The White Stork in Portugal: Results of the 2004 National Census

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Zusammenfassung

Im Norden und in der Mitte Portugals kommt der Weißstorch vor allem im Landesinneren und zwei Verbreitungsinseln an der Küste in den Regionen von Baixo Vouga (Aveiro) und Baixo Mondego (Coimbra) vor. In der südlichen Landeshälfte ist die Art weiter verbreitet, wenngleich sie bewaldete Regionen und die Berge meidet. Das Vorkommen ist klar mit der Existenz von Nahrungshabitaten, vor allem mit Flächen extensiver Landwirtschaft und Reisfeldern, verbunden. In den letzten beiden Jahrzehnten hat eine Ausbreitung in einige Randregionen stattgefunden.

Es wurden 8.206 Nester gefunden, von denen 7.685 von Weißstörchen besetzt waren. Damit hatte ein erheblicher Anstieg der besetzten Nester stattgefunden (133% seit 1994 und 401% seit 1984). Die meisten besetzten Nester befanden sich in der südlichen Landeshälfte.

Landesweit betrug die Dichte der besetzten Nester 8,65 pro 100 km². Die höchsten Werte wurden in der Südhälfte Portugals gefunden, jedoch auch in den Regionen Baixo Vouga (Aveiro), Baixo Mondego (Coimbra) und einigen Teilen von Castelo Branco.

Die meisten Nester befanden sich in Bäumen. Danach sind Masten und andere menschgemachten Strukturen häufig genutzte Nestunterlagen. Der Anteil von Nestern auf Masten hat sehr stark zugenommen.

Summary

In the North and Centre of Portugal, the White Stork is found throughout the border and interior with two further distribution patches on the coast, more specifically in the regions of Baixo Vouga (Aveiro) and of Baixo Mondego (Coimbra). In the southern half of the country, the species is more widespread, albeit nesting only at low densities or even absent in forested or mountainous areas. Its distribution clearly appears conditioned by the existence of feeding-habitats, in particular on non-intensive farming and rice fields. In the last two decades, the range has spread in some peripheral areas.

There were 8,206 nests detected, of which 7,685 were occupied, constituting a considerable increase in numbers of occupied nests (133% from 1994 and 401% from 1984). A clear majority of the pairs nest in the southern half of the country.

At a national level, the density of occupied nests was 8.65 per 100 km². The highest numbers were registered in the southern half of the country, but high densities were also observed in Baixo Vouga (Aveiro), Baixo Mondego (Coimbra) and some parts of Castelo Branco.

As for the locations of nests, most were in trees, with posts and other human structures the next most frequent nest supports. A very considerable increase was recorded in the proportion of nests placed on posts.

Introduction

In 1958/59, Portugal participated for the first time in the world censuses of White Storks (SANTOS JÚNIOR 1961), as part of the 2nd International White Stork Census. Since then, Portugal has participated in all subsequent world censuses of this species.

As observed in other countries of Western Europe (SCHULZ 1995), White Stork declined over a period of some decades. In 1984, the number of occupied nests was the lowest ever recorded in a census. The results of the 1994 census showed a clear population increase (ROSA *et al.*1999) reversing the declining trend registered until then.

As part of the 6th International Census of White Storks (2004/05), coordinated by BirdLife International, Portugal conducted its fifth national census of this species. This new census – coordinated nationally by ICN/CEMPA and SPEA/BirdLife – and which was carried out in 2004, aimed to gather information about distribution, population size, breeding density, nest locations and breeding success, and to realise a series of public relations exercises and environmental education presentations. The breeding success results will be presented at a later date.

Methods

During the 2004 breeding season (between March and July), all the areas of previously known breeding, or with habitat considered suitable for the species, were surveyed by 41 local coordinators and their respective teams. In total, there were more than 150 survey team members. There were gaps in the planned coverage within the originally planned survey in only 5 council areas, so the option was taken to extend the field work until September 2004. In all of these situations, given the increased difficulty of detecting nests without the presence of birds and in determining the occupancy of nests in the breeding season, the census was carried out by ornithologists with a high level of experience of the target species. As in the particular case of nests on coastal cliffs and rock stacks in the southwest of Portugal, it had not been possible to obtain good coverage during the previous breeding season, all the information obtained in 2004 was verified and matched with that of the 2005 breeding season.

