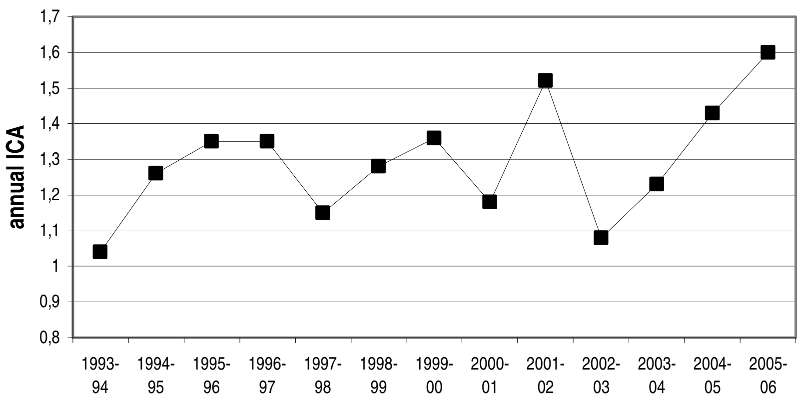


Figure 2: *ICA annual variations in France from 1993/94 to 2005/06.*

Ratio male/female

In 2005/06, the proportion of Woodcock males in the French hunting bags was 39% (782/2011). This value remains very stable from one season to another (39.5% in 2004/05).

Variations in weight

In 2005/06, the mean weight of a shot woodcock was 317.2 g. Adult and juvenile females were the heaviest, 322.3 g and 316.8 g in average respectively. The adult and juvenile males mean weight reached 314.6 g and 310.9 g respectively. Weights are the highest from mid-December to mid-January during a period of high risk of a cold spell occurring. This pattern is the same whatever sex and age (Figure 5 and 6).

Conclusion

According to the ICA values, the 2005/06 season was the best since the beginning of the CNB survey. In spite of a delay in autumn migration, the numbers of migrating and wintering woodcocks in France remained very high until February. This can be interpreted as a good conservation status of the European Woodcock population in the last 10-year period.

However, Woodcock is a very famous game bird all over South-Western Europe and especially in France. Appropriate management measures have to be proposed to maintain hunting pressure at a level which do not jeopardize the Woodcock population. In 2005/06, a bag limit was officially established in Brittany by a departmental order, which proves that the French government wishes to be active in this field. The bag limit was fixed at 3 woodcocks/week and 30 woodcocks/year, and every shot bird has to be marked with a numbered tab and reported in a bag booklet just after the shooting. We believe that this measure is an important step for a sustainable use and should be extended all over the country as soon as possible.

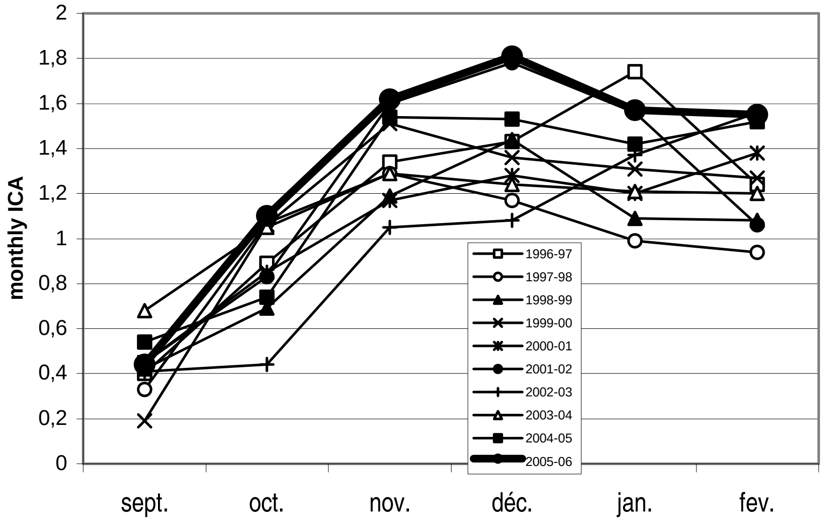


Figure 3: *ICA monthly variations in France for the 1996/97 to 2005/06 hunting seasons.*

