SEO/BIRDLIFE BIRD MONITORING PROGRAMMES

2012

SEO/BirdLife

OUR VOLUNTEERS' CONTRIBUTION

Thanks to the contribution of our volunteers we are able to take on large-scale projects, as it would be difficult to recruit professional staff for this work. The value of this contribution does not only reside in the scale or scope that can be given to the work. It is also an economic question– the economic value of our volunteers' work is almost never quantified.

It is not difficult to calculate a minimum economic value of our volunteers' contribution to each monitoring programme, census and atlas. It is also worthwhile to know its relevance in the understanding of the state of biodiversity in our country.

Each participant in any SEO/BirdLife monitoring programme (Sacre, Sacin or Noctua) must visit the field once or twice prior to sampling. They also need to design the work in hand well, which involves some "office" hours – a good job depends on a good design. Thus, they need to invest some time in checking digital or any other type of map, to consult and calculate things difficult to appreciate in the field, or to have an overview of the sampling area, the itineraries or the distribution of the points. This previous work, at home and in the field, also involves hours or even days in visits to the countryside and fieldwork. The censuses and atlases also imply this investment in time.

In other SEO/BirdLife monitoring programmes, like Paser, in addition to this previous work time –a must in any task–, we also have to consider the investment in special equipment, essential in scientific bird ringing (nets, electronic scales, rulers and special pliers, etc.). Moreover, it is a difficult task for a single person, so there are around 3-4 people in each ringing station.

We do not include in the calculations the prior design of the project, the equipment for some programmes (like Paser), other basic items in all programmes –binoculars, good boots, coat, etc.– and a car, the only way to reach locations where there is no public transport.

For example, just the annual tasks in the Sacre programme (with 1,050 participants represent nearly 2,100 fieldwork days per season. This fieldwork, meaning travelling to and from the sampling starting point, can imply very different efforts. For some people the fieldwork is close by, but for others it entails many kilometres. This is the result of the uneven distribution of the human population across Spain, with enormous extensions containing few inhabitants, like Tarragona, Teruel, Guadalajara, Cuenca, Ciudad Real, Córdoba, Badajoz, certain areas in Galicia and the east of Andalusia, where

ornithologist are scarce. Some volunteers travel scores or even hundreds of kilometres each year to obtain information on these areas. As well as the trips, lunch must also be taken into account. One needs to eat something during the working day. If a modest quantity (€100-€120) was paid for the kilometres, a simple lunch and a working day, it would amount to between €210,000 and €252,000 just for the fieldwork.

Applying the same calculations for Sacin (the 630 current participants contribute €116,000-€121,000), Noctua (€159,000-€190,000 with 529 current participants –3 visits per sampling unit) and Paser (€300,000-€360,000 with 300 current participants –10 visits per season– in 60 stations), only the seasonal fieldwork in these four monitoring programmes would represent around €795,000-€955,000.

But these monitoring programmes also progress thanks to several people intensely working full time in coordinating and maintaining the activity of several thousand people. This activity is maintained thanks to a regional coordination system, which itself requires attention; to the IT staff who create, update and improve computer applications so the volunteers can add their data and have permanent access to it in the form of tables, maps or graphs; to data compilation, review and correction, to analyse and then publish and disseminate the results; to the production of new materials, search of new participants, etc. Although these tasks cannot be assessed here in detail, we just wanted to stress the importance of our volunteers' contribution. It would also be good to add to the previous figure the salaries covered by the NGOs involved, as their contribution to these monitoring systems. In brief, SEO/BirdLife and its volunteers contribute more than €1m every year just for the maintenance of these four monitoring programmes.


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Volunteer


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Extensive livestock farming is very important for birds


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Rufous-tailed Rock-Thrush

It would be easy to quantify and show the value of the data included in the latest *Atlas of birds in winter in Spain*, a huge job worth highlighting here. Apart from the itineraries drawn for the Atlas, many previous fieldwork days were invested in designing the most adequate methodology, in obtaining information from specific censuses on Cranes, Seagulls and Herons; from nocturnal bird and seabird samplings, etc. This work involved 2,600 people over three years, which amounts to €900,000-€1,100,000. Again, excluding the money to pay the staff in coordination, compilation, review and analysis, trips, committee and coordination meetings, etc., the value of the *Atlas of birds in winter in Spain*, just published, would be around €1,800,000.

THE CONTRIBUTION OF SEO/BIRDLIFE AND ITS VOLUNTEERS IS OVER ONE MILLION EUROS PER YEAR JUST FOR THE MAINTAINANCE OF THESE FOUR MONITORING PROGRAMMES (SACRE, SACIN, NOCTUA AND PASER).

We are talking about enormous figures that give huge value to the activity generated by SEO/BirdLife, understood as the thousands of volunteers in all censuses, atlases and monitoring programmes, since they are the base of this Society's work in monitoring our birds

BIRD TRENDS IN SPRING

Virginia Escandell
SEO/BirdLife

- The sampling unit is 20 census points located within a 10 x 10 km UTM grid.
- It is carried out over two days: the first between 15 April and 15 May and the second between 15 May and 15 June (earlier in the Canary Islands and later in the mountains).
- Five minutes is spent at each census point noting all species detected.
- It begins at sunrise and ends before midday.

The sampling coverage keeps growing thanks to the fidelity of our previous participants and with new ones arriving each season. Moreover, in certain areas, and thanks to funding by some autonomous regions (in 2012, Basque Country, Valencia Region, Madrid and Andalusia), professional staff were hired in order to cover the bulk of the territory (Basque Country) or as back-up staff (Valencia). In addition, the support in coordination by the Galician Ornithology Society has improved the progress of the programme in this region.

Finally, and thanks to specific contracts, this programme was undertaken in all national parks in 2012, starting the sampling in areas that were previously not covered (with some exceptions) due to the difficulty of sampling there (restricted access). This expansion in coverage is very important for this monitoring programme since the result is further information on more and more species and increasingly consistent data.

Out of the 107 common species from which we obtained a value to determine their population trend under this monitoring

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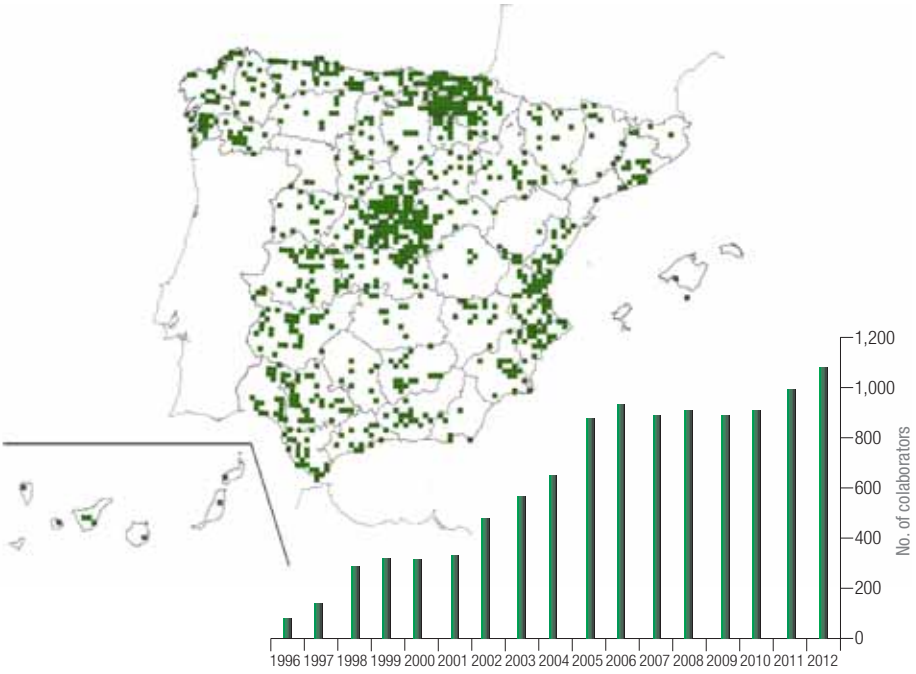
Crested Tit

Spanish name	Sample	Interannual average change (1998-2012)	Change (%) with respect to 1998
Acrocephalus arundinaceus	163	-3.8 (-5.9; -1.6)**	-14.2
Acrocephalus scirpaceus	213	1.7 (-0.2; 3.6)	36.3
Aegithalos caudatus	599	-0.4 (-1.8; 0.9)	7.9
Alauda arvensis	622	-2.3 (-2.9; -1.6)**	-26.5
Alcedo atthis	143	-5.2 (-9.6; -0.7)*	-45.2
Alectoris rufa	878	-1 (-1.5; -0.4)**	-16.2
Anas platyrhynchos	675	0.9 (-0.2; 1.9)	-6.6
Anthus campestris	223	-0.8 (-2.9; 1.3)	-4.7
Anthus trivialis	245	1.1 (-0.4; 2.6)	0.7
Apus apus	991	-0.9 (-1.6; -0.3)**	-26.2
Athene noctua	500	-3.3 (-4.5; -2.2)**	-37.4
Buteo buteo	886	-1.5 (-2.3; -0.7)**	-8.3
Calandrella brachydactyla	307	-0.5 (-1.9; 0.9)	-15.2
Carduelis cannabina	860	-0.4 (-1.1; 0.3)	14.5
Carduelis carduelis	1,006	-0.5 (-1; 0.1)	12.3
Cecropis daurica	345	0.6 (-1; 2.2)	24.7
Certhia brachydactyla	667	2.6 (1.8; 3.5)**	62.5
Cettia cetti	722	0.1 (-0.5; 0.7)	-11.1
Chloris chloris	984	2.2 (1.5; 2.8)**	64.5
Ciconia ciconia	510	2.4 (1.6; 3.3)**	59.7
Cinclus cinclus	104	0.5 (-3.5; 4.6)	29.1
Cisticola juncidis	538	-0.3 (-1.1; 0.5)	-38.2
Clamator glandarius	258	5.4 (2.7; 8)**	34.6
Columba livia	572	-0.1 (-1.2; 1)	-1.0
Columba oenas	166	5.9 (2.5; 9.3)**	-16.8
Columba palumbus	975	2.5 (1.8; 3.2)**	101.5
Corvus corax	730	-1.6 (-2.7; -0.5)**	-7.0
Corvus corone	738	-1 (-1.6; -0.5)**	-2.9
Corvus monedula	461	-3.3 (-4.2; -2.3)**	-43.6
Coturnix coturnix	689	-2.2 (-3; -1.4)**	-53.3
Cuculus canorus	955	0.4 (0; 0.9)	7.9
Cyanistes caeruleus	851	2.5 (1.8; 3.2)**	50.5
Cyanopica cookii	235	3.2 (1.7; 4.6)**	61.8
Delichon urbicum	795	1.2 (0.2; 2.1)*	-3.4
Dendrocopos major	685	3.6 (2.6; 4.5)**	76.5
Emberiza calandra	871	0.3 (-0.2; 0.9)	23.6
Emberiza cia	401	1.6 (0.3; 3)*	40.6
Emberiza cirlus	514	-0.3 (-1.4; 0.9)	37.6
Emberiza citrinella	163	-3.6 (-5.3; -1.8)**	-14.3
Emberiza hortulana	114	-2.9 (-5.2; -0.5)*	-13.2
Erithacus rubecula	688	1.4 (0.7; 2.1)**	42.3
Falco tinnunculus	904	-2 (-2.8; -1.3)**	-39.2
Fringilla coelebs	944	3.3 (2.7; 3.8)**	75.4
Galerida cristata	762	-0.8 (-1.4; -0.3)**	-6.1
Galerida theklae	342	3.4 (1.9; 4.9)**	86.8
Garrulus glandarius	641	2.2 (1.2; 3.3)**	55.5
Hippolais polyglotta	588	2.9 (1.9; 3.8)**	47.6
Hirundo rustica	1,051	-1.8 (-2.4; -1.2)**	-41.0
Jynx torquilla	220	-0.1 (-2.4; 2.3)	-24.8
Lanius collurio	252	-2.2 (-3.9; -0.5)*	-49.9
Lanius meridionalis	532	-6.4 (-7.7; -5.2)*	-56.6
Lanius senator	622	-1.9 (-2.9; -0.9)**	-13.6
Lophophanes cristatus	380	-0.7 (-2.2; 0.8)	29.7
Loxia curvirostra	138	6 (2.9; 9.2)**	130.4
Lullula arborea	594	0.8 (0; 1.6)*	15.6
Luscinia megarhynchos	853	2.2 (1.8; 2.5)**	33.3
Melanocorypha calandra	392	-3.8 (-4.5; -3.1)**	-33.9
Merops apiaster	730	-0.3 (-1.2; 0.6)	-6.6
Milvus migrans	664	2.7 (1.7; 3.7)**	51.4
Monticola solitarius	129	-2 (-4.6; 0.7)	17.1
Motacilla alba	752	-1.5 (-2.5; -0.6)**	-18.6
Motacilla cinerea	296	-0.2 (-2.3; 2)	12.4
Motacilla flava	255	1.7 (0.5; 3)**	28.2
Muscicapa striata	250	0.9 (-1.4; 3.2)	34.6
Oenanthe hispanica	423	-2.2 (-3.3; -1.1)**	-25.1
Oenanthe oenanthe	359	-1.3 (-2.4; -0.2)*	-14.7
Oriolus oriolus	710	2.9 (2.1; 3.6)**	54.3
Parus major	1,013	1.2 (0.6; 1.7)**	28.0
Passer domesticus	1,054	-0.9 (-1.3; -0.4)**	-5.2
Passer hispaniolensis	116	5 (-2; 12)	480.9
Passer montanus	401	-1.8 (-3.1; -0.5)**	-17.8
Periparus ater	505	1.6 (0.6; 2.6)**	31.2
Petronia petronia	394	1.2 (0; 2.4)	24.9
Phoenicurus ochruros	544	0.1 (-1.1; 1.3)	30.9
Phylloscopus bonelli	342	4.3 (3.2; 5.4)**	126.0
Phylloscopus collybita (1)	285	-7.6 (-10.6; -4.7)**	-55.5
Phylloscopus ibericus (1)	198	4.4 (1.7; 7.1)**	-2.8
Pica pica	853	-0.3 (-0.9; 0.2)	0.9
Picus viridis	851	-1.9 (-2.6; -1.2)**	-21.9
Prunella modularis	239	-2.3 (-3.8; -0.9)**	-36.3
Ptyonoprogne rupestris	267	0.8 (-1.5; 3.1)	-6.0
Pyrrhocorax pyrrhocorax	296	1.4 (-0.8; 3.7)	75.6
Pyrrhula pyrrhula	233	-2 (-4.3; 0.3)	20.9
Regulus ignicapilla	400	2.5 (1; 4)**	37.8
Regulus regulus	108	-0.2 (-6; 5.5)	-38.6
Riparia riparia	111	0.3 (-3.6; 4.2)	-74.9
Saxicola rubicola	851	-2.6 (-3.4; -1.9)**	-18.3
Serinus serinus	1,043	-1.5 (-2; -1.1)**	-10.1
Sitta europaea	303	4.5 (2.8; 6.1)**	110.0
Streptopelia decaocto	761	15.4 (14; 16.9)**	966.3
Streptopelia turtur	756	-1.6 (-2.5; -0.8)**	-29.3
Sturnus unicolor	966	1.6 (1; 2.3)**	27.3
Sturnus vulgaris	144	4.2 (1.4; 6.9)**	62.4
Sylvia atricapilla	781	5.6 (4.9; 6.4)**	118.0
Sylvia borin	205	-0.5 (-2.2; 1.2)	17.4
Sylvia cantillans	355	2.8 (1.4; 4.3)**	40.2
Sylvia communis	287	-4.1 (-5.6; -2.7)**	-37.9
Sylvia conspicillata	189	0.2 (-3; 3.4)**	26.5
Sylvia hortensis	195	4.7 (2.1; 7.3)**	131.1
Sylvia melanocephala	583	0.9 (0.2; 1.6)*	15.6
Sylvia undata	434	-2.6 (-4; -1.1)**	-30.3
Tetrax tetrax	232	-2.7 (-3.9; -1.6)**	-46.3
Troglodytes troglodytes	637	1.2 (0.5; 1.9)**	30.9
Turdus merula	1,063	1.5 (1.1; 2)**	31.8
Turdus philomelos	441	2.5 (1.1; 3.9)**	51.6
Turdus viscivorus	446	1.9 (0.4; 3.3)*	31.7
Upupa epops	866	-0.5 (-1.1; 0.2)	8.2

