

**KEY CONCEPTS OF ARTICLE 7(4)
OF DIRECTIVE 79/409/EEC**

PERIOD OF REPRODUCTION
AND
PRENUPTIAL MIGRATION
OF
ANNEX II BIRD SPECIES
IN THE EU

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INTRODUCTION

1. Context and objective

This document presents a review of best available information on the timing of the reproduction period and of pre-nuptial migration (return to the breeding areas) for bird species listed on Annex II of the Directive on the conservation of wild birds (79/409/EEC). Annex II lists those bird species that, owing to their population level, geographic distribution and reproductive rate, may be hunted throughout the Community (part 1) or in the Member States in respect of which they are indicated (part 2).

The need for this information arose from a Court of Justice judgement in 1994¹. The Court concluded that the closing date for the hunting of migratory birds and waterfowl must be fixed in accordance with a method that guarantees complete protection of those species during the period of pre-nuptial migration².

Although the Court only examined the question of fixing closing dates for hunting of migratory species, a matter related to the start of the pre-nuptial migration, its interpretation (namely the requirement of 'complete protection') is also relevant to the fixing of opening dates, a matter related to the end of the period of reproduction.

The present exercise was initiated by the Birds Directive's ORNIS Committee (Committee for the adaptation to technical and scientific progress, which is comprised of official representatives of the competent authorities in the Member States and chaired by the European Commission) in November 1998. Both the Committee and the Commission recognised the need to have a clear interpretation of key concepts of Article 7(4) in the light of the 1994 Court of Justice's ruling, and how to apply them to the bird species of Annex II.

This report aims to summarise information on the period of pre-nuptial migration and reproduction of each Annex II species for each Member State where that species occurs.

As a basis for data compilation a general scheme for 'period of reproduction', including the different possible stages, was developed. The sequence and importance of the different elements of this scheme vary in relation to the biology of different species. Likewise, a working definition was agreed for 'return to the breeding areas'. Further details on these definitions and their application are given in Section 2 of the introduction. The common methodology for collecting the data, including the gathering, processing and presentation of data, is also described in this section.

¹ Case C435/92, Association pour la protection des animaux sauvages and other v Préfet de Maine-et-Loire and Préfet de Loire-Atlantique. Reference for a preliminary ruling: Tribunal Administratif de Nantes, France. European Court Reports, 1994, page I-0067.

² This case also highlighted other difficulties in applying Article 7(4) linked to staggered closing dates (different closing dates for different species) These are the risk of confusion between different species, which may lead to the shooting of species for which the hunting is already closed. There is also the risk of disturbance caused by hunting to other bird species for which hunting has already closed. These elements are not covered by the present exercise

It must be recognised that there are likely to be some differences in quality of data for species across the Community. In order to ensure a science-based approach to underpin implementation of the directive there will therefore be a need to regularly update this review, taking into account new and better data on these species as it becomes available.

Furthermore, the data for individual species is presented at a national level and does not take into account any regional differences that may exist in relation to pre-nuptial migration and reproduction periods within a Member State. Where hunting seasons are fixed at regional or sub-regional levels there will be a need for more detailed information at the appropriate geographical and administrative levels.

Notwithstanding, the data has been compiled in close collaboration with the competent conservation authorities in each of the Member States as well as with BirdLife International and the Federation of Associations for Hunting and Conservation of the EU (FACE). All parties to the exercise were asked to provide the best available information on Annex II species, including where possible with reference to published sources. It is therefore considered by the Commission to be the most reliable overview available at this present time. The document, which has received a favourable opinion of the Ornithological Committee, is being made available as a Working document of the Commission services.

The current document provides a necessary and fundamental first step in clarifying the implications arising from the national application of the Court of Justice ruling. However, this work should not be read in isolation as it forms part of an ongoing exercise in interpreting the provisions of the Birds Directive relating to hunting. Furthermore, the data indicate that there are some problems in the definition of hunting seasons under Article 7(4) alone, varying in scale and degree, in every Member State.

Against this background, the Commission is now therefore proposing to continue the work on interpretation by examining other key concepts of the directive relating to hunting including the principles of wise use and ecologically balanced control. This work will include determining what scope exists for some degree of flexibility in fixing hunting dates beyond the constraints of Article 7(4) by way of the derogation possibilities under Article 9 of the directive. This will be done within the current constraints of the legal framework and the relevant case law of the EU Court of Justice. It will also be based on sound scientific principles and clear conservation objectives. The work will involve the Commission services developing an interpretative guide on this subject.