All detected nests of White Storks were recorded on cards designed for the purpose and distributed in advance by team coordinators. For each nest that was found, the observer was asked to record the following data: exact location (using 1:25,000 scale topographic maps), occupancy status, as much detail as possible about the location of the nest, indicating the existence or absence of an artificial platform.

With regard to occupancy, only two classes were considered:

Occupied — a bird or pair on the nest, or nest recently (re)constructed, or signs of the presence of birds (droppings) or of current nesting activity (egg shells, eggs, chicks, chick down/plumage etc);

Unoccupied — all nests where none of the above conditions were met.

Attempts at nesting but abandoned at the preliminary stage were not considered.

The decision was taken not to follow strictly the methodology proposed by the International Coordinators for the 6th International Census of White Storks, and not to gather data according to the parameters proposed by SCHÜZ (1952), because these methodologies/protocols are very difficult to apply at a national level in countries where there is a high density of occupied nests and/or extensive areas to be prospected, in the context of low numbers of ornithologists/collaborators and scarce financial resources. In fact, the SCHÜZ (1952) protocol has never been fully applied in any census carried out in Portugal (see SANTOS JÚNIOR 1961, BORGES DE CARVALHO 1977, CANDEIAS & ARAÚJO 1989, ROSA *et al.* 1999).

Nest supports were grouped into five categories: trees, buildings, posts, rocks and others. The category "others" only included nests which were difficult to group with any other existing category (e.g. barrel, hay stacks).

In order to facilitate a comparison of the results obtained with those of the previous censuses, the option was taken to present the results classified by administrative units, namely, regional Councils and Districts. At the same time, the information was summarised on UTM maps (squares 10x10 Km) as this is the basis currently adopted by the majority of censuses and atlases.

Results

Distribution

The distribution of nesting White Storks extends from the mountainous north-east to the Terras de Barroso, extending through the interior borders of Beira Alta and almost the whole of the Beira Baixa. A nesting nucleus exists in the wetland areas around the Ria de Aveiro (Baixo Vouga) as well as in the Baixo Mondego and the Leiria region. Nesting takes place along almost the whole length of the valley of the River Tagus, but is virtually absent in the western region; south of the River Tagus it is quite well distributed, yet is absent from the more mountainous regions of the Alentejo plain and from the Algarve (Fig. 1).

Population size

During the 6th National Census of White Storks, 8,206 nests of this species were detected of which 7,685 were occupied and 521 were empty (Tab. 1).

The majority of the occupied nests were found in the south of the country namely in Beja, Évora, Setúbal, Santarém and Portalegre (see Tab. 1). These districts accounted for 82.1% of the occupied nests identified in the census in Portugal. At the other extreme, the smallest proportions of occupied nests were to be found in Vila Real (0.12%), Leiria (0.18%), Lisboa (1.33%), Bragança (1.43%), Guarda (1.55%) and Aveiro (1.93%). No nests were detected in the Districts of Viana do Castelo, Braga, Porto and Viseu.

Breeding density

The overall nesting density (StD) in Continental Portugal was 8.65 pairs per 100 km² (Tab. 1). However, taking into account only the regional councils where occupied nests were detected, the density was 12.61 occupied nests per 100 km².

The highest densities of occupied nests were observed in the districts in the south of the country – namely in Setúbal, Beja and Évora. At the opposite extreme are Vila Real, Leiria, and Bragança (Tab. 1).

In Coimbra, Aveiro and Lisbon, White Storks breed at such high densities that even taking into account only the populated council areas, the recorded breeding densities were considerably higher (23.90, 13.28, and 9.02 occupied nests per 100 km², respectively) than those obtained for the district as a whole.

Nest location

For the 7,681 occupied nests for which the category of nest location was recorded, most were built in trees, followed by posts and other human structures of various types. However, there were significant differences between districts (Tab. 1).