Sample: number or sampling units considered in the analysis (those used two or more years). Interannual average change: average of the interannual variations between 1998 and 2012. Change (%) with respect to 1998: population percentage change with respect to 1998. It shows the statistically significant results (Wald Test: * p<0.05; ** p<0.01). (1) Values with respect to year 2005. In red, the 25 species of the most common birds.



Coverage in 2012 and change in the sampling units since 1996

programme, 32% are in decline. Most of them are birds associated with farmland and urban habitats (some of them are hunting species). The Southern Grey Shrike, Common Quail, Little Bustard, Eurasian Jackdaw, Barn Swallow, Little Owl, Calandra Lark and the Dartford Warbler are some of the species with the sharpest declines and continuing over the longest period.

THE SOUTHERN GREY SHRIKE IS STILL CATALOGUED AS "NEAR THREATENED" WHILE THE EURASIAN JACKDAW, BARN SWALLOW, LITTLE OWL, CALANDRA LARK AND DARTFORD WARBLER HAVE NOT EVEN BEEN ASSESSED.

Rapid population decline is one of the criteria considered by the IUCN to classify the species in the various categories of threat, and this is one of the values obtained with the data from Sacre programme. These species should at least be included in the "Vulnerable" category of the *Red Book of Birds of Spain, as the Little Bustard now is,* in accordance with the decline suffered by their populations since their numbers have gone down by more than 30% in the last 14 years, in tune with the information from the latest analyses. Nevertheless, the Southern Grey Shrike is still classified as "Near threatened" and the Eurasian Jackdaw, the Barn Swallow, the Little Owl, the Calandra Lark and the Dartford Warbler have not even been assessed. These species, according to this information, should also be considered within the national list of endangered species. Among the species whose populations reflect a positive change, we can highlight the Eurasian Collared-Dove.

Although more modestly, the populations of Treecreeper, Great Spotted Woodpecker, Wood Nuthatch and Coal Tit are also growing. Most of them belong to forest habitats or they are generalist, except the Eurasian Collared-Dove, whose population is strongly linked to urban centres, especially located around farmland.

The population trend may vary among the studied regions given the large extension of Spain's territory and the different biogeographical regions. This is the case of the Northern Raven, whose populations are stable in the Eurosiberian region, but are decreasing in the Mediterranean and increasing in the south.

Species with sharp negative trends in more than one region are the most worrying. This

Lanius meridionalis				Strong decline
Acrocephalus arundinaceus	*Corvus monedula*	*Melanocorypha calandra*	*Saxicola rubicola*	
Alauda arvensis	*Coturnix coturnix*	*Motacilla alba*	*Serinus serinus*	
Alcedo atthis	*Emberiza citrinella*	*Oenanthe hispanica*	*Streptopelia turtur*	
Alectoris rufa	*Emberiza hortulana*	*Oenanthe oenanthe*	*Sylvia communis*	
Apus apus	*Falco tinnunculus*	*Passer domesticus*	*Sylvia undata*	
Athene noctua	*Galerida cristata*	*Passer montanus*	*Tetrax tetrax*	
Buteo buteo	*Hirundo rustica*	*Phylloscopus collybita*		
Corvus corax	*Lanius collurio*	*Picus viridis*		
Corvus corone	*Lanius senator*	*Prunella modularis*		Moderate decline
Acrocephalus scirpaceus	*Cettia cetti*	*Merops apiaster*	*Pyrrhula pyrrhula*	
Aegithalos caudatus	*Cinclus cinclus*	*Monticola solitarius*	*Riparia riparia*	
Anas platyrhynchos	*Cisticola juncidis*	*Motacilla cinerea*	*Sylvia borin*	
Anthus campestris	*Columba livia*	*Muscicapa striata*	*Sylvia conspicillata*	
Anthus trivialis	*Cuculus canorus*	*Petronia petronia*	*Upupa epops*	
Calandrella brachydactyla	*Emberiza calandra*	*Phoenicurus ochruros*		
Carduelis cannabina	*Emberiza cirlus*	*Pica pica*		
Carduelis carduelis	*Jynx torquilla*	*Ptyonoprogne rupestris*		
Cecropis daurica	*Lophophanes cristatus*	*Pyrrhocorax pyrrhocorax*		Stable
Passer hispaniolensis	*Regulus regulus*			With no definite change
Streptopelia decaocto				Strong increase
Certhia brachydactyla	*Emberiza cia*	*Motacilla flava*	*Sylvia atricapilla*	
Chloris chloris	*Erithacus rubecula*	*Oriolus oriolus*	*Sylvia cantillans*	
Ciconia ciconia	*Fringilla coelebs*	*Parus major*	*Sylvia hortensis*	
Clamator glandarius	*Galerida theklae*	*Periparus ater*	*Sylvia melanocephala*	
Columba oenas	*Garrulus glandarius*	*Phylloscopus bonelli*	*Troglodytes troglodytes*	
Columba palumbus	*Hippolais polyglotta*	*Phylloscopus ibericus*	*Turdus merula*	
Cyanistes caeruleus	*Loxia curvirostra*	*Regulus ignicapilla*	*Turdus philomelos*	
Cyanopica cookii	*Lullula arborea*	*Sitta europaea*	*Turdus viscivorus*	
Delichon urbicum	*Luscinia megarhynchos*	*Sturnus unicolor*		
Dendrocopos major	*Milvus migrans*	*Sturnus vulgaris*		Moderate increase

Number of species classified in each population trend category considered

is the case of the Eurasian Jackdaw in the Eurosiberian and northern Mediterranean regions, and the Southern Grey Shrike in both Mediterranean regions. Stonechat populations are also in decline in several regions (in this case, in the three regions studied), but more moderately. The opposite is happening with the Eurasian Collared-Dove, notably increasing in both Mediterranean regions.

Thanks to the work undertaken in the national parks, the sampling in high mountain areas and in the Canary Islands has augmented. This will allow us in just a few seasons to show the results for these regions separately (currently we consider the data obtained in these regions with the general analyses at national scale).

Out of 32% of species whose populations are in decline, most are birds associated with farmland and urban habitats, precisely those closest to humans. This should alert us to identify whether the rapid transformation suffered by this habitat in recent years (both in its management and in its structure) is the cause of these changes or if there are other unknown problems. The abandonment of agricultural land, especially small farms around villages, and the loss of extensive grazing in many regions, implies the transformation of the territory with an increase in the forest mass. This affects the birds associated with

OUT OF 32% OF SPECIES WHOSE POPULATIONS ARE IN DECLINE, MOST ARE BIRDS ASSOCIATED WITH FARMLAND AND URBAN HABITATS, PRECISELY THOSE CLOSEST TO HUMANS.

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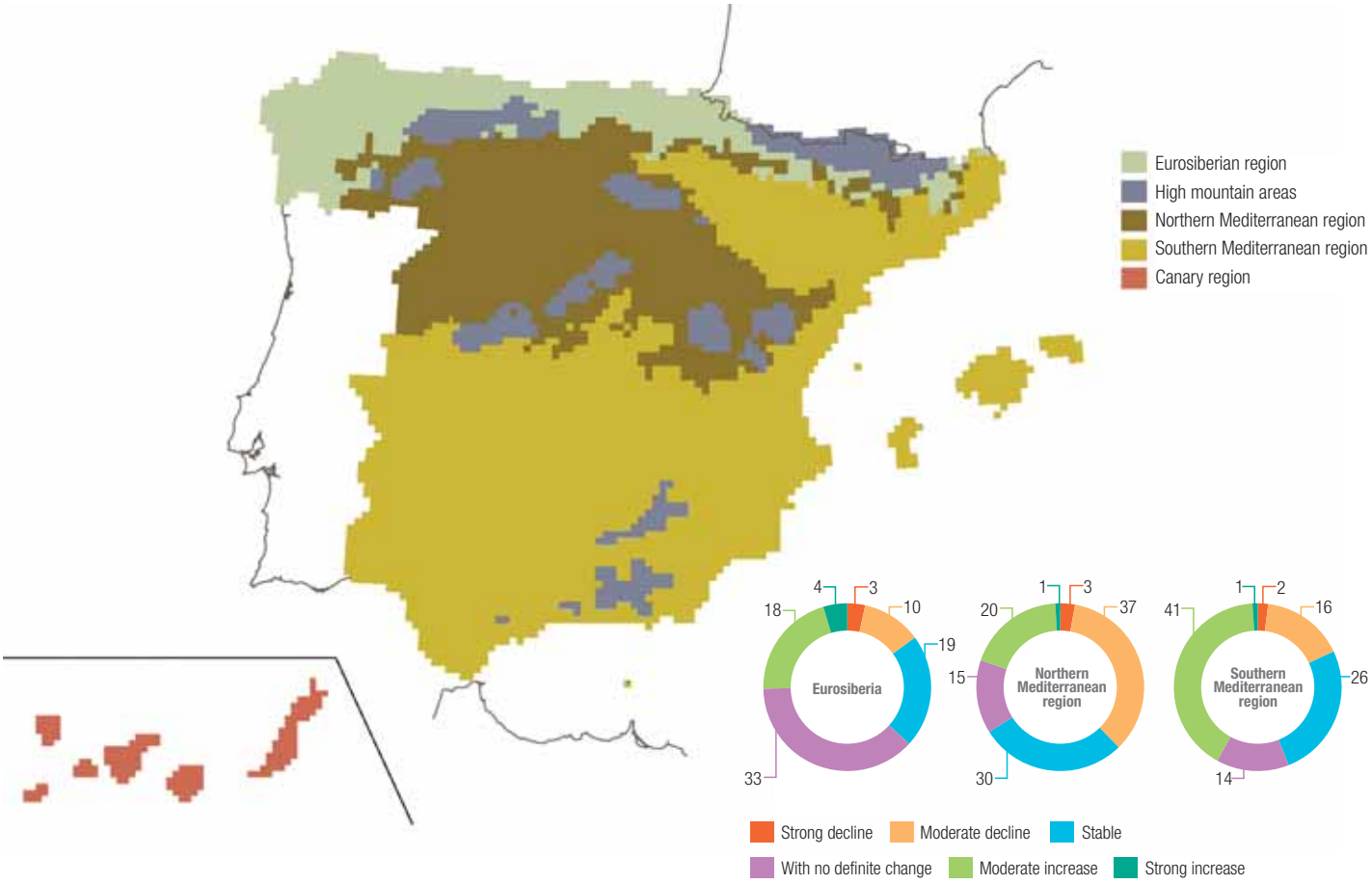
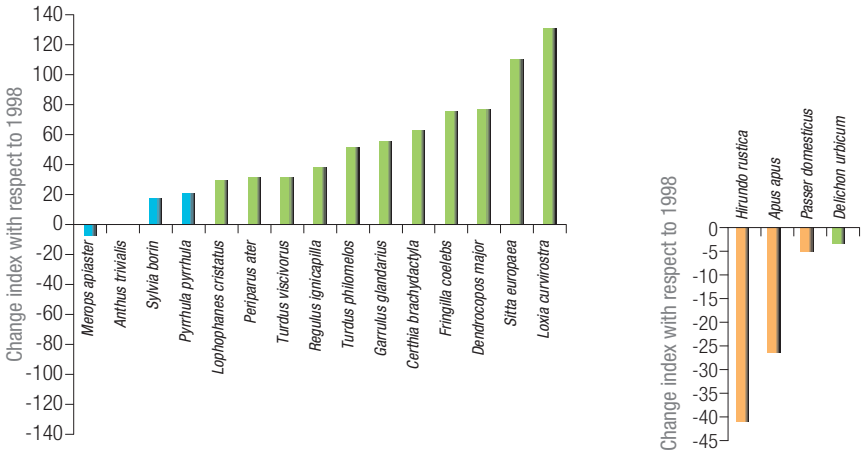
Eurasian Jackdaw



