



MANAGEMENT PLAN for SKYLARK (*Alauda arvensis*) 2007 –2009

Directive 79/409/EEC on the conservation of wild birds

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Executive summary

The Skylark *Alauda arvensis* is listed on Annex II/2 of the EU Birds Directive as a species for which hunting is permitted in those Member States (Cyprus, France, Greece, Italy and Malta), which have specifically indicated that hunting of the species can be allowed. However, the Skylark has been identified as a bird species that has an Unfavourable Conservation Status within Europe because of a large historical decline from which it has not recovered, and because of a moderate continuing decline in the EU25.

This management Plan discusses the causes of the decline and outlines a number of incentives, regulations and other initiatives, which aim at restoring the Skylark to a Favourable Conservation Status in Europe. The Management Plan is aimed at all EU Member States with breeding, staging or wintering Skylark. It is the responsibility of the relevant authorities in each Member State to carry into effect the Activities listed in the plan but also to decide how to implement the management prescriptions of this plan. It is anticipated that the Results will have been achieved when the running period of the Management Plan ends in 2009, after which the plan will be followed by new versions that take into account the results achieved during the first phase.

The Skylark is a common and widespread breeding bird across the middle latitudes of Eurasia, from Ireland to the Pacific. In Europe it occurs in all but the northernmost regions, although the breeding distribution is somewhat patchy in South Europe. Being originally a bird of steppe grasslands, it spread with the expansion of agriculture, and inside Europe it now mainly occurs in farmland. Within agricultural areas, the highest densities occur on set-aside and where high crop diversity provides a mosaic of habitats suitable for nesting and foraging throughout the breeding season. The Skylark is partly migratory and leaves the northern and more continental parts of its range in winter.

During the last three decades, significant population declines have been reported from almost all countries in northern and western Europe. Conversely, Skylark populations are chiefly stable in eastern Europe. The most likely cause is different degrees of agricultural intensification over the last 30 years.

The major threats to the Skylark stem from agricultural intensification: reduced crop diversity, predominance of autumn-sown crops, intensification of grassland management, and increased use of pesticides and fertiliser. These threats, typically acting in concert, are identified as being of high or medium importance, i.e. they are causing or likely to cause population declines of 10-30% over 10 years. Agricultural abandonment, development of infrastructure, atmospheric pollution and predators are identified as minor threats of low or local importance.

Legal hunting of Skylark occurs in five EU countries. Proper bag statistics are lacking, but an estimated 5% of the wintering population is harvested per year. Available data suggest that productivity and natural mortality are more or less equal. Thus, hunting at the current level of exploitation does not assist in the recovery of the species. Current Skylark harvesting activities must be critically examined and bag statistics improved. Also, programmes for monitoring winter population trends and investigating the issue of a skewed sex ratio of harvested birds should be initiated.

Site-based conservation measures are of little value in a dispersed species such as the Skylark. Instead, conservation efforts must address the general deterioration of the agricultural landscape as a habitat for the species. Member States should ensure that the means applied to achieve the agricultural and developmental goals of the Common Agricultural Policy also benefit the environment, including the biodiversity linked with agricultural fields.

The long-term objective (10 years) of the plan is to restore the Skylark to a favourable conservation status in the EU. The short term (3 years) objectives, which are outlined in this plan is to (1) improve management of

farmland as breeding and wintering sites for Skylark, (2) to collect more robust data on hunting impact in the EU and (3) improve monitoring of winter populations in key Member States. To achieve these short-term objectives the plan specifies the following results to be reached during the initial three-year period:

- (1) The percentage of agricultural land that is farmed organically has increased in all Member States with breeding or wintering Skylark.
- (2) Incentives exist for sowing crops in spring instead of in autumn and are taken up by farmers in all Member States with breeding or wintering Skylark except in the boreal regions with harsh winters where the preference is in securing sowing of winter cereals and increasing their areas.
- (3) Incentives exist for leaving cereal stubbles over winter and are taken up by farmers in all Member States with breeding or wintering Skylark.
- (4) Incentives exist for leaving unsown patches in autumn-sown cereal crops and are taken up by farmers in all Member States with breeding Skylark and high percentage of autumn tillage.
- (5) Incentives exist for extensification of grassland management (e.g. through reduced or no input of fertiliser/manure, later and less frequent mowing) and are taken up by farmers in all Member States with breeding or wintering Skylark.
- (6) Rules for set-aside management prevent nests of ground-dwelling birds being destroyed in spring and summer and encourage the retention of weed-rich stubbles over winter.
- (7) Decision support systems for optimisation of pesticide use are available to all farmers in the EU, either directly or through extension services.
- (8) Regulations exist which restrict irrigation to the minimum amount necessary for optimum crop growth in all Member States with breeding Skylark.
- (9) Data on the number of Skylark harvested annually are available in all Member States where harvesting of the species is permitted.
- (10) All harvesting of Skylarks in Member States conforms with the provisions of the Birds Directive (79/409/CEE) and does not hinder the recovery of the species to Favourable Conservation Status.
- (11) Programmes for monitoring the size of the winter population of Skylark exist in at least four Member States (two with hunting of the species and two without) that hold substantial numbers of the species in winter.
- (12) Sex ratio of harvested birds is being monitored at different sites through a co-operation with hunters in at least one Member State.

0. Introduction

The Skylark *Alauda arvensis* is listed on Annex II/2 of the EU Birds Directive as a species for which hunting is permitted in those Member States, which have specifically indicated that hunting of the species can be allowed. However, the Skylark has been identified as a bird species that has an unfavourable conservation status both at Pan-European and at EU level (Tucker & Heath 1994, BirdLife International 2004a). The species is not of global conservation concern and its global population is not concentrated in Europe; it is thus a Category 3 Species of European Conservation Concern (SPEC). Its European breeding population underwent a large decline between 1970 and 1990 (Tucker & Heath 1994). During 1990-2000, a moderate continuing decline occurred at EU level (BirdLife International 2004b), but several key eastern populations remained stable, and the species probably declined only slightly overall. However, the population size remains far below the level that preceded the decline, and consequently the species is classified as “Depleted” (BirdLife International 2004a).

On this background, it is important to assess the current conservation status of the species and the available research information in order to appraise the current effectiveness of conservation actions, identify reasons for the observed trends and recommend options for future management to restore the European Skylark populations. Hence, this plan will focus upon the full implementation of the provisions of the Birds Directive as they apply for this species.

The overall format of this action plan follows a new Single Species Action Plan format developed by BirdLife International for UNEP/AEWA Secretariat (AEWA 2002). However, some parts of the plan including some tables have been modified to accommodate the specific needs of a plan dealing with an extremely widespread species that is not linked with specific localities (IBAs, Protected Areas etc.), which might be targets of site-based management activities.

Ideally, the management prescriptions of this plan should cover the entire geographical range of the Skylark populations concerned. However, as the implementation of the plan is part of the fulfilment of the EU Birds Directive, the geographical scope of the plan is at this stage limited to the 25 EU Member States.

The first chapter of the Management Plan presents a summary of key information on the West Palearctic Skylark populations. The second chapter provides more detailed information on the populations that occur in Europe with the focus on the 25 EU Member States. Chapter 3 analyses the threats that are believed to be the causes of the decline while chapter 4 lists the policies and legislation relevant for Skylark management in Europe.

Chapter 5 evaluates the status for Skylark in the EU and sets out long-term and immediate objectives (goal and purposes) for its future management.

Chapter 6 describes the actions to be taken in the EU for the period 2006-2009. These activities cover the 25 Members States.

It is the intention that this management plan shall be revised in 2009.

1. Biological Assessment

<p>General information</p>	<p>The Skylark <i>Alauda arvensis</i> is the commonest and most widespread lark of the Western Palearctic. It has a huge distribution across the middle latitudes, from Ireland to the Pacific. It is well-known from its striking song-flight and is often the only lark species present in many habitats within its distribution range. The species is partly migratory, leaving the northern and more continental parts of its range in winter.</p> <p>The Skylark occurs in farmland and grassland habitats. Being originally a bird of steppe grasslands, it spread with deforestation and expansion of crops and pastures, especially through the 19th century. More recently, agricultural intensification is believed to have caused a widespread population decline, and the species is regarded as having an unfavourable conservation status within Europe (Tucker & Heath 1994, BirdLife International 2004a) and at EU level (BirdLife International 2004b).</p> <p>The Skylark is listed on Annex II/2 of the EU Birds Directive (79/409/CEE) as a species for which hunting is permitted in five countries (France, Italy, Malta, Greece and Cyprus).</p>
<p>Taxonomy</p>	<p>Five subspecies occur within Europe:</p> <p><i>A.a. arvensis</i>, from Wales, England and Norway east to the Urals, south to central France, the Alps, Slovenia, NW Hungary, Slovakia, Ukraine, Russia south to c. 50°N. <i>A.a. scotica</i>, Ireland, NW England, Scotland, Faeroes. <i>A.a. guillelmi</i>, N Portugal, NW Spain. <i>A.a. sierra</i>, central and southern Portugal, southern Spain. <i>A.a. cantarella</i>, NE Spain, southern France, Italy, and further east S of the range of <i>arvensis</i>, south to northern Greece, European Turkey (?), the Black Sea, east to c. 42°E.</p> <p>Three more subspecies occur within the Western Palearctic, and 4-7 further east.</p>