The principal tree species used for nesting are *Populus* sp. (25.5%, n=3111), *Pinus* sp. (24.2%), *Eucalyptus* sp. (21.0%), *Fraxinus* sp. (8.4%), *Quercus ilex (6.2%)* and *Cupressus* sp. (6.0%). The remaining 9.6% was made up of some twenty or so other species.

Amongst 2,868 occupied nests on posts, 65.2% were found on electricity pylons, 22.8% were on dedicated nesting posts and 11.2% on telephone posts. Of the 1,824 occupied nests on electricity pylons, 62.0% were found on high and very-high tension posts, 24.6% on medium tension posts and 13.4% on low tension posts.

White Stork nests are also found on a wide range of human structures, notably chimneys (25.6%, n=1439), roofs (19.2%), ruins (19.2%), churches and chapels (9.9%) and grain silos (7.2%).

Of the 103 occupied nests on rocks, 96.1% were found on the coastline in the southwest of the country and only 3.9% on rocky outcrops and cliffs in the interior of southern Portugal.

Discussion

Distribution

The first national census made in Portugal – 1958/59 – will have had considerable gaps in coverage, such that the number of regional councils where White Storks were nesting will have been underestimated, mainly in the south and in the northeast of the country. Thus, it is believed that, contrary to what is shown in Table 2 and Figure 2, the breeding range of the White Stork diminished between 1958/59 and 1984. Since then, the range has expanded, as White Storks are confirmed to breed in more council areas (+37.5%) than 20 years ago (Tab. 3). Both historical loss and recent reoccupation of range have occurred on the edges of the main areas of distribution.

The distribution of the White Stork in Portugal is probably limited by feeding habitat – specifically, non-intensive farming, rice fields, wet meadows, reservoirs, ponds, timber woods and landfills – although there are no studies to support this theory unequivocally.

Population size

Between the first and third national census of White Storks, the number of occupied nests declined by about 49%. Most of this decrease occurred in the period 1958/59-1974/77 (about 38-43%), the trend being much less pronounced during 1974/77-1984 (about 10-17%). In fact, there was a considerable increase in the financial and human resources made available for the field work over the period of the three first national censuses, along with better basic knowledge and access to land, so that it now seems clear that the decline in breeding White Stork numbers was even more pronounced than shown by the results of those censuses.

Between 1984 and 2004, there was a considerable increase in breeding White Stork numbers, so that the number of occupied nests increased by about 401%. Between 1984 and 1994, the increase was about 115%, followed by a slightly higher increase of about 133% in the next decade.

Notwithstanding the increases recorded in occupied nests in all districts, considerable quantitative differences exist. Between 1984 and 2004, extremely high increases in occupied nests were noted in Guarda (2,280%), Aveiro (2,000%), Coimbra (1,861%) and Lisbon (1,600%). In Setúbal (791%) and Santarem (746%) the recorded increases were not as pronounced, but were still considerably higher than those observed in the country as whole over the same period. With the exception of the findings in Guarda, where it has to be recognised that the calculated increase could, in reality, be overstated because of failures of coverage in 1984, in the remaining districts the White Stork appears to be dependent on rice fields, where it predates large quantities of Red Swamp Crayfish *Procambarus clarkii* (CORREIA 2001). The introduction of this "exotic" has made these agricultural areas more attractive for new pairs, as well as enabling many other pairs not to migrate, so that the existence of a year-round supply of crustaceans allows the White Stork population to avoid the higher mortality rates associated with migration and over-wintering in Africa.

The changes of migration and of wintering strategies of the White Stork (HERNANDEZ 1995, MARCHAMALO DE BLAS 1995, TORTOSA *et al.* 1995 and ROSA *et al.* 1998), likely enabled by alternative food resources – Red Swamp Crayfish introduced into the Iberian Peninsula at the end of the 1970's (RAMOS & PEREIRA 1981, HOBBS *et al.* 1989) and solid urban residues obtained from rubbish tips and landfills – have probably contributed to the recovery of the breeding population. In addition, the end of a prolonged drought in the traditional wintering areas of the Sahel (HELD *et al.* 2005) should also have made a strong contribution to the recovery of the nesting populations.