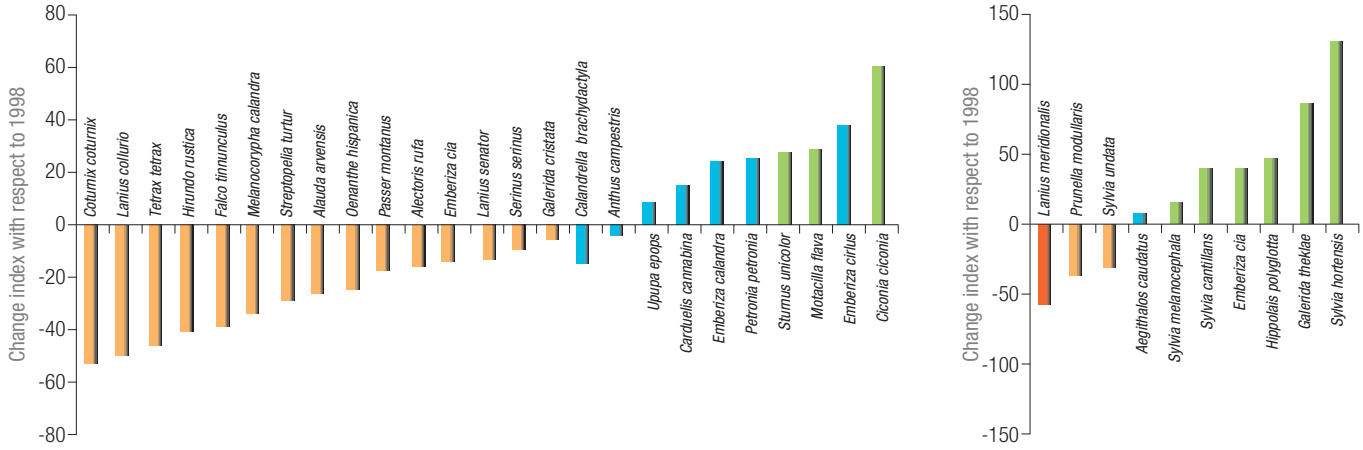
Biogeographical regions considered. Number of species in each category of population trend in the Eurosiberian and southern and northern Mediterranean regions. This division has been carried out by different authors, most notably by Rivas Martínez and Allué Andrade, based on biogeographical regions

farmland and favours those that prefer arboreal and shrub habitats. This is true, for example, of Paridae species and similar birds, like the Wood Nuthatch, Treecreeper and Coal Tit, and some Picidae species, like the Great Spotted Woodpecker and others like the Blackcap. All of them form part of the 37% of species whose populations have increased in recent years.

The populations of more generalist birds are also growing, like the Common Wood Pigeon, Blackbird and Chaffinch. We can easily spot them in parks and gardens within big cities, villages or the countryside.



Birds associated with forests (left) and urban habitats (right)



Birds associated with farmland (left) and shrub habitats (right)

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Red-legged Partridge

The results obtained by species (in groups, depending on the family they belong to) are shown as an example. In some cases, the species of the same group occupy the same kind of habitat, for example the Paridae, where all the species are associated with forest and with a positive trend. But in other cases it varies, like the larks, where most of the species are associated with farmland, with the exception of the Woodlark and the Thekla Lark, associated with shrubs and forests, which show a positive population trend.

ALL SPECIES BELONGING TO THE GREY SHRIKE GROUP ARE IN DECLINE.

The shrikes present a very adverse state, with all species belonging to this group in

© Tatavasco

Woodchat Shrike

decline. This is especially noticeable in the Southern Grey Shrike population and very worrying in the case of the Lesser Grey Shrike –although its population in Spain has always been small, now it is, in practical terms, extinct.

The case of Silviidae is the most prominent example of species with a phylogenetic relation that currently occupy very different habitats: sylviid warblers, leaf warblers, reed warblers...The sylviid warblers population enjoy a positive trend (with the exception of the Dartford Warbler), as does Bonelli's Warbler, Common Firecrest and Melodious Warbler. The rest of the species, escept Great Reed Warbler, are stable.

More information at:
www.seguimientodeaves.org

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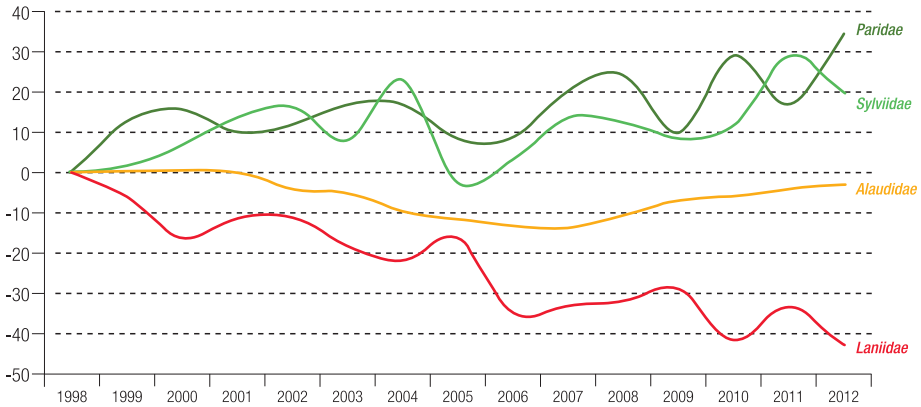
Goldcrest



Change for populations of *Alaudidae*, *Laniidae*, *Paridae* and *Passeridae* families

Alaudidae
Alauda arvensis
Calandrella brachydactyla
Galerida cristata
Galerida theklae
Lullula arborea
Melanocorypha calandra

Laniidae
Lanius collurio
Lanius meridionalis
Lanius senator

Paridae
Cyanistes caeruleus
Lophophanes cristatus
Parus major
Periparus ater

Sylviidae
Acrocephalus arundinaceus
Acrocephalus scirpaceus
Cettia cetti
Cisticola juncidis
Hippolais polyglotta
Phylloscopus bonelli
Regulus ignicapilla
Sylvia atricapilla
Sylvia borin
Sylvia cantillans
Sylvia communis
Sylvia conspicillata
Sylvia hortensis
Sylvia melanocephala
Sylvia sarda

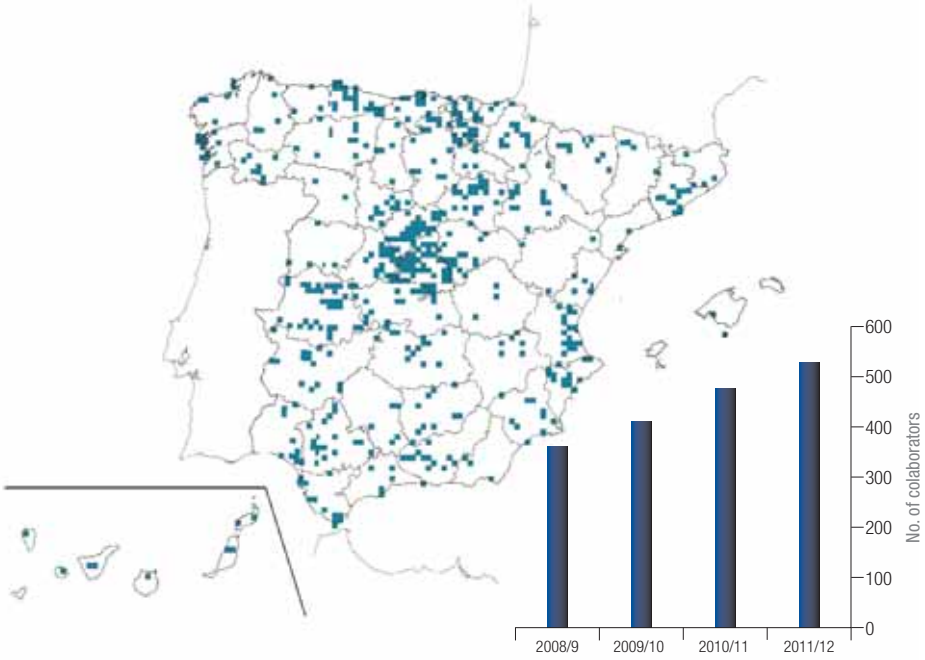
BIRD TRENDS IN WINTER

Virginia Escandell
SEO/BirdLife

- The sampling unit is 8 itineraries, consecutive, if possible.
- Located within a 10 x 10 km UTM grid.
- It is carried out in two days: the first between 15 November and 31 December and the second between 1 January and 15 February (earlier in the Canary Islands).
- One walks very slowly (400-700 m in 15 minutes).
- It begins at dawn and ends after approximately two hours.

After four winters of fieldwork on the Sacin programme we have the first results indicating the trend for the populations this season. In many species there is a coincidence between the population trend in winter and in spring. This is quite worrying with the decreasing populations, like the Southern Grey Shrike, Calandra Lark, Common Kestrel, Crested Lark, Dartford Warbler and Red-legged Partridge. However, other species show positive population trends in winter, contrary to the results in spring. We can mention the House Sparrow, Tree Sparrow, Eurasian Jackdaw, European Serin and European Stonechat.

In general terms, Paridae, species associated with arboreal environments, have a positive trend. Other species that also present a favourable situation in both seasons are the Blackcap, Common Wood Pigeon, European Robin, Chaffinch and Eurasian Collared-Dove. The case of the Blackcap particularly stands out. It is a pre-Saharian migratory species whose



Current coverage of participation in the programme and change in participation since 2008

increase in population in winter (in addition to the increase of its breeding populations across the continent) could be influenced by climate change– it might be a species whose migratory behaviour is changing.

On many occasions, surveys in this season are especially tough, but very interesting: if climate conditions are really changing, the record they leave in the fieldwork during this season will be key to having the data to prove it.

More information at:
www.seguimientodeaves.org

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Winter itinerary in Aigüestortes

Species	Sample	Average change (%)	Change with respect to 2008/9 (%)
Aegithalos caudatus	268	1.9 (-3.1; 7)	10.04
Alauda arvensis	164	-2.5 (-6.6; 1.6)	0.03
Alcedo atthis	52	20.5 (0; 41.1)	54.14
Alectoris rufa	215	-9 (-14.7; -3.2)**	-26.42
Anthus pratensis	261	8 (2; 14.1)**	22.6
Anthus spinoletta	29	-23.4 (-44.3; -2.5)*	-45.89
Carduelis cannabina	253	17.9 (10.3; 25.4)**	75.7
Carduelis carduelis	348	19.3 (13.5; 25.2)**	62.06
Carduelis citrinella	11	-32.2 (-80.5; 16.1)	-44.82
Carduelis spinus	88	1.2 (-14.3; 16.7)	-24.71
Certhia brachydactyla	208	2.7 (-3.7; 9.1)	12.67
Cettia cetti	111	-2.9 (-11.1; 5.3)	-16.73
Chloris chloris	271	9.2 (1.6; 16.8)*	31.97
Ciconia ciconia	98	26.4 (10.7; 42.1)**	191.07
Cisticola juncidis	83	-1.1 (-13.1; 10.8)	5.6
Coccothraustes coccothraustes	75	-9.4 (-25.6; 6.8)	-37.82
Columba livia	160	11.2 (0.7; 21.7)*	64.81
Columba oenas	38	28.8 (-1.7; 59.4)	120.77
Columba palumbus	287	6.9 (1.3; 12.5)*	17.97
Corvus corax	225	10 (2.1; 17.9)*	35.8
Corvus corone	219	5.5 (1.3; 9.7)*	24.55
Corvus monedula	101	20.1 (6.1; 34)*	69.46
Cyanistes caeruleus	294	4.1 (0; 8.2)*	11.79
Cyanopica cookii	103	-10.6 (-17.7; -3.5)**	-31.96
Dendrocopos major	204	6.8 (1.1; 12.6)*	18.45
Emberiza calandra	193	2.5 (-4.8; 9.8)	7.42
Emberiza cia	183	6.4 (-2.2; 15.1)	20.69
Emberiza cirlus	152	7.4 (-1.3; 16.2)	35.68
Emberiza citrinella	39	-4.5 (-22.1; 13.2)	-10.26
Emberiza schoeniclus	44	-15.9 (-27.4; -4.4)**	-33.32
Erithacus rubecula	356	8.1 (5.1; 11)*	28.09
Falco columbarius	49	5.6 (-23; 34.3)	6.04
Falco tinnunculus	254	-6.1 (-12; -0.2)*	-18.06
Fringilla coelebs	367	5.8 (2.2; 9.4)**	15.69
Galerida cristata	201	-3.4 (-8; 1.2)	-3.53
Galerida theklae	98	3.3 (-4.8; 11.4)	13.08
Garrulus glandarius	204	2.8 (-2; 7.5)	13.65
Grus grus	57	3.1 (-14.4; 20.6)	-16.14
Hirundo rustica	29	-33.1 (-70.2; 4)	-55.22
Lanius meridionalis	188	-1.8 (-8.5; 4.8)	-3.65
Lophophanes cristatus	148	4.9 (-2.1; 11.9)	17.87

