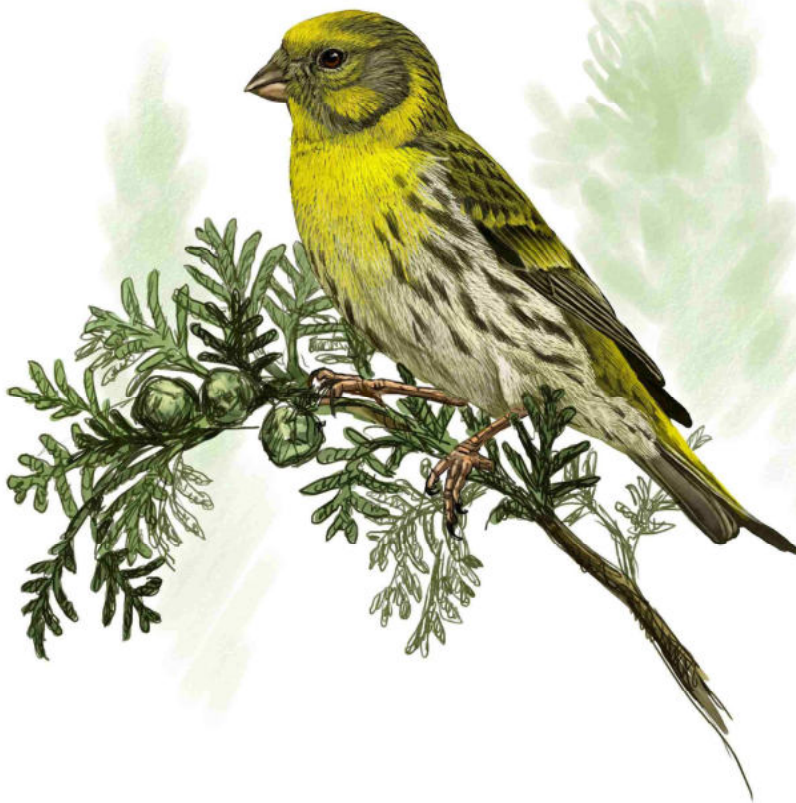


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Preface

First of all I wish you all the best for 2012! In this second issue of 2011 you find a comprehensive overview of the ornithological atlases in Italy by Maurizio Fraissinet. It's up to you to agree with his statement that "Italy is the world leader in the publication of bird atlases". In the second contribution, Goetz Rheinwald tells us more about 35 years of grid-mapping in the area of Bonn. Finally, in the Books & Journals section, you find several short reviews.

I hope you will enjoy this issue!

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An Overview of Ornithological Atlases in Italy

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Abstract

On the occasion of the launch of the National Atlas it was appropriate to conduct an analysis of the Italian production of bird atlases. In this regard, this paper presents, in 11 tables, the Breeding and Wintering Atlases checklist of National, Regional, Provincial, Urban, Natural Protected Areas and Other local Types of Territories level. From 1982 to 2011 some 119 Ornithological Atlases have been published in Italy, with an average of 3.8 per year. The country is no doubt the world leader in producing bird atlases.

Introduction

Since the winter of 2009/2010 and the 2010 breeding season a project has been launched in Italy to produce a new national atlas of breeding and wintering birds. Given that the previous national atlas was published in the dim-and-distant 1993 - with data referring to as early as 1983-1986 - this is a subject close to the hearts of Italian ornithologists (Meschini & Frugis, 1993). Since then, nothing has been done on a national basis, whereas in other European countries various national atlases have been produced. This is a somewhat contradictory situation if we consider the study carried out by Gibbons and co-workers (Gibbons *et al.*, 2007) whereby – on a global basis – Italy has the largest number of regional and local atlases and by far the largest number of urban atlases (Fraissinet & Dinetti, 2007).

On the occasion of the launch of the National Atlas it was thus deemed appropriate to conduct an analysis of the Italian production of bird atlases so as to update the findings of Gibbons *et al.* (2007) and disseminate what has been done so far or what is currently under way in Italy in this sector.

This revisiting of bird atlases in Italy published to date, in progress or completed but awaiting publication, is intended as a resource for those who wish to examine the distribution of individual species in Italy in detail. In this regard, this paper contains an extensive list of references. The atlases are presented in synoptic tables, each referring to the geographical scale of reference. This ranges from the national to the municipal scale or at least to a very limited area. For practical reasons all tables are given at the end of the article.

A brief history

In 1975, in the wake of the publication of some national bird atlases (the UK and Denmark), the Italian Atlas Project (PAI) was launched. However, the time was not ripe and the organizers' optimism had to come to terms with a sphere of interest that was poorly developed and uncommon. This led to the operation foundering, with the collection of only 326 record cards in the one and only survey year. However, the idea was not shelved and did not discourage the organizers, to the extent that in 1982, with the boost in ornithological interest - there had also been the first Italian conference at Aulla in 1981 - a new project was launched which, this time, albeit amid a thousand difficulties and misunderstandings, managed to reach completion in 1986 after five years of surveys (1983 – 1986). However, the results of the research were only published in 1993 and present several lacunae in southern Italy, due to misunderstandings between the organizers and local observers and to lack of cover. In any event, the National Atlas was produced and provided material for analysis on the country's wealth of bird species (Battisti & Contoli, 1995) and for the production of regional and local atlases.

Prior to the publication of this National Atlas in Italy, other local atlases had already been produced. The first one was on the breeding birds in the province of Pavia, published in 1977 in the proceedings of the 7th National Symposium on Nature Conservation held in Bari (Barbieri *et al.*, 1977). In reality, the work remained in the form of an article and the complete text was never published as a book.

Subsequently, 1982 saw the publication of the first annotated maps of the Breeding Birds Atlas of the Italian Alps (Brichetti, 1982). However, the first to see the daylight in the form of complete texts, both published in 1985, were the Atlas of Breeding Birds in the province of Brescia (Brichetti & Cambi, 1985) and the regional atlas of Sicily (Massa, 1985), followed by those of Piedmont – Valle d'Aosta (Mingozzi *et al.*, 1988) and Campania (Fraissinet & Kalby, 1989). In 1989 also the Bird Atlas of the Monti Lepini was published (Corsetti, 1989).

The first urban atlas published was of Florence (Dinetti & Ascani, 1990), followed by those of Cremona (Groppali, 1994) and Naples (Fraissinet, 1995). These led the way to a remarkable production of bird atlases at the regional, provincial, local and urban scales, relative both to breeding and wintering. This all made Italy, as stated above, the country which has produced, at the regional and local level, the largest number of bird atlases in the world. In this broad span of time we should also include the publication of the European Atlas of Breeding Birds (Hagemeyer & Blair, 1997), produced with the collaboration of several Italian ornithologists.

Results

After the publication of the National Atlas (Table 1), Corrado Battisti and Longino Contoli (1995) published an analysis of data on species richness in biogeographical terms. Proceeding southward there emerged a gradient of peninsular species impoverishment, accentuated in the sub-peninsular area of Calabria and Puglia.

An exception to this southward species decline is the very species-rich Central Apennines. Umbria, by contrast, is somewhat species-poor, perhaps due to its environmental homogeneity. Hence in Italy the biogeographical phenomenon of species impoverishment in peninsular and island Italy, which is manifested between Centre North and South either side of the Naples – Gargano axis (Battisti & Contoli, 1995). The table on the regional atlases (Table 2) confirms the phenomenon, with the number of species breeding in Campania and Sicily lower than the Centre-North regions, with the exception of Umbria, supporting the findings highlighted by Battisti and Contoli (Battisti & Contoli, 1995) for the National Atlas. This trend is also observed in the mean value of species per square, while there are no differences in the ratio between non-Passeriformes and total species number and in the *non-Passeriformes/Passeriformes* ratio. Of interest in this respect is the increase in these two parameters in the course of the years in the three Sicilian atlases.



Table 3 shows that the number of regional atlases of wintering birds is much lower. However, compared with the breeding bird atlases, we observe that the number of wintering species is higher in all regions, as is the *non-Passeriformes/Passeriformes* ratio. This is explained by the arrival in Italy in winter, among other species, of many *Anseriformes* and *Charadriiformes* which boost both the number of species and the percentage of non-Passeriformes.

Almost 25% of Italian provinces have a bird atlas for the breeding period (Table 4), while there are decidedly fewer provincial bird atlases for wintering birds (Table 5). In this case the gradual decline in the number of species with the lower latitudes along the peninsula is also worth noting, in other words the biogeographical effect of the peninsula referred to above in relation to regional atlases. The large number of *non-Passeriformes* compared to total wintering species is confirmed, already encountered for regional wintering bird atlases.

In Italy 31 urban breeding bird atlases have been published (Table 6), concerning a total of 27 towns and cities. Atlases that are published, partly published and those still under way or awaiting publication amount to 49 in all. This is an incredibly large number that makes Italy the world leader in this type of research. This success is due to more than one factor: one of these is definitely the establishment of the Urban Bird Atlas Group (GAOU) (Dinetti *et al.*, 1995), later changed into the Urban Bird Group (GAU) (Fraissinet & Dinetti, 2007) which, given the great variability in town planning and architecture found in Italian towns and cities, has established methodological and procedural criteria for urban atlases. Of interest is, for breeding atlases, the low ratio of *non-Passeriformes/total species* and *non-Passeriformes/Passeriformes*, typical of urban environments (Fraissinet & Fulgione, 2008). The exception is Venice due to the presence in the area of extensive lagoons and marshes, as also occurs for the provincial atlas. The area is suitable for both the breeding and wintering of many *non-Passeriformes* water birds.

As regards the urban atlases of wintering birds (Table 7), in this period towns and cities in the south host a larger number of species than those in the north, the opposite of what occurs in the breeding season. The percentage of *non-Passeriformes* species to the total also rises, following the presence of some gull, heron and duck species which stopover in urban centers during the winter. Unlike urban areas, bird atlases for protected areas and other local types are and still thin on the ground (Tables 8, 9 and 10).

Conclusions

Overall, 119 bird atlases published or partly published in Italy were reviewed, 46 more than those reported for Italy in the work of the above-cited Gibbons *et al* (2007). In this respect, Italy is the country which has produced to date the most bird atlases in absolute terms. Figure 1 reports the trend in production of atlases in Italy by year. It may be noted that an average of 3.8 bird atlases per year since 1982 have been published or partly published.