Population development	<p>Until recently, the Skylark benefited widely from the increase in arable farmland. However, almost all countries of northern and western Europe have reported population declines, sometimes marked, during the last 30 years. The species is apparently chiefly stable further east (Snow & Perrins 1998).</p> <p>Based upon the trend in the breeding population during 1970-1990, the species was classified as being in “large decline” by Tucker & Heath (1994). While declines continued in many western European countries during 1990-2000, key eastern populations remained stable, and the species probably declined only slightly overall. Nevertheless, its population size remains far below the level that preceded the decline, and consequently the species is classified as “Depleted” (BirdLife International 2004a).</p> <p>Significant population declines between 1970 and 2000 have been reported from the following countries thought to be holding more than 500,000 breeding pairs: Sweden, Denmark, United Kingdom, Germany, France, Spain (1970-1990), Italy, Estonia, Lithuania (1990-2000), Czech Republic (1970-1990), Hungary (1970-1990), Romania (1990-2000) and Turkey (1990-2000). Stable populations of more than 500,000 pairs are found in Russia, Latvia, Belarus, Poland, Ukraine and Bulgaria (Tucker & Heath 1994, BirdLife International 2004a).</p> <p>In the EU25, the Skylark population is estimated at 17 to 32 million breeding pairs, comprising 40-43% of the European total. At EU level, the species underwent a large decline between 1970 and 1990 and a moderate continuing decline between 1990 and 2000 (BirdLife International 2004b).</p>
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<p>Distribution throughout the annual cycle</p>	<p>The Skylark is a Eurasian species, breeding in upper and lower middle latitudes across the continent, ranging from continental to oceanic climates and from the temperate into the boreal zone. It is widespread and abundant in Europe, occurring in all regions except the northern tundra, but with a somewhat patchy distribution in the southernmost parts of its range. Its major strongholds are apparently between 45° and 55° N.</p> <p>The species shows a gradation from being wholly migratory in the northern and eastern parts of its breeding range to making no more than local movements in the south. Northern and central Europe is largely vacated in winter, the birds (nominate <i>A.a. arvensis</i>) moving south-west on a broad front, reaching the western seaboard and the Mediterranean area.</p> <p>British and Irish birds (<i>A.a. arvensis</i> and <i>scotica</i>) are mainly resident, although upland and northern Scottish breeding areas are often vacated in winter. The southern subspecies are largely resident, with local flock movements in winter, but movements across the Strait of Gibraltar are known to occur. Some south-eastern populations (<i>A.a. cantarella</i>) are migratory and reach, e.g., Cyprus, Malta (De Lucca 1969) and North Africa (Cramp 1988).</p>
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Survival and productivity

There are no monitoring schemes directly measuring annual productivity and/or survival in the Skylark. The British Trust for Ornithology Nest Record Card Scheme measures productivity per nesting attempt but not the number of breeding attempts per pair per year. However, the species has been the subject of several dedicated studies on its population dynamics.

The age of first breeding is one year. Two or three but exceptionally up to six clutches may be produced per year, with clutch size increasing from first to third clutch (Delius 1965, Jenny 1990a, Topping & Odderskær 2004). Mean clutch size is 3.69-3.91, seemingly increasing from west to east across Europe (Cramp 1988). At least in the UK, a significant rise in clutch size occurred between 1950 and 1994 (Chamberlain & Crick 1999), whereas the number of clutches per year has been reduced linked to intensive autumn-sown arable rotations in NW Europe (Daunicht 1998, Donald 2004).

Egg and nestling mortality is sizeable but highly variable between studies; the mean number of chicks leaving the nest per female (or territory) per year has been reported as follows: 4.54 (Delius 1965) in English coastal dunes, 2.69 (Schläpfer 1988), 3 (Daunicht 1998) and 1.9 in sprayed and 2.9 in unsprayed fields (Odderskær et al. 1997a). The number of nest-leaving chicks in organically farmed areas is higher than in conventional areas (Helmecke and Fuchs 2003). Main causes of egg and chick loss are predation, farming operations (mowing, mechanical weeding), and cooling/starvation (Schläpfer 1988, Jenny 1990b, Daunicht 1998, Poulsen et al. 1998). The loss by predation can be strongly effected by agricultural management especially in large fields, for example by the indirect influence of crop choice (autumn-/ spring-sown crops and their resulting structures of the vegetation)(Daunicht 1998). At least in the northern parts of the species' range, the reproductive output is highly dependent on weather conditions, with cold and wet weather causing extensive nest mortality (Odderskær et al. 1997a).

Juvenile mortality from leaving the nest to independence has been estimated at 20% by Delius (1965) and 23% by Ottens et al. (2003) but at 50% by Jenny (1990b). Delius further estimated the mortality from independence to age of first breeding at 38%, giving a total first year mortality of c. 50%. On the other hand, Wilson et al. (1997) assumed that only 20-35% of the young leaving the nest survive to breeding age.

It is notable that Delius' (1965) old study from English coastal dunes reports significantly higher productivity and lower mortality rates than most of the more recent studies from various agricultural habitats. Wilson et al. (1997) estimated that each female must make 2-3 nesting attempts per year in order to maintain a stable population size. This may be difficult to attain in many areas because of, e.g., (1) rapid growth of the now dominant autumn-sown crops making them unsuitable for Skylark breeding too early in the year, and (2) more frequent mowing of grasslands made possible by increased fertilisation.

Estimates of annual minimal adult survival rates vary between sexes and within studies: within males from 77% in males (Daunicht 1998) to 62% (Jenny 1990a) and within females from 62% (Delius 1965) to 27% (Daunicht 1998). The oldest bird known from ringing recoveries was 8 years 9 months (Czech National Museum/Bird Ringing Station). Adult mortality mainly occurs during migration and winter (Schläpfer 1988) and is generally higher during cold winters. The relative importance of different mortality factors (e.g. harvesting) is unknown. Sexes may to some extent be affected by different mortality factors, because the males stay closer to their breeding grounds than the females (Glutz von Blotzheim & Bauer 1985). On the other hand females seem to be less settled than males, which can highly effect the returning rate (Delius 1965, Daunicht 1998).

Life history	Breeding:	Feeding:	Outside breeding season:
	<p>The reproductive season stretches from mid-April to mid-July, with outer extremes of mid-March and mid-August according to latitude and altitude (Cramp 1988).</p> <p>Territorial during the breeding season, territorial boundaries being adjacent in favourable habitats where densities may be as high as 50 territories/km².</p> <p>Breeds on the ground. Age of first breeding 1 year. Essentially monogamous within a breeding season, but instances of bigamy and breaking of pair-bond occur.</p> <p>Up to 6 broods per season (normally 2-4), fewer in northern latitudes. Clutch size normally 3-5, peaking mid breeding season.</p> <p>Incubation is 11 days. Fledging period is 18-20 days, but young usually leave nest at 8-10 days. Become independent at c. 25 days (Cramp 1988).</p>	<p>Forages in fields with cereals or other crops, set-aside areas, meadows and steppe grasslands where vegetation is not too high or too dense. When vegetation grows higher, mainly forages at edges and bare spots, e.g. tramlines. Autumn and winter often on stubble fields. Avoids areas close to vertical structures such as woods, hedgerows and buildings.</p> <p>Feeds mainly on the ground, taking seeds or insects from soil surface, leaves or flowers.</p> <p>Seeds of cereals and other crops important food, together with seeds of grasses and various weeds.</p> <p>When available, insects and other invertebrates are preferred, and the young are almost exclusively fed animal matter. Beetles (esp. <i>Carabidae</i>, <i>Staphylinidae</i>, <i>Curculionidae</i> and <i>Chrysomelidae</i>) are important, but also various dipterans (e.g. <i>Syrphidae</i> larvae), lepidoptera larvae, sawflies and spiders.</p> <p>In autumn and winter, cereal leaves and other green plant parts gain importance, although seeds and invertebrates are preferred.</p> <p>(Green 1980, Cramp 1988, Christensen et al. 1996, Petersen & Navntoft 2003).</p>	<p>In northern, eastern and central Europe, many farmland areas are largely vacated at the end of the breeding season, but post-breeding dispersal is poorly known.</p> <p>Autumn passage begins in September, peaks in first half of October in northern Europe and lasts into first half of November further south (Snow & Perrins 1998). Migration is diurnal and nocturnal (Guyomarc'h & Guillet 1996).</p> <p>Often occurs in loose groups or in flocks outside the breeding season. Large-scale cold-weather movements can occur at any time during winter.</p> <p>Spring migration begins in January in the south, becoming heavy in February and early March. First arrivals in Fennoscandinavia and Baltic countries mid-February to late March, but not until March and early April further east.</p> <p>British and Irish birds are mainly resident, as are most birds of southern Europe, with local flock movements in winter (Cramp 1988).</p>