Species	Sample	Average change (%)	Change with respect to 2008/9 (%)
Loxia curvirostra	50	3.2 (-10.6; 17.1)	3.83
Lullula arborea	131	-3.5 (-11.6; 4.6)	-14.65
Melanocorypha calandra	76	-10.6 (-21.6; 0.3)	-23.32
Monticola solitarius	24	2.3 (-25.2; 29.8)	15.26
Motacilla alba	301	5.3 (0.5; 10.1)*	24.02
Motacilla cinerea	118	12.4 (0; 24.8)*	57.97
Oenanthe leucura	13	0.5 (-24.9; 25.9)	-15
Parus major	348	4.2 (1.1; 7.4)**	11.53
Passer domesticus	308	9.5 (4.6; 14.3)**	41.91
Passer hispaniolensis	48	4.2 (-7.9; 16.3)	1.71
Passer montanus	113	4.5 (-8.8; 17.9)	40.74
Periparus ater	168	19.8 (12.9; 26.7)**	61
Petronia petronia	76	6.6 (-13.2; 26.4)	36.06
Phoenicurus ochruros	269	4 (-0.5; 8.5)	16.13
Phylloscopus collybita	276	14.5 (9; 20.1)**	47.1
Pica pica	270	-1.9 (-4.9; 1.1)	-4.36
Picus viridis	223	-3.4 (-8.9; 2)	-8.68
Prunella modularis	145	10.4 (1.2; 19.5)*	38.57
Ptyonoprogne rupestris	44	-36.8 (-46.8; -26.8)**	-71.71
Pyrrhocorax pyrrhocorax	78	2.8 (-11.2; 16.7)	24.34
Pyrrhula pyrrhula	82	-2.3 (-15.3; 10.8)	-15.95
Regulus ignicapilla	195	-3 (-8.8; 2.8)	-14.53
Regulus regulus	72	-33.7 (-46.2; -21.2)**	-83.09
Saxicola rubicola	249	0.2 (-4.8; 5.2)	1.68
Serinus serinus	255	8 (0.8; 15.2)*	32.53
Sitta europaea	122	1.4 (-5; 7.9)	7.33
Streptopelia decaocto	186	10.2 (1.9; 18.5)*	58.05
Sturnus unicolor	308	12.5 (6.7; 18.4)*	45.13
Sturnus vulgaris	129	19 (4.8; 33.1)**	47.73
Sylvia atricapilla	199	19.8 (13.3; 26.3)**	80.02
Sylvia melanocephala	196	7.7 (2.5; 13)**	20.07
Sylvia undata	143	-2 (-9.7; 5.7)	-8.59
Troglodytes troglodytes	*204*	*8.4 (3.4; 13.4)***	*28.7*
Turdus iliacus	118	-46.2 (-55.2; -37.2)**	-84.95
Turdus merula	362	3.6 (0.9; 6.2)**	8.9
Turdus philomelos	291	-0.9 (-5.1; 3.3)	-7.28
Turdus pilaris	55	-29.8 (-51.9; -7.8)*	-81.09
Turdus viscivorus	232	4.1 (-2.1; 10.3)	8.22
Upupa epops	111	-4.4 (-12.9; 4.1)	-13.26
Vanellus vanellus	140	-11.3 (-20; -2.6)*	-36.02

Sample: number of sampling units considered in the analysis. Average interannual trend: average in the interannual variations between the winters of 2008/2009 and 2011/2012. Change (%) with respect to 2008/2009: percentage of change in the populations with respect to 2008/2009. It shows the statistically significant results (Wald Test: * p<0.05; ** p<0.01)

sacre
sacin

COMMON BIRD TRENDS IN NATIONAL PARKS

Virginia Escandell
SEO/BirdLife

- **Spring: Sampling following the same methodology as the Sacre programme within the limits of the 14 national parks.**
- **Winter: Sampling following the same methodology as Sacin programme within the limits of the 14 national parks.**

The results shown here are the starting point to obtain the population trend for common birds in the National Parks Network and which can be used as an indicator of the state of the biodiversity in these areas.

Obtaining the information needed to assess the trend of the state of conservation of bird populations is very useful so as to warn of changes affecting it within the National Parks Network. This indicator is already being used on a European, national and regional scale, and is obtained through the long-term monitoring programmes Sacre and Sacin. This is why these sampling programmes started in 2012 in the current 14 national parks. After a number of years of sampling, we will not only have an indicator for the National Parks Network, but we will also be able to compare results with the rest of the territory on a larger scale and check the differences between areas with different environmental impacts.

We took into account the proportion of each habitat in each park to design the winter itineraries and the spring sampling stations. In general, forests are the most sampled, since it is the most abundant habitat in many parks: conifers in Ordesa y Monte Perdido, Aigüestortes i Estany de Sant Maurici and Sierra Nevada, Holm Oak

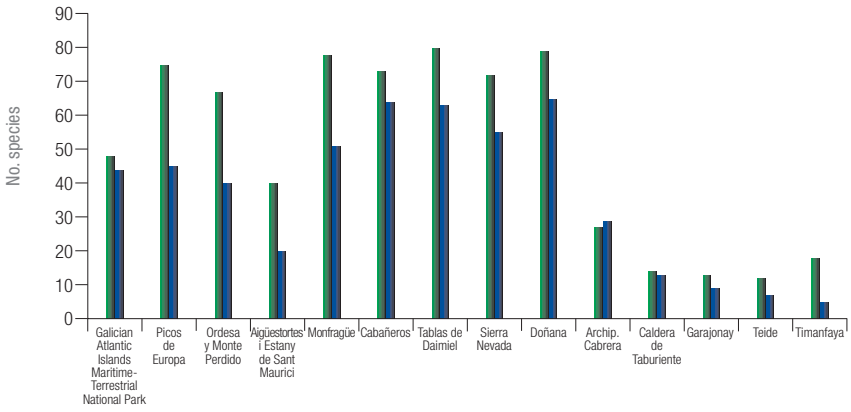
Aigüestortes i Estany de Sant Maurici National Park

National Park	Forests		Shrub land		Pastures		Wetland areas		Agricultural land		Rocky areas	
	Sacre	Sacin	Sacre	Sacin	Sacre	Sacin	Sacre	Sacin	Sacre	Sacin	Sacre	Sacin
Galician Atlantic Islands Maritime-Terrestrial Nat. Park	32	19	52	66	0	0	0	0	10	6	7	9
Picos de Europa	53	50	8	3	36	30	2	0	0	18	1	0
Ordesa y Monte Perdido	72	88	2	0	17	8	10	0	0	4	0	0
Aigüestortes i Estany de Sant Maurici	60	88	3	0	33	0	0	13	0	0	5	0
Monfragüe	83	92	17	8	0	0	0	0	0	0	0	0
Cabañeros	75	75	19	17	6	8	0	0	0	0	0	0
Tablas de Daimiel	5	0	0	0	0	0	95	100	0	0	0	0
Sierra Nevada	27	73	66	10	0	2	0	0	2	2	6	13
Doñana	60	25	24	25	0	13	16	38	0	0	0	0
Archipiélago of Cabrera	50	63	50	38	0	0	0	0	0	0	0	0
Caldera de Taburiente	100	100	0	0	0	0	0	0	0	0	0	0
Garajonay	100	100	0	0	0	0	0	0	0	0	0	0
Teide	13	0	88	100	0	0	0	0	0	0	0	0
Timanfaya	0	0	0	50	0	0	0	0	0	0	100	50

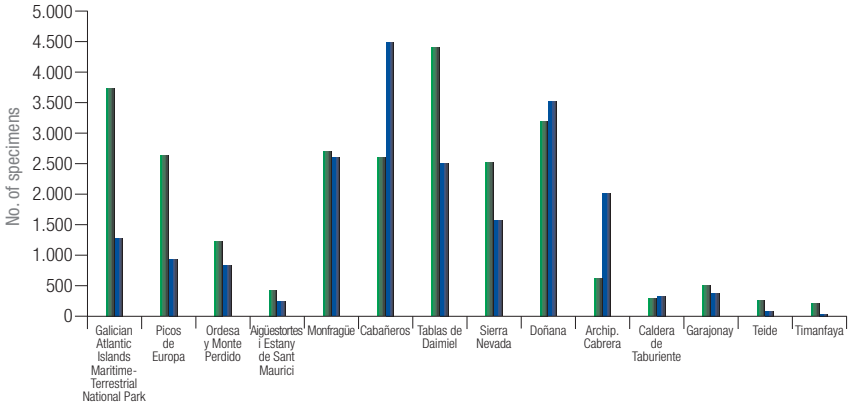
Percentage of sampling in each habitat in each national park in spring (Sacre) and in winter (Sacin)

forests in Monfragüe and Cabañeros, forests of Canary Island pine in Caldera de Taburiente and Laurel forests in Garajonay. The shrub areas are represented in Teide, Atlantic Islands and Cabrera and the pastures in Picos de Europa. The wetland areas are mainly concentrated in Daimiel and part of Doñana, and the rocky areas, in Timanfaya. Although abundant, farmland is the habitat with the least samplings, as it occupies a low percentage of the national parks. In the high mountain parks there are slight differences in the sampling percentage between winter and spring: there are more shrubs and pastures in spring, located at high altitudes and difficult to reach in winter. This occurs in Sierra Nevada and Aigüestortes, respectively.

The highest number of species and specimens are in the peninsular parks, especially in Cabañeros, Tablas de Daimiel, Monfragüe and Doñana. The values are smaller for those parks in high mountains (Picos de Europa, Ordesa, Aigüestortes and Sierra Nevada), in particular for Aigüestortes, probably due to the harsher conditions, especially in winter. The parks with the least number of species and specimens, both in spring and winter, are in the Balearic and Canary islands, the latter in particular. However, in the Atlantic Islands of Galicia the number of species is more similar to those in high mountains in the Peninsula than to those in other islands. It is the second park in number of specimens in spring, after Daimiel (due to the large number of seagulls).



Number of species registered in each national park in spring (green) and in winter (blue)



Number of specimens registered in each national park in spring (green) and in winter (blue)

In all the parks the number of species is higher in spring than in winter with an average of 14 species more in spring, except in Cabrera, where two more species were found in winter.

More information at:
www.seguimientodeaves.org

noctua

NOCTURNAL BIRD TRENDS

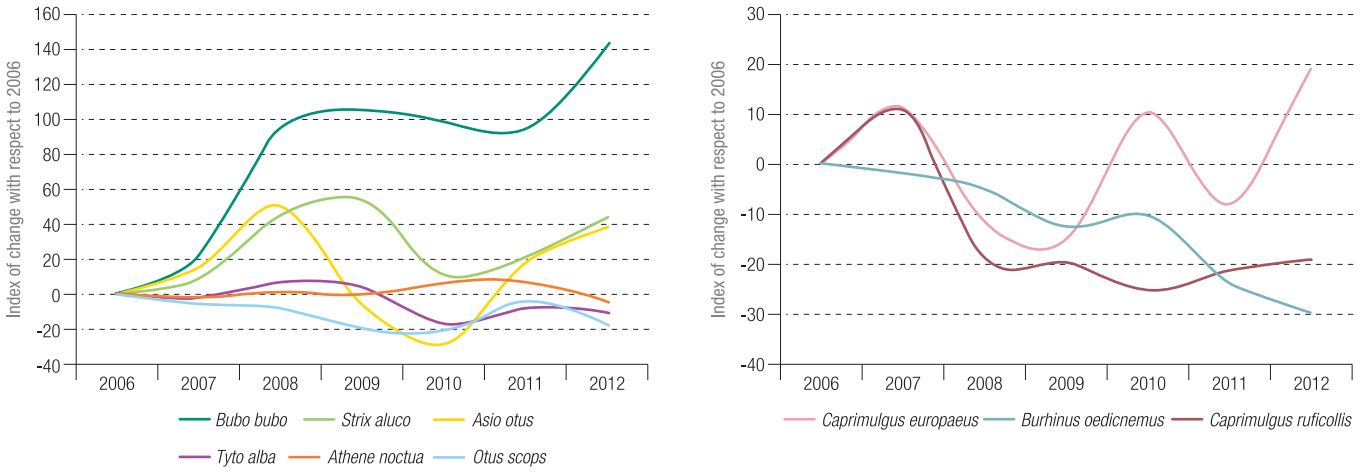
Virginia Escandell
SEO/BirdLife

- The sampling unit is 5 points located within a 10 x 10 km UTM grid.
- It is carried out over three days: the first between 1 December and 15 February, the second between 1 March and 15 May and the third between 16 April and 30 June.
- 10 minutes is spent at each census point taking note of all the species detected. It begins at dusk and ends after approximately two hours.

Through the Noctua programme fieldwork the most common nocturnal birds of prey are detected, but also other less common species, like the Short-eared Owl and, very occasionally, over the years of sampling its distribution area, the Boreal Owl. We also obtain information on other groups of birds with nocturnal habits, such as nightjars and the Eurasian Stone-curlew. The results are presented here, since we obtain sufficient data for analysis and the methodology applied is appropriate in these cases.

Out of the five most common species of nocturnal birds of prey, three show quite unfavourable results: The Eurasian Scops Owl, the Barn Owl and the Little Owl. All of them, to a greater or lesser extent, are associated with areas of the livestock-farming mosaic and all show an index of change in population trend with negative values with respect to 2006. Only the Eagle Owl and the Tawny Owl display a positive change, especially in the last year, and particularly the Eagle Owl.

Little Owl



Trends of the most common species of nocturnal birds of prey in Spain (left). Trends of other nocturnal birds or with nocturnal activity in Spain (right)

After large population growth in previous years, over the last three seasons it has been stable but with a slight decrease. Now, it has returned to growth, showing an important increase this last season. The Tawny Owl's positive change is shared with other birds associated with forests, as can be seen in the results from Sacre programme.

OUT OF THE FIVE MOST COMMON SPECIES OF NOCTURNAL BIRDS OF PREY, THREE SHOW QUITE UNFAVOURABLE RESULTS: THE EURASIAN SCOPS OWL, THE BARN OWL AND THE LITTLE OWL.

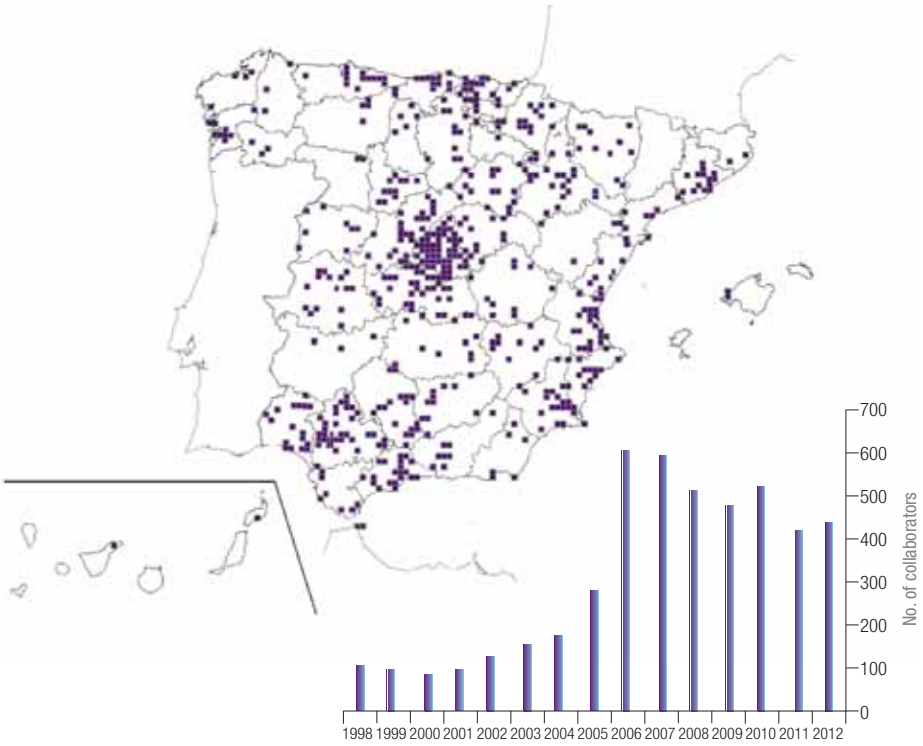
In addition, Eurasian Stone-curlew and Reck-necked Nightjar (species also associated with livestock farming habitats) have likewise shown a decline. Nevertheless, European Nightjar, which has had many ups and downs in its population trend since 2006, now shows an increase of almost 20% in the last season, with respect to the previous one.