Breeding density

The current density of 8.65 occupied nests per 100 km² is considerably higher than that recorded in previous censuses – 3.38 in 1958/59, 1.91 to 2.08 in 1974/77, 1.73 in 1984, and 3.72 in 1994. This increase is obviously a direct consequence of the increase in the number of White Storks nesting in Portugal.

At a district level, the highest densities were found in Setúbal, Beja, Évora, Portalegre and Santarém (Tab. 1). Some of these districts hold the main fragments of non-intensive farming (case of Beja, Évora and Portalegre) where it has been possible to record 50 occupied nests in many of the UTM squares of 10x10 km (in one situation a maximum of 150 occupied nests was surveyed in a single UTM square of 10x10 km). Other districts carry the biggest and most productive rice fields of Portugal – Tejo (Santarém e Setúbal) and Sado (Setúbal) (LIMA 1997). District densities were lower in Coimbra and Aveiro, the location of some two of the most distinctive fragments of rice fields in Portugal – Baixo Mondego and Baixo Vouga (LIMA 1997). However, the distribution of nests depended so strongly on the availability or otherwise of feeding habitat, that locally densities could be very high (in both districts, the highest council-level densities were in excess of 30 occupied nests per 100 km²).

The White Stork nests at low densities or is completely absent from more forested and less agricultural landscapes, or in rough or mountainous areas.

Nest location

Compared with 1994, there was a clear increase in the number of occupied nests in all the pre-defined categories of nest location. However, there was a considerable change in the proportion of different nest types, and for the first time, the majority of occupied nests were not found in trees.

As shown in Table 4, there was a very substantial increase in the number (more than +390% compared with 1994) and proportion of occupied nests on posts (from 17.8% in 1994 to 37.4% in 2004). This continues the trend of change in nest-support observed between 1984 and 1994 (ROSA *et al.* 1999), and demonstrates the capacity of the species to take advantage of new structures. By contrast, compared with previous censuses, there was a decline in the proportion of occupied nests in trees, human structures and on rocks, a tendency already noted in 1984 (ROSA *et al.* 1999).

The decrease in the proportion of nests on rocks is largely accounted for by the reduction in the number of nests on rocky outcrops and cliffs in the interior of the country (26 occupied in 1994 for only 4 occupied nests in 2004).

White Storks show impressive flexibility in their choice of nest site, as shown by the enormous variation observed between districts (Tab. 2).

Conservation

The Livro Vermelho dos Vertebrados de Portugal (Red Book of Portuguese Vertebrates) (ICN 2005) categorises the White Stork as a species with a conservation status of "Least Concern", because of its favourable population trend. In order to maintain this situation it is therefore important to guarantee the maintenance and development of certain agricultural practices, especially in non-intensive farming and in rice fields, in order to secure important feeding habitats of this species. In addition, it will also be important to establish a permanent collaboration with companies that manage the transport and electrical/energy distribution networks, in order to avoid high bird mortality rates through electrocution or collision.

The increasing trend for drought in the Sahel since the turn of the century (eg. HELD 2005) represents the resurgence of a serious threat to the conservation of White Storks in Portugal and the rest of Western Europe. In this context, protection of the principal wintering areas in Portugal and in the Iberian Peninsula is particularly important.

Public Relations work

Progress and results of the 6th National Census of White Storks were disseminated by the principal national media bodies, particularly radio (e.g. Antena 1, Rádio Cidade, Rádio Comercial, Rádio Clube Português and Rádio Renascença) and newspapers and journals (e.g. Correia de Manhã, Diário Notícias, Focus, Público and Visão). In spite of our efforts, television chains barely covered the event, there being only a documentary broadcast on RTP2. Various regional newspapers and radio stations publicised the project.

To our surprise, thanks to an initiative by France Press, the story was taken up in various national papers in other countries (e.g. Costa Rica, Egypt, Laos, Israel, Mexico, Syria, South Africa and Vietnam).

Environmental education

The census produced 5,000 pamphlets, 5,000 posters, 5,000 games, and 5,000 nest registration cards. This material was well-distributed, mainly to 897 schools, 199 municipal bodies, 1,130 scouts' associations, 35 protected area offices and 101 non-governmental organisations.