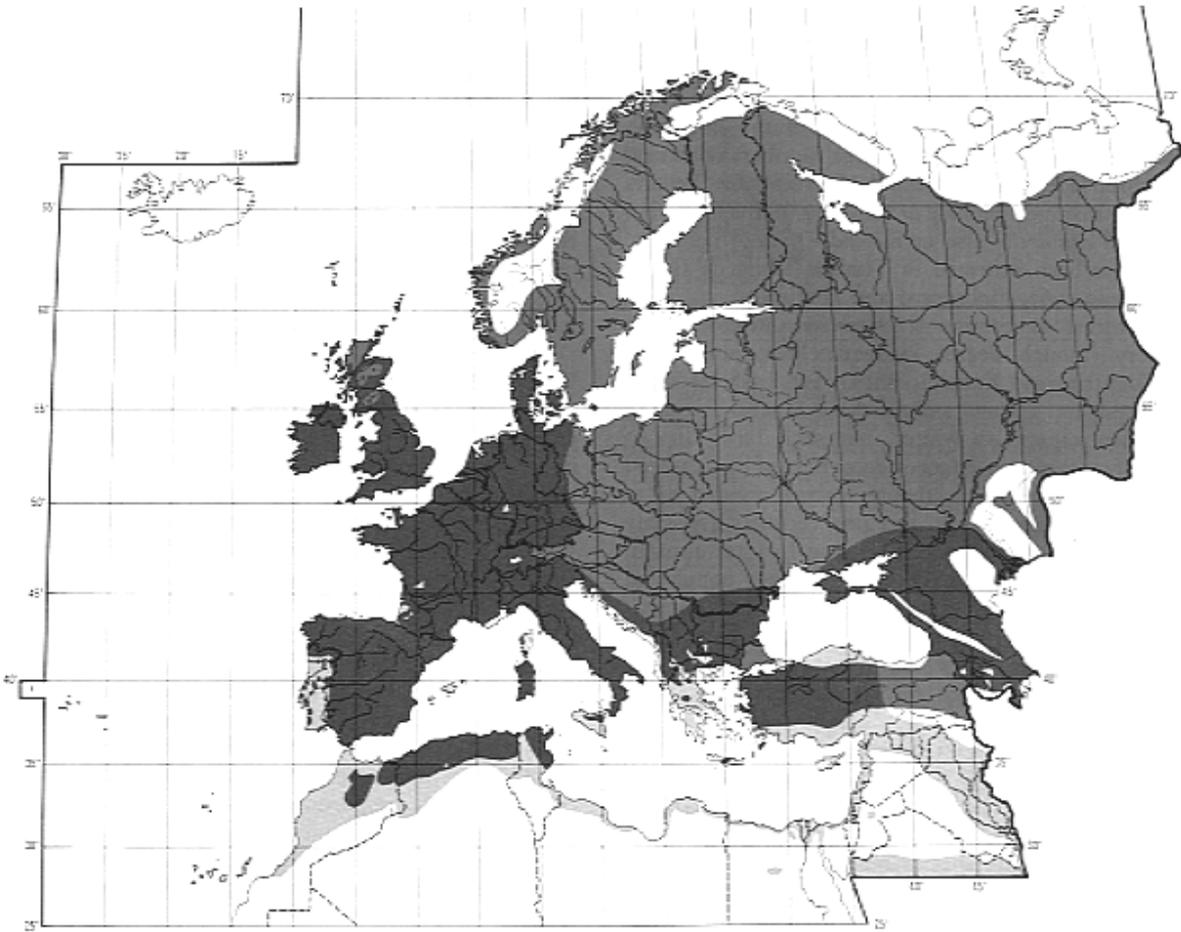
<p>Habitat requirements</p>	<p>Skylarks are characteristic ground-nesting birds of open temperate and boreal habitats. In Europe, the vast majority of birds now occur in various kinds of farmland although the highest densities are often found in salt marshes, coastal grazing marshes, downland and sand-dunes (Tucker & Heath 1994, Browne et al. 2000). Further east it is a typical species of steppe and forest-steppe zones, which it enters along river valleys and in the wake of expanding agriculture. In mountain regions it breeds in fields and alpine meadows up to at least 2000 m (Cramp 1988).</p> <p>Within agricultural habitats, cereals, legumes, root crops, young leys and set-aside are preferred (Browne et al. 2000). The highest densities occur where high crop diversity provides a mosaic of habitats suitable for nesting throughout the breeding season (Tucker & Heath 1994, Daunicht 1998). Skylarks avoid tall or dense crops: preferred vegetation height is > 10 cm and < 60 cm for nesting and < 25 cm for feeding, and preferred ground cover is 35-60% (Daunicht 1998, Donald et al. 2001b, Toepfer & Stubbe 2001). Territory densities can be up to three times higher in organically farmed areas than in conventional areas (Wilson et al. 1997, Gottwald and Funchs 2003, Petersen 2003)¹. Being vulnerable to nest predation (e.g. from corvids), the species avoids areas close to woods, hedgerows, single trees and other vertical structures (Petersen 1996, Donald et al. 2001b).</p> <p>Outside the breeding season, stubble fields, coastal marshes and lowland raised bogs are preferred sites in the UK and Ireland while pastures are avoided (Donald 2004, A. Copland in litt.). Oilseed rape is an important winter habitat in parts of NW Germany, where almost all skylarks wintering in farmland areas in Westphalia are found in rape fields where they feed on green rape leaves. (H. Illner unpublished data). In Iberia dry pasture, fallows and growing cereals are preferred (Donald 2004).</p>
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¹ Chamberlain et al. (1999b) found no difference in Skylark densities between organic and conventional farming systems. Organic farms often have smaller fields and higher crop diversity than conventional farms. This is generally beneficial to Skylarks, but if the smaller field size is accompanied by a denser hedgerow structure (as is frequently the case in the UK but not in continental Europe) a less suitable Skylark habitat may result.

Table 1. Geographical distribution of Skylark during the year (EU 25 only).

Breeding	Formerly breeding (date of extinction)	Migrating (September – November & January – April)	Non-breeding visitor (October – March)
<ul style="list-style-type: none"> • Austria • Belgium • Czech Republic • Denmark • Estonia • Finland • France • Germany • Greece • Hungary • Ireland • Italy • Latvia • Lithuania • Luxembourg • Netherlands • Poland • Portugal • Slovakia • Slovenia • Spain • Sweden • United Kingdom 		<ul style="list-style-type: none"> • All EU Member States 	<ul style="list-style-type: none"> • Belgium • Cyprus • France • Germany • Greece • Ireland • Italy • Luxembourg • Malta • Netherlands • Portugal • Spain • United Kingdom <p>In addition, small numbers winter in:</p> <ul style="list-style-type: none"> • Austria • Denmark • Estonia • Slovenia • Sweden

Fig. 1. *Distribution of Skylark in the Western Palearctic. Medium grey: breeding area, absent in winter. Dark grey: breeding and wintering area. Light grey: wintering area, no regular breeding (from Cramp 1988).*



2. Available key knowledge

Table 2 provides a summary of the most recent, available knowledge on the distribution and trends of the breeding population of Skylark in each of the European countries. Due to the abundance of the species and its general occurrence in the wider countryside, population sizes must be estimated by extrapolation of census results from small sample areas censused by, e.g., point counts or territory mapping. Thus, accurate figures are nowhere available on a national scale.

Data from the Pan-European Common Bird Monitoring scheme on population trends during 1980-2002 for Europe as a whole, EU15 and the New Member States, respectively, are shown in Fig. 2.

Whereas at least rough estimates of the size of the breeding population exist for most countries, information on numbers outside the breeding season are extremely sparse. An information request was sent out as part of the work on a previous version of this Skylark Action Plan (Barbier 1998), and the available data are summarised in Table 3. Seemingly, no countries are presently implementing programmes suitable for monitoring changes in the wintering population of Skylarks. This is a major gap in our knowledge, and a problem in the evaluation of current threats to the species, because most mortality in adults seems to occur during migration and wintering (Schläpfer 1988).

Being a typical dispersed species, and with the vast majority of the population occurring in agricultural areas year round, the Skylark is not linked with Important Bird Areas or Protected Sites. Therefore, the IBA concept is not considered of relevance to the species, and tables on the occurrence of the species in IBAs/Protected areas have not been included.

A table summarising available data on hunting of the species is included as Table 4. Statistics on annual bags of Skylarks do not exist in any of the countries where hunting is permitted according to Annex II/2, so the figures presented in the table are largely qualified guesses.

The lack of proper bag statistics is a serious gap in knowledge, and acting in concert with the lack of adequate information on the numbers wintering in the countries in question, it makes it difficult to evaluate the possible impact of hunting on European Skylark populations.

Table 2. *European breeding population of Skylark.*

Country	Breeding pairs	Quality	Year(s) of the estimate	Breeding population trend (1990-2000)	Quality	Reference
Albania	500 – 1,000	2	2002	?	–	BirdLife International 2004a
Andorra	500 – 750	3	1999-2001	0	3	ADN 2002, BirdLife International 2004a
Armenia	250,000 – 500,000	2	1990-2002	0	2	BirdLife International 2004a
Austria	120,000 – 240,000	2	2002	0	3	BirdLife Austria unpubl., BirdLife International 2004a
Azerbaijan	10,000 – 100,000	3	1996-2000	0	3	BirdLife International 2004a
Belarus	2,300,000 – 3,000,000	2	1997-2002	0	2	BirdLife International 2004a
Belgium	29,000 – 52,000	2	2001-2002	– 20-29%	2	BirdLife International 2004a
Bosnia & Herzegovina	Present	3	(1990-2003)	?	–	BirdLife International 2004a
Bulgaria	800,000 – 2,500,000	2	1996-2002	0	2	BirdLife International 2004a
Croatia	50,000 – 100,000	3	2002	– 50-79%	3	BirdLife International 2004a
Czech Rep.	800,000 – 1,600,000	2	2000	0	2	BirdLife International 2004a
Denmark	1,100,000 – 1,300,000	2	2000	– 0-9%	2	Jacobsen 1997, BirdLife International 2004a
Estonia	500,000 – 800,000	2	1998-2002	(–)	2	Eltis et al. 2003
Finland	300,000 – 400,000	2	1998-2002	0	2	BirdLife International 2004a
France	800,000 – 3,000,000	3	1994 - 2000 1998-2002	- 12% – 14%	1 1	Boutin et al. 2003, Jiguet et al. 2003, BirdLife International 2004a
Georgia	Present	3	(2003)	?	–	BirdLife International 2004a
Germany	1,600,000 – 2,700,000	2	1999	– 20-29%	2	Bauer et al. 2002, BirdLife International 2004a
Greece	2,000 – 5,000	3	1995-2000	– 0-19%	3	BirdLife International 2004a
Hungary	730,000 – 900,000	1	1999-2002	0	2	Szép & Nagy 2002, BirdLife International 2004a
Rep. Ireland	250,000 – 500,000	2	1988-1991	– 0-19%	2	BirdLife International 2004a

Italy	500,000 – 1,000,000	3	2003	– 0-19%	3	BirdLife International 2004a
Latvia	1,100,000 – 1,800,000	2	1990-2000	0	2	Strazds et al. 1994, LOB 1998, BirdLife International 2004a
Liechtenstein	4 – 8	1	1998-2000	– 30-49%	1	BirdLife International 2004a
Lithuania	1,100,000 – 1,500,000	3	1999-2001	– 0-19%	3	BirdLife International 2004a
Luxembourg	7,000 – 8,000	2	2002	– 30-49%	1	BirdLife International 2004a
Macedonia	70,000 – 200,000	3	1990-2000	0	3	BirdLife International 2004a
Moldova	50,000 – 55,000	2	1990-2000	0	2	BirdLife International 2004a
Netherlands	50,000 – 70,000	1	1998-2000	– 28%	1	SOVON 2002, BirdLife International 2004a
Norway	100,000 – 400,000	3	1990-2001	– 0-19%	3	Hogstad & Øien 2001
Poland	4,000,000 – 7,000,000	1	2000-2002	0	2	BirdLife International 2004a
Portugal	1,000 – 10,000	3	2002	0	3	BirdLife International 2004a
Romania	460,000 – 850,000	2	2000-2002	– 0-19%	2	BirdLife International 2004a
Russia	15,000,000 – 35,000,000	2	1990-2000	0	3	BirdLife International 2004a
Serbia & Montenegro	350,000 – 500,000	2	1990-2002	– 10-19%	2	BirdLife International 2004a
Slovakia	200,000 – 400,000	2	1980-1999	0	2	BirdLife International 2004a
Slovenia	8,000 – 12,000	2	1994	– 0-19%	3	BirdLife International 2004a
Spain	2,000,000 – 6,000,000	3	1992	?	–	SEO/BirdLife 1992, Purroy 1997, Marti & Del Moral 2003, BirdLife International 2004a
Sweden	500,000 – 1,000,000	2	1999-2000	– 28%	1	BirdLife International 2004a
Switzerland	40,000 – 50,000	1	1993-1996	– 10-19%	2	BirdLife International 2004a
Turkey	900,000 – 1,800,000	3	2001	– 0-19%	3	BirdLife International 2004a
Ukraine	2,200,000 – 3,100,000	2	1990-2000	0	2	BirdLife International 2004a
UK	1,785,000	1	2000	– 15%	1	Stone et al. 1997, Crick et al. 2004, BirdLife International 2004a
Total (approx.)	40,000,000 – 80,000,000			– 0-9%		BirdLife International 2004a

Data quality:

1: reliable quantitative data, 2: incomplete quantitative data, 3: no quantitative data

Fig.2. Population trends 1980-2002 of the Skylark in Europe (17 countries), EU15 (11 countries; data from Finland, Greece, Luxembourg and Portugal lacking) and New EU Member States (5 countries: Czech Republic, Estonia, Hungary, Latvia and Poland). Population size shown as index values; 1990 = 100. The large fluctuations 1980-90 in the graph for the New Member States may be partly accidental, due to a limited amount of data.