The negative trend for the Eurasian Stone-curlew and the Little Owl discovered by the Noctua programme coincides with results from Sacre programme, although the decrease of the Little Owl is much sharper according to data from daytime sampling.

More information at:
www.seguimientodeaves.org

Species	Sample	Average interannual change (2006-2012)	Change (in %) with respect to 2006
Asio otus	98	-3.7 (-12.2; 4.8)	11.4
Athene noctua	269	0.3 (-1.9; 2.5)	-4.8
Bubo bubo	150	13.8 (9.1; 18.5)**	142.6
Burhinus oedicnemus	101	-5.6 (-9.5; -1.7)**	-29.6
Caprimulgus europaeus	218	1.3 (-2.3; 4.8)	18.8
Caprimulgus ruficollis	174	-4.9 (-8.1; -1.6)**	-19.3
Otus scops	286	-2.6 (-4.7; -0.5)*	-18.2
Strix aluco	166	3.9 (-0.5; 8.2)	43.9
Tyto alba	142	-2.5 (-9; 3.9)	-10.9

Sample: number of sampling units considered in the analysis. Average interannual trend: average interannual variations between 2006 and 2012. Change (%) with respect to 2006: population percentage change with respect to 2006. It shows the statistically significant results (Wald Test: * p<0.05; ** p<0.01)



Noctua programme current coverage and participation change since 1998

paser

BIRD RINGING IN SPRING

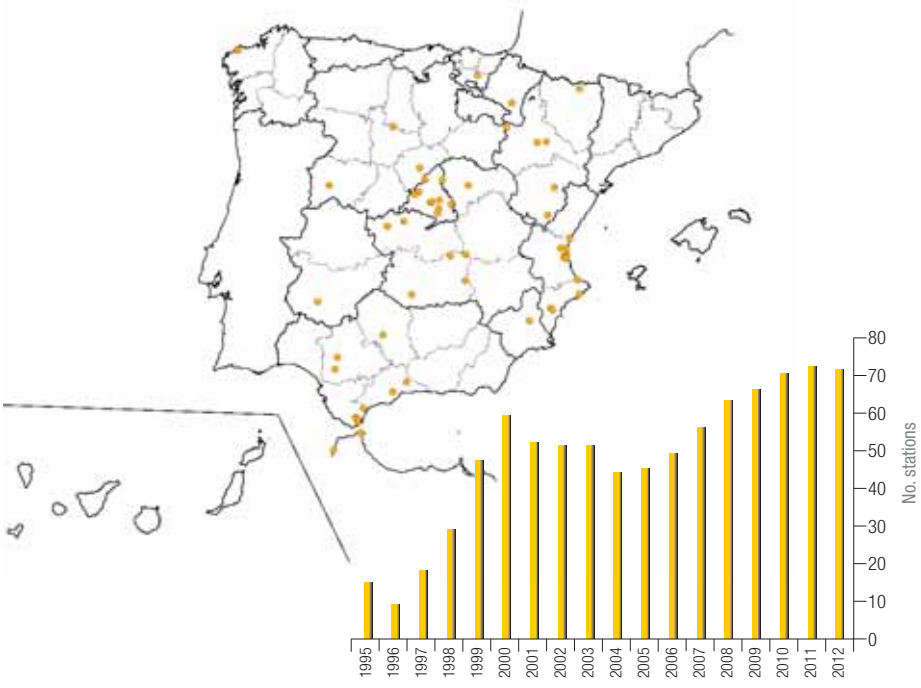
Arantza Leal and Alazne Díez
SEO/BirdLife

- Bird ringing stations in a specific homogeneous habitat.
- At least ten days of sampling is carried out, one every ten days, from the end of March to the beginning of August.
- Each sampling day lasts five hours and the nets must be ready at dawn.
- Every year the same sampling work is undertaken: same number of nets in the same place.

In 2012, 55 stations participated in this monitoring programme, spread across 23 provinces in 12 autonomous regions.

Nearly 19,000 birds, belonging to 124 species, were caught in these stations. Out of all these birds 69.65% were adults, 30.19% were born that natural year (2012) and the rest (0.16%) were birds whose age could not be determined with certainty. Most of the stations are located in wetlands: 42% on riverbanks and 27% in reed wetland. This explains to a great extent that the species with the most captures are those associated with these habitats. Some 18% of the stations sample in Mediterranean forest (mainly in Holm oak forests) and the other 13% in other kinds of habitats, such as the one illustrated (station P2202, located in Monte Perdido, Huesca).

In the 21st Spanish and the 5th Iberian Congress of Ornithology, held in Vitoria (Basque



Paser stations location in 2012 and change in the number of stations since the start of the programme

Country), in 2012, a poster analysed the participation in the Paser stations "Paser 1995-2012. Eighteen years of a bird monitoring programme through ringing". Available at www.seo.org.

ONE OF THE KEYS TO MAKING THE RESULTS OF THE PASER PROGRAMME USEFUL IS TO MAINTAIN IT OVER TIME, THE LARGEST POSSIBLE NUMBER OF YEARS, AND, VERY IMPORANTLY, THE PERMANENT TRAINING OF NEW BIRD RINGERS, ENSURING FUTURE OPERATIONS.

The level of demand for this programme has meant that the Paser stations operation has varied over these 18 years. We analysed the change in the number of stations under continuous operation over the years, the average lifetime and the percentage of stations that met all the methodological requirements of the programme.

Since 1995, a total of 177 stations have participated: In recent years, an average of 60 stations operating each season has been maintained; 45% of them have been working for 5 or more years. Out of the 15 initial stations, 4 of them remain active.

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View from the Paser station, located in Monte Perdido (Huesca), P2202

© Francisco Picón Díaz

© Francisco Picón Díaz

Ringing tasks in the Paser station in Río Segura, Archena (Murcia), P4310

Species	No. of captures	% of captures	No. of Bird Stations
Acrocephalus scirpaceus	2,950	15.75	40
Sylvia atricapilla	1,709	9.12	47
Luscinia megarhynchos	1,041	5.56	42
Cettia cetti	938	5.01	38
Turdus merula	903	4.82	48
Carduelis chloris	776	4.14	42
Passer hispaniolensis	688	3.67	11
Serinus serinus	667	3.56	37
Parus major	663	3.54	47
Parus caeruleus	651	3.47	34
Hippolais polyglotta	639	3.41	41
Erithacus rubecula	566	3.02	33
Passer domesticus	562	3.00	34
Carduelis carduelis	531	2.83	39
Sylvia melanocephala	531	2.83	27
Sylvia borin	379	2.02	29
Fringilla coelebs	348	1.86	30
Acrocephalus arundinaceus	277	1.48	18
Passer montanus	246	1.31	15
Hirundo rustica	238	1.27	27

Species with most captures in the Paser stations in 2012. with the total number of birds caught. percentage of total captures and number of stations where a species has been caught

© Juan Antonio Gil Gallús

Eurasian Bullfinch

One of the keys to making the results of the Paser programme useful is to maintain it the largest possible number of years and for that we make the following recommendations: 1. Carry out the bird ringing between several bird ringers, 2. Set the sampling point in places with easy-access, close to the participants residence and avoiding places with restricted access, and 3. Run permanent training of new bird ringers to ensure future operations.

PASER PHENOLOGY

The data generated by bird ringing through this monitoring programme can be analysed in many ways in order to obtain different results. Up to now, the data was used to show the change in the productivity index, and calculate the number of young captured by year with respect to the total number of captures (young plus adults). This index allows us to observe interannual changes in the reproductive trend of common birds breeding in Spain.

Some of the variables registered in the ringing in this programme determine phenological data on the state of reproduction which are really valuable: cloacal state (males), brood patch (females; see picture) and age of each specimen, so the first fledglings are detected. This information enables us to establish the breeding period for each species in our territory, the difference between regions, differences between seasons, etc.

This season we have taken on a new analysis: to establish the breeding phenology as the juveniles emerge throughout the spring. The number of specimens detected was weighted according to the effort of their capture and a chart was made showing the change in the number of chicks detected throughout the spring. This index has been obtained for each ten days, within the period of the Paser programme, for the period 1998-2012.

We hope to expand the phenological analysis in the coming seasons in order to establish in detail, through this programme, the breeding period for the highest possible number of birds in Spain.

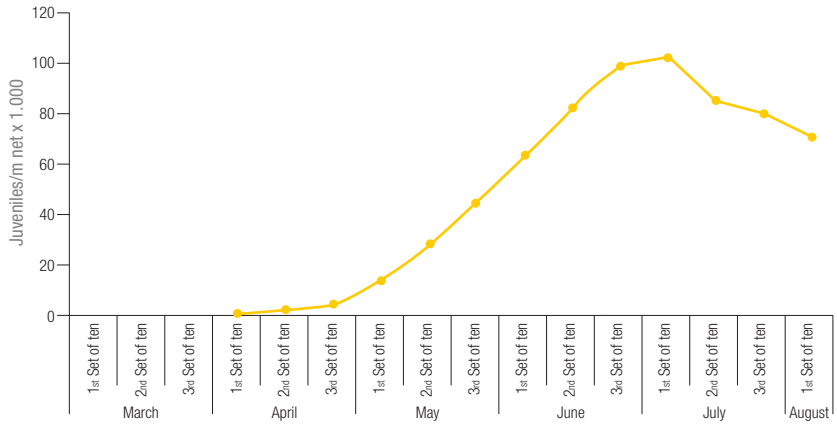
You can find below the results of the preliminary analysis of 3 birds, which are models for birds' most common migratory strategies: resident species (Blackbird), species with pre-Saharan migration (European Robin) and species with trans-Saharan migration (Melodious Warbler).

© José A. Cortés

Female Cetti's Warbler's active brood patch

BLACKBIRD (*Turdus merula*)

The Blackbird is basically a resident bird, so in general it does not migrate (most of its populations). The first juveniles are detected in mid-April. The largest number of chicks are registered in the last ten days of June and the first ten days of July. During the 15 years of the Paser programme 129 stations have captured blackbirds.



Blackbird breeding phenology according to the first fledglings

© Pablo Vera

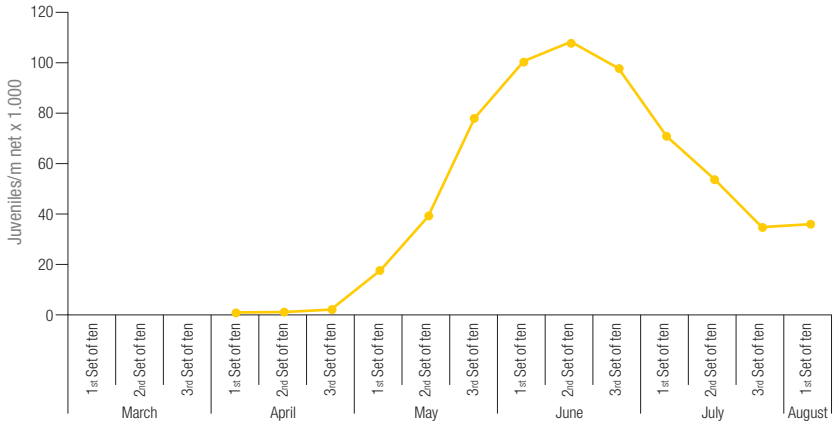
Eurasian Blackbird

Considered Paser stations to establish the breeding phenology of the Blackbird (1998 - Eurasian Blackbird 2012, 129 stations)

EUROPEAN ROBIN (*Erithacus rubecula*)

The European Robin shows a pre-Saharan migratory strategy where the wintering limit is located in the north of Africa. Like the Blackbird, the Robin can easily be seen eating on the ground, since its diet is made up of invertebrates that can be found in the substratum, although it can also eat small berries and fruits, depending on the region and season.

These birds move northwards to breed and the moment to start catching juveniles born that year is similar to Blackbird dates. From 10 to 20 July is when the maximum number of specimens start flying, a bit earlier than the Blackbird.



Phenology of the European Robin reproduction according to the emergence of fledglings

© José A. Cortés

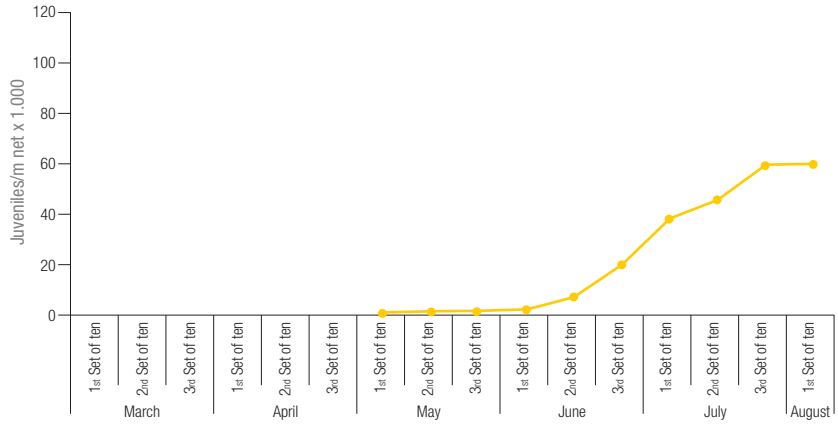
European Robin fledgling

Considered Paser stations to establish the breeding phenology of the European Robin (1998-2012, 89 stations)

MELODIOUS WARBLER (*Hippolais polyglotta*)

The Melodious Warbler is a trans-Saharan migrant that spends the winter in the equatorial regions in central and southern Africa. It is one of the most captured species in Paser and it is easily identified by its long bouts of singing and its yellow colour, but it will not be seen easily on the ground, as occurs with the two previous species. It feeds mainly on insects caught in the vegetation where it lives.