This interpretation guide forms part of a broader initiative on 'sustainable hunting' under of the Birds Directive which the Commission has initiated with the Member States, the Federation of Associations for Hunting and Conservation of the EU (FACE) and BirdLife International. The initiative is based on a programme of scientific, conservation as well as training and awareness measures with the aim of establishing a 'Charter on sustainable hunting' within the framework of the Birds Directive.

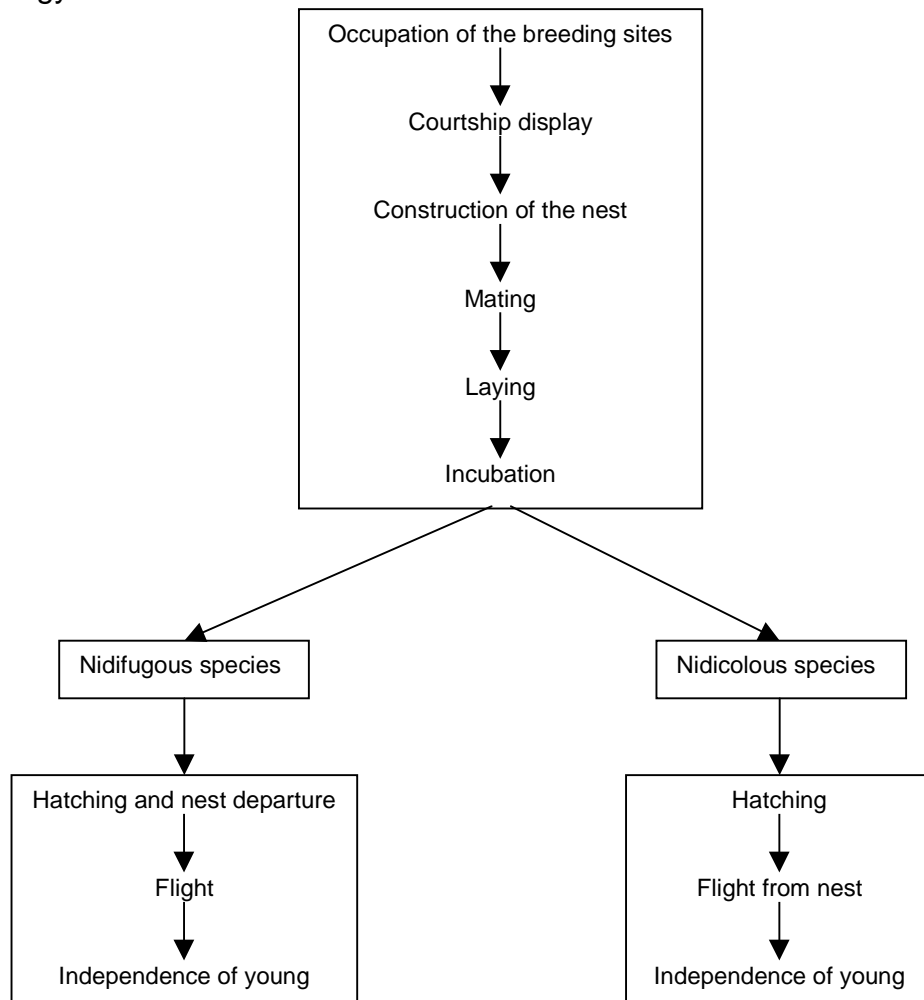
2. Methodology

2.1 Definitions

Initial discussions by the ORNIS Committee's Scientific Working Group in November 1998 agreed the following working definitions:

Period of reproduction³

'Breeding season'⁴ was defined using the definition of Cramp & Simmons (1997)⁵: "the breeding season is the period during which a species lays and incubates its eggs and rears its young to the flying stage." However, the 'reproduction period' not only covers the breeding season but also includes the occupation of the breeding areas as well as the period of dependence of young birds after leaving the nest (previously recognised in the 1993 Commission report on the application of the Birds Directive⁶). The following scheme, which deals with the different stages of reproduction, was agreed as an appropriate general scheme for the period of reproduction. The sequence and importance of the elements of this general scheme may vary by species according to differences in breeding biology.



