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BIRD MIGRATION STUDY-SITE SIEMIANÓWKA (E POLAND) IN 2002-2003

Michał Polakowski, Monika Broniszewska, Alicja Krasnodębska, Tomasz Tumiel and Anna Wnorowska

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M. Polakowski, A. Krasnodębska, A. Wnorowska, Sekcja Ornitologiczna Koła Naukowego Biologów, Instytut Biologii, Uniwersytet w Białymstoku, Świerkowa 20B, PL-15-950 Białystok, Poland, E-mail: knb@uwb.edu.pl, akcja_siemianowka@wp.pl; M. Broniszewska, Pałecznica 152, PL-21-100 Lubartów, Poland; Tomasz Tumiel, Towarowa 2a/48, PL-15-007 Białystok, Poland

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In the years 2002-2003 there was conducted a fieldwork for catching and ringing birds at the water reservoir Siemianówka (52°55'N, 23°50'E) located in eastern part of Poland close to the country border with Belarus (Fig. 1). The reservoir is located on the River Narew, in its upper part, situated at the border between Białostocka and Bielska highlands (Kondracki 1998). The bird catching area was situated within willows (*Salix* sp.), reedbed, meadow and an around 40-years old pinestand (*Pinus sylvestris*) (Plate 1).

The main aim of the study was the collecting of data on bird migration in an inland locality situated far from any guiding lines that is usually a case in many other ringing sites.

The birds were caught from 4 August to 12 October 2002, and in periods: 17-25 April, 7 July – 4 November 2003, using differentiated number of mist-nets (Table 1) and funnel traps of Ottenby type (Meissner 1998). Nets controls were performed from dusk to dawn every hour and additionally once in an evening darkness. Big-mesh nets for owls and funnel traps for waders were controlled during a night every two hours. In bad weather conditions nets were controlled more frequently to avoid bird losses. Because of fluctuating water level in autumn 2003 some nets localities were changed. In addition to standard work with small-mesh nets that was rather stable over the season some short-term pilot catches of waders were done on eastern side of the reservoir at a mudy area near the shore and on a shallow water body near the camp locality (20-21 August 2002, 21 April 2003 and 18-20 August 2003).

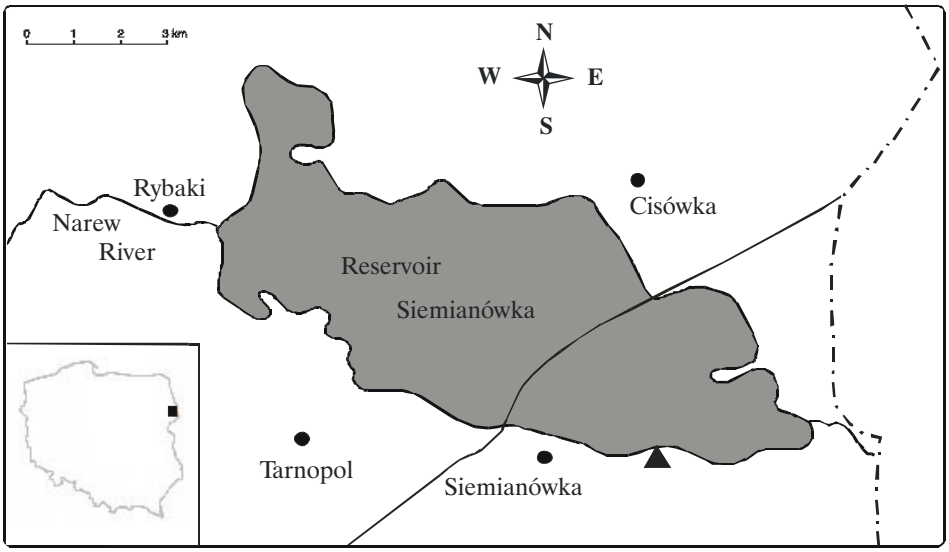

Fig. 1. Localisation of the ringing site Siemianówka. The camp location is pointed by a triangle.