The first juveniles are registered in mid-June and the highest number of young specimens emerge at the end of July or early August. Its juveniles are the latest to appear of the three species studied.



Phenology of Melodious Warbler reproduction according to the emergence of fledglings

© Pablo Vera

Melodious Warbler

Considered Paser stations to establish the breeding phenology of the Melodious Warbler (1998 - Melodious Warbler 2012, 121 stations)

More information at:
www.seguimientodeaves.org

aves y clima

BIRD PHENOLOGY

Blas Molina
SEO/BirdLife

- Selection of participation sites which are visited frequently or daily.
- Record the observation dates (first arrivals, latest observations, first and last fledglings, etc.).

The Birds and Climate programme has already gathered more than 80,000 registers; some 20,000 have been recorded since its start in 2007. The constant collaboration in providing dates of interest will provide very solid information in the long term.

This programme allows us to understand the phenology of the species in great detail and at different regional scales. The constant gathering of information year after year at the same location reflects the dates of arrival and departure of some migratory species. Moreover, the knowledge about the breeding phenology of some birds provides a good tool to work in conservation, since it helps to have information to mark out sensitive periods in forestry work or hunting dates.

It is important to pay attention to the observations and register the dates correctly in order to establish the phenology of each species and assess future changes that are not subject to natural variations.

© Javier Milla

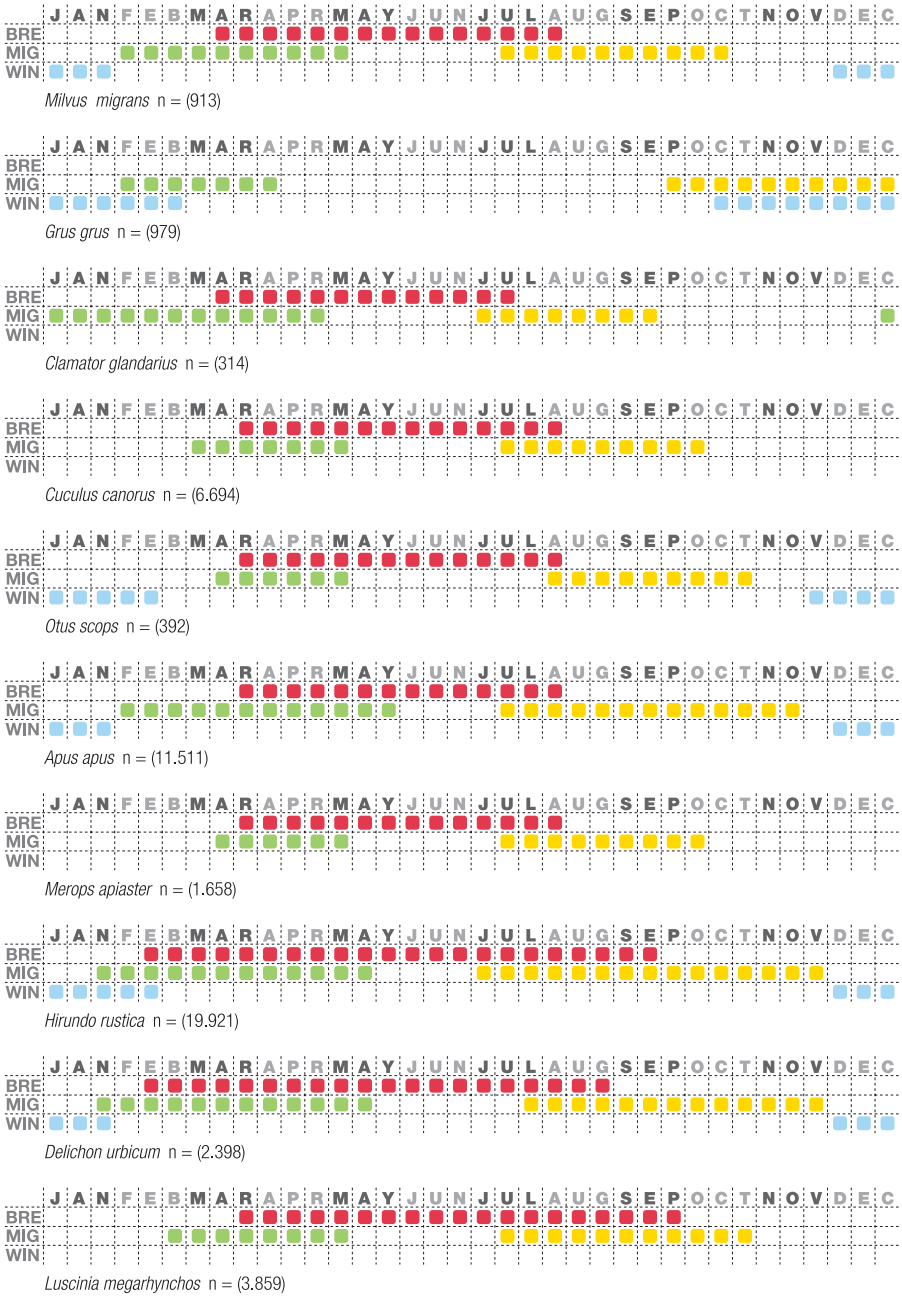
Barn Swallow

As there is a lack of constant attention, it is essential that the selection of locations corresponds to an area regularly frequented by the collaborator, and who must have experience and knowledge of the area so that the data registered in the programme contains the least chance of error.

The current information on the database can define the general graph on phenology of the most common species for periods of migration, reproduction and wintering, bearing in mind the migratory or sedentary behaviour shown by each of them. The easiest species to observe have the highest number of registers and are often seen in urban areas, like Barn Swallow, Common Swift or House Martin. Phenology is determined by various factors such as latitude, altitude and topography. However, each year the prevailing weather conditions determine the first and last sightings (storms, prevailing winds, droughts, etc.).

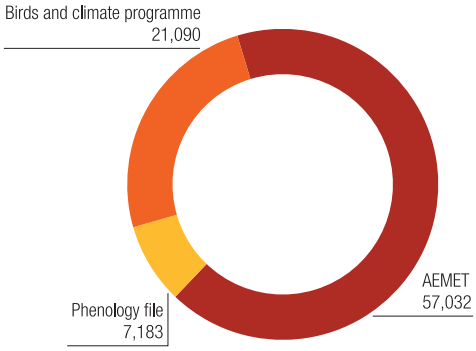
The limits of the periods marked on the general phenology graphs are shortened in the coldest areas, mountains and areas furthest from migratory routes. Conversely, they are extended in southern areas of the Peninsula, warmer areas or in places where migratory flows are detected. The migratory or wintering contingent very often overlaps or meets the sedentary population. Furthermore, there are few specimens at the beginning and end of each period with the bulk of the population migrating, breeding or wintering in the middle of each period.

More information at:
www.avesyclima.org



Phenology of the 10 most registered species in the Birds and Climate programme. Data available displayed. Each square corresponds to a period of 10 days in each month (decade)

BRE: Breeding season. Occupation of area during breeding until abandonment, fights and disputes between males, pairing, etc.
MIG: Prenuptial migration period (destined for breeding area) or post-nuptial (destined for wintering areas) is initiated with the arrival or departure of the first specimens according to species.
WIN: Wintering period. Birds established in an area over a period during the winter months.



Number of registers included in the phenology database of SEOBird/Life, AEMET (National Meteorology Agency) and Phenology File (SEOBirdLife and Birds and Climate historical data)

migra

BIRD MIGRATION

Javier de la Puente, Ana Bermejo and Juan Carlos del Moral
SEO/BirdLife

- Remote device migration monitoring
- Long-term work sites, such as continuous ringing stations, bird boxes, etc., are used as marking points for small species.

In 2012 we obtained the first results from the birds ringed in the Migra programme and their migration trips. The programme started in 2011 thanks to the support of Fundación Iberdrola. The aim of this programme is to study bird migrations and movements through the most modern remote monitoring technologies which, fortunately, improve every year, allowing us to address new challenges.

In 2011 we marked more than 90 birds belonging to 5 species with different kinds of devices: 7 European Booted Eagles with GPS data loggers and 26 Common Terns, 17 European Bee-eaters, 12 Eurasian Scops-Owls and 30 Great Reed-Warblers with geolocators. The first results came in the second year of the programme. Thus, we are finding out in detail the migration journey, the wintering and resting areas in the migration and when the birds leave and return to their breeding areas.

The marking of the European Booted Eagles with GPS data loggers was very successful and also very exciting, since we were able to consult their movements daily and in real time, monitoring their migration and wintering trips 2011/2012 through www.migraciondeaves.org. Out of the marked specimens, we recaptured two European Booted Eagles, two European Bee-eaters, two Great Reed-Warblers and two Common Terns in order to download the information from the geolocators and data loggers.

THE FIRST MIGRATION REVEALED: THE EUROPEAN BOOTED EAGLE'S TRIP

We only knew that Spanish European Booted Eagles crossed the Strait of Gibraltar and went beyond the desert to winter thanks to a few recuperated birds, marked in Spain and found dead in Sahel in winter. Now they are the first species with results in the Migra programme. Thanks to the specimens marked with GPS by SEO/BirdLife and the Govenement of Extremadura in Castilla y León, Catalonia, the Region of Valencia, Extremadura and Madrid in 2011, some of the secrets of their migration and wintering areas are now revealed.

The European Booted Eagles leave their breeding areas in Spain in mid-September and, after a trip of 13-50 days, they reach their wintering areas in mid-October.

They spend the winter in sub-Saharan Africa, in Guinea, Mali, Mauritania, Niger, Nigeria and Sierra Leone, in a narrow strip with a width of around 1,500 km, further south than the Egyptian Vultures, Short-toed Snake Eagles, Montagu's Harriers and Spanish Lesser Kestrels. In general terms, they spend the whole winter in a single wintering area at 2,800-3,500 km from their nests.

Trips of up to 60 km from the nest of a breeding European Booted Eagle in Madrid

European Booted Eagles migratory journeys

Between the end of February and mid-March, after about five months in the Sahel and far away from their nests, they leave the wintering areas in Africa and, after a one-month trip (between 18-42 days), they come back to the same nests as the previous year during the first fortnight of April. The migration back to Spain is slower than the autumn one and generally following a route further to the west. This is called "circuitous migration". The following winter they migrate back to the same wintering areas.

The European Booted Eagles travel an average of 200 km per day, with a maximum of 500 km per day. During their migration they may sometimes rest for weeks at a time, in an intermediate place between the breeding and wintering areas, as shown by a specimen which stopped on its two migrations in northern Morocco.

As expected for a gliding bird of prey, they only fly during the daytime and cross from Europe to Africa by the Strait of Gibraltar in both migrations.

With the data from the first year of work, and thanks to researchers from Alicante University, *Bird Study* (a prestigious international science magazine, devoted to applied ornithology) published the first results on migration.

THE EUROPEAN BOOTED EAGLE SPENT THE WINTER AT 2,800-3,500 KM FROM ITS NEST. IT TRAVELLED AN AVERAGE OF 200 KM PER DAY, WITH A MAXIMUM OF 500 KM PER DAY.

But there is still much information to analyse and publish. For instance, the local movements within the breeding areas of some specimens proved surprising. In fact, there are cases of daily trips of up to 60 km away from the nest to areas with an abundance of prey to hunt.

THE JOURNEYS OF A 30-GRAMME PASSERINE THE GREAT REED-WARBLER

For the first time we know in some detail the migratory journey and wintering area of a Passerine in Spain: the Great Reed-Warbler. Although this trans-Saharan migratory bird has, since the 80's, often been ringed in Spain (more than 29,000 ringed specimens and more than 3,000 recuperated) there were only 7 ringed specimens captured in Africa (6 in Morocco, probably still in migration, and 1 in Mauritania, closer to the wintering area), so the wintering areas in Africa remained a mystery.

In the spring of 2011 SEO/BirdLife fitted 30 birds with geolocators in Madrid, Valencia-Alicante and Vitoria (Basque Country). The fieldwork was carried out in collaboration with researchers from Valencia University and the ringing groups Pit-Roig, Merula, Txepetxa and Aranzadi.

Great Reed-warbler migratory journeys

In the spring of 2012 two ringed birds were recuperated. A male ringed in Madrid overwintered in two areas of Mali and Burkina Faso, at 3,000 km from its breeding area. After leaving Spain at the beginning of August, it reached its wintering area in early

September, where it remained until the end of November. Then, it flew to a second wintering area, 600 km to the west, where it stayed until it returned to Spain, reaching its breeding area at the beginning of May.

THE EUROPEAN ROLLER, BIRD OF THE YEAR 2012: A SLOW AND SPECTACULAR MIGRATION OF 20,000 KILOMETRES

The information given by this species is notable: it was the first one marked with satellite transmitter devices, when its movements were totally unknown. Four specimens were marked in spring 2012. Three of them crossed to Africa through the Strait of Gibraltar and the Alboran Sea, they bordered the Sahara desert by the Atlantic coast in a southwesterly direction and continued east to reach Niger and Nigeria, practically following the southern edge of the desert: a journey of more than 5,500 km. One European Roller started migrating on the afternoon of 6 September and in 22 hours crossed 600 kilometres of open sea past the Balearic Islands to reach the coast of Algeria. Then, it crossed the desert through Algeria and Niger to arrive at Lake Chad, 3,000 km away from its breeding area. Although this is the specimen with its nests furthest away from its wintering area, it flew 1,000 km less than the other three specimens thanks to the route it followed.

It is striking that all of them ended up in the same wintering area, less than 300 km apart from each other, in the first part of the winter. But at the end of October they surprised us again: they flew almost simultaneously towards the south to reach Namibia and Botswana in two weeks on a 10,000 km route, after crossing Nigeria, Cameroon, Equatorial Guinea, Congo and Angola. The migration back in spring was very similar, but unfortunately only one of the four marked Rollers was able to get back to its breeding area in Spain.