³ Note that Article 7(4) refers both to 'rearing season' and 'the various stages of reproduction' (cf. French version 'les différents stades de reproduction et de dépendance'; German version 'Einzelnen Phasen der Brut - und Aufzuchtzeit')

⁴ This term is considered equal and better English than the term 'rearing season' used in Article 7(4).

⁵ Cramp, S. & Simmons, K.E.L. (eds). 1977. *Birds of the Western Palearctic*, Volume 1. Oxford, Oxford University Press. 722 pp.

⁶ COM(93) 572 final. *Second report on the application of Council Directive 79/409/EEC on the conservation of wild birds*. Brussels, 24 November 1993.

Return to the breeding areas⁷

Return to the breeding areas is an annual displacement, in one of more stages, of birds from their wintering areas back to nesting grounds. The wintering period ends with departure from the wintering areas where migrant birds have been more or less stationary since the end of the post-nuptial (autumn) migration. The return to the breeding areas is commonly called 'pre-nuptial migration' or 'spring migration'.

In Europe, return migration movements are mostly directed north, northeast or northwest. This means that migrants from African winter quarters first cross the Mediterranean, then pass through central Europe on their way to their Northern European breeding areas. This migration normally takes several weeks (including breaks at resting places on the way) but individual birds can complete the journey in one or a few days. The start, end and length of the migration season in a particular country are determined by a number of biological, geographical and methodological factors.

Regarding the beginning of the pre-nuptial migration, all individuals of a species within a same region do not end their wintering period at the same time. Not only are there individual differences, but within a single wintering area birds of different populations having different annual cycles come together. Birds belonging to northern populations, for example, often start their return flight much later than birds breeding more to the south. An extreme case is the so-called 'leapfrog' migration (e.g. in the Redshank): birds breeding in more northern latitudes travel greater distances and move to more southerly wintering areas than those that nest farther south.

The fact that birds leave a wintering area does not necessarily mean that they start their return migration. They can move to other wintering quarters because of changes in the local ecological conditions, exhaustion of food resources, disturbance or changes in climatic conditions. When migratory and sedentary birds of the same species coexist on the same wintering grounds, the situation can be even more complex. Thus, apparent discrepancies may arise among the data for large countries. Major differences between neighbouring regions can reflect ecological differences more than actual differences in migration timing. For example, although the southern parts of Spain (Andalucía) and Italy (Sicilia) are situated on the same latitude (37th) this does not necessarily imply similar arrival dates of migrants because different populations might be involved.

The length of the migration period does not only depend on the north-south extension of the country concerned but also on the availability and the use of resting places. A typical example concerns the Bar-tailed Godwits which migrate from the African winter quarters to Siberian breeding areas. After a continuous flight from the Banc d'Arguin in Western Africa, they stay several weeks in the Wadden Sea. The migration period length is also determined by the quantity and the geographical range of the birds involved: a small population can pass in a few days while a numerous species with an extensive breeding range can have a prolonged migratory season encompassing several months. Moreover, the

⁷ "return to breeding areas" is taken as a synonym of "return to the rearing grounds"

migration period can also be extended if a country is passed over by several populations with different time schedules.

Methodological reasons can also account for a short period: the start and end dates of migration are not recorded accurately because it only involves small numbers of birds which are often not noted if few observations are available (low chance of recording). As said before, availability of data differs very much from species to species (behavioural differences) and from country to country (e.g. numbers of observers).

In general, the beginning of the return migration can only be estimated by comparison of data from many different regions of the European Union, analysis of ring recoveries and consideration of arrival dates in the breeding areas.

Information defining the timing of pre-nuptial migration was based on statistics relating to populations rather than individual birds.

2.2 Nature of the information

Gathering of data

It was the responsibility of each Member State to provide the 'best available' information for each Annex II species and accordingly, information was sought from the national representatives on the Scientific Working Group (SWG) for the relevant bird species. Initially data was provided on a questionnaire prepared and circulated on December 1998 by the Commission services. Subsequently, and according to the development of the work, updated information was provided either on questionnaires or other forms (e.g. tables).

Some bird species have been subjected to more intensive study than others, whilst some countries have a long history of ornithological research and others have more restricted information. Thus, the quality and quantity of information presented is variable both between countries and between species. Nonetheless, given these constraints the report summarises data that is considered to be the best available. The report presents explicit references for all data allowing an 'audit trail' to original sources.