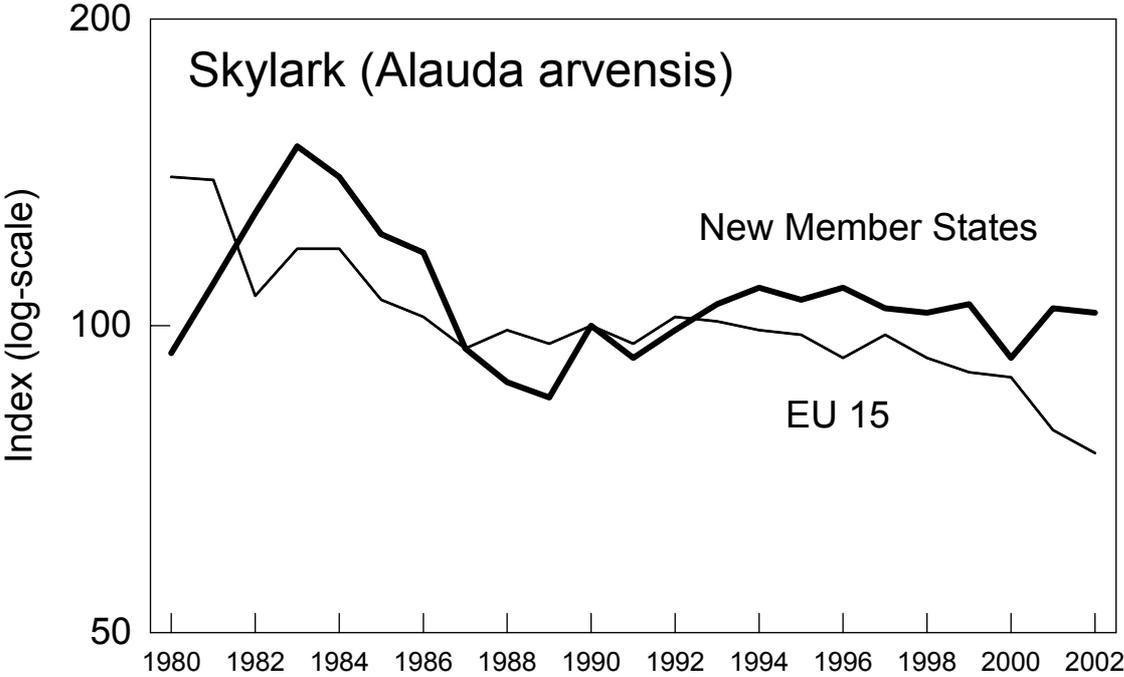
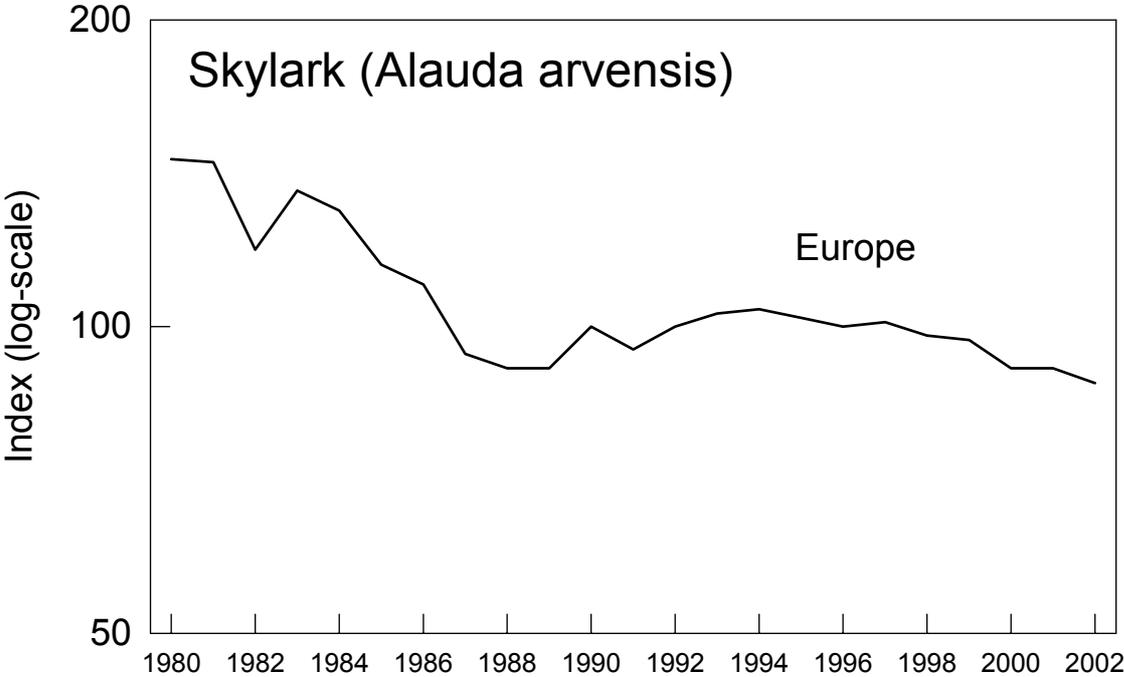


Table 3. *European wintering population of Skylark. Only countries with supposed presence of the species in winter included.*

Country	No. of wintering birds	Year(s) of the estimate	Wintering population trend	Reference
Albania	–	–	–	
Austria	0 – 500	–	–	Barbier 1998
Belgium	Regular winter visitor but no quantitative data	–	–	Faveyts in litt.
Bulgaria	–	–	–	
Croatia	–	–	–	
Cyprus	“Very common winter visitor”	–	–	M. Miltiadou, BirdLife Cyprus, pers. comm.
Denmark	Up to some thousands in mild winters	–	–	Olsen 1992
Estonia	0 – 10	1998-2003	0	Elts et al. 2003
France	“An important wintering country”	–	–	Barbier 1998
Germany	min. 200.000	2001-2004	–	H. Illner and W.D. Daunicht in litt.
Greece	–	–	–	
Rep. Ireland	4,520,000	1981-1984	–	Lack 1984, D. Stroud pers. comm.
Italy	175,000 – 700,000	–	0	Barbier 1998
Luxembourg	–	–	–	
Malta	100 – 300	1999-2003	–	BirdLife Malta database
Netherlands	max. 50,000	2000	fluctuating	Bijlsma et al. 2001
Norway	–	–	–	
Portugal	Extremely abundant in the south, but no quantitative data available	–	–	Elias et al. 1998, Leitão et al. 1998, Leitão 2003
Russia	–	–	–	
Slovenia	–	–	–	
Spain	Several tens of millions	–	–	Barbier 1998
Sweden	Up to some thousands in mild winters	–	–	Å. Berg pers. comm.
Switzerland	–	–	–	
Turkey	–	–	–	
Ukraine	–	–	–	
UK	21,980,000 ¹⁾	1981-1984	–	Lack 1984, D. Stroud pers. comm.

¹⁾ This figure is almost certainly too high, because analyses of ring-recovery data show that relatively few birds of continental origin winter in the UK (BirdLife in litt.)

Table 4. Summary of information on hunting of Skylark in EU countries.

Country	Open season	Estimated annual harvest	Reference
Cyprus	30 October – 15 February	180,000 – 400,000	P. Panayides pers. comm., Game Fund, Ministry of Interior
France	mid-September to end-January	1,200,000 – 1,600,000	Barbier 2001
Greece	20 August – 10 February	max. 500,000	Barbier 1998
Italy	1 September – 31 January	1,000,000 – 1,500,000	Barbier 1998
Malta	1 September – 31 January	20,000 – 50,000	J. Borg pers.comm.
Spain	“Autumn migration and winter”	max. 500,000	Barbier 1998
UK	–	max. 100	BirdLife in litt.
Total		3,400,000 – 4,550,000	

Notes:

Cyprus: Harvesting data refer to the Greek-Cypriot part of the island only. Main season for Skylark hunting is January-February.

France: The annual harvest estimate is the sum of two different hunting systems: (1) “Traditional” hunting with traps (October-November, only permitted in five departments in the south-west). The catch is estimated at c. 600,000 birds per year (Barbier 2001). (2) Shooting, where the bag was estimated at 637,570 birds in 1998/99 but subsequently is supposed to have risen as populations of other quarry species have fallen (Barbier 2001 cited in Donald 2004).

Greece: The national open season is from 15 September to 10 February. Hunting is allowed regionally 20 August – 14 February.

Italy: The open season varies regionally. Hunting methods includes the use of illegal live decoys and other illegal lures such as recording of calls (Donald 2004).

Spain: Protected on a national scale since 1990, but in certain autonomous regions in the north of the country some hunting occurs, although this has not been confirmed by the official authorities (Barbier 2001)

UK: Hunting is not allowed. Although it has been claimed that the practice has ceased (Barbier 2001, Donald 2004), a limited number of special permits are still granted for the training of falcons, e.g. 23 licenses, 77 birds killed in 2003 (BirdLife in litt.).

3. Threats

This chapter gives an overview of the threats believed to have a negative impact on Skylark populations in the EU25 countries. The major pattern in Skylark population trends across Europe is that of severely declining or depleted populations in the EU15 countries (and Norway and Switzerland) and largely stable populations in the New Member States and other East European countries (Table 2, Fig. 2). A similar pattern exists in several other farmland species, and the most likely cause is differences in the degree of agricultural intensification over the last 30 years (Donald et al. 2001c).