MORE MARKING AND MORE SPECIES

In 2012 and 2013 the marking of some of the 2011 species was continued as well as beginning some new ones. Nearly 200 specimens belonging to 13 species were fitted with satellite transmitter devices and geolocators.

© Javier de la Puente / SEO/BirdLife

European Roller marked with satellite transmitter

IN THE WINTER OF 2012/2013 WE STARTED THE WORK ON THE RED KITE THANKS TO THE SUPPORT FROM FUNDACIÓN BIODIVERSIDAD.

One new species is the White Stork, the first adult specimens marked in Spain with GPS-satellite transmitters in collaboration with the regional governments of La Rioja and the Basque Country.

The marking of the Red Kite began in the winter of 2012-2013, thanks to the support of Fundación Biovidersidad. The birds were marked in Aragón, Castilla y León and Madrid. This species is in danger of extinction in Spain. The information that is being gathered will be of great help for its future conservation.

In addition, Common Swifts were fitted with geolocators for the first time in Spain. Some specimens of Great Reed-Warbler, Eurasian Scops-Owl, Cory's Shearwater and Bulwer's Petrel, recuperated in 2013, were marked again.

European Roller's migratory route

The marking of these new species was undertaken thanks to the collaboration of other entities. For the first time in Spain, the Ornithology Group SEO-Monticola marked Barn Swallows and Common Nightingales with geolocators, in Madrid. The Extremadura regional government provided information on two new Booted Eagles, two European Rollers and the first European Bee-eater marked in Spain with a GPS-satellite transmitter, apart from the

two Booted Eagles and the Black-shouldered Kite marked in 2011.

The Terra Natura Biological Station (University of Alicante) informed on the movements of the first Lesser Kestrels tagged in Spain with satellite transmitters, as well as five Short-toed Snake Eagles. Cabañeros National Park gave the data about 11 Black Vultures marked in 2006. Barcelona University made available data for 2 Eurasian Scops-Owls, 3 Cory's Shearwaters and 14 Bulwer's Petrels.

The Swiss Stork organisation, Grefa (Madrid) and Grupo SaBio from the Institute of Cinegetic Resources or IREC, by its initials in Spanish (UCLM-CSIC-JCCM) are giving information on many specimens for the project's website.

It is also important to highlight that in spring 2013 four European Rollers, two Barn Swallows, two Common Nightingales, one Great Reed-Warbler and one Common Swift were recuperated with the geolocators – all of them had valuable information accumulated since their marking, nearly one year ago. In the coming months, after analysing the data, we will be able to publish for the first time these three species' -marked in Spain- wintering areas and migration in detail.

WWW.MIGRACIONDEAVES.ORG

Migra programme's web page is becoming the reference website on bird migration in Spain. In mid-2013, there is information on 171 specimens belonging to 18 different species, with more than 245,000 locations.

During 2012 many innovations improved the display of information and facilitated its dissemination. An RSS system was included as well as an option to subscribe to a distribution list to receive the Migra e-news. In addition, the new section to donate will allow everyone to help financially, from small quantities to adopting a bird, so the programme can mark more specimens. We are now uploading pdf files and in the future we will include publications and monographs obtained with the analysis of all the information being gathered.

More information at:
www.migraciondeaves.org

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Common Nightingale with a geolocator

© Carlos Ponce

Common Swift marked with a geolocator

© Javier de la Puente / SEO/BirdLife

Marking a Common Nightingale with a geolocator

censos

THE GREAT CORMORANT IN SPAIN
BREEDING AND WINTER POPULATION IN 2012-2013

Blas Molina
SEO/BirdLife

- Spring: direct census of breeding colonies.
- Winter: roosts census.

In 2012-2013, SEO/BirdLife carried out a census on the breeding and wintering Great Cormorant, within the international census promoted by IUCN/Wetlands International Cormorant Research Group and the "CorMan" project, in collaboration with the European Commission, whose aim was to assess the number and distribution of the Great Cormorant in the Western Palearctic.

The first two attempts of this species at breeding were recorded in the 1980s and since then new colonies have appeared. In 2007 a minimum of 532 pairs were counted while in 2012 that figure rose to 1,605. That means that the breeding population has tripled in five years.

The Great Cormorant wintering population still shows a positive trend, although more moderate. In January 2013 the third census was carried out in order to update the change a decade after the previous census. Over 1,000 sites were visited, counting a minimum of 78,893 specimens.

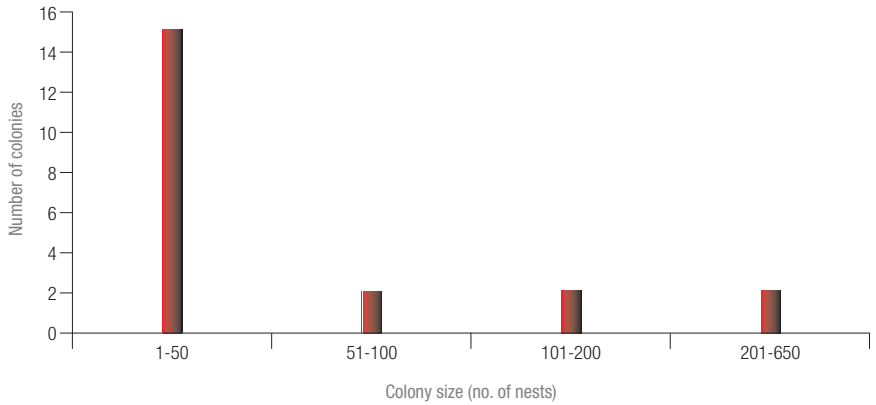
© Ángel Sánchez

Great Cormorant colony in Encinta. Extremadura

DISTRIBUTION AND SIZE OF THE BREEDING POPULATION

During the breeding Cormorant census 293 wetlands were visited, especially those sites known to be breeding areas, sites with previous traces or with specimens present throughout the year. Some 125 participants obtained a good coverage.

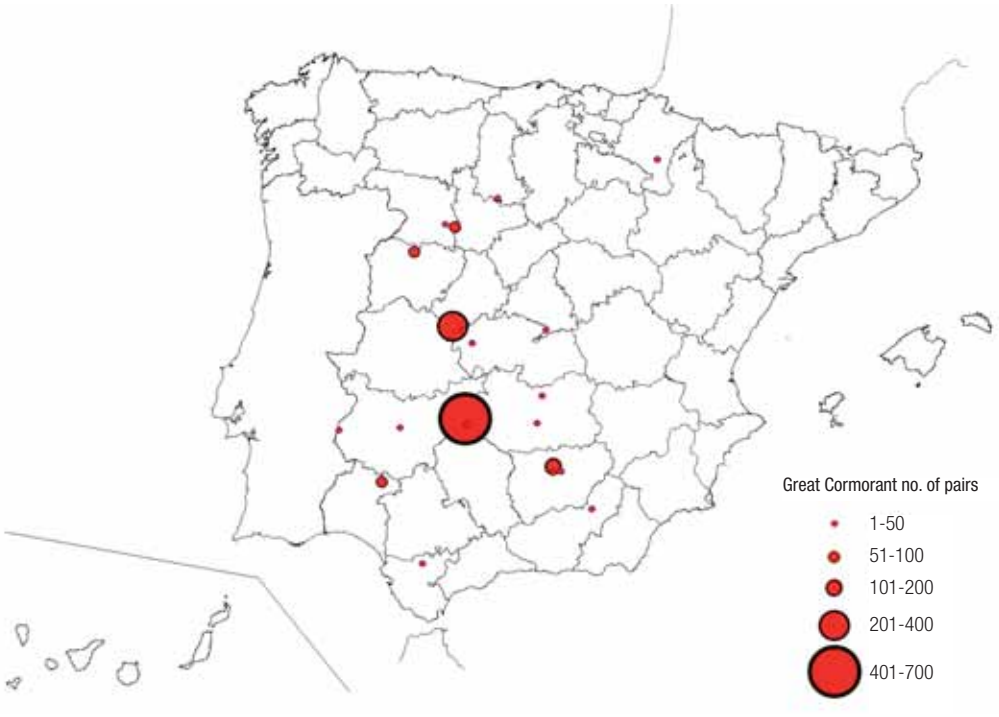
They detected 21 colonies in 24 provinces, in 5 autonomous regions, mainly in the south east of the Peninsula, with a minimum of 1,605 pairs. The most important colonies were found in Badajoz (Extremadura)



Colony ranking by number of nests

Autonomous region	No. of pairs
Extremadura	651
Castilla-La Mancha	483
Andalusia	259
Castilla y León	205
Navarra	7
Total	**1,605**

Number of Great Cormorant breeding pairs in 2012 by autonomous region.



Distribution of Great Cormorant population in the breeding season 2012

Province	No. of pairs
Badajoz	651
Toledo	468
Jaén	196
Salamanca	120
Valladolid	60
Huelva	54
Zamora	24
Ciudad Real	15
Cádiz	8
Navarra	7
Granada	1
Palencia	1
Total	**1,605**

Number of Great Cormorant breeding pairs in 2012 by province

River basin	No. pairs	%
Guadiana	666	41.50
Tagus	468	29.16
Guadalquivir	251	15.64
Duero	205	12.77
Andalusian Atlantic	8	0.50
Ebro	7	0.44
Total	**1,605**	**100.00**

Number of Great Cormorant breeding pairs in 2012 by river basin.

and 70% of the pairs were in the Guadiana and Tagus rivers basins. In the northern half of the Peninsula there was only a small colony in Navarre. The rest were located in the middle zone of the Duero river basin. Virtually all the breeding points are in reservoirs or rivers.

The nests were in trees over 3 meters tall, especially in holm oaks, poplars, French tamarisk and eucalyptus. Only the colony in Navarra was located in a reed wetland. On occasions, the nests are found in Ardeidae's colonies, as is the case of the El Puente gravel pits (Toledo), Pisuerga river (Palencia), Pitillas Lagoon (Navarra) and Zufre reservoir (Huelva).

The biggest colony is located in La Serena reservoir (Badajoz) with over 600 nests in holm oaks. The average colony size is below 50 nests, having isolated nests in four cases.

Although we did not make any special effort to count non-breeding specimens, there were about a thousand of them in early summer, scattered around 29 provinces.

The trend change in the breeding population in Spain is clearly positive, with an output that now triples the 2007 figure. Despite some colonies appearing and disappearing between seasons, others, we know, remain, like those in the Rosarito reservoir in Toledo, the Castronuño river banks in Valladolid or the Guadalén and Giribaile reservoirs in Jaén.

WINTER DISTRIBUTION AND POPULATION SIZE (2012-2013)

In January 2013, the 3rd national census on wintering Great Cormorant was carried out. It basically focused on detecting and counting the roosts or groupings formed by the cormorants overnighting. Only in some cases the Cormorants outside of these groupings were considered, where the counting was very tough due to the difficulty in locating the sites or where there were many small roosts.

Some 1,090 wetlands and sites were prospected, including some coastal stretches. We paid particular attention to sites with evidence of roosts in previous years and in those with positive results in the 2003 national census.

Nearly a thousand people participated in this task. The minimum number of specimens counted was 78,893.

The Andalusian region hosted the most numerous population with over 20,000 specimens. Another five autonomous regions exceeded 5,000 birds. On this occasion, a few specimens were also registered in the Canary Islands and Ceuta. Valencia province hosted the highest number of wintering specimens (7,828) and another three provinces (Sevilla, Badajoz and Murcia) exceeded 5,000.

The Albufera of Valencia is one of the main concentration points for wintering cormorants, accounting for over 50% of those birds in the Valencia region. Other notable wetlands with over a thousand specimens were the River Ebro Delta in Tarragona, Redondella Island and Isla Grossa in Murcia, the Valuengo reservoir in Badajoz and the Odiel Marshes and Isla Cristina in Huelva.

© Ramón Elósegui

Great Cormorant

Autonomous Regions/ Provinces	Number of specimens
Almería	1,042
Cádiz	3,314
Córdoba	2,226
Granada	446
Huelva	4,138
Jaén	1,119
Málaga	1,127
Seville	6,997
Andalusia	**20,409**
Huesca	499
Teruel	199
Zaragoza	1,845
Aragón	**2,543**
Asturias	1,340
Asturias	**1,340**
Cantabria	702
Cantabria	**702**
S, C, Tenerife	11
Las Palmas	1
Canary Islands	**12**
Ávila	189
Burgos	226
León	1,231
Palencia	517
Salamanca	629
Segovia	168
Soria	248
Valladolid	873
Zamora	1,826
Castilla y León	**5,907**
Albacete	304
Ciudad Real	1,408
Cuenca	147
Guadalajara	336
Toledo	3,857
Castilla-La Mancha	**6,052**

Autonomous Regions/ Provinces	Number of specimens
Barcelona	1,988
Glrona	1,086
Lleida	1,395
Tarragona	4,277
Catalonia	**8,746**
Alicante	1,057
Castellón	794
Valencia	7,282
Valencia Region	**9,133**
Ceuta	**41**
Badajoz	5,736
Cáceres	2,762
Extremadura	**8,498**
A Coruña	1,530
Lugo	552
Ourense	826
Pontevedra	1,380
Galicia	**4,288**
Mallorca	376
Menorca	163
Ibiza	0
Formentera	3
Cabrera	0
Balearic Islands	**542**
La Rioja	**1,006**
Madrid	**1,849**
Murcia	**5,598**
Navarra	**1,184**
Álava	261
Guipúzcoa	400
Vizcaya	382
Basque Country	**1,043**
Total	**78,893**

Number of Great Cormorant specimens counted in roosts by autonomous region and province in January 2013

Wetland/Site	Province	No. of specimens
Albufera of Valencia I	Valencia	3,345
Isla Redondella (Mar Menor)	Murcia	3,032
Albufera of Valencia II	Valencia	2,874
Odiel Marshes	Huelva	2,346
Isla Grosa	Murcia	1,945
Paraje Natural Marismas de Isla Cristina/Ayamonte	Huelva	1,120
National Park Delta de l'Ebre: Salinas-Punta de la Banya	Tarragona	1,048
Valuengo Reservoir	Badajoz	1,032
Corta de los Olivillos	Sevilla	850
Tarfia (Veta la Palma)	Sevilla	846
Guadiana River-Orellana Reservoir	Badajoz	832
National Park Delta de l'Ebre: Badia del Fangar	Tarragona	803
Foix Reservoir	Barcelona	784
Torre del Águila Reservoir	Sevilla	779
River Guadalquivir, Alcolea del Río	Sevilla	705