Acknowledgements

Our thanks are due to Alexandra Lopes (SPEA/BirdLife) who coordinated all the work in the area of Environmental Education, Marisa Candelária (SPEA/BirdLife) who also coordinated the national census and Luís Costa (Executive Director of SPEA/BirdLife) and the rest of the team of SPEA/BirdLife for the unconditional help extended.

We must also thank the bodies which sponsored the carrying out of this census, namely: EDP – Energias de Portugal, RSPB – The Royal Society for the Protection of Birds, IA – Instituto do Ambiente, Swarovsky-Disportugal e CMA – Câmara Municipal de Albufeira.

We extend our thanks to all the regional coordinators and collaborators: the guards and technical personnel of ICN, volunteers from SPEA and of other NGO's (Quercus – Associação Nacional de Conservação da Natureza, CEAI – Centro de Estudos de Avifauna Ibérica, LPN – Liga para a Protecção da Natureza / Alentejo, FAPAS – Fundo para a Protecção dos Animais Selvagens, CEIA – Centro de Educação Ambiental da Serra d'Ossa, Centro de Estudos do Alto Tejo, A Rocha, Associação Aldeia), Comissões Coordenadoras de Desenvolvimento Regional, Câmaras Municipais, students and teachers of some educational instituitons, Corpo Nacional de Escutas, and private individuals.

We also thank José Pedro Granadeiro for the preparation of the distribution maps and David Hurst for the translation into English.

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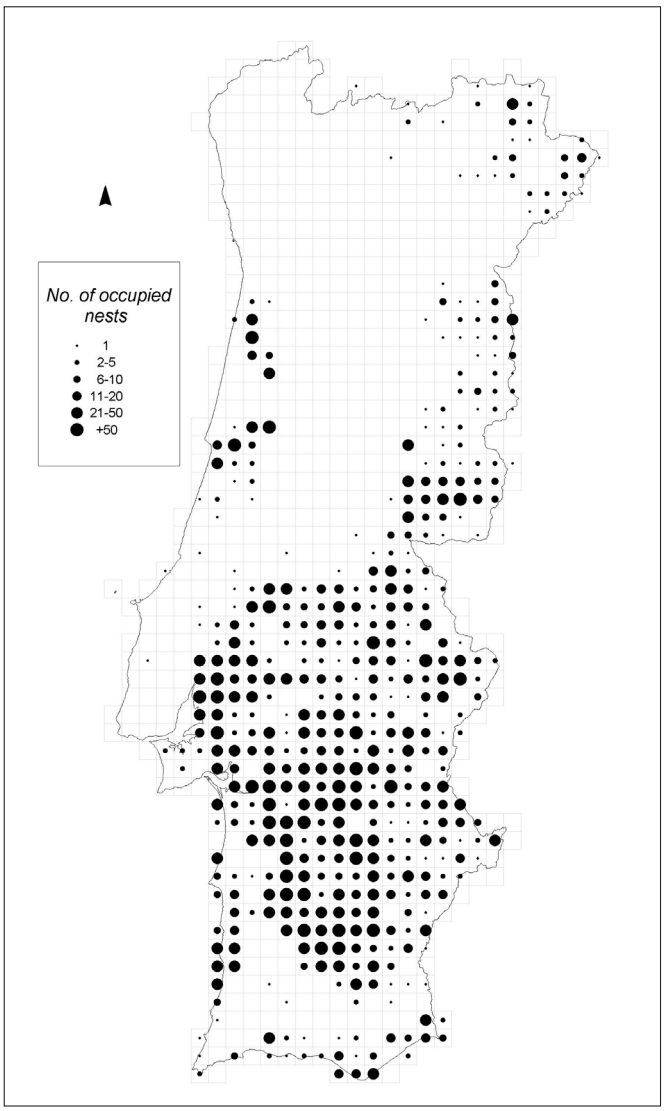

Fig. 1. Distribution of the White Stork in Portugal (2004).
Verbreitung des Weißstorchs in Portugal (2004).