The human activities and other threats impacting the Skylark have been rather thoroughly studied in western Europe, especially in the UK. A similar amount of knowledge does not exist for the East European countries. Therefore, this chapter mainly focuses on the threats known to exist in western Europe. However, with the enlargement of the EU and the concomitant adoption of EU agricultural policy in the New Member States, intensification of agriculture is likely to occur over large parts of eastern Europe in the near future. As a consequence, East European Skylark populations will probably face many of the same threats as their West European relatives in the coming years and, unless appropriate action is taken, may well face a similar population decline (cf. Donald et al. 2001c).

For each of the threats listed, the importance is assessed according to a ranking system as follows:

- Critical: a factor causing or likely to cause **very rapid declines** (>30% over 10 years);
- High: a factor causing or likely to cause **rapid declines** (20-30% over 10 years);
- Medium: a factor causing or likely to cause relatively **slow, but significant, declines** (10-20% over 10 years);
- Low: a factor causing or likely to cause **fluctuations**;
- Local: a factor causing or likely to cause negligible declines;
- Unknown: a factor that is likely to affect the species but it is unknown to what extent.

Numbers in brackets below refer to the IUCN hierarchical classification of causes of species decline (IUCN SSC SiS Threats Authority file).

1. Agriculture (1.1)

Agricultural intensification

The major cause of the population declines is probably agricultural intensification. Several elements of agricultural intensification have a negative impact on the Skylark:

- The trend towards monocultures, amalgamation of production units and loss of mixed farm holdings (with both arable and pastoral production) has led to reduced crop diversity. Skylark population densities, and especially the number of successful breeding attempts per season, are strongly correlated with crop diversity. The presence of different crops, with different structure and phenology, within a small area ensures that vegetation of a suitable height and density is present over a long period (e.g. Schläpfer 1988, Evans 1997, Daunicht 1998, Chamberlain et al. 2000). Abandonment of arable pockets in intensively managed grassland landscapes is liable to be especially damaging (Robinson et al. 2001).

- Sowing of cereals in spring has been replaced in many regions by autumn sowing. This impacts the Skylark in two ways. Firstly, autumn-sown crops are unsuitable breeding habitat, generally allowing just a single successful nesting attempt because they become too tall and dense very early in the season, restricting suitable nest sites and foraging opportunities (Wilson et al. 1997, Daunicht 1998, Chamberlain et al. 1999a, Donald et al. 2001b). Secondly, autumn-sowing results in a loss of winter stubbles. Stubble fields are very important feeding habitats in autumn, winter and early spring (Donald & Vickery 2000, Donald et al. 2001a, Gillings 2001). It should be noted that in Finland the importance of winter cereals is in contradiction with western European conditions as the sward as a consequence of the short growing season is low and sparse in autumn. Therefore the sward does not become too dense and high for the Skylarks during the first breeding but provide shelter for the birds and nests (Tiainen in litt.).
- Intensification of grassland management through re-seeding, increased fertiliser application, frequent mowing or increased stocking rates reduces the suitability of grassland as Skylark breeding habitat. Re-seeding and increased fertilisation lead to a homogeneous, dense, fast-growing sward, which quickly becomes unsuitable as a nesting habitat. Frequent cutting for hay or silage destroys the nests of the Skylarks, and increased stocking rates lead to higher frequencies of nest destruction through trampling (Busche 1989, Jenny 1990b, Wilson et al. 1997, Chamberlain & Gregory 1999).
- Increased use of pesticides such as herbicides and insecticides causes a reduction in the amounts of weed seeds and invertebrates serving as food items for Skylarks. In a Danish study, the number of Skylark fledglings produced per territory was 50% higher in unsprayed spring barley fields than in sprayed fields (Odderskær et al. 1997a). Reducing herbicide and insecticide dosages by 75% led to a 20-25% increase in the number of Skylarks (Petersen 2002). In winter, leaves of dicotyledonous weeds are preferred food items, and their amount is greatly reduced when herbicides are applied in autumn (Donald et al. 2001a).
- Increased amounts of fertiliser used on arable fields and grassland generally reduce their value as Skylark breeding habitat. The higher nutrient levels accelerate crop development and make the areas unsuitable for Skylark nesting and foraging earlier in the season than before.
- Irrigation may affect Skylark breeding habitat negatively in the same way as fertilisation, but the effects have not been documented. By analogy to the effects of heavy rainfall (Donald 2004, Petersen unpubl. data), strong irrigation could well impair nesting success through flooding of nests or cooling of eggs and nestlings.

Importance

The different elements of agricultural intensification typically act in concert, and it is difficult to separate their effects. Agent-based population modelling suggests that habitat variables are the most important limiting factors (Topping & Odderskær 2004). As a whole, the importance of agricultural intensification is set at High/Medium.

Agricultural abandonment (1.1.5)

Changed economic conditions may render farming unprofitable in some areas. This results in an abandonment of fields, which may then be afforested or invaded by bushes and other kinds of tall

vegetation. In some regions this could cause a significant loss of Skylark habitat (e.g. Aunins et al. 2001).

Importance

The major trend will undoubtedly be towards agricultural intensification. The importance of agricultural abandonment as a threat is set at Local.

2. Infrastructure development (1.4)

Enlargement of human settlements, road constructions, industry and resort development may all cause a loss of Skylark habitat. This may be a particular problem in tourist areas in southern Europe.

Importance

The importance of infrastructure development as a threat is set at Local.

3. Harvesting (3)

Within the EU25, legal harvesting of Skylarks only occurs in five countries: France, Italy, Malta, Greece and Cyprus. Besides, sizeable numbers may be harvested in northern Spain. Hunting is carried out partly for food (3.1) and partly as a cultural and leisure activity (3.5). Outside the EU, a few Skylarks of European origin are probably harvested in NW Africa. Furthermore, Skylarks are a prime target of hunting tourists to countries such as Romania (Donald 2004). Since 1996, police forces in Hungary, Bulgaria, Slovenia and Italy have confiscated 180,000 dead birds, a third of which were Skylarks, from Italian hunters (British Birds 95: 363 cited in Donald 2004).

The yearly harvest within the EU is estimated at 3.4 – 4.55 million birds (Table 4), most of which (2.5 – 3 million) are taken in France and Italy. The majority of European Skylarks winter in these countries and on the Iberian peninsula, where up to 500,000 birds may be harvested annually. Some 600-900,000 birds, probably chiefly of Turkish and South Russian origin, are harvested in Greece and Cyprus.

The total European wintering population is in the order of 100 million individuals, of which 65-70% may be supposed to winter in SW Europe and NW Africa, 20-25% in SE Europe and the Middle East, and c. 10% elsewhere, mainly in the UK and Ireland (estimated from Table 2 and migration data summarized in Cramp 1988 and Donald 2004). Using the harvest data in Table 3, the annual harvest in SW Europe may be estimated to c. 5% of the wintering population. The percentage of the wintering population harvested in SE Europe is probably of the same order of magnitude as in the SW, given that an unknown, but perhaps sizeable, number of birds are taken in non-EU countries. This mortality, however, must be viewed in relation to the annual productivity and natural survival.

According to the data summarized in Part 1 (Biological Assessment), a reasonable estimate of annual productivity per female in West European farmland could be 2.55 young leaving the nest. Assuming a

breeding population of 40 million pairs, this is equivalent to an annual production of 102 million young leaving the nest. Averaging the estimates of Delius (1965), Schläpfer (1988), Jenny (1990a,b) and Wilson et al. (1997), a 1st year mortality (leaving the nest to breeding recruit) of 65% and an adult mortality of 42% may be assumed. This would be equivalent to a yearly loss of 66.3 million 1st year birds and 33.6 million adults, yielding a total of 100 million birds lost, approximately equalling the yearly production of young. It must be stressed that the productivity and mortality parameters used in these calculations are by no means worst case estimates. *It is doubtful whether an annual harvest, even as small as 5 %, may be justified under these conditions, also taking into account that the species is declining over large parts of its range.*

It has been suggested that hunting mainly affects females, because Skylark males winter further north than the females (Donald 2004). This would increase the impact of hunting on the breeding population. However, given the small number of birds wintering north and east of the countries where hunting occurs (and excluding the sedentary population in the UK and Ireland), the fraction of males avoiding the hunting pressure in this way is probably small. This issue might be addressed by monitoring of sex ratios of harvested birds.

The timing of hunting seasons (20 August – 15 February) does not conflict with the breeding season, as very few dependent young occur after mid-August and breeding activities do not start until March (Cramp 1988). *However, hunting in February in Greece (and maybe also in Cyprus) overlaps with spring migration (EU Commission 2001) and is thus in contradiction to the Birds Directive.*

Importance

The importance of harvesting as a threat is set at Low/Medium.

4. Pollution (6)

Atmospheric pollution (6.1)

In certain breeding habitats, e.g. heaths and dunes, deposition of nutrients, particularly nitrogen compounds, can lead to unfavourable changes in vegetation structure.

Importance

The importance of atmospheric pollution as a threat is set at Local.

Land pollution (6.2)

Only agricultural pollution (use of pesticides) may be of importance to Skylarks. With the pesticides currently approved within the EU, the risk of direct poisoning of sizeable numbers of Skylarks is regarded as very low, provided that the products are used in accordance with regulations.

However, the indirect effects of pesticide use, i.e. effects of food depletion, may constitute an important threat (e.g. Campbell et al. 1997). These effects should be viewed as part of the intensification of agriculture and are considered under that heading.

Importance

A separate evaluation of the importance of land pollution has not been made (cf. above).

5. Predators (8.2)

Several species of corvids have increased across Europe within the last decades, and the same may be the case for mammalian ground predators (e.g. foxes, mustelids), at least in some areas. These increases may be at least partly due to a reduced hunting pressure (termed “decreased keeping” by some authors, e.g. Tapper 1990) or to a reduced incidence of rabies (A. Ranner pers. comm.). It has been suggested that these increases could be one reason for the decline in Skylark populations, but the available data on Skylark nest mortality rates in the UK do not support this hypothesis (Chamberlain & Crick 1999). It is known that Crows and Magpies may significantly reduce songbird nesting success, especially in species such as Blackbird and Song Thrush, but without any apparent impact on the populations at a national level (Stoate & Thomson 2000).

The decline in Skylark numbers coincides in many areas with a recovery of Sparrowhawk populations. This apparent link cannot be taken as evidence of a causal relationship, however, because there have been many other broad-scale changes in the countryside over the period in question. The existence of a causal link is not supported by the study of Stoate & Thomson (2000), who found no correlation between population trends in 23 songbird species (incl. Skylark) and the presence of Sparrowhawks. Skylarks generally form small percentages of Sparrowhawk diet, and increased Skylark survival rates during the period of Sparrowhawk population recovery suggest that predation is unlikely to have caused the decline (Donald 2004).