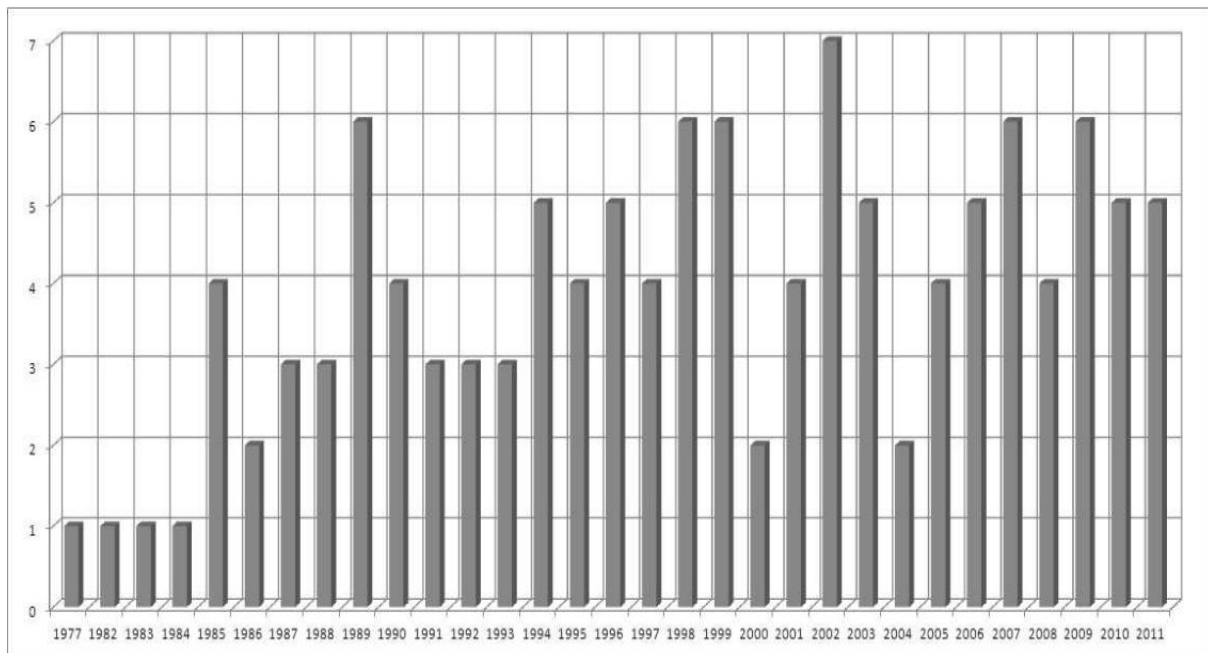


Figure 1: Number of published ornithological atlases in Italy per year in the period 1977-2011

Moreover, it cannot be ruled out that a few local atlases with limited dissemination nation-wide may have been overlooked. The average duration of field surveys for a regional breeding atlas was 7.5 years, a wintering atlas six years; on average field surveys lasted nine years for provincial breeding atlases, 7.5 years for wintering; finally, field surveys of urban atlases lasted an average of three years (breeding birds) and eight years (wintering). The latter figure, however, is altered by the fact that the urban atlas of Turin took more than 10 years of field surveys. There are always far fewer atlases of wintering birds than of breeding birds. This difference may be due to several factors: adverse climate, with mountain areas being frequently isolated by snowfall, fewer daylight hours and hence less time available, difficulty finding a large number of observers available to travel in winter, etc. Finally, the production of bird atlases is not evenly distributed in Italy.

Indeed, there are several regions in the south in which no type of atlas has yet been published.

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Legend to the column names of the tables:

SP: Survey period

Area: Area in km²

NS: Number of squares

ST: Square type

SL: Square side length (km)

NO: Number of observers

ND: Data not available

MEDIA: Average number of species per square

(pr.): provisional data

RTM: Regional Technical Map

MD: Municipal Grid

NGU: Non – Geometric Unit

% NP/Tot: Ratio of non-Passeriformes to total species x 100

IGM: Istituto Geografico Militare

NBSp: Number of breeding species

NP/Pass.: Ratio of non-Passeriformes to Passeriformes

UTM: Universal Transverse Mercator

GTC: General Topographic Maps of the Province of Trento

NWsp: Number of wintering species

Table 1. The National Atlas on the Breeding Birds

	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Italy	1983-1986	301.278	941	IGM	20	946	240	72,98	52	1,08	Published	Meschini & Frugis, 1993
San Marino (RSM)	2007-2011	61	80	UTM	1	8	82	ND	34,1	0,51	Published	Londi <i>et al.</i> , 2011

Table 2. The Regional Atlases of the Breeding Birds

Regions	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pas s	Result	References
Piemonte - Valle d'Aosta 1	1980 - 1984	28.6 61	341	IGM	10	158	189	61,1	43,9	0,78	Publishe d	Mingozzi <i>et al.</i> , 1988
Piemonte - Valle d'Aosta 2	ND	28.6 61	341	IGM	10	ND	120	ND	ND	ND	Publishe d	Aimassi & Reteuna, 2007
Piemonte - Valle d'Aosta 3	1999 -	28.6 61	341	IGM	10	>15 0	ND	ND	ND	ND	Comple ted	Acquarone & Cucco, 2005
Lombardia	1983 - 1987	2385 9	303	IGM	10	148	196	61,3	44,8	0,81	Publishe d	Brichetti & Fasola, 1990
Friuli Venezia Giulia	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Publishe d	Musi, 1991
Liguria	1981 - 1986	5421	81	IGM	10	64	144	57,4	34	0,51	Publishe d	AA.VV.,1989
Toscana	1982 - 1992	2299 2	286	IGM	10	123	187	51,97	41,1	0,7	Publishe d	Tellini Florenzano <i>et al.</i> , 1997
Umbria 1	1988 - 1993	8456	98	IGM	10	27	136	53,2	38,3	0,61	Publishe d	Magrini & Gambaro, 1997
Lazio 1	1983 - 1986	1720 3	211	IGM	10	78	171	54,4	43,2	0,76	Publishe d	Boano <i>et al.</i> , 1995
Lazio 2	2000 - 2009	1720 3	234	UTM	10	43	186	65,5	45,6	0,84	Publishe d	Brunelli <i>et al.</i> , 2011
Campania	1983 -	1399	167	IGM	10	38	135	34,25	37	0,58	Publishe	Fraissinet & Kalby, 1989

	1987	5										d	
Sicilia 1	1979 - 1983	25780	300	UTM	10	27	131	39,5	44,2	0,79	Published	Massa, 1985	
Sicilia 2	1984 - 1992	25780	297	UTM	10	46	143	40,5	46,8	0,90	Published	Lo Valvo <i>et al.</i> , 1993	
Sicilia 3	1992 - 2006	25780	297	UTM	10	ND	155	ND	52,9	1,12	Published	AA.VV., 2008	
Sardegna	2010	24090	312	UTM	10	20	ND	ND	ND	ND	In progress	Grussu, <i>pers. com.</i>	

Table 3. The Regional Atlases of the Wintering Birds

Regions	SP	Area	NS	ST	SL	NR	NWSp	MEDIA	%NP/Tot	NP/Pas s	Result	References
Piemonte - Valle d'Aosta 1	1986 - 1992	28.661	341	IGM	10	245	197	ND	57,8	1,37	Published	Cucchi <i>et al.</i> , 1996
Piemonte - Valle d'Aosta 2	1999 -	28.661	341	IGM	10	>150	ND	ND	ND	ND	Completed	Acquarone & Cucco, 2005
Lombardia	86/87 - 90/91	23859	323	IGM	10	217	187	53,8	55	1,22	Published	Fornasari <i>et al.</i> , 1992
Liguria	87/88 - 91/92	5421	81	IGM	10	89	188	52	55,8	1,26	Published	Spanò <i>et al.</i> , 1998
Toscana	1982 - 1992	22992	278	IGM and UTM	10 e 3	65	227	44,3	45,3	0,83	Published	Tellini Florenzano <i>et al.</i> , 1997
Umbria	88/89 - 92/93	8456	98	IGM	10	27	114	42,7	43	0,75	Published	Magrini & Gambaro, 1997
Campania	89/90 - 94/95	13995	179	UTM	10	49	161	ND	38,5	0,62	Published	Milone, 1999

Table 4. The Provincial Atlases of the Breeding Birds

Provinces	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Verbano Cusio Ossola	1996 - 2005	2225	169	IGM	4	78	142	44,6	30,8	0,61	Published	Bionda & Bordignon, 2006
Biella	1987 - 1996	1664	416	IGM	4	92	135	ND	44,6	0,80	Published	Bordignon, 1998
Novara	1998 - 2001	1580	385	IGM	4	33	108	ND	50	1,0	Published	Bordignon, 2004
Varese 1	1983 - 1987	1198	18	IGM	10	22	121	61	38,8	0,63	Published	Guenzani & Saporetti, 1988
Varese 2	2003 - 2005	1198	460 *	CTR	1	21	125	25,1	45,6	0,83	Published	Gagliardi <i>et al.</i> , 2007
Lodi	2006 -	ND	ND	ND	ND	ND	ND	ND	ND	ND	In progress	Website Lodi Porvince
Pavia	1975	2964	46	IGM	10	ND	138	ND	39	0,64	Partially published	Barbieri <i>et al.</i> , 1977
Brescia	1980 - 1984	4777	74	IGM	10	43	159	ND	37,1	0,59	Published	Brichetti & Cambi, 1985
Bolzano	1987 - 1991	7400	116	IGM	10	112	142	ND	37,3	0,59	Published	Niederfriniger <i>et al.</i> , 1998
Trento	1986 - 1995 - 2003	6206	87	IGM	10	54	156	ND	39,1	0,62	Published	Pedrini <i>et al.</i> , 2005
Verona	1983 - 1987	3096	49	IGM	10	40	152	53,8	38,1	0,61	Published	De Franceschi, 1991
Treviso 1 e Belluno	1983 - 1988	6154	76	IGM	10	49	151	ND	40	0,67	Published	Mezzavilla, 1989
Treviso 2	2003 - 2006	2479	34	IGM	10	29	140	ND	41,4	0,70	Published	Mezzavilla & Bettiol, 2007
Vicenza	1983 - 1988 - 1993	2722	38	IGM	10	63	148	64,8	34,4	0,52	Published	NISORIA, 1994
Padova	1992 - 1994 - 1996	2142	33	IGM	10	37	105	46	44,7	0,81	Published	NISORIA & CORVO, 1997
Venezia	1996 - 1998 - 1999	1460	107	IGM	5	62	121	ND	57,8	1,37	Published	Bon <i>et al.</i> , 2000
Rovigo	1998 - 2000 -	1803	108	IGM	5	41	105	ND	58	1,38	Published	Fracasso <i>et al.</i> , 2003