Processing of data

Given the high number of species in Annex II of the Directive - 81 species and sub-species - the work was carried out by phases. Firstly 33 migratory species - also used to fine tune definitions and methodology -, secondly 15 sedentary species and sub-species, and finally the remaining 33 Annex II migratory birds.

Further to the SWG including experts from FACE and BirdLife International, the process of gathering and summarising these data has been advised by a small advisory group. This group discussed various aspects of the draft compiled data and where information for some species appeared to be anomalous, these were highlighted, via the Commission, with the relevant Member State's SWG representative. Ultimate responsibility for changing data in such circumstances remained with the SWG representative.

Presentation of data

To avoid spurious precision and to allow for normal between-year variation in timing of migration and breeding events, the data presentations summarise the data on reproduction and return migration in 'decades' or ten-day periods (i.e. 1-10, 11-20, 21 up to 31 in each month).

A number of general principles were adopted in the gathering of data:

- Where there is a range in timing of pre-nuptial migration or breeding (as will occur in most countries of significant size), data has been used that relates to the earliest periods in each of the Member States concerned. This is generally relating to the southernmost parts or lowest altitudes. Likewise, for the end of the reproduction, the data used refers to the latest dates. This means that regional differences may exist for prenuptial migration and reproduction periods within the territory of one Member State, which may be relevant. The Court considered that "*on condition that complete protection of the species is guaranteed, the fixing of closing dates which vary between the different parts of the territory of a Member State is compatible with the directive.*"
- Where significant between-year variation occurs on a regular basis, data from the earliest periods have always been taken ;
- Where different populations of the same species migrate through a country at different times, information relating to the earliest migrating population has been used. In some cases, where different populations (i.e. different subspecies or different flyways) are clearly distinguishable in the field their correspondent timings where given.
- Extreme, outlying and erratic data have been excluded due to their unpredictable nature and falling outside normal patterns of variation between and within years.

2.4 Need for future regular review

In some Member States, progressively earlier breeding⁸ and migration⁹ of some species has been demonstrated consequent upon changing climate that is resulting in warmer spring's weather in Europe. This, and climate-induced changes in distributions¹⁰ indicate that whilst the data presented here is a good current summary of relating to recent years, there will be a need for regular review and updating. Furthermore, the evolution on the knowledge of reproduction biology and ecology and of migration's phenology may also require future updating.

⁸ Crick, H.Q.P., Dudley, C., Glue, D.E. & Thomson, D.L. 1997. UK birds are laying eggs earlier. *Nature* 388: 526.

⁹ Sparks, T.H. 1999. Phenology and the changing pattern of bird migration in Britain. *International Journal of Biometeorology* 42: 134-138.

¹⁰ Thomas, C. & Lennon, J. 1999. *Nature* 399: 213.

3. Criteria used to identify the beginning and end of the period of reproduction

In general, for migratory species, the stage of reproduction identifying the start of the period of reproduction is the 'occupation of the breeding sites'. However, the occupation of the breeding sites is generally difficult to use where the species is mainly locally resident or where there is a mixing of locally resident and migratory birds. In these cases, the stage identifying the start of the period of reproduction is the 'construction of the nest'. In those situations where the stage retained is difficult to recognise in the field, a mention is made to the corresponding number of decades counted from the start of egg laying (generally well known for most species).

In general, the stage retained to identify the end of the period of reproduction is the 'full flight of young birds', i.e. fledging of all broods including second or third broods for some species (e.g. rails / Rallidae, pigeons / Columbidae, thrushes / Turdidae). Full flight means that young birds are capable of sustained, continuous flight to a similar capacity as adult birds and corresponds to the 'independence of young birds. Nonetheless, for certain species (e.g. crows / Corvidae) the full flight occurs before 'independence of young birds'. Young birds are independent when the loss of parental care and/or feeding does not significantly lower survival prospects of young. In those situations where the 'full flight/independence of young' is difficult to establish in the field, a mention is made to the corresponding number of decades counted from the end of hatching.