Importance

The importance of predators as a threat is set at Low.

6. Regional differences in the relative importance of threats

As mentioned in the introduction to this chapter, Skylark population trends have until now differed between eastern and western Europe. There is little doubt that various components of agricultural intensification have been the main cause of the population decline in western Europe and thus constitute the most important threat to the Skylark in the vast majority of the EU15 countries. This does not mean that East European Skylarks are not threatened by agricultural intensification. Firstly, because they winter in western Europe, their winter survival is impaired by the loss of stubble fields, increased use of herbicides etc. Secondly, with the inclusion of East European countries in the enlarged EU, agricultural intensification will most probably gain speed in the New Member States. This could cause a serious loss of Skylark breeding habitat in those countries. Thus, the Actions needed are much the same in the two regions, even though in eastern Europe they do not face the task of reversing a trend but just the task of preventing it from occurring.

As a result of the economic changes in eastern Europe, agricultural intensification has occurred in some areas while fields have been abandoned in others, locally to the detriment of the Skylark. It remains to be seen whether the adoption of EU agricultural policy in the New Member States will enhance this trend or will cause a re-cultivation of formerly abandoned areas.

Even if harvesting may not seem a serious threat when viewed in isolation, an additional mortality in the order of 5% may still be a cause of concern in a declining species. Although acting locally, hunting probably affects the Skylark over large parts of Europe, because the majority of European Skylarks (except those from Britain and Ireland) winter in or migrate through areas where hunting occurs. Therefore, harvesting as a threat affects most continental Skylark populations although it only takes place in six countries.

4. Policies and legislation relevant for management

The Skylark mainly occurs in agricultural areas. Therefore, management of Skylark habitat is intimately linked with national and international agricultural policy and legislation, the most important of which is the Common Agricultural Policy of the EU. A detailed account of the relevant agricultural legislation is beyond the scope of this Action Plan. See http://europa.eu.int/comm/agriculture/consleg/index_en.htm for an overview of the Community legislation on the Common Agricultural Policy.

Table 5. *International conservation and legal status of the Skylark.*

World Status¹⁾ (Criteria)	European Status²⁾	SPEC category³⁾	EU Birds Directive Annex	Bern Convention Annex	Bonn Convention Annex	African-Eurasian Migratory Waterbird Agreement	Convention of International Trade on Endangered Species
Not listed	Depleted	3	II/2	Annex III	Not listed	Not listed	Not listed

¹⁾ BirdLife International/IUCN Red List assessment.

²⁾ BirdLife International 2004a. – Depleted: Species whose European populations do not meet any IUCN Red List Criteria and are not Rare or Declining, but which have not yet recovered from a moderate or large decline suffered during 1970-1990.

³⁾ BirdLife International 2004a. – SPEC 3: Species whose world populations are not concentrated in Europe, but which have an unfavourable conservation status in Europe.

Member States / Contracting parties obligations

Skylark is listed on Annex II/2 of the EU Birds Directive, which implies that the species may be hunted only in those Member States, which have specifically indicated that hunting of the species can be allowed, i.e. Cyprus, France, Greece, Italy and Malta.

Skylark is also listed on Annex III of the Bern Convention, which implies that any exploitation of the species shall be regulated in order to keep the populations out of danger. Measures shall include (1) closed seasons and/or other procedures regulating the exploitation, (2) the temporary or local prohibition of exploitation in order to restore satisfactory population levels and (3) the regulation as appropriate of sale, keeping for sale, transport for sale or offering for sale of live and dead birds.

National policies, legislation and ongoing activities

Table 6. *National conservation and legal status of the Skylark.*

Country	Status in national Red Lists	Legal protection/hunting status	Year of protection status	Open season	Annual bag size	Highest responsible national authority
<i>Austria</i>	Least Concern	Protected		None	–	Provincial Governments
<i>Belgium</i>	Flanders: Vulnerable	Protected		None	–	Regional Authorities of the 3 Belgium administrative regions: Flanders, Wallonia and Brussels Capital Region
<i>Cyprus</i>				30/10 – 15/2	180,000 – 400,000 ⁵⁾	Ministry of Interior
<i>Czech Republic</i>	Not listed	Protected		None	–	Ministry of Environment
<i>Denmark</i>	Not listed	Protected		None	–	Ministry of Environment
<i>Estonia</i>	Not listed	Not protected Not huntable		None	–	
<i>Finland</i>		Protected		None	–	
<i>France</i>		Huntable		mid-Sep. to end-Jan. ³⁾	1.2 – 1.6 million ⁶⁾	

<i>Germany</i>	Vulnerable (Near threatened)	Protected		None	–	
<i>Greece</i>		Huntable		20/8 – 10/2	< 500,000	
<i>Hungary</i>						
<i>Ireland</i>	Amber List	Protected		None	–	
<i>Italy</i>		Huntable		1/9 – 31/1 ⁴⁾	1 – 1.5 million	
<i>Latvia</i>						
<i>Lithuania</i>						
<i>Luxembourg</i>		Protected		None	–	
<i>Malta</i>	Not listed	Huntable		1/9 – 31/1	20,000 – 50,000	
<i>Netherlands</i>	Red List (since 2004)	Protected		None	–	
<i>Poland</i>						
<i>Portugal</i>	Least Concern	Protected		None	–	Ministry of Environment
<i>Slovakia</i>						
<i>Slovenia</i>						
<i>Spain</i>		Protected ¹⁾	1990	–	max. 500,000	
<i>Sweden</i>	Near Threatened	Protected		None	–	
<i>United Kingdom</i>	Red List	Protected ²⁾		–	max. 100	DEFRA

1. Protected according to national and international rules, but hunting during autumn migration and winter is practiced in certain autonomous regions
2. A limited number of special permits are granted for the training of falcons
3. The open season varies according to region and hunting method
4. The open season varies regionally
5. Harvesting data refer to the Greek-Cypriot part of the island only
6. The annual bag estimate is the sum of two different hunting systems: Shooting and traditional hunting with traps

Table 7. Site (and habitat) protection and research.

Country	Percentage of population included in IBAs, SPAs and national protected areas	Research carried out in the last 5 years
<i>Austria</i>		
<i>Belgium</i>	Negligible	Yes (privat)
<i>Cyprus</i>		
<i>Czech Republic</i>	< 5	Yes
<i>Denmark</i>	< 5	Yes
<i>Estonia</i>		No
<i>Finland</i>	Negligible	Yes
<i>France</i>		
<i>Germany</i>	< 5	Yes (regional)
<i>Greece</i>		
<i>Hungary</i>		
<i>Ireland</i>		Yes (farmland birds in general)
<i>Italy</i>		
<i>Latvia</i>		
<i>Lithuania</i>		
<i>Luxembourg</i>		
<i>Malta</i>		
<i>Netherlands</i>	Negligible, < 5	Yes
<i>Poland</i>		
<i>Portugal</i>		No
<i>Slovakia</i>		
<i>Slovenia</i>		
<i>Spain</i>		
<i>Sweden</i>	< 5	Yes
<i>United Kingdom</i>		Yes

Table 8. Recent conservation action towards the Skylark.

Country	National protection plan for the species	National Skylark project / working group?	National survey/ monitoring programme?	Monitoring programme in protected areas?	Conservation efforts over the last 10 years
<i>Austria</i>	No	No	Yes (common bird census)	No	1)
<i>Belgium</i>	No	No	Yes (regional)	No	
<i>Cyprus</i>	No				
<i>Czech Republic</i>	No	No	Yes (mapping and breeding census)	No	None
<i>Denmark</i>	No	No	Yes	No	2)
<i>Estonia</i>	No	No	Yes	No	None
<i>Finland</i>	No	No	Yes		3)
<i>France</i>			Yes ¹		
<i>Germany</i>			Yes		4)
<i>Greece</i>					
<i>Hungary</i>			Yes		
<i>Ireland</i>	No	No	Yes (Countryside Bird Survey)	No	No
<i>Italy</i>			Yes		
<i>Latvia</i>			Yes		
<i>Lithuania</i>			Yes		
<i>Luxembourg</i>			Yes (regional)		
<i>Malta</i>	No	No	Yes	No	

¹ Several programmes exist including "programme de suivi de la migration automnale" (CRBPO/Muséum National d'Histoire Naturelle, "programme de suivi des populations reproductrices" (programme ACT – ONCFS/FNC) and "programme de suivi des populations hivernantes" (programme ACT – ONCFS/FNC).

<i>Netherlands</i>	In prep. (2005-2009)	In prep.	Yes	Partly	Experimental (agro-environment schemes)
<i>Poland</i>			Yes		
<i>Portugal</i>	No	No	Yes	No	None
<i>Slovakia</i>					
<i>Slovenia</i>					
<i>Spain</i>					
<i>Sweden</i>			Yes		5)
<i>United Kingdom</i>	Yes (UK BAP)	RSPB Conference 1999: Ecology and Conservation of Skylarks	Yes (BBS)	–	Yes (SAFFIE 2002-2006)

- 1) No dedicated efforts, but agri-environment measures, especially increased area of set-aside, benefit the species.
- 2) No dedicated efforts, but national action plans have aimed at reducing agricultural use of pesticides since 1987.
- 3) No special conservation effort but the national agri-environmental scheme (with 95% of farmers and farmland area having joined it) includes measures, which are favourable for the Skylark (Piha et al. 2003, 2005, Tiainen et al. 2004).
- 4) Local efforts (Illner et al. 2004).
- 5) No dedicated efforts, but a national action plan for increasing the area of organic farming exists.

5. Framework for Action

Priority statement/evaluation

The Skylark is still a widespread and abundant breeding species across most of its European range, and until recently it benefited from the increase in arable farmland. During recent decades, however, significant population declines have been reported from almost all countries in northern and western Europe. Conversely, Skylark populations are chiefly stable in eastern Europe. As a quarry species, the species is only of importance in France, Italy, Cyprus and northern Spain and to a smaller extent in Greece and Malta.

Research activities, particularly in the UK, indicate that the decline of the Skylark in western Europe is probably caused by a combination of reduced survival outside the breeding season and reduced breeding success in terms of the number of broods raised per year. There can be little doubt that the main reason for this is agricultural intensification, impacting the species throughout its annual cycle. With the enlargement of the EU, intensification of agriculture is likely to take place over much of eastern Europe. Such intensification might well result in further Skylark population declines.