Table 1
Numbers and parameters of nets/traps used in different years

Mesh size / thread of nets	2002 4 Aug. – 12 Oct.	2003	
		17 – 25 Apr.	7 Jul. – 4 Nov.
16 mm – 235/2 dtex	35*	23*	45
19 mm – 70 dtex	1	1	1
25 mm – 235/2 dtex	3	0	1
40 mm – 235/2 dtex	5	5	12
80 mm – 235/2 dtex	0	0	2
Total nets	46*	29*	61
Total funnel traps	2	0	3*

* average number of nets/traps

During work at the study site in years 2002-2003 there were ringed 8412 birds of 106 species (Table 2). Apart from ringing the birds were sexed and aged (if possible), measured (according to Busse 1983, 2000 and Svensson 1992) and checked for the fatness (fat-scores after Busse 2000). Many of them were tested for orientation using Busse's flat orientation cage (Busse 1995). It seems that results of these tests could be especially interesting as in Siemianówka there is no guiding lines that potentially could disturb orientation of migrants.

Looking at the general results of work special attention should be paid to species richness of the birds caught in Siemianówka – one of the highest noted in Poland (*cf.* Busse *et al.* 1985, 1989, 1993, Keller *et al*. 1997, Jędra and Ziaja 2000, Dylon *et al.* 2003). This suggests the species richness of the Northern Podlasie re-

gion and confirms findings of authors writing mainly about breeding avifauna of the area (Dyrcz *et al.* 1984, Tomiałojć *et al.* 1984, Lewartowski and Piotrowska 1987, Gromadzki *et al.* 1994, Polakowski and Juniewicz 1998). Apart from the general causes of the avifauna abundance the high numbers of birds caught result from the location of the study site in the ecotone biotopes, which are usually frequently visited by different species of migrants.

Table 2
Birds ringed / retrapped and controlled (controls in brackets) in years 2002-2003

	2002	2003		2002-2003
	Autumn	Spring	Autumn	Total
Accipiter nisus	7	0	7 (1)	14
Acrocephalus arundinaceus	10 (3)	0	34 (17)	44
Acrocephalus palustris	41	0	71 (4)	112
Acrocephalus schoenobaenus	101 (2)	0	539 (26)	640
Acrocephalus scirpaceus	49 (1)	0	126 (4)	175
Aegithalos caudatus	35 (22)	0	222 (9)	257 (11)
Aegolius funereus	4 (1)	0	0	4
Alcedo atthis	1	0	3	4
Anas crecca	0	0	1	1
Anas penelope	0	1	0	1
Anas platyrhynchos	0	0	3	3
Anas querquedula	0	1	0	1
Anthus trivialis	8 (2)	2	4	14
Asio flammeus	1	0	2	3
Asio otus	6	3	8	17
Bonasa bonasia	1	0	0	1
Calidris alpina	0	0	1	1
Calidris ferruginea	2	0	0	2
Calidris minuta	0	0	3	3
Caprimulgus europaeus	1	0	5	6
Carpodacus erythrinus	2 (1)	0	17 (1)	19
Carduelis flammea	0	0	1 (1)	1
Carduelis spinus	4	4	26	34
Certhia familiaris	10 (4)	1	18 (5)	29 (1)
Charadrius hiaticula	0	0	1	1
Chlidonias niger	0	0	2	2
Coccothraustes coccothraustes	0	0	8 (1)	8
Coturnix coturnix	0	0	1	1
Crex crex	2	0	2	4
Cuculus canorus	1	0	1	2
Cygnus olor	0	0	1	1
Delichon urbica	0	0	8	8
Dendrocopos major	2 (4)	0	5	7