	2002												
Pordenone	1981 - 1986	2273	39	IGM	10	33	142	57,3	37,3	0,59	Published	Parodi, 1987	
Trieste e Gorizia 1	ND	350	14	IGM	10	23	142	ND	ND	ND	Published	Perco & Utmar, 1989	
Gorizia 2	1990 - 1996	466	72	CTR	3	24	131	ND	47,3	0,89	Published	Parodi, 1999	
Piacenza	1995 - 2000	2590	45	IGM	10	21	153	53,6	45	0,82	Published	Ambrogio <i>et al.</i> , 2001	
Parma	1980 - 1995	3449	36	CTR	10	1	157	78,9	40,7	0,68	Published	Ravasini, 1995	
Modena 1	1982 - 1990	2690	49	IGM	10	15	149	53,7	41,6	0,71	Published	Giannella & Rabacchi, 1992	
Modena 2, Reggio Emilia	2003 - 2007	4982	ND	CTR	5	80	ND	ND	ND	ND	Awaiting publication	Bagni <i>et al.</i> , 2005	
Bologna	1995 - 1999	3702	483	CTR	5	67	169	ND	ND	ND	Published on CD rom	Tinarelli <i>et al.</i> , 2002	
Forlì 1	1982 - 1986	2910	42	IGM	10	23	125	60,2	35,2	0,54	Published	Foschi & Gellini, 1987	
Forlì - Cesena 2, Ravenna	1995 - 1997	4235	139	CTR	c.6	27	159	ND	49	0,92	Published	Gellini & Ceccarelli, 2000	
Forlì - Cesena 3, Ravenna 2	2004 - 2007	4235	139	CTR	10	ND	161	ND	51,5	1,06	Published	Ceccarelli & Gellini, 2011	
Rimini	2004 - 2006	533	76	CTR	c.3	ND	95	ND	43,1	0,75	Published	Casini, 2007	
Pesaro - Urbino	1983 - 1986	2893	42	IGM	10	25	140	42,4	37,8	0,60	Published	Pandolfi & Giacchini, 1995	
Ancona	2005 - 2006	1960	66	CTR	c.6	27	126	59,6	39,7	0,65	Published	Giacchini, 2007	
Ascoli Piceno e Fermo	2004 - 2006	2087	102	UTM	5	ND	128	44,4	37,5	0,6	Completed but not yet published	Brusaferro <i>et al.</i> , 2009	
Livorno	1980 - 1982	1125	31	IGM	10	9	115	44	41,7	0,71	Unpublished	Arcamone & Meschini, 1982	
Napoli 1	1980 - 1984	1171	26	IGM	10	2	ND	ND	ND	ND	Partially published	Fraissinet & Caputo, 1984; Fraissinet, 1985 e 1986	
Napoli 2	2007 -	1171	148	CTR	5	39	99	24,2	39,3	0,65	Published	Fraissinet &	

	2009												
Lecce	2000 - 2007	2759	46	UTM	10	ND	82	ND	43,9	0,83	Published	Mastronardi, 2010 La Gioia, 2009	
Mendrisiotto (CH)	1981 - 1985	106	133	ND	1	1	91	ND	30,7	0,44	Published	Lardelli, 1988	

Table 5. The Provincial Atlases of the Wintering Birds

Provinces	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Biella	87/88 - 96/97	1664	416	IGM	4	92	108	ND	47,2	0,89	Published	Bordignon, 1998
Novara	97/98 - 01/02	1580	385	IGM	4	33	95	ND	53,6	1,15	Published	Bordignon, 2004
Brescia	84/85 - 87/88	4777	74	IGM	10	60	164	51,8	52,4	1,1	Published	Brichetti & Cambi, 1990
Lodi	2006 -	ND	ND	ND	ND	ND	ND	ND	ND	ND	In progress	Website Lodi Province
Trento	88/89 - 94/95 2003	6206	87	IGM	10	54	143	ND	52,4	1,1	Published	Pedrini <i>et al.</i>, 2005
Venezia	88/89 - 93/94	1460	45	UTM	10	90	168	66,4	62,5	1,6	Published	Stival, 1996
Forlì e Cesena	03/04 - 07/08	2377	81	CTR	c.6	19	127	37,2	53,5	1,1	Published	Ceccarelli <i>et al.</i>, 2009
Modena	87/88 - 94/95	ND	44	IGM	10	44	144	ND	ND	1,15	Unpublished	Giannela & Rabacchi, 1995
Grosseto	88/89 - 93/94	4503	66	IGM	10	78	185	57	62,7	1,68	Published	Corsi & Giovacchini, 1995
Roma	89/90 - 90/91	5352	77	IGM	10	ND	135	ND	51,1	1,04	Not completed	Boano <i>et al.</i>, 1994; Brunelli, <i>com. pers.</i>
Napoli	1980 - 1984	1171	26	IGM	10	2	ND	ND	ND	ND	Partially published	Fraissinet & Caputo, 1984; Fraissinet, 1985 and 1986
Ticino (CH)	84/85 - 88/89	2811	1157	RTE*	1	>100	131	ND	48,8	0,95	Published	Lardelli, 1992

Table 6. The Urban Atlases of the Breeding Birds

Towns	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Biella	1998	30,7	123	ND	0,5	1	59	14,97	28,8	0,4	Published	Bordignon, 1999a
Cossato (BI)	1989 e 1995	27,7	139	ND	0,5	15	74	12	38,3	0,62	Published	Bordignon, 1997
Torino	1989- 1999	130	61	UNG	ND	44	90	ND	40	0,66	Published	Maffei <i>et al.</i> , 2001
Asti	2005- 2007	51,8	204	ND	1	18	120	10,8	57	1,3	Unpublished	Caprio & Cozzo, 2009
Varese	1993 - 1996	43,6	136	GC**	0,6	5	74	ND	43,2	0,41	Unpublished	Viganò, 1996; Viganò , <i>pers. com.</i>
Milano 1	1986 - 1988	105	58	ND	1,3	1	42	14,7	30,9	0,44	Unpublished	Nova, 2002
Milano 2	1994	c.120	48	ND	2	12	59	13,7	37,2	0,59	Published	Nova, 2002
Milano 3	2004 - ?	181,75	207	UTM	1	20	57	ND	ND	ND	Completed?	Bonazzi <i>et al.</i> , 2005; Bonazzi <i>et al.</i> , 2011
Brescia	1994 - 1998	15,5	65	GC**	0,5	7	52	12,1	28,8	0,4	Published	Ballerio & Bricchetti, 2003
Bergamo	2001 - 2004	39	188	CTR	0,5	35	76	17,9	35,5	0,55	Published	Cairo & Facoetti, 2006
Pavia	1997- 1998	33,5	ND	UTM	0,5	31	61	ND	34	0,56	Published	Benini <i>et al.</i> , 1998
Voghera (PV)	2008 - 2009	63,28	284	ND	0,5	28	73	ND	52	1,08	Published	Gatti, 2011
Cremona 1	1990 - 1993	10,23	61	ND	0,5	16	48	ND	29,1	0,33	Published	Groppali, 1994
Cremona 2	2001 - 2004	13,43	75	ND	0,5	10	55	ND	36,4	0,57	Published	Groppali, 2004
Crema (CR)	2000 - 2001	22,75	91	ND	0,5	ND	49	ND	40,8	0,68	Published	Mastrorilli, 2002
Trento	1991 - 1994	158	187	CTG'	1	17	113	19,7	34,5	0,52	Published	LIPU, 1998
Treviso	2010- 2011	55,5	68	UTM	1	14	75	ND	44	0,79	Completed	Nardo & Mezzavilla, 2011
San Donà di Piave (VE)	1998 - 1999	12,1	55	UTM	0,5	10	60	18,9	42	0,71	Published	Nardo, 2003
Portogruaro (VE)	1997 - 1999	9,3	ND	ND	0,5	13	58	ND	ND	ND	Unpublished	Nardo, <i>pers. com.</i>

San Donà e Musile di Piave (VE)	1997 - 1998	16,3	30	ND	0,5	15	54	21	38,9	0,39	Published	Marcolin & Zanetti, 1999
Marcon (VE)	1988 - 1990	25,39	ND	ND	1	1	53	ND	ND	ND	Published	Stival, 1990
Venezia	2008 -	ND	350	UTM	1	50 - 60	109	ND	55	1,22	In progress	Bon, <i>pers. com.</i>
Padova	2001 - 2004	35	77	CTC	0,7	20	57	20,3	33,3	0,5	Published	Bottazzo & Giacomini, 2010
Udine	2002 - 2005	56,81	75	UTM	1	27	70	27	42,8	0,75	Published	Parodi, 2008
Genova	1996 - 2000	57	77	UTM	1	51	55	ND	34,5	0,52	Published	Borgo <i>et al.</i> , 2005
La Spezia	1994 - 1995	20	89	UTM	1	7	67	16,2	38	0,63	Published	Dinetti, 1996
Parma	2006 - 2007	ND	ND	ND	0,5	ND	ND	ND	ND	ND	Unpublished	Dinetti & Gustin, <i>in prep.</i>
Reggio Emilia	1999 - 2000	21,5	119	UTM	0,5	1	45	ND	31,1	0,45	Published	Gustin, 2002
Forlì	2004 - 2006	44,25	177	IGM	0,5	13	62	12,97	37	0,58	Published	Ceccarelli <i>et al.</i> , 2006
Senigallia (AN)	2009 -	115,77	ND	CTR	1	ND	64	ND	40	0,68	In progress	Mencarelli <i>et al.</i> , 2009
Lucca	2007 -	25	124	ND	0,5	8	48	ND	35,4	0,54	Completed?	Dinetti & Chines, <i>in prep.</i>
Firenze 1	1986 - 1988	102,4	119	GC	c.1	20	74	ND	35,1	0,5	Published	Dinetti & Ascani, 1990
Firenze 2	1997 - 1998	102,	119	GC	c.1	22	82	27,5	41,4	0,7	Published	Dinetti & Romano, 2002
Firenze 3	2007 - 2008	102.4	124	UTM	1	23	86	31	39,5	0,65	Published	Dinetti, 2009
Prato	1999 - 2001	ND	87	ND	0,5	6	61	ND	32,7	0,48	Not completed	Dinetti, <i>pers. com.</i>
Pisa	1997 - 1998	27,4	ND	ND	0,5	11	64	18,7	39	0,64	Partially published	Dinetti, 2003
Livorno 1	1992 - 1993	38,1	177	UTM	0,5	31	58	ND	34.4	0,52	Published	Dinetti, 1994
Livorno 2	2006 -	38,1	177	UTM	0,5	4	59	ND	34,6	0,53	In progress	Dinetti & Ascani, <i>in prep.</i>
Grosseto 1	1998 - 1999	14,7	75	UTM	0,5	12	52	17,7	32,6	0,48	Published	Giovacchini, 2001