Classical, site-based conservation measures are of little value in a dispersed species like the Skylark. Instead, conservation efforts must address the general deterioration of the agricultural landscape as a habitat for Skylarks. In the past, EU agricultural policy and subsidy schemes have chiefly aimed at regulating and supporting agricultural production. It is, however, possible to achieve these goals *and* at the same time benefit nature by including environmental knowledge and concerns in the framing and implementation of the Common Agricultural Policy, as was first realised with the MacSharry reforms of the CAP in 1992. Such steps should be taken even further in the Common Agricultural Policy. Furthermore, in their implementation of the policy and schemes, the Member States should ensure that the means applied to achieve the agricultural goals to the greatest possible extent also benefit the environment, *including* the biodiversity linked with the agricultural fields.

To avoid a repetition of the West European population declines in eastern Europe, it is particularly important that such environmental considerations are given a high priority when EU agricultural policy is implemented in the New Member States.

The impact of hunting on Skylark mortality rates is difficult to assess and should be the subject of further research. Although it is not the prime reason for the population declines, hunting at the current level of exploitation is unlikely to assist in the recovery of the species. In particular, it must be ensured that all Skylark harvesting conforms with the terms of the Birds Directive and that proper bag statistics exist in all Member States.

Purpose of the Management Plan

Recognising that the Skylark has an Unfavourable Conservation Status in EU due to a moderate continuing decline the long-term objective (10 years) of this plan is:

To restore the Skylark to a favourable conservation status in the EU¹.

It is unlikely that strong progress towards this goal will be achieved within the time frame of the present Management Plan. The fate of the Skylark in Europe is inseparably linked with agricultural policy, and a halt in the declining trend is unlikely to occur before Skylark-friendly management options have been implemented on a large scale for some years in a majority of EU Member States holding important Skylark populations. Recognising this, the short-term objective of the Management Plan is:

- To put into force a number of incentives, regulations and other initiatives that will contribute to restoring the Skylark to a Favourable Conservation Status in Europe.

The plan applies for a three years period after which it should be evaluated and reviewed. This should include an assessment of the results achieved during the first three years. During this process the objectives for the short-term objectives for the next Skylark EU Management Plan should also be identified that most effectively will lead to the recovery of the European Skylark population and the achievement of the long-term objective to restore the Skylark to favourable conservation status.

Results for the period 2006-2009

This section outlines the results to be achieved during the first 3-year period of Skylark management within the EU. The results outlined below (and the corresponding activities in Part 6) are targeted at the authorities responsible for the implementation of the provisions of the Birds Directive in the Member States *and* at the authorities responsible for the implementation of the agri-environment schemes under the Common Agricultural Policy. The results aim initially to address the most urgent issues in order to safeguard the Skylark population in the EU, but at the same time restrict the corresponding activities to be carried out during the 3 year period to a (fairly) realistic level. In the Logical Framework Analyses (LFA) table (Table 11), the results with corresponding activities, verifiable indicators, means of verification and assumptions are outlined.

It is anticipated that the results will have been achieved when the running period of the Management Plan ends in 2009. It is furthermore an underlying assumption that this first Management Plan will be followed by versions with revised objectives that take into account the results achieved during the first phase, other new information etc. Among the results that will be provided by this plan are data on winter population trends, the number of birds harvested annually, and the annual productivity. Such information is essential for future population modelling and will help identify the actions for the next Skylark Management Plan.

¹ The EU Habitats Directive (92/43/EEC) states that a species's conservation status will be taken as Favourable when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long-term basis.

The results to be accomplished during the first European Skylark Management Plan period (2006 – 2009) are listed below. The numbering (1 – 12) does not indicate priority, which is given in Table 9.

Agriculture

As described in Part 3 (Threats), agricultural intensification reduces the suitability of farmland as a habitat for Skylarks in different ways. Several of these issues (e.g. low crop diversity, low sward heterogeneity and increased use of pesticides and inorganic fertiliser) can be addressed by conversion to organic farming. Some elements of organic farming, especially mechanical weeding (if performed too late), may however affect Skylarks negatively². Organic farming also includes a large number of passages by tractor during a sensitive period, which together with the practise of topping (cutting of vegetation without collecting the material) poses a threat to ground-breeding birds (Kvarnäck 2006). Still, the overall effect of a conversion is positive (see, e.g., Petersen 2003 for the immediate effects of conversion on Skylark densities, Gottwald and Fuchs 2003). Improving incentives for farming organically should therefore be a key element of this action plan.

The plan must also address the problems related to autumn-sowing of crops, such as loss of winter stubbles and crop heights that quickly become unsuitable for Skylark breeding in spring. This can be done by including incentives for spring-sowing and retention of stubbles in agri-environment schemes and ensuring that such incentives are attractive for farmers. On a smaller scale, conditions for Skylark may be improved by leaving unsown patches within the fields (cf. Odderskær et al. 1997b, Morris et al. 2004) and by leaving strips of cereals sown in double spaced rows without fertiliser and pesticides (Illner et al. 2004).

Grassland is the natural habitat of Skylark but agricultural intensification has reduced its value for the species. Re-seeding, increased fertiliser levels, frequent mowing and/or increased stocking rates shorten the breeding season and cause heavy loss of nests. As part of the agri-environment schemes, incentives for extensification of grassland management should be available for farmers in all Member States. Where set-aside exists, management regulations should encourage soil treatment, herbicide and mowing regimes that are beneficial to ground-living birds.

Pesticide use reduces the amount of available food. This issue may be addressed through economic incentives for low-input and organic farming, but also by propagating the use of existing computer-based decision support systems which aim at optimising pesticide use in relation to the actual need for pest control.

Along the same line, it should be ensured that irrigation is restricted to the minimum amount necessary for optimum crop growth.

A result of the implementation of this Management Plan should therefore be that by 2009:

² Although mechanical weeding in spring cereals destroys 70-85% of the active Skylark nests, the impact on overall breeding success is normally negligible because few nests are active at the time of weeding and the success rate of such early nests is anyway low due to predation (Odderskær & Topping unpubl., Petersen unpubl.).

- (1) The percentage of agricultural land that is farmed organically has increased in all Member States with breeding or wintering Skylark.
- (2) Incentives exist for sowing crops in spring instead of in autumn and are taken up by farmers in all Member States with breeding or wintering Skylark except in the boreal regions with harsh winters (such as in Finland) where the preference is in securing sowing of winter cereals and increasing their area.
- (3) Incentives exist for leaving cereal stubbles over winter and are taken up by farmers in all Member States with breeding or wintering Skylark.
- (4) Incentives exist for leaving unsown patches in autumn-sown cereal crops and are taken up by farmers in all Member States with breeding Skylark and high percentages of autumn tillage.
- (5) Incentives exist for extensification of grassland management (e.g. through reduced or no input of fertiliser/manure, later and less frequent mowing) and are taken up by farmers in all Member States with breeding or wintering Skylark.
- (6) Rules for set-aside management prevent nests of ground-dwelling birds being destroyed in spring and summer and encourage the retention of weed-rich stubbles over winter.
- (7) Decision support systems for optimisation of pesticide use are available to all farmers in the EU, either directly or through extension services.
- (8) Regulations exist which restrict irrigation to the minimum amount necessary for optimum crop growth in all Member States with breeding Skylark.

This will benefit not only the Skylark but also several other species that are linked with agricultural areas and where recent population declines have occurred (e.g. Lapwing, Corn Bunting).

Harvesting

An essential component when managing a huntable species is detailed information on the number of birds harvested per year. Currently, this type of information is not available from any of the Member States where Skylark hunting takes place. Collection of reliable bag data is therefore a key activity of this plan. Furthermore, there is a need for critically examining whether all current harvesting activities are actually in accordance with the provisions of the Birds Directive and whether they are contributing to or hindering the recovery of the species.

A result of the implementation of this Management Plan should therefore be that by 2009:

- (9) Data on the number of Skylark harvested annually are available in all Member States where harvesting of the species is permitted.
- (10) All harvesting of Skylarks in Member States conforms with the provisions of the Birds Directive (79/409/CEE) and does not hinder the recovery of the species to favourable Conservation Status.

Research and monitoring

Adequate population monitoring and an understanding of factors that contribute to population dynamics are essential to management of wildlife populations. In the Skylark, breeding population trends are generally well monitored through national programmes. However, the critical parameters in population dynamics of the species seem to be annual productivity (including chick mortality after leaving the nest) and winter mortality.

Productivity and juvenile mortality can probably only be measured in case studies, i.e. on a local scale, by dedicated nest search throughout the breeding period and by radio-tagging of young. Assessment of 1st year/adult ratios of birds caught or shot is not possible, because post-juvenile moult is complete at the age of 3 months (Pätzold 1983).

Programmes for monitoring winter population trends must be initiated, ideally in all countries holding important numbers of Skylark in winter and at least in two countries with hunting (e.g. France, Italy, Greece) and two countries without hunting (e.g. UK, Portugal). Such data must be available to allow an assessment of the impact of harvesting on Skylark populations. In the interpretation of these monitoring data, due attention should be given to the effects of winter weather on Skylark movements and mortality.

A study of sex ratios of harvested birds should be initiated through a co-operation with hunters, in order to clarify if females face a higher risk.

A result of the implementation of this Management Plan should therefore be that by 2009:

- (11) Programmes for monitoring the size of the winter population of Skylark exist in at least four Member States (two with hunting of the species and two without) that hold substantial numbers of the species in winter.
- (12) Sex ratio of harvested birds is being monitored at different sites through a co-operation with hunters in at least one Member State.

Such data will contribute to the development of a predictive population model that would enable sustainable levels of hunting to be determined in the context of other population impacts and conservation management activities.

6. Activities

Table 9. *Actions to be taken in all countries in the EU with breeding, staging or wintering Skylark (the scale for priority and the time scale are given below the table).*

Result	Priority	National activities	Time scale	Means of verification
The percentage of agricultural land that is farmed organically has increased.	High/Medium	<ul style="list-style-type: none"> Ensure that incentives for conversion to organic farming are available to all farmers. 	Short	<ul style="list-style-type: none"> National statistics of agricultural land use 2004-2009.
Incentives for sowing crops in spring instead of in autumn exist and are taken up by farmers. ¹	High	<ul style="list-style-type: none"> Ensure that incentives for sowing crops in spring instead of in autumn are available to all farmers. 	Short	<ul style="list-style-type: none"> National statistics of agricultural land use 2004-2009.
Incentives for leaving cereal stubbles over winter exist and are taken up by farmers.	High	<ul style="list-style-type: none"> Ensure that incentives for leaving cereal stubbles over winter are available to all farmers. 	Short	<ul style="list-style-type: none"> National statistics of agricultural land use 2004-2009.