	2002	2003		2002-2003
	Autumn	Spring	Autumn	Total
Dendrocopos medius	1 (1)	0	0	1
Dendrocopos minor	2 (1)	0	5 (2)	7
Dryocopos martius	0	0	1	1
Egretta alba	0	0	1	1
Emberiza citrinella	13	3	7 (4)	23
Emberiza schoeniclus	16	1	92 (3)	109
Erithacus rubecula	731 (142)	165 (13)	551 (69)	1447 (1)
Ficedula albicollis	0	0	4	4
Ficedula hypoleuca	15	2	64	81
Ficedula parva	4	0	6	10
Fringilla coelebs	44	29 (1)	44	117 (1)
Gallinago gallinago	2	0	16 (2)	18
Garrulus glandarius	8	0	4	12
Glaucidium passerinum	2	0	0	2
Hippolais icterina	12 (1)	0	10	22
Hirundo rustica	11	0	26	37
Jynx torquilla	0	0	6	6
Lanius collurio	0	0	14	14
Larus ridibundus	0	0	1	1
Locustella fluviatilis	6	0	6 (1)	12
Locustella luscinioides	7	0	29	36
Locustella naevia	6	0	4	10
Luscinia luscinia	2	0	14 (5)	16
Luscinia svecica	4	0	31 (12)	35
Lymnocryptes minimus	0	0	3	3
Motacilla alba	2	0	44 (1)	46
Motacilla citreola	1	0	10	11
Motacilla flava	0	0	119	119
Musicapa striata	9 (1)	0	9	18
Nucifraga caryocatactes	0	0	1	1
Oriolus oriolus	0	0	3	3
Parus ater	25 (1)	3	30 (3)	58
Parus caeruleus	239 (36)	2	320 (53)	561 (7)
Parus cristatus	5 (3)	1	8 (7)	14 (3)
Parus major	311 (57)	0	352 (59)	663 (2)
Parus montanus	39 (29)	1 (1)	45 (11)	85 (10)
Parus palustris	22 (11)	0	8 (1)	30
Perdix perdix	0	2	0	2
Philomachus pugnax	3	0	5	8
Phoenicurus ochruros	1	0	2	3
Philomachus phoenicurus	7 (2)	0	3	10
Phylloscopus collybita	574 (34)	58 (2)	283 (22)	915 (4)
Phylloscopus sibilatrix	12	0	18	30

	2002	2003		2002-2003
	Autumn	Spring	Autumn	Total
Phylloscopus trochilus	136	10	114	260
Picus canus	1 (1)	0	0	1
Porzana parva	0	0	1	1
Porzana porzana	0	0	3	3
Prunella modularis	71 (3)	6	33 (2)	110
Pyrrhula pyrrhula	40 (26)	1	24 (2)	65
Regulus regulus	35	0	72 (7)	107
Remiz pendulinus	4	0	1	5
Riparia riparia	0	0	4	4
Saxicola rubetra	16 (1)	0	56 (3)	72 (1)
Scolopax rusticola	5	0	3	8
Sitta europaea	2	0	0	2
Strix aluco	2	0	0	2
Sylvia atricapilla	390 (96)	1	250 (51)	641 (1)
Sylvia borin	158 (32)	0	116 (20)	274
Sylvia communis	60 (12)	0	99 (17)	159
Sylvia curruca	60 (7)	0	53 (11)	113
Sylvia nisoria	2	0	10 (2)	12
Tachybaptus ruficollis	0	0	1	1
Tringa erythropus	0	0	3	3
Tringa glareola	7	0	41	48
Tringa nebularia	0	0	3	3
Tringa ochropus	0	0	2	2
Tringa totanus	0	0	1	1
Troglodytes troglodytes	20 (3)	0	24 (3)	44
Turdus iliacus	0	3	0	3
Turdus merula	170 (50)	2	90 (6)	262 (3)
Turdus philomelos	94 (5)	15	63 (3)	172
Turdus pilaris	6	0	5	11
Turdus viscivorus	1	0	0	1
Total individuals	3704	317	4391	8412
Number of species	73	24	93	106