Grosseto 2	2009 - 2010	17,6	91	UTM	0,5	4	55	18,6	34,5	0,52	Published	Giovacchini, 2011.
Viterbo	1991 - 1993	10	41	UTM	0,5	12	44	ND	27,2	0,37	Partially published	Cignini <i>et al.</i> , 1994
Roma 1	1989 - 1993	385	360	UTM	1	67	74	38,4	26	0,59	Published	Cignini & Zapparoli, 1996
Roma 2	2008 -	ND	364	UTM	1	60	ND	ND	ND	ND	In progress	Fraticegli, <i>pers. com.</i>
Lido di Ostia (Roma)	2005	7	41	ND	0,5	5	43	ND	18,6	0,22	Published	Demartini <i>et al.</i> , 2006
Napoli 1	1990 - 1994	117,2	144	UTM	1	43	62	12,3	27,4	0,37	Published	Fraissinet, 1995
Napoli 2	2001 - 2005	117,2	142	UTM	1	33	64	14,6	39	0,64	Published	Fraissinet, 2006
Martina Franca (TA)	2006 - 2008	7	35	ND	0,5	2	39	18	23	0,3	Completed	Chiatante, <i>pers. com.</i>
Cagliari	1991	50	50	ND	1	15	47	ND	34	0,46	Partially published	Mocci Demartis & Gruppo ICNUSA, 1992
Caltanissetta	2000 - 2006	15,25	61	ND	0,5	6	52	ND	34,6	0,28	Completed	Falci, <i>in prep.</i>

Table 7. The Urban Atlases of the Wintering Birds

Towns	SP	Area	NS	ST	SL	NO	NWSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Torino	1989-1999	130	61	UNG*	ND	44	ND	ND	ND	ND	Published	Maffei <i>et al.</i> , 2001
Asti	2005-2007	51,8	204	ND	1	18	ND	ND	ND	ND	Unpublished	Caprio & Cozzo, 2009
Milano 3	2004 - ?	181,75	207	UTM	1	20	62	ND	ND	ND	Completed?	Bonazzi <i>et al.</i> , 2005; Bonazzi <i>et al.</i> , 2011
Brescia	ND	15,5	65	GC**	0,5	ND	ND	ND	ND	ND	In progress	Brichetti, <i>pers. com.</i>
Bergamo	00/01 - 03/04	39	188	CTR	0,5	35	58	14	31	0,45	Published	Cairo & Facchetti, 2006
Cremona 1	90/91-92/93	10,23	61	ND	0,5	16	46	ND	26	0,35	Published	Groppali, 1994
Cremona 2	2001 - 2004	13,43	75	ND	0,5	10	66	ND	45,4	0,83	Published	Groppali, 2004
Treviso	09/10 - 11/12	55,5	68	UTM	1	14	73	ND	46,6	0,87	In progress	Nardo & Mezzavilla, 2011
San Donà di Piave (VE)	97/98 - 98/99	12,1	55	UTM	0,5	10	75	19,7	40	0,84	Published	Nardo, 2003
Venezia	08/09 - 10/11	ND	350	UTM	1	50 - 60	136	ND	59,5	1,47	In progress	Bon, <i>pers. com.</i>
Genova	1996 - 2000	57	77	UTM	1	51	ND	ND	ND	ND	Published	Borgo <i>et al.</i> , 2005
Roma	2007 - 2011	ND	360	ND	1	58	117	ND	ND	ND	In progress	Cardillo <i>et al.</i> , 2011
Napoli 1	90/91 - 93/94	117,2	147	UTM	1	43	76	15,7	40,7	0,59	Published	Fraissinet, 1995
Napoli 2	2001 - 2005	117,2	142	UTM	1	33	76	17,3	43,4	0,76	Published	Fraissinet, 2006
Martina Franca (TA)	2006 - 2008	7	35	ND	0,5	2	ND	ND	ND	ND	Completed	Chiatante, <i>pers. com.</i>

Table 8. The Atlases of the Breeding Birds in the protected natural areas

Parks and Reserves	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Mont Avic	ND	ND	ND	ND	ND	ND	91	ND	27,4	0,37	Published	Bocca, 2002
Monte Fenera	1992 - 1997	36,2	145	ND	0,5	1	65	ND	36,9	0,58	Published	Bordignon, 1999b
Monte Fenera	2002 - 2007	36,2	145		0,5	1	60	ND	ND	ND	Completed but not yet published	Bordignon, 2009
Dolomiti Bellunesi 1	1982 - 1989	ND	15	IGM	10	ND	114	ND	41	0,70	Published	Cassol & Dal Farra, 1998
Dolomiti Bellunesi 2	2007 - 2008	310	308	UTM	1	ND	85	ND	30,5	0,44	Unpublished	Gustin, 2007
Colli Euganei	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Published	Mezzavilla, 2001
Prealpi Giulie	1999 - 2004	200	ND	UTM	1	ND	100	ND	ND	ND	Published	Genero, 2007
ZPS "Aree Carsiche della Venezia Giulia"	2010 -	ND	234	UTM	1	ND	96	ND	ND	ND	In progress	Cutini <i>et al.</i> , 2011
Parco Alto Milanese	1992 - 1995	360	ND	ND	ND	ND	ND	ND	ND	ND	Published	Soave & Rizzi, 1997
Delta del Po	2004 - 2006	ND	95	CTR	3	a.25	135	ND	57,7	1,3	Published	Costa <i>et al.</i> , 2009
Sibillini	1995 - 2001	750	206	ND	2	13	107	29	ND	ND	Published?	Fermanelli <i>et al.</i> , 2009
Monte S.Bartolo	2000	157,7	85	CTR	0,5	ND	50	15,2	30	0,42	Completed but not yet published	Casini <i>et al.</i> , 2001
Simbruini	2007 - 2009	300	90	ND	2	12	106	ND	32	0,47	Completed but not yet published	De Santis <i>et al.</i> , 2009
Monte Cucco, Monte Subasio, Fiume Tevere	2003 - 2005	19,7	258	UTM	1	13	117	41	38,4	0,62	Published	Velatta & Magrini, 2010
Appia Antica	2005	17,3	138	UTM	0,5		57		33,3	0,50	Published	Taffon <i>et al.</i> , 2008
Castelli Romani	ND	15	684	UTM	0,5	ND	72	14	32,8	0,48	Completed but not yet	Ukmar <i>et al.</i> , 2009

Lago di Vico	2006 - 2010	2,9	42	UTM	1	ND	72	33	38,8	0,63	published Completed but not yet published	Quatrini <i>et al.</i> , 2009; Quatrini <i>et al.</i> , 2011
Decima Malafede	2010	6,1	304	UTM	0,5	ND	71	ND	36,6	0,57	Completed but not yet published	Sorace <i>et al.</i> , 2011
Vesuvio	1997 - 2008	8,5	100	UTM	1	7	71	ND	32,3	0,48	Published	Fraissinet & Conti, 2008
Nebrodi	ND	86000	ND	UTM	1	ND	ND	ND	ND	ND	Published	Sarà, 2009

Table 9. The Atlases of the Wintering Birds in the protected natural areas

Parks	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Monte Fenera	92/93 - 97/98	36,2	145	ND	0,5	1	50	ND	ND	ND	Published	Bordignon, 1999b
Monte Fenera	2002 - 2007	36,2	145	ND	0,5	1	ND	ND	ND	ND	Completed but not yet published	Bordignon, 2009
Vesuvio	1997 - 2008	8,5	100	UTM	1	7	61	ND	32,7	0,48	Published	Fraissinet & Conti, 2008
Nebrodi	ND	86000	ND	UTM	1	ND	ND	ND	ND	ND	Published	Sarà, 2009

Table 10. The Atlases of the Breeding Birds in other local types

Territories	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Alpi italiane	1977 - 1987	ND	643	IGM	10	272	ND	ND	ND	ND	Partially published	Brichetti, 1982, 1983, 1986, 1988
Alpi italiane (Tetraonidi e Coturnice)	1988 - 1992	ND	643	IGM	10	750	ND	ND	ND	ND	Published	Artuso, 1994
Valsesia	1986 - 1989	763,21	193	IGM	2	1	105	ND	30,4	0,43	Published	Bordignon, 1993
Bassa Pianura Lombarda	1994 - 1999	1081,2 5	170	IGM	2,5	21	85	26,1	43,5	0,77	Published	Brichetti & Gargioni, 2005
Monte Calisio (TN)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Published	Caldonazzi & Fasola, 1989

Val di Cecina	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Published	Tellini, 1996
Bassa Val di Cecina	1987 - 1988		174	ND	2	ND	88		37,5	0,6	Published	Dinetti <i>et al.</i> , 1991
Comprensorio del Trasimeno (PG)	1989 - 1998	ND	ND	ND	ND	ND	ND	ND	ND	ND	Published	Velatta, 2002
Monti Lepini	1976 - 1988	ND	46	IGM	5	1	95	ND	ND	ND	Published	Corsetti, 1989

Table 11. The Atlases of the Wintering Birds in other local types

Territories	SP	Area	NS	ST	SL	NO	NBSp	MEDIA	%NP/Tot	NP/Pass	Result	References
Medio ed alto bacino dell'Arno	84/85 - 86/87	4350	45	IGM	10	ND	99	32,7	ND	ND	Unpublished	Sposimo <i>et al.</i> , 1985
Fascia costiera del Lazio	92/93 - 94/95	ND	147	IGM	5	3	181	53,3	58,6	1,4	Published	Biondi <i>et al.</i> , 1999

Repeated grid mapping for 35 years

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Abstract

In the region of greater Bonn, Germany, grid mapping in squares of geographical minutes started in 1975 and has been repeated every five years in the same plots between 1985 and 2010. A regression analysis on the results of the seven counts shows that 21 species suffer a significant decline and 29 have significantly increased their distribution. We are sure that the distribution decline is caused by the general decline in population numbers whereas the increase in range is only in some cases caused by the general increase in population. Human activity in the environment has created additional breeding habitats from which certain species can benefit in distribution. The results are also presented in maps which show the changes in relation to the predominant habitats.