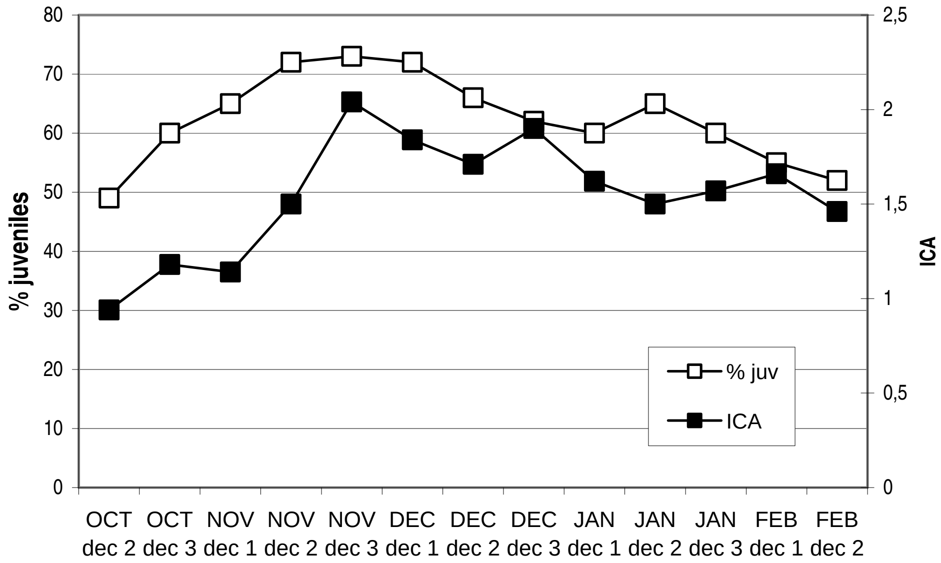


Figure 4: *Variations in ICA and proportion of juveniles by 10-day periods in France, in 2005/06.*

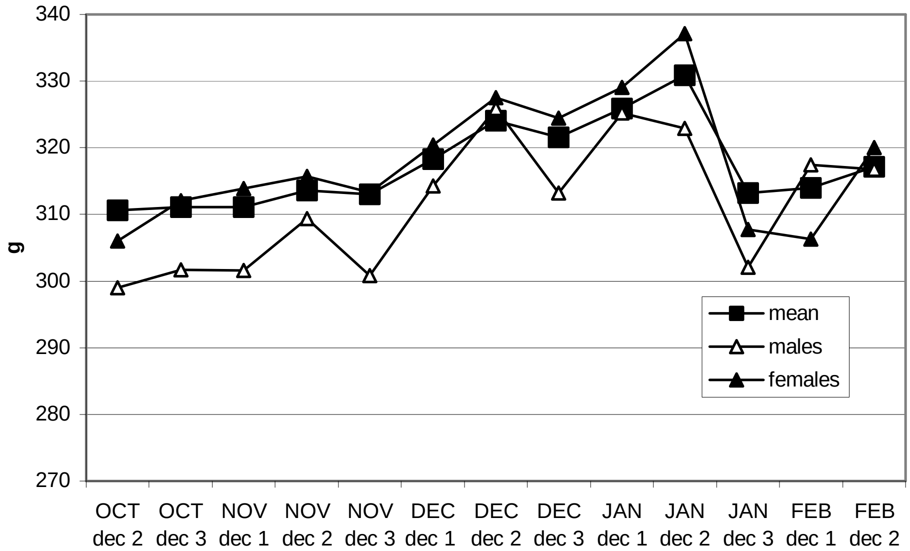


Figure 5: *Intra-annual variations in weight of the Woodcock hunting bags in France in 2005/06. Results are expressed for the whole data set and according to sex.*

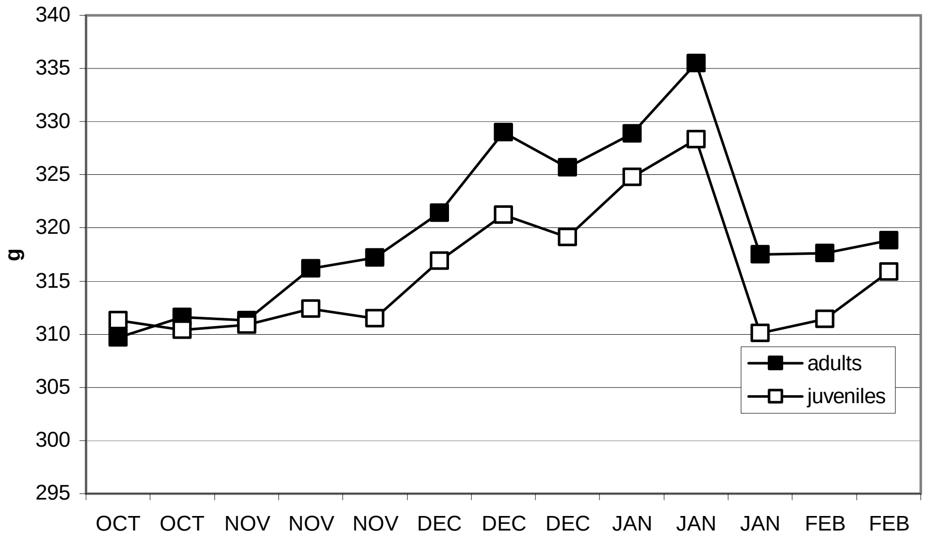


Figure 6: *Intra-annual variations in weight of the Woodcock hunting bags in France in 2005/06, according to age.*

Early observation of Jack Snipe in France

On 1st of August 2006, a Jack Snipe (*Lymnocryptes minimus*) was observed in the *département* of Pas-de-Calais in the north of France. Such an early observation of this species has never been made in this country before. A similar observation is known in England in 1833. [Guy-Noël Olivier (2006) in Le Chasseur de Bécassines 92 : 4]

Ringing of Great Snipe in France

A Great Snipe (*Gallinago media*) was ringed on 11th of August 2006 in the *département* of Doubs in the east of France. This is the second ringing of this species by the French Snipes network. The first was ringed 2 years ago in the *département* of Morbihan in Western France. Observations and, of course, ringing of Great Snipe are rare in France in so far as only a few individuals cross through the country every year.