¹ An exception is in the boreal regions with harsh winters such as Finland where the preference is in securing sowing of winter cereals and increasing their area.

Incentives for leaving unsown patches in autumn-sown cereal crops exist and are taken up by farmers.	Medium/Low	<ul style="list-style-type: none"> • Launch incentives for leaving unsown patches in autumn-sown cereal crops and ensure that they are available to all farmers. (Member States with breeding Skylark and high percentage of autumn tillage only). 	Short	<ul style="list-style-type: none"> • National statistics of agricultural land use 2004-2009.
Incentives for extensification of grassland management (e.g. through reduced or no input of fertiliser/manure, later and less frequent mowing) exist and are taken up by farmers.	Medium	<ul style="list-style-type: none"> • Ensure that incentives for extensification of grassland management are available to all farmers. 	Short	<ul style="list-style-type: none"> • National statistics of agricultural land use 2004-2009.
Rules for set-aside management prevent nests of ground-dwelling birds being destroyed in spring and summer and encourage the retention of weed-rich stubbles over winter.	Medium	<ul style="list-style-type: none"> • Ensure that rules for set-aside management (1) do not allow harrowing or mowing during the breeding season and (2) encourage the retention of weed-rich stubbles over winter. 	Short	<ul style="list-style-type: none"> • National or regional administrative regulations for set-aside management.
Decision support systems for optimisation of pesticide use are available to all farmers, either directly or through extension services.	Medium	<ul style="list-style-type: none"> • Support the use of computer-based decision support systems for optimisation of pesticide use and ensure that such systems are available to all farmers, either directly or through extension services. 	Medium	

Regulations restricting irrigation to the minimum amount necessary for optimum crop growth exist.	Medium/Low	<ul style="list-style-type: none"> Put into force regulations restricting irrigation to the minimum amount necessary for optimum crop growth. (Member States with breeding Skylark only) 	Medium	<ul style="list-style-type: none"> National/regional legal notices or administrative regulations in relevant Member States.
Programmes for monitoring the size of the winter population of Skylark exist in at least four Member States (two with hunting of the species and two without) holding substantial numbers of the species in winter.	Medium	<ul style="list-style-type: none"> Establish a national programme to monitor the size of the winter population of Skylark. (Member States with wintering Skylark only) 	Short	<ul style="list-style-type: none"> Reports and/or websites present first results or document the existence of a monitoring programme in relevant Member States.

The **Priority** of each Result is given, according to the following scale:

- Essential: an action that is needed to prevent a large decline in the population, which could lead to species or subspecies extinction.
- High: an action that is needed to prevent a decline of more than 20% of the population in 20 years or less
- Medium: an action that is needed to prevent a decline of less than 20% of the population in 20 years or less
- Low: an action that is needed to prevent local population declines or which is likely to have only a small impact on the population across the range.

The **Time scales** attached to each Activity use the following criteria:

- Immediate: completed within the next year.
- Short: completed within the next 1-3 years
- Medium: completed within the next 1 – 5 years.
- Long: completed within the next 1 – 10 years
- Ongoing: an action that is currently being implemented and should continue.
- Completed: an action that was completed during the preparation of the Management Plan.

Table 10. Additional actions in all countries in the EU where harvesting of Skylark takes place (the scale for priority and the time scale are given in Table 9).

Result	Priority	National activities	Time scale	Means of verification
Data on the number of Skylark harvested annually are available in all Member States where Skylark hunting takes place.	High	<ul style="list-style-type: none"> Ensure that annual bag data are available. 	Short	<ul style="list-style-type: none"> Publication/website with official bag statistics available in each of the relevant Member States.
All harvesting of Skylarks in Member States conforms with the provisions of the Birds Directive (79/409/CEE) and does not hinder the recovery of the species.	High	<ul style="list-style-type: none"> Critically examine all current Skylark harvesting activities and ensure that only activities conforming to the provisions of the Birds Directive and not hindering the recovery of the species are allowed. 	Short	<ul style="list-style-type: none"> Publication/website with official rules for Skylark harvesting, nationally or regionally, available in relevant Member States. Reports on levels of illegal harvesting of Skylarks. Annual reports from Member States to ORNIS Committee.
Male:female ratio of harvested Skylarks is being monitored at different sites through a co-operation with hunters in at least one Member State.	Medium	<ul style="list-style-type: none"> Establish, through a co-operation with hunters, a programme to monitor the male:female ratio of harvested Skylarks at different sites. 	Short	<ul style="list-style-type: none"> Report/website presents first results or documents the existence of a monitoring programme in relevant Member State(s).

Table 11. *Summary of objectives/results and activities of the Skylark Management Plan 2006-2009.*

DESCRIPTION	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>Goal: To restore the Skylark to a Favourable Conservation Status in Europe.</p> <p>Purpose: To put into force a number of incentives, regulations and other initiatives, which will contribute to restoring the Skylark to a Favourable Conservation Status in Europe.</p>	<p>The European Skylark population is restored to a Favourable Conservation Status.</p> <p>Incentives, regulations and other initiatives put into force.</p>	<p>The European Threat Status classification of Skylark.</p>	<p>Key elements responsible for the negative population development of the Skylark have been identified and addressed in the Action Plan.</p> <p>Member States have adequate resources and commitment to take responsibility for Skylark management in accordance with the requirements of the Birds Directive.</p>
<p>Results 2006-2009:</p> <ol style="list-style-type: none"> 1. The percentage of agricultural land that is farmed organically has increased in all Member States with breeding or wintering Skylark. 2. Incentives for sowing crops in spring instead of in autumn exist and are taken up by farmers in all Member States with breeding or wintering Skylark 3. Incentives for leaving cereal stubbles over winter exist and are taken up by farmers in all Member States with breeding or wintering Skylark. 4. Incentives for leaving unsown patches in autumn-sown cereal crops exist and are taken up by farmers in all Member States with breeding Skylark and high percentage of autumn tillage. 	<ol style="list-style-type: none"> 1. By 2009, the percentage of agricultural land that is farmed organically is higher than in 2004 in all Member States with breeding, staging or wintering Skylark. 2. By 2009, the percentage of spring-sown crops is higher than in 2004 in all Member States with breeding, staging or wintering Skylark. 3. By 2009, the percentage of overwinter cereal stubbles is higher than in 2004 in all Member States with breeding, staging or wintering Skylark. 4. By 2009, the percentage of autumn-sown crops with unsown patches is higher than in 2004 in all Member States with breeding Skylark and high percentage of autumn tillage. 	<ol style="list-style-type: none"> 1. National statistics of agricultural land use 2004-2008. 2. National statistics of agricultural land use 2004-2008. 3. National statistics of agricultural land use 2004-2008. 4. National statistics of agricultural land use 2004-2008. 	<p>(1-5:) Incentives are contained within the Common Agricultural Policy.</p> <p>Member States have the commitment to make the incentives available and attractive to farmers.</p> <p>Adequate resources are available.</p> <p>Farmers have a positive attitude towards the incentives.</p>

<p>5. Incentives for extensification of grassland management exist and are taken up by farmers in all Member States with breeding or wintering Skylark.</p> <p>6. Rules for set-aside management prevent nests of ground-dwelling birds being destroyed and encourage the retention of weed-rich stubbles over winter.</p> <p>7. Decision support systems for optimisation of pesticide use are available to all farmers in the EU, either directly or through extension services.</p> <p>8. Regulations restricting irrigation to the minimum amount necessary for optimum crop growth exist in all Member States with breeding Skylark.</p> <p>9. Data on the annual number of Skylark harvested are available in all Member States where harvesting of the species is permitted.</p> <p>10. All harvesting of Skylarks in Member States conforms to the provisions of the Birds Directive and does not hinder the recovery of the species.</p> <p>11. Programmes for monitoring the size of the winter population of Skylark exist (Member States with wintering Skylark only).</p> <p>12. A programme for monitoring sex ratio of harvested Skylarks at different sites exists in at least one Member State.</p>	<p>5. By 2009, the percentage of extensively managed grassland is higher than in 2004 in all Member States with breeding, staging or wintering Skylark.</p> <p>6. By 2009, Skylark-friendly rules for set-aside management exist in all Member States with breeding, staging or wintering Skylark.</p> <p>7. By 2009, more farmers are using decision support systems for optimisation of pesticide use than in 2004 in all Member States with breeding, staging or wintering Skylark.</p> <p>8. By 2009, regulations restricting irrigation to the minimum amount necessary for optimum crop growth exist in all Member States with breeding Skylark.</p> <p>9. National bag reporting system exists and reliable data on the number of Skylark harvested annually are collected in relevant Member States.</p> <p>10. By 2009, national/regional hunting regulations have been examined and, if necessary, revised in all Member States with hunting of Skylark.</p> <p>11. A programme for monitoring the size of the winter population of Skylark exists in at least four Member States (two with hunting, two without) holding >100,000 individuals of the species in winter.</p> <p>12. Sex ratio of harvested birds is being monitored through a co-operation with hunters in at least one Member State (e.g. France, Italy).</p>	<p>5. National statistics of agricultural land use 2004-2008.</p> <p>6. National or regional regulations for set-aside management.</p> <p>7. -</p> <p>8. National/regional legal notices or administrative regulations in relevant Member States.</p> <p>9. By 2009, a publication or website with official bag statistics is available in each of the relevant Member States.</p> <p>10. Publication/website with official (national or regional) rules for Skylark harvesting available in relevant Member States and report to ORNIS Committee by national delegates no later than 2008.</p> <p>11. By 2009, reports and/or websites present first results or document the existence of a monitoring programme in relevant Member States.</p> <p>12. By 2009, a report/website presents first results or documents the existence of a monitoring programme in relevant Member State(s).</p>	<p>6. Skylark-friendly management rules are in accordance with the Common Agricultural Policy.</p> <p>7. Distribution and use of decision support systems is not hampered by patent rights or other economic interests.</p> <p>8. Member States have the commitment to put regulations into force.</p> <p>9. Hunters have a positive attitude towards keeping bag records.</p> <p>10. Member States have adequate resources and commitment to transpose and implement the Birds Directive.</p> <p>11. Sufficient manpower for monitoring is available in Member States.</p> <p>12. Hunters have a positive attitude towards the programme.</p>
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