Introduction

In the period 1974-1978 the ornithological working group for Bonn and its surroundings (OAG Bonn) performed a breeding bird mapping project in the region of larger Bonn. Mapping units were the grids of 'geographical minutes', i.e. 1.2 to 1.8 km of the Topographic Map 1:25 000 (TK 25). Each year one quarter of the TK25, or a total of 15 squares were studied. The results were published in Rheinwald et al. 1984 and 1987.

In 1985 the members of the OAG Bonn decided to repeat this mapping in one quarter. Since in 1975 the north-eastern quarter was studied, in 1985 we investigated this quarter of those TK25 again. Since then this survey in the NE-quarter has been repeated every five years. In 2010 we had the seventh run of the grid mapping.

The mapping is qualitative. Fieldworkers use recording sheets which indicate for most species when an observation can be considered as a breeding record. Since 1990 we map the same 13 TK25 NE-quarters which cover 420 km². This large area is representative for the southern part of the state (Land) of North Rhine-Westphalia.

We analyse the results in two ways. We determine first for each study year the sum of all mapped squares and ascertain the percentage from the total squares. The percentages of the seven mapping years are analysed by a linear regression. We use the gradient of the regression line as a measure for

the increase or decrease and the correlation coefficient as a measure for the significance

To illustrate the changes in species distribution between six years (1990 was omitted to obtain a better format) we produced for a number of species figures which show all ‘minutes squares’ with breeding records. The basis of the figures is the map of the study area where only the NE-quarters are used. That means that the four cardinal points and the main landscapes (lowlands, highlands, woodlands, and agricultural areas) are preserved.

We also produced three maps of the study area with the distribution of the various land use categories in 2010 (Figure 1), and the spatial changes for farmland (field) between 1975 and 2010 (Figure 2).

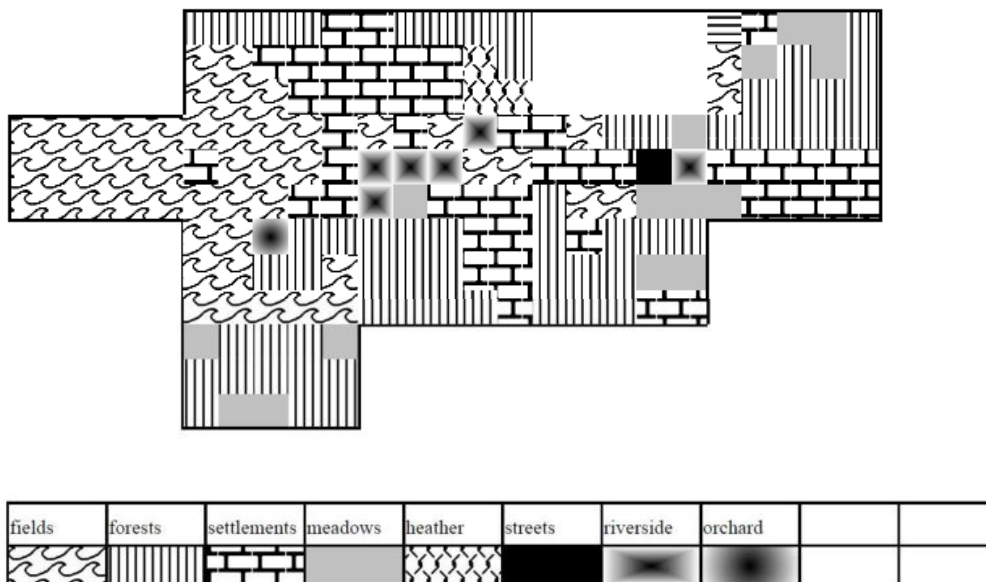


Figure 1: Map of the study area with main land use categories (2010)

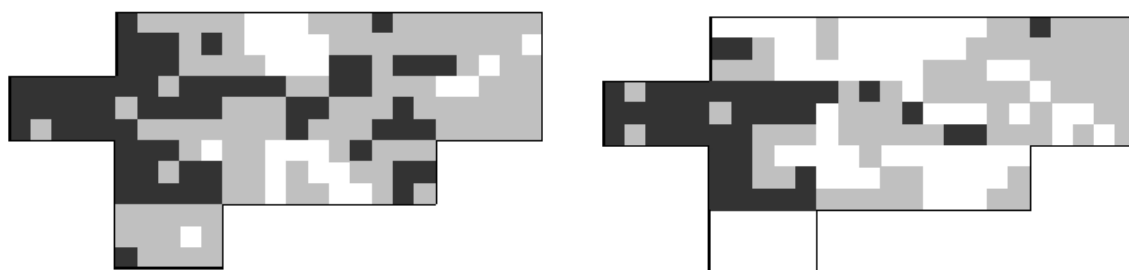


Figure 2: Changes in distribution of fields between 1975 (left) and 2010 (right) in the study area. Black=>50% cover in the grid, Grey=<50%, Blank=absence

Results

Increase and decrease of the distribution

In Table 1 all species with a significant decline from 1975 to 2010 are presented. Table 2 shows the species with significant increase. For some examples of spatial changes, see Figure 3 and 4.

Table 1: Species that decreased significantly in distribution between 1975 and 2010.
 $>0,754-0,874 = p < 0,05$; $0,875-0,950 = p < 0,01$; $>0,951 = p < 0,001$ (two-sided test)

Species	1975	1985	1990	1995	2000	2005	2010	annual change	Corr coeff.
<i>Anthus trivialis</i>	59,2	44,3	36,2	23,4	17,4	5,6	8,2	-1,6***	0,984
<i>Cuculus canorus</i>	34,0	30,3	26,6	21,5	12,3	9,2	5,6	-0,89***	0,976
<i>Emberiza calandra</i>	24,4	16,7	7,5	7,3	5,6	2,1	1,0	-0,67***	0,958
<i>Emberiza schoeniclus</i>	18,8	17,1	12,9	9,3	6,2	7,7	4,1	-0,44***	0,963
<i>Phylloscopus trochilus</i>	78,1	76,0	81,6	71,2	56,4	46,2	37,9	-1,26**	0,887
<i>Alauda arvensis</i>	81,1	63,8	65,0	67,3	56,9	46,2	39,0	-1,09**	0,941
<i>Phasianus colchicus</i>	59,2	41,1	30,8	33,7	30,8	28,7	16,7	-1,02**	0,933
<i>Phoenicurus phoenicurus</i>	38,5	19,4	19,5	5,9	6,7	3,6	4,6	-0,98**	0,925
<i>Carduelis cannabina</i>	71,1	51,1	52,9	56,6	48,7	39,5	31,3	-0,96**	0,917
<i>Perdix perdix</i>	42,9	19,9	21,6	18,1	15,9	12,3	10,8	-0,80**	0,901
<i>Gallinula chloropus</i>	20,3	12,6	9,1	10,2	7,2	7,2	6,7	-0,36**	0,911
<i>Vanellus vanellus</i>	14,8	14,4	15,0	13,2	7,7	8,2	6,2	-0,28**	0,885
<i>Picus canus</i>	9,6	6,3	8,7	4,4	3,1	3,1	0,5	-0,25**	0,925
<i>Oriolus oriolus</i>	11,4	9,9	7,0	8,8	2,6	3,1	3,2	-0,24**	0,894
<i>Caprimulgus europaeus</i>	1,8	0,9	0,8	1,0	1,0	0,0	0,0	-0,05**	0,882
<i>Streptopelia turtur</i>	42,9	21,2	20,8	27,3	25,1	15,9	9,2	-0,73*	0,833
<i>Luscinia megarhynchos</i>	20,7	17,6	10,8	12,7	7,7	9,7	10,3	-0,33*	0,857
<i>Galerida cristata</i>	7,7	3,1	0,0	0,0	0,5	0,0	0,0	-0,20*	0,828
<i>Saxicola rubetra</i>	7,4	1,8	2,0	0,5	0,5	0,5	0,0	-0,18*	0,861
<i>Oenanthe oenanthe</i>	6,6	0,9	0,4	0,5	0,0	0,0	0,0	-0,16*	0,788
<i>Charadrius dubius</i>	4,8	5,4	2,9	2,0	2,1	1,0	2,1	-0,11*	0,842

For twenty-one species the distribution has decreased. All of them show a significant decline in their population numbers in many parts of Europe too. We can conclude from this that the population decline leads to restriction of the distribution because the species retreat to the better habitats and leave the less optimal ones. We could suppose from this relation that the amount of population decline and amount of restriction in distribution should be in the same order. A comparison with local data shows a good agreement.