2005-2006 French Snipes report

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The French Snipes ONCFS/FNC network was officially created in 2006. Its main objective is to develop knowledge on Snipes population dynamics and, particularly, on survival rates. Therefore, ringing is the main tool of this network which should gather 120 snipe ringers spread over 64 French *départements* and ring 1,000 snipes per year in the coming years. Now, 84 ringers work in 34 *départements*.
From ringing data we can also expect to obtain data on phenology of migration although the low hunting pressure on snipes in Northern and Eastern Europe will probably limit the data set.
Finally, another objective for the French Snipe network will be to regularly assess the breeding numbers of Common Snipes in France. Estimations could be available every 5 years.

In 2005, 856 snipes were ringed in the framework of the network: 745 Common snipes and 111 Jack snipes (Figure 1). It is the best result registered since 1998 (beginning of Snipe ringing effort).

Since 2000, several controls and recoveries were noted. The recovery rate is about 4%, which is rather low for a game species. Curiously, no foreign recovery was pointed out from 2,859 ringed snipes since 1998.
Foreign rings recovered or controlled in France provide information on origin and/or migratory routes of birds that winter in France or migrate across our country. The 30 known recoveries show that foreign snipes recoveries mainly come from countries around the Baltic Sea (Table 1).

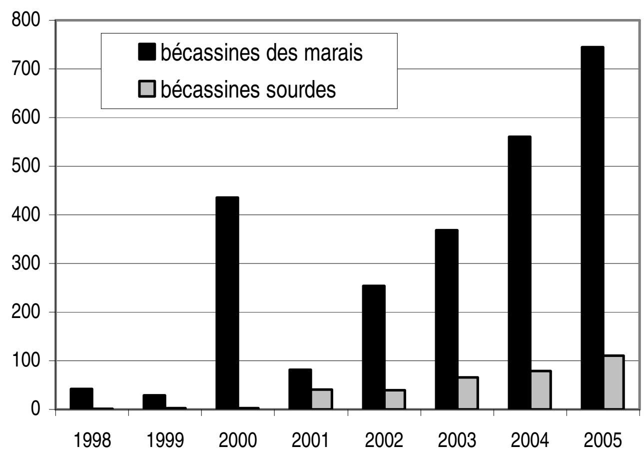

Figure 1: *Number of snipes ringed every year by the French Snipes ONCFS/FNC network since 1998.*

Country of ringing	n
Poland	11
Germany	4
Switzerland	3
Spain	2
Hungary	2
Belgium	2
Sweden	1
Finland	1
Belarus	1
Russia	1
Czech Republic	1
Jersey	1

Table 1: *Detail of foreign rings recovered in France since 1997.*

Recent Woodcock and Snipe publications

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HIDALGO DE TRUCIOS S.J. & G. ROCHA CAMARERO, 2000. La Becada *Scolopax rusticola* en Extremadura. Universidad de Extremadura, Servicio de Publicaciones. 68 pp.

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STROM S.M., PATNODE K.A., LANGENBERG J.A., BODENSTEIN B.L. & A.M. SCHEUHAMMER. 2005. Lead contamination in American Woodcock (*Scolopax rusticola*) from Wisconsin, U.S.A. Arch. Environ. Cotam. Toxicol. 49: 396-402.

URA T., AZUMA N., HAYAMA S. & S. HIGASHI. 2005. Sexual dimorphism of Latham's Snipe (*Gallinago hardwickii*). Emu 105(3): 259-262.

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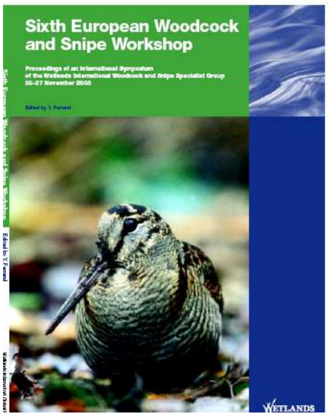

Proceedings of the Sixth European Woodcock and Snipe Workshop are **still available** for members who need. Please ask to the Coordinator to get supplementary copies.

Reviews, bibliographies, translations from Russian into English of literature, published on the Woodcock and all Snipe species; inhabited the territory of the former Soviet Union: Dr JEVGENI SHERGALIN, Sopruse pst. 175-58, Tallinn 13413 Estonia. Tel: (3725) 090684; Fax (3726) 599351. *E.mail*: zoolit@hotmail.com http://tele2.ee/birds/