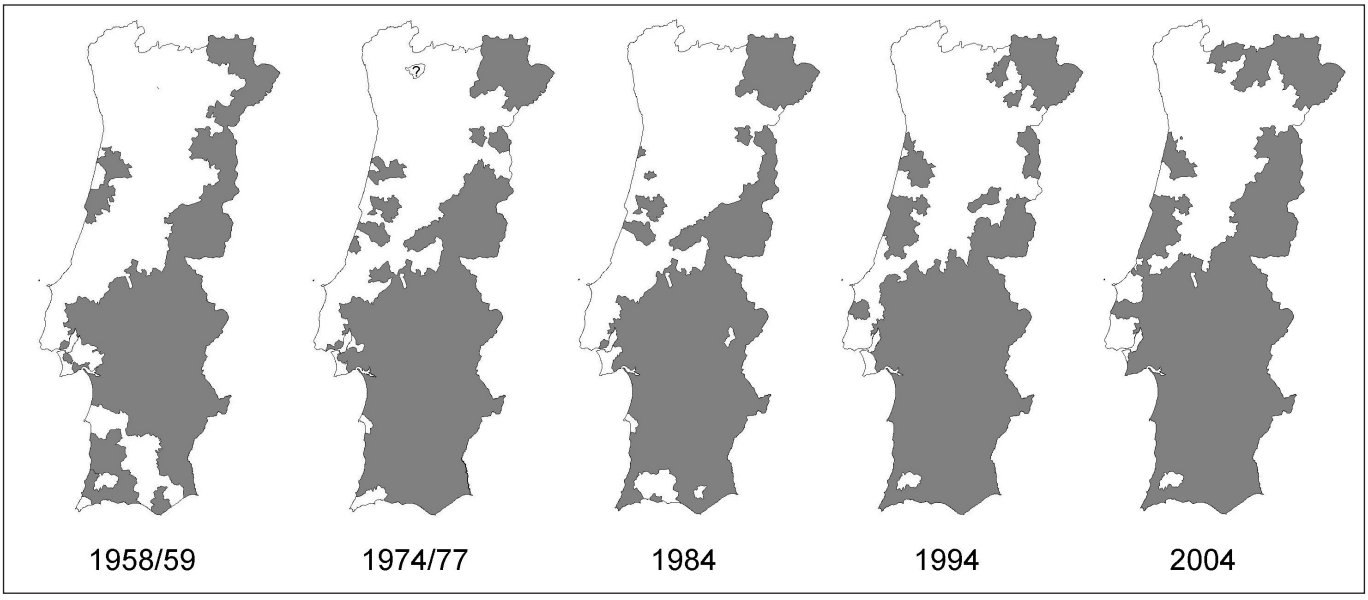

Fig. 2. Distribution of the White Stork in Portugal (1958/59 to 2004)

Sources: 1958/59 from SANTOS JÚNIOR (1961); 1974/77 from BORGES DE CARVALHO (1977); 1984 from CANDEIAS & ARAÚJO (1989); ROSA *et al.* (1999)

Verbreitung des Weißstorchs in Portugal (1958/59 to 2004)

Quellen: 1958/59 SANTOS JÚNIOR (1961); 1974/77 BORGES DE CARVALHO (1977); 1984 CANDEIAS & ARAÚJO (1989); ROSA *et al.* (1999)

Fig. 3. White Stork couple mating, Southwest Portugal Coast (Photo: Luis Quinta)

Weißstorchpaar bei der Paarung, Felsenküsten im Südwesten Portugals (Foto: Luis Quinta).

Fig. 4. "Funny nest" in a Holm Oak, Almodôvar, Portugal (Photo: Gonçalo Rosa).

Ein besonderer Neststandort in einer Steineiche, Almodôvar, Portugal (Foto: Gonçalo Rosa).

Fig. 5. White Stork hunting Red Swamp Crayfish's *(Procambarus clarkii)* in the wintering season, Alcácer do Sal, Portugal (Photo: Luis Quinta).