Table 2: Species that increased significantly in distribution between 1975 and 2010.
>0,754-0,874 = p<0,05; 0,875-0,950 = p<0,01; >0,951 = p<0,001 (two-sided test)

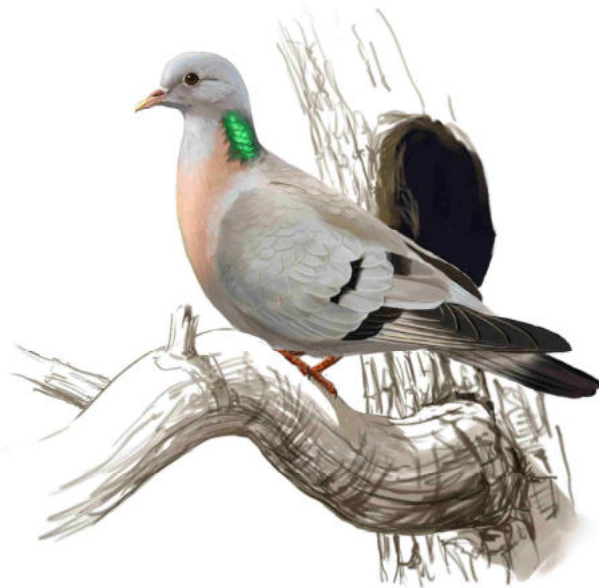
Species	1975	1985	1990	1995	2000	2005	2010	annual change	Corr coeff
<i>Corvus corone</i>	43,3	56,6	73,7	80,0	86,7	90,3	90,3	1,45***	0,963
<i>Columba oenas</i>	0,7	3,1	4,1	9,8	19,5	21,0	24,6	0,77***	0,951
<i>Fulica atra</i>	2,9	4,5	7,0	7,3	9,7	9,2	11,9	0,25***	0,976
<i>Dryocopus martius</i>	5,5	5,4	7,0	9,3	9,7	10,8	12,3	0,21***	0,959
<i>Dendrocopos major</i>	50,0	47,9	69,5	77,1	82,6	86,7	79,0	1,14**	0,879
<i>Dendrocopos medius</i>	0,0	4,0	3,3	6,8	5,6	12,8	21,0	0,52**	0,885
<i>Lanius collurio</i>	6,6	7,6	10,8	12,7	11,8	19,0	17,9	0,36**	0,930
<i>Certhia brachydactyla</i>	11,4	9,5	12,0	14,2	14,9	17,4	21,5	0,30**	0,887
<i>Corvus monedula</i>	2,2	2,2	2,5	5,9	7,7	6,7	11,3	0,26**	0,901
<i>Accipiter gentilis</i>	1,8	5,4	5,8	10,2	7,7	9,7	10,3	0,24**	0,904
<i>Buteo buteo</i>	40,0	30,0	46,2	59,0	63,1	60,0	68,7	1,01*	0,867
<i>Sitta europaea</i>	42,5	43,4	67,5	73,7	71,3	71,3	68,2	0,90*	0,800
<i>Erithacus rubecula</i>	69,2	63,3	84,5	83,4	95,9	93,8	90,3	0,86*	0,836
<i>Aegithalos caudatus</i>	28,1	25,7	38,7	51,7	55,9	46,2	50,8	0,81*	0,817
<i>Garrulus gladius</i>	55,1	53,8	69,1	68,3	82,6	79,0	72,8	0,75*	0,822
<i>Parus cristatus</i>	13,3	14,9	23,3	34,6	35,9	27,2	29,7	0,57*	0,765
<i>Sylvia atricapilla</i>	76,6	82,3	88,7	97,1	98,5	96,9	90,3	0,54*	0,781
<i>Phylloscopus collybita</i>	75,5	82,8	92,9	96,6	99,0	92,8	92,8	0,53*	0,777
<i>Turdus philomelos</i>	75,1	85,9	93,7	93,2	95,9	93,8	90,8	0,46*	0,765
<i>Sylvia borin</i>	58,8	57,4	70,8	79,0	85,1	74,4	63,6	0,42*	0,489
<i>Parus caeruleus</i>	82,5	91,4	95,8	94,2	95,8	97,4	94,9	0,34*	0,820
<i>Accipiter nisus</i>	0,3	4,0	5,8	14,2	10,8	8,2	12,3	0,33*	0,803
<i>Columba palumbus</i>	84,0	90,9	97,0	96,1	98,5	97,4	94,4	0,32*	0,758
<i>Anas platyrhynchos</i>	21,4	24,8	27,9	35,1	32,3	33,3	29,7	0,31*	0,765
<i>Dendrocopos minor</i>	6,2	3,1	5,8	10,7	10,3	10,8	15,9	0,30*	0,843
<i>Carduelis chloris</i>	74,8	71,4	75,0	86,8	88,2	86,2	75,4	0,28*	0,483
<i>Parus major</i>	88,8	93,2	98,3	97,6	100	97,9	96,9	0,25*	0,772
<i>Podiceps cristatus</i>	0,7	2,7	3,3	3,4	3,1	3,1	5,1	0,09*	0,863
<i>Alcedo atthis</i>	1,1	0,9	1,2	2,9	3,1	2,6	3,1	0,07*	0,843

Twenty-nine species increased significantly in the percentage of occupied squares in the last 35 years. Why is the number of increasing species much larger than that of decreasing, while in the population trends it is just the opposite?

From a recent list of population trends of birds in Germany (Sudfeldt et al. 2009) and other sources we have information about trends from 1990 to 2007. The species of Table 2 can be divided into three categories: (1) species with increasing populations (*Accipiter gentilis* and *nisus*, *Columba oenas*, *Dryocopus martius*, *Dendrocopos major* and *medius*, *Sylvia atricapilla*); (2) species without significant population trend (*Podiceps cristatus*, *Anas platythynchos*, *Buteo buteo*, *Fulica atra*, *Columba palumbus*, *Alcedo atthis*, *Dendrocopos minor*, *Erithacus rubecula*, *Sylvia borin*, *Aegithalos caudatus*, *Parus major*, *caeruleus* and *cristatus*, *Sitta europaea*, *Certhia brachydactyla*, *Lanius collurio*, *Garrulus glandarius*, *Corvus corone* and *monedula*); (3) species with declining populations (*Turdus philomelos*, *Phylloscopus collybita*, *Carduelis chloris*).

In group 1 the explanation is obvious: an increasing population leads to an enlargement of the breeding range. In group 2 and 3 the population is stable or decreasing but the breeding range is significantly enlarged. The main cause for this phenomenon is that the landscape has changed considerably due to human activities. Examples are the construction of roads through large areas with arable country, changes in openness of the landscape as open areas now have fringes of bushes and trees. In time, towns and even villages have expanded together with their commercial or industrial areas. In the Rhine valley there are now a large amount of gravel-pits. All this changes have not improved the breeding conditions and the population numbers have not increased or even decreased. However a number of species birds used the change to expand their breeding ranges.

From our findings we deduce that conservation emphasis should lie on the improvement of the specific habitats of the species so that breeding output and survival are increasing, and that new habitats not necessarily provide better conditions.



In Figure 3 and 4 we give a few examples of spatial changes in distribution. We chose species that show highly significant changes in the last 35 years (see Table 1 and 2). The figures for all species with significant changes will probably be published in a German scientific journal.

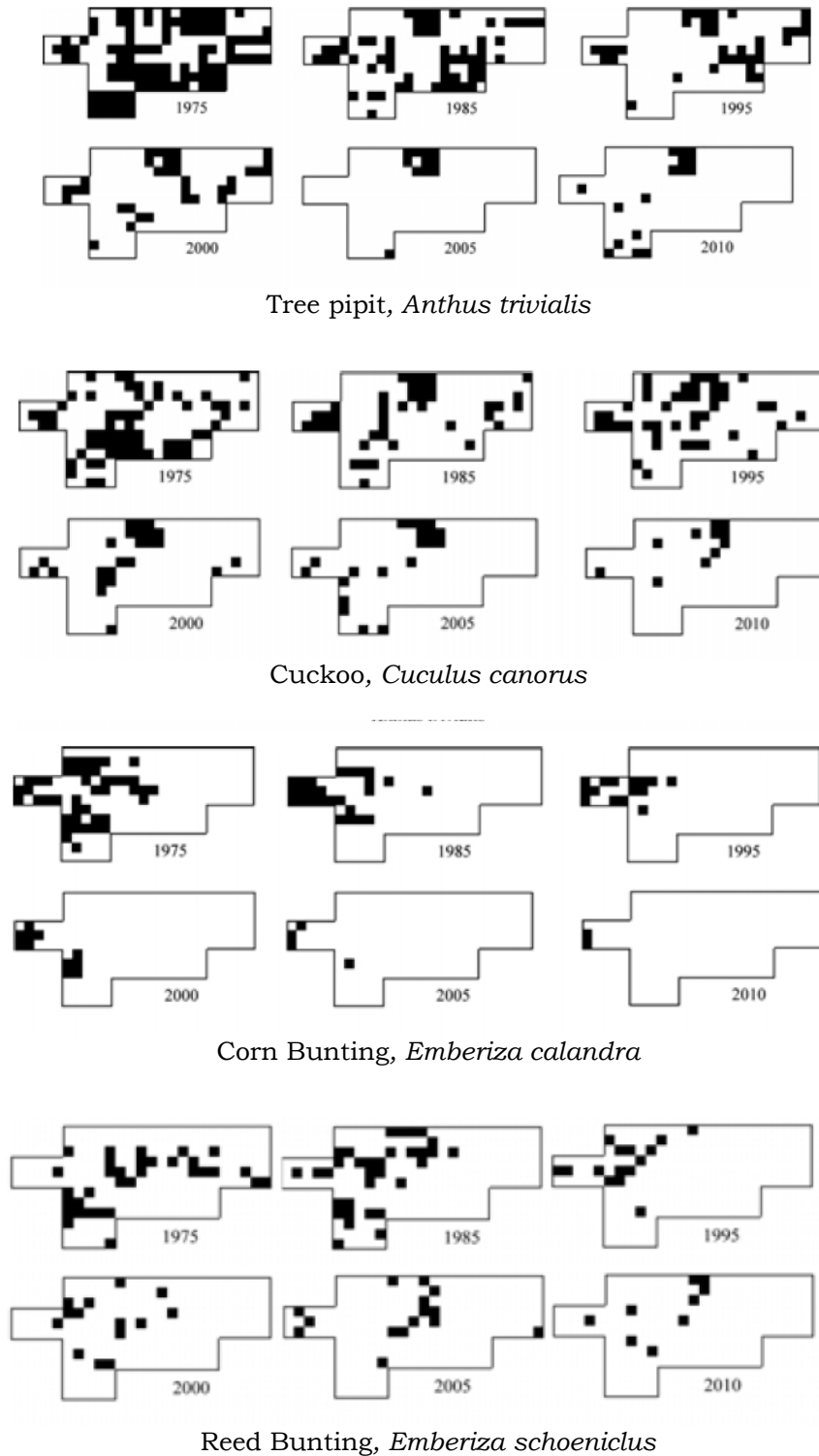
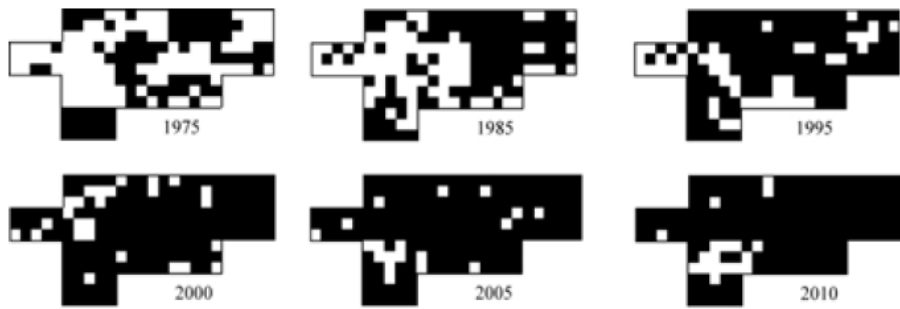
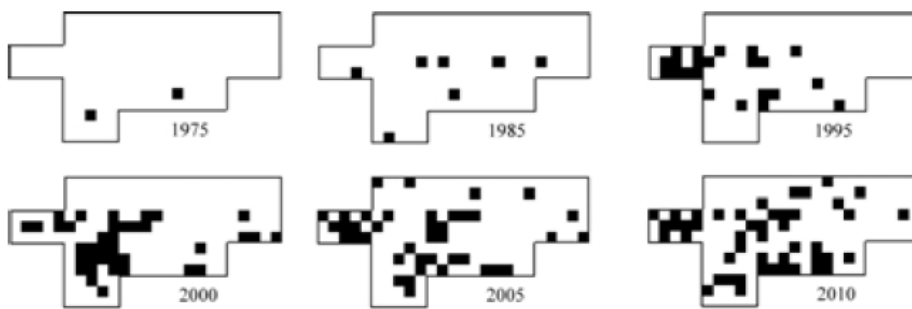