The stage identifying the start and the end of the period of reproduction for each individual Annex II bird species is given in the following table:

Species	Start	End
<i>ANATIDAE</i>		
<i>Cygnus olor</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Anser fabalis</i>	occupation of the breeding sites	full flight of young birds
<i>Anser brachyrhynchus</i>	<i>Does not breed in the EU territory covered by the Directive</i>	
<i>Anser albifrons</i>	<i>Does not breed in the EU territory covered by the Directive</i>	
<i>Anser anser</i>	occupation of the breeding sites	full flight of young birds
<i>Branta canadensis</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Branta bernicla</i>	<i>Does not breed in the EU territory covered by the Directive</i>	
<i>Anas penelope</i>	occupation of the breeding sites	full flight of young birds
<i>Anas strepera</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds

Species	Start	End
<i>Anas crecca</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Anas platyrhynchos</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Anas acuta</i>	occupation of the breeding sites	full flight of young birds
<i>Anas querquedula</i>	occupation of the breeding sites	full flight of young birds
<i>Anas clypeata</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Netta rufina</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Aythya ferina</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Aythya fuligula</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Aythya marila</i>	Occupation of the breeding sites	full flight of young birds
<i>Somateria molissima</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Clangula hyemalis</i>	occupation of the breeding sites	full flight of young birds
<i>Melanitta nigra</i>	occupation of the breeding sites	full flight of young birds
<i>Melanitta fusca</i>	occupation of the breeding sites	full flight of young birds
<i>Bucephala clangula</i>	occupation of the breeding sites	full flight of young birds
<i>Mergus serrator</i>	occupation of the breeding sites	full flight of young birds
<i>Mergus merganser</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
TETRAONIDAE		
<i>Bonasa bonasia</i>	courtship display (4 decades before egg laying)	Independence of young birds (c. 3-4 decades after hatching)
<i>Lagopus lagopus</i>	continuous occupation of breeding territory	Independence of young birds (c. 6 decades after hatching)
<i>Lagopus mutus</i>	continuous occupation of	Independence of young birds

Species	Start	End
	breeding territory	(c. 6 decades after hatching)
<i>Tetrao tetrix</i>	courtship display on lek sites (4 decades before egg laying)	Independence of young birds (c. 8 decades after hatching)
<i>Tetrao urogallus</i>	courtship display on lek sites (6 decades before egg laying)	Independence of young birds (c. 9 decades after hatching)
PHASIANIDAE		
<i>Alectoris chukar</i>	occupation of breeding territory by singing males (4 decades before egg laying)	Independence of young birds (c. 6 decades after hatching)
<i>Alectoris graeca</i>	continuous occupation of breeding territory (4 decades before egg laying)	Independence of young birds (c. 6 decades after hatching)
<i>Alectoris rufa</i>	continuous occupation of breeding territory (4 decades before egg laying)	Independence of young birds (c. 6 decades after hatching)
<i>Alectoris barbara</i>	continuous occupation of breeding territory (4 decades before egg laying)	Independence of young birds (c. 6 decades after hatching)
<i>Perdix perdix</i>	continuous occupation of breeding territory (6 decades before egg laying)	Independence of young birds (c. 6 decades after hatching)
<i>Coturnix coturnix</i>	occupation of the breeding sites by singing males	Independence of young birds (c. 3 decades after hatching)
<i>Phasianus colchicus</i>	courtship display (2 decades before egg laying)	Independence of young birds (c. 6 decades after hatching)
MELEAGRIDIDAE		
<i>Meleagris gallopavo</i>	<i>no data in Europe</i>	
RALLIDAE		
<i>Rallus aquaticus</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds (3 decades after hatching)
<i>Gallinula chloropus</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds (5 decades after hatching)
<i>Fulica atra</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds (6 decades after hatching)
HAEMATOPODIDAE		
<i>Haematopus ostralegus</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
CHARADRIIDAE		
<i>Pluvialis apricaria</i>	occupation of the breeding sites	full flight of young birds
<i>Pluvialis squatarola</i>	<i>does not breed in the EU territory covered by the Directive</i>	