Weißstorch erbeutet einen Roten Amerikanischen Sumpfkrebs *(Procambarus clarkii)* im Winter, Alcácer do Sal, Portugal (Foto: Luis Quinta).

Tab. 1. Results of the Portuguese National Census of the White Stork (2004): number of nests, nest densities and breeding sites.
Ergebnisse des nationalen Weißstorchzensus in Portugal (2004): Anzahl der Nester, Siedlungsdichte und Nestunterlagen.

DISTRICT	No. of nests			Occupied nest densities		Breeding sites (Percentage of the occupied nests)					
	occupied	not occupied	surveyed	Area (Km²) (INE 2003)	Density (StD) (HPa per 100 km²)	Trees	Human buildings	Posts Pylons	Rocks	Others	Unknown
Aveiro	148	5	153	2.800,2	5,29	0.0	7.4	92.6	0.0	0.0	0.0
Beja	1974	146	2120	10.223,1	19,31	42.7	21.7	31.2	4.4	0.1	0.2
Braga	0	0	0	2.706,3	0,00	-	-	-	-	-	-
Bragança	110	29	139	6.595,4	1,67	69.1	5.5	25.5	0.0	0.0	0.0
Castelo Branco	336	26	362	6.616,1	5,08	28.9	29.2	42.0	0.0	0.0	0.0
Coimbra	285	6	291	3.974,2	7,17	28.8	3.5	67.7	0.0	0.0	0.0
Évora	1427	93	1520	7.398,2	19,29	52.4	15.9	31.5	0.1	0.0	0.0
Faro	251	26	277	4.990,0	5,03	19.9	52.2	22.7	5.2	0.0	0.0
Guarda	119	16	135	5.536,0	2,15	65.5	20.2	14.3	0.0	0.0	0.0
Leiria	14	3	17	3.499,8	0,40	0.0	28.6	71.4	0.0	0.0	0.0
Lisboa	102	5	107	2.769,9	3,68	0.0	8.8	91.2	0.0	0.0	0.0
Portalegre	788	30	818	6.065,3	12,99	59.1	19.2	21.4	0.3		0.0
Porto	0	0	0	2.331,1	0,00	-	-	-	-	-	-
Santarém	804	33	837	6.715,9	11,97	25.0	16.7	58.3	0.0	0.0	0.0
Setúbal	1318	101	1419	5.042,6	26,14	44.6	18.4	37.0	0.0	0.0	0.0
Viana do Castelo	0	0	0	2.219,3	0,00	-	-	-	-	-	-
Vila Real	9	2	11	4.305,2	0,21	22.2	33.3	44.4	0.0	0.0	0.0
Viseu	0	0	0	5.007,9	0,00	-	-	-	-	-	-
NATIONAL TOTAL	**7685**	**521**	**8206**	**88.796,5**	**8,65**	**42.0**	**19.2**	**37.4**	**1.3**	**~ 0.0**	**~ 0.0**

Tab. 2. Number of occupied nests and totals surveyed in the national White Stork censuses and population trends (the trends were calculated by the variation of the occupied nest numbers). Sources: a SANTOS JÚNIOR (1961), b SCHÜZ & SZIJJ (1960), c BORGES DE CARVALHO (1977), d CANDEIAS & ARAÚJO (1989), e ROSA et al. (1999) and f SCHÜZ (1979).

Anzahl der besetzten Nester und die Gesamtzahl der Nester in den nationalen Zählungen, sowie Populationstrends (die Trends wurden auf Basis der Veränderung der Anzahl besetzter Nester berechnet). Quellen: a SANTOS JÚNIOR (1961), b SCHÜZ & SZIJJ (1960), c BORGES DE CARVALHO (1977), d CANDEIAS & ARAÚJO (1989), e ROSA et al. (1999) und f SCHÜZ (1979).