Figure 3: Changes in distribution of four declining species 1975-2010. First row 1975-1985-1995, second row 2000-2005-2010

In the east and south of the map we have areas with hills and forests, in the central parts the Rhine valley with towns, traffic lines and plenty commercial activity and in the west extended agriculture (see Figure 1 & 2). In the middle of the upper border lies the Wahner Heide, a nature reserve which was for long time a closed military camp; the airport Cologne/Bonn is close by. In this area where Tree pipit and Cuckoo persist in good populations we find also high densities of Stonechat and Red-backed shrike.



Carrion Crow, *Corvus corone*



Stock Dove, *Columba oenas*



Black woodpecker, *Dryocopus martius*

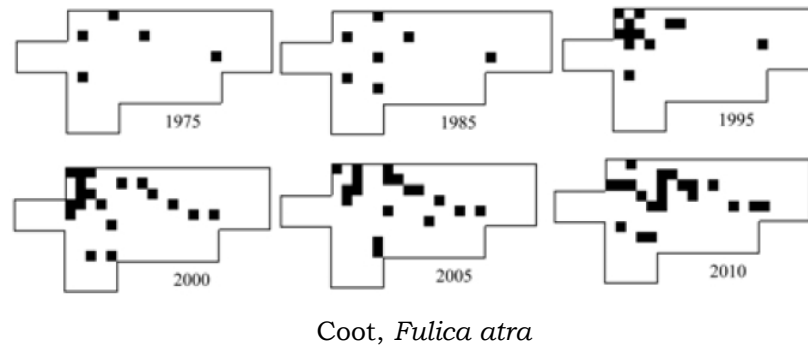


Figure 4: Changes in distribution of four increasing species 1975-2010. First row 1975-1985-1995, second row 2000-2005-2010

All corvids increased in the last decades. So it is not surprising that the carrion crow has settled in the last 35 years nearly all areas completely. And it is a very common bird in the region whereas the magpie which is blamed to have multiplied in reality has nearly not increased in numbers.

A really unexpected development shows the Stock dove. In the seventies of last century it was a candidate for the Red Data Book. The causes for the steep decline of the species were supposed to be lack of holes of the Black woodpecker. However this species has increased and has spread into new areas. A comparison of the two diagrams indicates that there may be some interdependence between Stock dove and Black woodpecker. But the main increase of the stock dove took place in the areas with much arable country where the Black woodpecker does not occur. Here, the Stock dove uses holes in the ground (such as rabbit holes) for nesting.

The spread of the Coot may have its cause in the increase of submerged vegetation in all stagnant waters as a consequence of fertilisation by pollution. Another reason may be that the birds became tamer as a consequence of the halt in persecution. They settle more often in smaller habitat patches even in urbanised areas. This is also the case for the Great crested grebe.

Conclusions

The results of qualitative repeated grid mapping provide interesting additional information to bird census work. Declining species generally show a decline in distribution area. Several of the increasing species, especially those with steep increase, extend also their breeding range. But a lot of species show an increase in range although their population numbers are stable or declining.

We think that these findings say that repeated study of the distribution reveals a better insight into the demands of birds and therefore into the needs for nature conservation. We plan to continue these mapping though those who started the project are now at an age where fieldwork becomes difficult. We hope that at least several of the thousands of birders will be interested in this long-time project to ensure its future.

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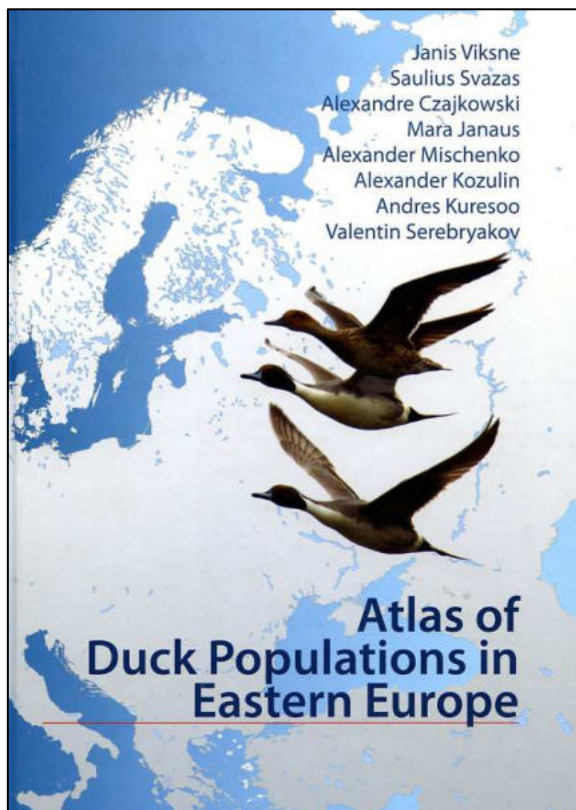
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Books, reports & journals

Viksne, J., Svazas, S., Czajkowski, A., Janaus, M., Mischenko, A., Kozulin, A., Kuresoo, A., Serebryakov, V. 2010: Atlas of Duck Populations in Eastern Europe. Akstis, Vilnius. 199 pages. ISBN 978-9986-759-40-9
Contact: Jānis Viksne, ornlab@latnet.lv

Eastern Europe is undoubtedly the main breeding area of many European duck species. Yet, knowledge on the situation of ducks in this vast region has not been readily available to researchers and conservationists in Western Europe, where large parts of the eastern breeding populations spend the winter. Thanks to the efforts of waterbird specialists from six countries, supported by the OMPO office in Vilnius, a lot of hidden information has now been compiled in an English book.

The title “atlas” could be slightly misleading as the 200 pages do not contain detailed grid-based distribution maps but present a huge amount of information on range, breeding habitats and densities, population size and trend, main staging and wintering sites within the region, phenology and threats. The area covered includes European Russia, Ukraine, Belarus and the three Baltic states Lithuania, Latvia and Estonia. Information is presented for eleven duck species of the genus *Anas* and *Aythya*.



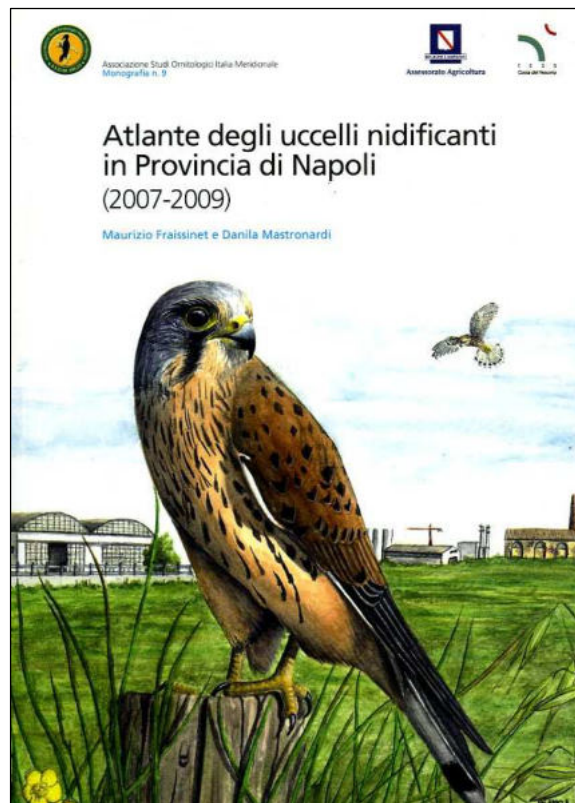
This is not a book which is easy to read, as the text does not attempt to provide an overall synthesis but rather presents information for each country, extracted from many special publications as well as unpublished data. The lack of a synthesis is understandable as the information available for different countries and regions varies strongly and many gaps remain. However, many maps, tables and graphs provide an insight in the research carried out in the countries concerned. The bibliography lists mostly publications from Eastern Europe, whereas recent studies on the same species, in particular of ringing recoveries, carried out in Central and Western Europe, are lacking. Hopefully, the book will encourage researchers to collaborate across regions and to analyse the vast amount of data at a pan-European level.