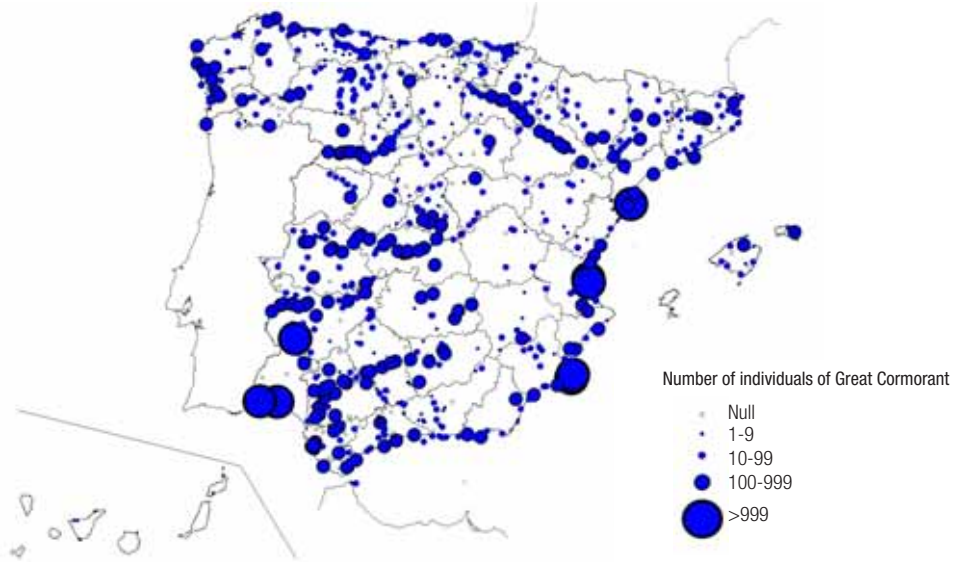
The 15 wetlands with highest number of wintering specimens registered

The trend continues to be positive, rising by about 10,000 specimens with respect to 2003 (68,785 Cormorants) in general terms, with slight or similar increases in most regions. Some autonomous regions presented a decrease in their wintering populations, like the Valencia region and Navarra. Although Extremadura resulted in a smaller number, it could well be a more adjusted figure than that of 2003. Aragón showed inferior values, perhaps due to lower coverage.

More information at:
www.seguimientodeaves.org

© Juan Jiménez

Some roosts gathering on coastal cliffs



Distribution and size of the cormorant roosts in winter, 13th January

acuáticas

CENSUS OF AQUATIC BIRDS IN WINTER

OVERWINTERING WATER BIRDS AND HYDROGRAPHICAL DEMARCATIONS

Blas Molina
SEO/BirdLife

- Wetlands direct census.
- Mid-January.
- Preferably at dawn or dusk, especially in sites with vegetation.

The data obtained from the water bird census have traditionally been analysed in order to attain information on wetland sites, provinces, autonomous regions or on a national level, but not on a hydrographical demarcation scale.

The concept of "hydrographical demarcation" stems from the EU Water Framework Directive, passed in 2000, and corresponds to the terrestrial and marine area formed by one or several close river basins and the transitional, subterranean and coastal waters associated with them. A river basin is an area which drains its water into the sea through a main river and all the streams, creeks, lagoons, etc. Therefore, demarcation is a concept directly linked to the way water is managed and administered as a natural resource. The flood level and the state of conservation of the wetlands in each river basin have an effect on the number of water birds overwintering each season.

© Quique Marcelo

Tufted Duck

© Blas Molina

Tablas de Daimiel

Fifteen demarcations have been considered for the Peninsula and the Balearic Islands. In 2010 the highest number of water birds were found in the Ebro and Guadalquivir river demarcations, in two large wetlands: The Ebro Delta and Guadalquivir Marshlands.

Hydrographical demarcations

On a wider scale we obtain eight hydrographical groups, grouping demarcations by their similar hydrological and climatic features. The units corresponding to Andalusia and the river Ebro and the basins in Catalonia concentrate about 60% of water birds. Most water birds concentrate in winter in the coastal wetlands or around them. This is why the coastal hydrographical groups register greater numbers. The index of change in the wintering population of Anatidae and Coots per hydrographical demarcation (with 1991 as the reference year, when it started) shows notable decreases in Andalusia and uncertain results in the short term. For the Guadiana demarcation the index resulted negative, both in the short and long term. By contrast, the Balearic populations shows positive changes in both periods.

More information at:
www.seguimientodeaves.org

Hydrographical Demarcation	Anatidae and Coots	Other water birds	Total	%	% Cumulative
Ebro	223,315	214,437	437,752	23.07	23.07
Guadalquivir	201,880	221,661	423,541	22.32	45.39
Galicia-Costa	18,208	131,918	150,126	7.91	53.30
Júcar	51,871	78,394	130,265	6.86	60.17
Andalucia Atlantic Basin	11,422	118,407	129,829	6.84	67.01
Guadiana	69,879	51,900	121,779	6.42	73.43
Duero	91,114	22,637	113,751	5.99	79.42
Catalonia Interior Basin	12,586	83,167	95,753	5.05	84.47
Tajo	39,575	43,421	82,996	4.37	88.84
Cantábrico	19,538	53,523	73,061	3.85	92.69
Segura	21,453	19,239	40,692	2.14	94.84
Andalucia Mediterranean Basin	8,263	26,751	35,014	1.85	96.68
Islas Baleares	17,563	14,081	31,644	1.67	98.35
Basque Country Interior Basin	1,908	16,583	18,491	0.97	99.32
Miño-Sil	5,312	7,532	12,844	0.68	100.00
Total	**793,887**	**1,103,651**	**1,897,538**	**100.00**	

General results of census of wintering water birds in Spain in 2010 per Hidrographical demarcation

Hydrographical Demarcation-Grouped	Anatidae and Coots	Other water birds	Water birds group	%	% Cumulative	Change (%) 1991-2010	Change (%) 2000-2011
Andalucia	221,565	366,819	588,384	31.01	31.01	-13.24	Sin definir(1)
Ebro & Catalonia Int. Basin	235,901	297,612	533,513	28.12	59.12	10.28	2.41
Norte	44,966	209,556	254,522	13.41	72.54	11.82	4.73
Levante	73,324	97,633	170,957	9.01	81.55	-1.33	-1.05
Guadiana	69,879	51,900	121,779	6.42	87.96	-35.98	-52.09
Duero	91,114	22,629	113,743	5.99	93.96	158.98	-8.58
Tajo	39,575	43,421	82,996	4.37	98.33	21.12	-43.23
Baleares	17,563	14,081	31,644	1.67	100.00	196.61	197.88
Total	**793,887**	**1,103,651**	**1,897,538**	**100.00**		**-3.67**	**-3.09**

Number of specimens of wintering water birds and change index (in the short and long term) of Anatidae and Coot populations per Hydrographical Demarcation. (1) Non-significant result

Grouped hydrographical demarcations and wetlands censused in each

atlas en invierno

atlas en primavera

BIRD DISTRIBUTION

Juan Carlos del Moral
SEO/BirdLife

After many years of work (2006-2012), the *Atlas of birds in winter in Spain* has just been published.

It took seven years to prepare it, from the initial work and planning (2006) and checks to implement the methodology, contrast the results and analyse the work needed to obtain the proposed goals (2007).

Now, a new challenge begins: to update the Atlas in spring.

The latest atlas of breeding birds in Spain was published 10 years ago. Not only must we update the information to keep track of the changes in bird populations and to try to identify where the problems lie –we must also address the renewal of this atlas for many other reasons.

On the one hand, using a similar methodology to the atlas in winter is interesting because then we can compare the data more easily and create a repeatable sampling system that facilitates the registration of changes over time. On the other hand, we need to bear in mind that the whole of Europe is working on a new atlas in the breeding season and we cannot be left behind. Spain needs to contribute to such an important general interest project.

SEO/BirdLife is going to take the necessary steps to organise this new task in order to have a new publication by 2020, although we will try to have the fieldwork finished by 2017, so that all the informa-

- 2,600 participants
- 1,600 various monitoring programmes
- 1,071 atlas participants
- 2,121 complete grids
- 40,106 itineraries
- 120,317 km of sampling (1.8 laps of the Earth)
- 30,100 hours (3 years and 5 months)
- 407 species:
  - 314 habitual: 238 abundant / 76 scarce
  - 35 rare
  - 58 exotic

tion will be included in the new European atlas of breeding birds.

A scientific committee will be created (from the SEO/BirdLife scientific committee) that will establish the appropriate methodology to try to obtain the best results. The methodology and desired results (within our limitations) will depend on several questions:

- Number of collaborators. Ideally, we would like to count on 5,600 participants, corresponding to the number of grids in Spain, taking as a sample unit the UTM 10x10 km grid. If there were one participant per grid, everything would be easy.

- Experience of the collaborators. The basic idea is to show where a species is more abundant or scarcer (or where it is more or less probable to find it), but it is not easy to carry out qualitative censuses or properly census the number of detected specimens per species and calculate the distances between detections. The strong mathematical link between the number of specimens in an area and the frequency of occurrence has been verified, so it is possible to opt for a double methodology, like in the wintering bird atlas. One to collect lists of detected species periodically (perhaps under the breeding categories: possible, probable, certain) and another to quantify the specific number of birds in the itineraries. The quantitative work by a few people could complement the qualitative work by many.

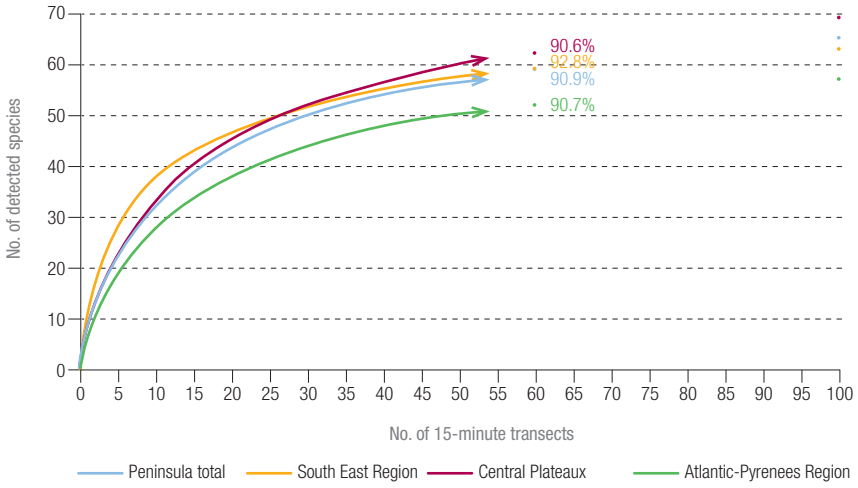
- The sampling effort needed to obtain enough data to facilitate as much as possible the fieldwork of the volunteers who will participate in the atlas, but ensuring good coverage of each participant's fieldwork. An example is the result from the design of the winter atlas fieldwork, where the limit of the effort requested of the participants was established when examining the curves of accumulation of species per grid as the number of itineraries increased (see graph). That pilot study confirmed, for instance, that with 15 working hours in winter in three seasons (60 itineraries of 15 minutes) 90% of the species were detected in each grid (depending on the region). We have to test the minimum effort needed in spring to reasonably cover a grid.

THE WHOLE OF EUROPE IS WORKING ON A NEW ATLAS OF BREEDING BIRDS AND WE CANNOT BE LEFT BEHIND. SPAIN MUST CONTRIBUTE TO SUCH AN IMPORTANT GENERAL INTERST PROJECT

© Felipe González

European Robin

There will probably be a debate addressing: 1) trying to cover all the grids in Spain with little effort in all of them if there is not one person per grid, renouncing to properly cover each grid and representing only the occurrence or not of the most common species or those detected in a short time during the sampling; or 2) focusing the effort on some of the grids in Spain to obtain the best information possible of those and calculate for the non-sampled grids (but with known environmental features) the possibility of detecting the species according to their most relevant environmental variables. That implies the use of predictive models to determine the bird distribution and abandon the traditional method (representing the occurrence/non-occurrence), being aware of the pros and cons of each methodology. The second can predict the occurrence of species where they are not; the first is clearly deficient because we will never detect all the species in 100 km^2 and less in the 5,600 grids in Spain.



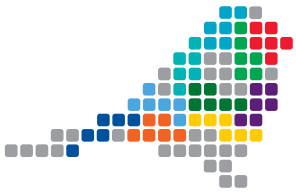
Accumulation curves of number of species in different regions according to the sampling hours in winter

In addition, we will make a big effort to obtain information on those species not usually detected in the standardised atlas work. We will also have to work on sampling nocturnal birds, seabirds, specific censuses, identification of scarce species (committees of rarities and exotic birds, etc.).

More information at:
www.seguimientodeaves.org

TEN ONGOING MONITORING PROG

Operation period of each programm



SEO/BirdLife Birds monitoring programmes

sacre
Bird trends in spring
1996-2012

sacin
Bird trends in winter
2008-2012

noctua
Nocturnal bird trends
1997-2012

paser
Bird ringing in spring
1995-2012

aves y clima
Phenology of birds
2009-2012

migra
Bird migration
2011-2012

censos
Bird population size
2004-2012

acuáticas
Census of aquatic birds in winter
1991-2012

atlas en primavera
Distribution of birds in spring
1998-2012

atlas en invierno
Distribution of birds in winter
2007-2012

0 500

* Seasonal average

GRAMMES NEED YOUR PARTICIPATION

ne and number of participants in each.

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GET THE KNOWLEDGE TO CONSERVE

- We need new participants each season to replace vacancies and to keep growing.
- Train and convince a friend to keep the participation growing
- We need your help.

ACKNOWLEDGEMENTS

First and foremost, SEO/BirdLife wishes to thank once again the hundreds of participants for all the work included in the present document. In the electronic version of this bulletin **www.seo.org (publicaciones)** everyone is included. Thanks to them, this good work continues.

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