District	1958/59 [a,b]		Trend 1958/59 - 1974/77	1974/77 [c]		Trend 1974/77 - 1984	1984 [d]		Trend 1984 - 1994	1994 [e]		Trend 1994 - 2004	2004	
	No. of nests			No. of nests			No. of nests			No. of nests			No. of nests	
	Occupied	Total		Occupied	Total		Occupied	Total		Occupied	Total		Occupied	Total
Aveiro	?	34	?	?	12	?	7	9	+ 143%	17	17	+ 771%	148	153
Beja	?	525	?	?	397	?	327	444	+ 204%	995	1076	+ 98%	1974	2120
Braga	0	0	?	?	4	?	0	0	-	0	0	-	0	0
Bragança	?	107	?	?	78	?	33	57	+ 170%	89	101	+ 24%	110	139
Castelo Branco	?	93	?	?	221	?	105	117	+ 25%	131	147	+ 156%	336	362
Coimbra	?	89	?	?	11	?	16	16	+ 256%	57	67	+ 400%	285	291
Évora	?	1257	?	?	482	?	433	583	+ 36%	588	633	+ 143%	1427	1520
Faro	?	52	?	?	108	?	55	71	+ 202%	166	210	+ 51%	251	277
Guarda	?	103	?	?	24	?	5	8	+ 660%	38	47	+ 213%	119	135
Leiria	0	0	?	?	2	?	1	1	+ 100%	2	2	+ 600%	14	17
Lisboa	?	81	?	?	23	?	6	9	+ 100%	12	12	+ 750%	102	107
Portalegre	?	652	?	?	293	?	302	389	+ 32%	400	524	+ 97%	788	818
Porto	0	0	?	0	0	?	0	0	-	0	0	-	0	0
Santarém	?	253	?	?	103	?	95	108	+ 228%	312	343	+ 158%	804	837
Setúbal	?	244	?	?	172	?	148	192	+ 234%	494	552	+ 167%	1318	1419
Viana do Castelo	0	0	?	0	0	?	0	0	-	0	0	-	0	0
Vila Real	0	0	?	0	0	?	0	0	-	1	1	+ 800%	9	11
Viseu	0	0	?	0	0	?	0	0	-	0	0	-	0	0
Total Nacional National Total	**3000**	**3490**	**-38% to -43%**	**1700-1850 [f]**	**1930**	**-9% to -17%**	**1533**	**2004**	**+ 115%**	**3302**	**3732**	**+ 133%**	**7685**	**8206**

Sources: [a] Santos Júnior (1961), [b] Schuz & Szijj (1960), [c] Borges de Carvalho (1977), [d] Candeias & Araújo (1989), [e] Rosa *et al.* (1999) and [f] Schüz (1979)

Tab. 3. Number of councils with occupied nests between 1958/59 and 2004.
Anzahl der Kreise die zwischen 1958/59 und 2004 vom Weißstorch besiedelt waren.

	Survey				
	1958/59 [a]	1974/77 [b]	1984 [c]	1994 [d]	2004
Number of councils with occupied	97	106	96	117-118	132

Sources: [a] Santos Júnior (1961), [b] Borges de Carvalho (1977), [c] Candeias & Araújo (1989), [d] Rosa et al. (1999)

Tab. 4. Preferred breeding sites: surveyed in 1958/59 (Santos Júnior 1961), surveyed in 1974/77 (BORGES DE CARVALHO 1977), occupied 1984 (ICN, unpublished data), occupied in 1994 (ROSA et al. 1999) and occupied in 2004.
Nestunterlagen des Weißstorchs: alle Nester 1958/59 (Santos Júnior 1961 alle Nester 1974/77 (BORGES DE CARVALHO 1977), besetzte Nester 1984 (ICN, unpublizierte Daten), besetzte Nester 1994 (ROSA et al. 1999) und besetzte Nester 2004.

Nest site classes	Survey									
	1958/59		1974/77		1984		1994		2004	
Trees	1347	72,6%	1197	63,6%	773	64,7%	1742	53,0%	3229	42,0%
Human buildings	421	22,7%	553	29,4%	355	29,7%	890	27,1%	1477	19,2%
Posts	0	0,0%	29	1,5%	22	1,8%	586	17,8%	2871	37,4%
Rocks	33	1,8%	83	4,4%	41	3,4%	69	2,1%	103	1,3%
Others	54	2,9%	20	1,1%	3	0,3%	2	0,1%	2	<0,1%

Imprint

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