Verena Keller

Fraissinet, M. & Mastronardi, D. 2010: Atlas of the breeding birds of the province of Naples (2007-2009). Associazione Studi Ornitologici Italia Meridionale, Monografia n.9. 303 pages.(in Italian with English summary: Atlante degli uccelli nidificanti in Provincia di Napoli (2007-2009). ISBN 978-9986-759-40-9
Contact: Maurizio Fraissinet, mfraissinet@tiscali.it

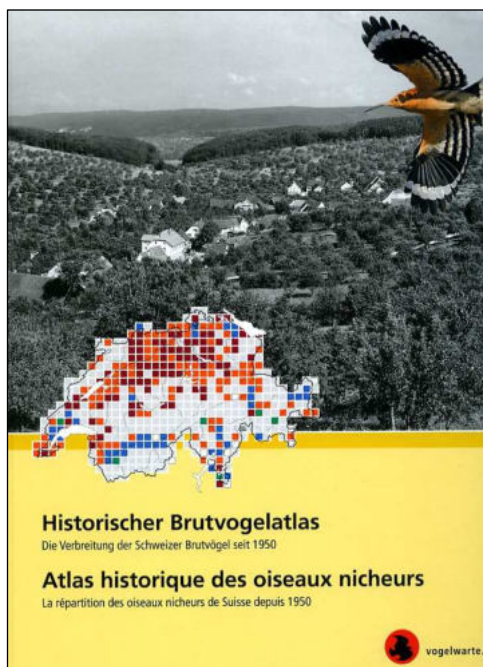
Although Italy is already world champion in the production of breeding bird atlases on various geographical scales, here we have another interesting provincial atlas published, this time on the Province of Naples. As of the 29 already existing provincial atlases in the country only one covers an area in the southern part of the country, this recent work is most welcome and can be considered as an important addition to the ornithological knowledge in Italy. This becomes even more important in the light of the level of urbanisation and the severe environmental degradation of wide areas of this province. After a short first chapter on the history of Naples follows a more extensive part on the description of geography, landscape, habitats and ecosystems and the climatic features of the region. The text is well illustrated with good quality pictures. The province of Naples lies on the coast in the region of Campania and has a surface of approximately 1171 km². Apart from the Vesuvius volcanic complex, the Lattari mountains in the south up to 1443 m, and Appenines in the east, the remaining areas of the province consists mainly of alluvial plains. The climate is typically Mediterranean. There are vegetation associations typical of various stages of Mediterranean maquis and characteristic formations of sub-montane and montane belts. In the next chapter the method is explained. Research was carried during three years, from 2007 to 2009. Throughout the mapping period a total of 39 fieldworkers participated at the survey. The province was divided into 148 squares of 5 × 5 km, except for squares with a small surface for which the area was lumped together with the neighbouring square.

The main part of the book is taken by the species texts. On two pages following information is provided: Italian and scientific name, status in Campania, biogeographical region, European and national population estimation. The text itself gives describes the European and Italian distribution, the habitat choice and former presence in the study area, the recent distribution and the estimated number of breeding pairs. The colour map shows the geographical features of the study area superposed by the grid of 5 × 5 km. The dots on the map report the distinction in three categories: possible, probable and confirmed breeding. Each species text is illustrated by several pictures. A total of 99 species (all categories together) were found during the survey period. The most common species (found in the highest percentage of squares) are Blackbird, Serin, Blackcap and Greenfinch. In a short closing chapter the conservation status of the breeding birds of the province is analysed.



Knaus, P., Graf, R., Guélat, J., Keller, V., Schmidt, H. & Zbinden N. 2011: Historical atlas of the breeding birds of Switzerland. The distribution of breeding birds since 1950. Schweizerische Vogelwarte, Sempach. 336 pages. (In French and German with English and Italian summaries: Historische Brutvogelatlas. Die verbreitung der Schweizer Brutvögel seit 1950- Atlas historique des oiseaux nicheurs. La répartition des oiseaux nicheurs de Suisse depuis 1950). **See also:** www.vogelwarte.ch/Atlas1950. **Order:** <http://www.vogelwarte.ch/bucher.html>, Price: 84 CHF

Information on the former distribution of species is an important basis from which to evaluate the current situation of birds and their conservation needs. The Swiss Ornithological Institute launched a project to document the distribution of breeding birds in the 1950s with the aim to create a national atlas for the period 1950-1959 comparable to the two later ones. Observations in notebooks, regional publications and documents hidden in archives provided an unexpected wealth of information, the result of which is this historical atlas. Despite some gaps it documents the changes in distribution of a large number of species since 1950. After a short introduction an extensive chapter is dedicated to landscape changes and new conditions for breeding birds since the 1950s. It is illustrated with various



interesting landscape views made on the same spot (historical and recent) and includes several maps. Two more chapters tell us more about the history of bird watching in the country and about the organisation of the project, and provide information on the atlas perimeter, data collection, storage, compilation presentation and treatment of incomplete data. A next chapter is dedicated to the results, dealing with the comparison between the more recent atlases of 1972-76 and 1993-96, number and richness of species, changes in range and effects of landscape changes illustrating the findings with clear tables and a number of maps. The main part of the book presents maps and texts for 100 species, most of which have shown marked changes in their breeding distribution since 1950. The distribution for the three atlas periods is shown in three small maps (squares of 10×10 km). A synthesis of all three periods is presented

in a larger and coloured comparative map, each of the four colours used indicating a possible combination of presence/absence for the three atlas periods. Although it is the only way to show the changes together, it needs some attention to study the maps. The species texts (in German and French with English and Italian summaries) describe the changes in distribution. For each species a table summarises the changes in occupied atlas squares between the atlas periods for the whole of Switzerland and for the Central Plateau, the region for which data quality is the best. This book shows in an excellent way how old data can be 'dug up' and successfully used for long-term comparisons in breeding bird distribution.

Valkama, Jari, Vepsäläinen, Ville & Lehikoinen, Aleksii 2011: The Third Finnish Breeding Bird Atlas. – Finnish Museum of Natural History and Ministry of Environment. <<http://atlas3.lintuatlas.fi/english>> (cited [DATE]) ISBN 978-952-10-7145-4

This is the official English version of *The Third Finnish Breeding Bird Atlas*. The results have not been published in any printed format.

The Third Finnish Breeding Bird Atlas survey was conducted in 2006–2010. The first two atlases were carried out in 1974–79 and 1986–1989. The aim of the third atlas was to examine the present distributions of birds and compare them with those published in the previous atlases. The atlas data can be utilized together with other long-term bird monitoring and other environmental data to investigate changes in biodiversity. Distribution data was collected from 10 x 10 km grids (KKJ Uniform Coordinate System). The third atlas was conducted in close co-operation with researchers and research organizations, BirdLife Finland and its member associations and, most importantly, with thousands of volunteer bird-watchers.

Distribution maps are shown for all those species whose breeding has been confirmed during any of the three atlases, or at least two breeding attempts have been verified outside the atlas periods. The Little Crake *Porzana parva* has been included as an exception here because, although there are no verified breeding attempts, there are regular observations of displaying males.

The exact locations of grids occupied by some threatened species have been randomly moved from 0 to 30 km (for Spotted Eagle *Aquila clanga* from 0 to 50 km).

The bird atlas survey can be viewed as a tool to monitor biodiversity. The main aim of the third atlas was to examine the present distribution of Finnish birds, and to investigate changes in distribution together with other environmental data. In particular, the first bird atlas 1974–79 (Hyytiä et al. 1983) and the second bird atlas 1986–89 (Väisänen et al. 1998) are important reference materials. The data of the atlas were also used in the evaluation of the Red Listed species in Finland 2010. Furthermore, more detailed studies concerning e.g. distribution changes are currently continuing and will be published later on.

Most ecosystems have been adversely influenced by human activities. Furthermore, human-induced climate change has been a topic of discussion in recent years. One of the aims of the scientific use of the atlas and other environmental data is to examine how (man-made) changes in the environment affect the diversity of our birds. Birds, in turn, are typically considered as good indicators of environmental change and therefore changes in bird communities may reflect changes on a larger scale.

When the third bird atlas project was initiated, a specific network of standardized line transect censuses was also established. The aim is to get data on numbers of birds and their population changes. When put together, the atlas data and constant line transect data form a good overall picture of the numbers and distribution of Finnish bird populations. The population estimates shown in this web page are mostly based on data from line transects. For birds of prey, they are derived from the national raptor grid survey which was started in 1982. However, for some rarer bird of prey species, data has been collected by WWF Finland and Metsähallitus. Finnish Game and Fisheries Research Institute has collected data on e.g. waterfowl, game species and farmland birds. Population sizes were needed for the evaluation of Red Listed species of Finnish birds in 2010.

It was decided even before the start of the third atlas that it will only be published on the internet. This made fast publication of results possible – in practice, the atlas was ready only three months after closure of the project. On the atlas webpage it is now possible to compare results of all three atlases. However, the different observation activity in all three atlases has not been taken into account in the figures.

(text from the website)

Example of a species page:

Finnish Breeding Bird Atlas

Home
Species
Background

Wigeon (*Anas penelope*)

FI: Haapana, SV: Blåsänd

« »

Population trend: Declining ▼

Distribution trend: Stable →

Breeding pairs: 45,000–55,000

Finnish red list category: LC

Degree of breeding evidence	Grids	% of grids
Confirmed	1085	28,1 %
Probable	606	15,7 %
Possible	728	18,8 %
Total	2419	62,6 %

Comparison to the combined results of 1st and 2nd atlas

BIRD ATLAS 1974–79/1986–89
Anas penelope
Wigeon

BIRD ATLAS 2006–2010
Anas penelope
Wigeon

Larger map

BIRD ATLAS 2006–2010
Anas penelope
Wigeon

80

Your text in the next issue?

Bird Census is meant as a forum for everybody involved in bird census, monitoring and atlas studies. Therefore we invite you to use it for publishing articles and short reviews on your own activities within this field such as (preliminary) results of a regional or national atlas or a monitoring scheme, species-specific inventories, reviews or activity news of your country (as a delegate: see also below)

Instructions to authors

- Text in MS-Word.
- Author name should be with full first name. Add address and email address.
- Figures, pictures and tables should not be incorporated in the text but attached as separate files.
- Provide illustrations and figures both in colour and black and white. Figures and tables in colour will be shown in colour in the PDF version on our EBCC website: www.ebcc.info.
- The length of the papers is not fixed but should preferably not exceed more than 15 pages A4, font size 12 pt, line spacing single (figures and tables included).
- Papers should include an abstract of maximum 100 words.
- Authors will receive proofs that must be corrected and returned as soon as possible.
- Authors will receive a pdf-file of the paper.

References:

- In the text: Aunins (2009); Barova (1990a, 2003), Gregory & Foppen (1999), Flade *et al.* (2006), (Chylarecki 2008), (Buckland, Anderson & Laake 2001)
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National delegates are also invited to send a summary of the status of monitoring and atlas work for publication on the website of EBCC, see www.ebcc.info/country.html.

Contact David Noble, British Trust for Ornithology, The Nunnery, Thetford, Norfolk IP24 2PU, United Kingdom, +44 1842 750050, email: david.noble@bto.org.

Please send short national news for the Delegates Newsletter to EBCC's Delegates Officer: Åke Lindström, Dept. of Animal Ecology, Lund University, Ecology Building, S-223 62 Lund, Sweden, +46-46-2224968, Mobile: +46-70-6975931, email: ake.lindstrom@zooekol.lu.se

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