Species	Start	End
<i>Vanellus vanellus</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
SCOLOPACIDAE		
<i>Calidris canutus</i>	<i>does not breed in the EU territory covered by the Directive</i>	
<i>Philomachus pugnax</i>	occupation of the breeding sites	full flight of young birds
<i>Lymnocyptes minimus</i>	occupation of the breeding sites	full flight of young birds (c. 4 decades after hatching)
<i>Gallinago gallinago</i>	<ul style="list-style-type: none"> • occupation of the breeding sites with courtship display • construction of the nest in all other cases 	full flight of young birds (c. 4 decades after hatching)
<i>Scolopax rusticola</i>	occupation of the breeding sites (roding)	full flight of young birds (c. 4 decades after hatching)
<i>Limosa limosa</i>	occupation of the breeding sites	full flight of young birds
<i>Limosa lapponica</i>	occupation of the breeding sites	full flight of young birds
<i>Numenius phaeopus</i>	occupation of the breeding sites	full flight of young birds
<i>Numenius arquata</i>	occupation of the breeding sites	full flight of young birds
<i>Tringa erythropus</i>	occupation of the breeding sites	full flight of young birds
<i>Tringa totanus</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Tringa nebularia</i>	occupation of the breeding sites	full flight of young birds
LARIDAE		
<i>Larus ridibundus</i>	courtship display at breeding sites (2 decades before egg laying)	full flight of young birds
<i>Larus canus</i>	courtship display at breeding sites (2 decades before egg laying)	full flight of young birds
<i>Larus fuscus</i>	courtship display at breeding sites (3 decades before egg laying)	full flight of young birds
<i>Larus argentatus</i>	courtship display at breeding sites (3 decades before egg laying)	full flight of young birds
<i>Larus cachinnans</i>	courtship display at breeding sites (3 decades before egg laying)	full flight of young birds
<i>Larus marinus</i>	courtship display at breeding sites (3 decades before egg laying)	full flight of young birds
COLUMBIDAE		
<i>Columba livia</i>	construction of the nest	full flight of young birds
<i>Columba oenas</i>	occupation of the breeding sites, together with courtship display	full flight of young birds
<i>Columba palumbus</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory 	full flight of young birds

Species	Start	End
	<ul style="list-style-type: none"> • construction of the nest in all other cases 	
<i>Streptopelia decaocto</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Streptopelia turtur</i>	occupation of the breeding sites	full flight of young birds
ALAUDIDAE		
<i>Alauda arvensis</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds (c. 3 decades after hatching); semi-nidicolous species
TURDIDAE		
<i>Turdus merula</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Turdus pilaris</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Turdus philomelos</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
<i>Turdus iliacus</i>	occupation of the breeding sites	full flight of young birds
<i>Turdus viscivorus</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	full flight of young birds
CORVIDAE		
<i>Garrulus glandarius</i>	construction of the nest	Independence of young birds (c. 5 decades after hatching)
<i>Pica pica</i>	construction of the nest, including re-lining of old nests (3 decades before egg laying)	Independence of young birds (c. 7 decades after hatching)
<i>Corvus monedula</i>	construction of the nest, including re-lining of old nests	Independence of young birds (c. 7 decades after hatching)
<i>Corvus frugilegus</i>	continuous occupation of breeding colonies	Independence of young birds (c. 7 decades after hatching)
<i>Corvus corone</i>	construction of the nest, including re-lining of old nests	Independence of young birds (c. 6 decades after hatching)
STURNIDAE		
<i>Sturnus vulgaris</i>	<ul style="list-style-type: none"> • occupation of the breeding sites where it is mainly migratory • construction of the nest in all other cases 	Independence of young birds (c. 3 decades after hatching)

BIRD SPECIES DATASHEETS

Explanatory notes for the datasheets

Each datasheet contains three parts:

- The first part includes data on distribution, movements, population size and relevant biological and behavioural aspects. This information, based on general literature (e.g. The Birds of the Western Palearctic, The EBCC Atlas of the European Breeding Birds, Atlas of Anatidae Populations in Africa and Western Eurasia), is given to provide a global perspective of the Member States data. This information was compiled by the IRSNB and revised by the SWG.
- In the second part, the data on the period of reproduction is compiled by Member State. This includes the stage used to identify the beginning of the reproduction period, relevant comments, the period of reproduction (given at intervals of ten days - decades) and the references used. At the end of this part, important comments and conclusions are added. These include comments on the species breeding range and the stages identifying the start and the end of the reproduction period.
- In the third part, the data on the period of prenuptial migration is compiled by Member State. This includes a table assessing the degree of difficulty to identify the beginning of the prenuptial migration period and the references used; the periods of the prenuptial migration (in decades) are given in a separate table. At the end of this part, important comments and conclusions are added. These include comments on the species movements (e.g. wintering areas) and comments on the identification of return movements.

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By Member State

BELGIUM

- 1 - Avifaune de Belgique, 1967.
- 2 - LIPPENS & WILLE, 1972.
- 3 - VLAVICO, 1989.
- 4 - DEVOS, 1998.
- 5 - AVES database.

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