The most commonly ringed five species were: the Robin *Erithacus rubecula* – 17.2%, the Chiffchaff *Phylloscopus collybita* – 10.9%, the Great Tit *Parus major* – 7.9%, the Blackcap *Sylvia atricapilla* – 7.6% and the Sedge Warbler *Acrocephalus schoenobaenus* – 7.6%. Altogether these dominants reached 45.7% of all birds ringed in 2002, but only 24.8% in 2003. Similar species composition was noted at the Kaliszany ringing site in the Middle Vistula Valley in 2000-2001 (Dylon *et al.* 2003), but there the share of dominants was higher – 58.8%, and at the Operation Carpatica ringing site in southern, mountainous part of Poland in 1998-1999 (Jędra and Ziaja 2000). At the latter site the share of Chiffchafs was particularly high,

while this of Robins was similar to our results at Siemianówka. Results of work of the Operation Vistula, situated by the River Vistula, showed dominance of Chiffchaffs and Robins, while Blackcaps and Dunnocks *Prunella modularis* were a little bit less numerous. Some of mentioned differences in numbers of Chiffchaffs could be caused by different kind of nets used at Siemianówka (with rather thick thread) in contrast to thin-thread nets at two other sites.

Clearly different species composition was noted at the Operation Baltic stations situated at the sea coast. In 2003 Robins, Blue Tits *Parus caeruleus* and Great Tits dominated there (Operation Baltic unpubl.) and total numbers per station were much bigger than at the Siemianówka site. Such situation is generally observed when comparing coastal and inland ringing stations (Busse *et al*. 1985, 1989, 1993, Keller *et al.* 1997, Jędra and Ziaja 2000, Dylon *et al*. 2003, Polakowski *et al*. in press). At the coastal stations diurnal migrants guided by the coast are easily caught during active migration along narrow stripes of forest covering coastal dunes.

In 2003 at Siemianówka we caught many reedbed birds (20.4% of all birds caught *versus* 6% in 2002). The most common were the Sedge Warbler – 539 indiv., and the Reed Warbler *Acrocephalus scirpaceus* – 126 indiv. These differences could be caused by both the different number of migrants and the local situation as to water level in the reservoir (in 2003 the level of water was much higher than in 2002). At the "reedbed site" – Lake Drużno (N Poland) in years 1999-2001 the most common were Reed Warblers and Sedge Warblers while the Marsh Warbler *Acrocephalus palustris* was less numerous (Jakubas *et al.* 2002).

During the work at Siemianówka some Wood Sandpipers *Tringa glareola* were ringed and colour-marked according to "Tringa glareola 2000" project (Remisiewicz 2002). In 2002 seven birds were ringed with colour rings and in 2003 – 35 indiv.

Several birds ringed at Siemianówka were controlled. Altogether 1056 catches were short-term controls during the same season (retraps) and 46 birds were caught at the site later on (Table 2). These numbers are rather high in relation to other locations (*e.g.* Busse *et al.* 1993). Eight birds gave long-distance recoveries: two from Italy – a Wood Sandpiper and a Chaffinch *Fringilla coelebs*, two from France – a Woodcock *Scolopax rusticola* and a Reed Warbler, two from Lithuania – Long-

Table 3
Late occurences of some species

	Sex/age	Last observation date
Acrocephalus arundinaceus	*imm.*	30 Sep. 2002
Acrocephalus palustris	f.g.	6 Oct. 2002
Ficedula parva	*imm.*	8 Oct. 2003
Hippolais icterina	*imm.*	6 Sep. 2003
Locustella fluviatilis	*imm.*	31 Aug. 2002
Locustella fluviatilis	*imm.*	15 Sep. 2003
Locustella luscinioides	*imm.*	22 Sep. 2003
Phylloscopus trochilus	♀ *imm.*	11 Oct. 2002
Phoenicurus ochruros	*imm.*	26 Oct. 2003

tailed Tits *Aegithalos caudatus*, one from Hungary – a Sedge Warbler, and one from the Czech Republic – a Bluethroat *Luscinia svecica*.

The work gave a number of faunistically interesting findings as *e.g.* the Hazel Grouse *Tetrastes bonasia*, the Little Crake *Porzana parva*, the Great Egret *Egretta alba* and ten Citrine Wagtails *Motacilla citreola* (Polakowski *et al.* 2004). In comparison to the known phenology of birds in Poland (Tomiałojć and Stawarczyk 2003) there were noted unusually late records of some species (Table 3).

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