

**INTERNATIONAL ACTION PLAN FOR
THE LESSER KESTREL (*Falco naumanni*)**



Compiled by:

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Timetable

Workshop: September 1994 - Palma de Mallorca, Spain

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Reviews

This action plan should be reviewed and updated by BirdLife International every five years. An emergency review will be undertaken if sudden major environmental changes, liable to affect the population, occur within the species' range.

Geographical scope

This action plan needs implementation in Albania, Algeria, Armenia, Azerbaijan, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Egypt, France, Greece, Hungary, Iran, Iraq, Israel, Italy, Jordan, Kazakhstan, Lebanon, Libya, Former Yugoslav Republic of Macedonia, Moldova, Morocco, Oman, Poland, Portugal, Romania, Saudi Arabia, Slovakia, Slovenia, Spain, Syria, Tunisia, Turkey, Ukraine, Uzbekistan, Yemen and Yugoslavia. During migration and winter most African countries – notably South Africa where large numbers winter – are visited by the Lesser Kestrel, and parts of the action plan will also need implementation in the Afrotropics.

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SUMMARY

The Lesser Kestrel *Falco naumanni* is a globally threatened species classified as Vulnerable by Collar *et al.* (1994). It has shown major population declines in large parts of its western Palearctic breeding range and has disappeared from several countries where it bred until recently. The western Palearctic population (Europe and North Africa) was estimated to be 10,000–17,000 pairs in 1994 (Biber 1994).

In many countries data on Lesser Kestrel breeding populations are still deficient. Our knowledge of the species' ecology also shows some gaps (e.g. maximum distances of foraging grounds from breeding colonies). In particular a comprehensive understanding of the migration routes of different breeding populations and their wintering grounds is still lacking. Knowledge of the species' migration and winter ecology and of possible threats in Africa is incomplete.

Threats and limiting factors

- * **Habitat loss in breeding areas - critical**
- * **Reduction in the availability of prey due to pesticide use - critical**
- * **Habitat loss in winter quarters and stopover sites - unknown**
- * **Loss of nest-sites - low/medium**
- * **Interspecific competition - low/medium**
- * **Pesticide toxicity - low**
- * **Human persecution and disturbance - low**

Conservation priorities

- * **Promote appropriate agricultural policy including low-density grazing, low use of fertilizers and suitable cultivation practices - high/critical**
- * **Promote a zoned forestry policy - high**
- * **Encourage full legal protection for Lesser Kestrel and the designation of protected areas - high**
- * **Promote the production of a national species action plan - high**
- * **Protect colonies from accidental and deliberate disturbance - high**
- * **Development of standard survey methodology and surveys to identify important areas - high**
- * **Research into limiting factors and appropriate habitat management - high**

INTRODUCTION

Since the 1960s populations of Lesser Kestrel *Falco naumanni* throughout the western Palearctic have declined dramatically. This decline may be attributed to a number of factors including restoration and demolition of older buildings (reducing nest-site availability), the urbanisation of formerly open areas (destroying important feeding areas) and intensification of agricultural practices (loss of feeding sites and a reduction in prey availability). These factors have led to similar declines in the populations of a number of insectivorous bird species, such as the Hobby *Falco subbuteo*, Great Bustard *Otis tarda*, Little Owl *Athene noctua*, Roller *Coracias garrulus* and others. Other threats to the Lesser Kestrel include poisoning by pesticides, human persecution and interspecific competition.

The Lesser Kestrel is a globally threatened species listed as Vulnerable by Collar *et al.* (1994). It is included in Annex I of the EU Wild Birds Directive, Appendix II of the Bern Convention, Appendix II of the Bonn Convention, Appendix II of CITES and Annex B of the African Convention on the Conservation of Nature and Natural Resources.

A first action plan for the Lesser Kestrel was compiled in 1990 (Biber 1990) on behalf of the Commission of the European Communities and the International Council for Bird Preservation (now BirdLife International). Three workshops have been held so far to identify priority actions necessary for the conservation of the Lesser Kestrel: Canterbury, U.K., 7 September 1991; Berlin, Germany, 14 May 1992; Palma de Mallorca, Spain, 20 September 1994. They were all attended by people from most of the main range-states. The last of these, which set the basis for this action plan, was attended by 20 people from 10 range-states.

PART 1. BACKGROUND INFORMATION

Distribution

* **Breeding range**

The Lesser Kestrel has a Palearctic breeding distribution, south of 55°N. It breeds from the Iberian peninsula east to Afghanistan, Mongolia and north-east China. In Europe it breeds in Albania, Armenia, Azerbaijan, Bosnia-Herzegovina, Bulgaria, Croatia, France, Georgia, Greece, Italy, Kazakhstan, Moldova, Portugal, Romania, Russia, Slovenia, Spain, Turkey and Ukraine (Biber 1994). In North Africa, it breeds in Algeria, Morocco, Tunisia and occasionally in Egypt. In the Middle East, the breeding range includes Afghanistan, Iran, Iraq, Israel, Jordan and Syria (Evans 1994).

* **Winter range**

The bulk of the western Palearctic population winters in Africa south of the Sahara, excluding the Congo basin and Cameroon (Louette 1981). However, a proportion of adults winters in southern Spain (Negro *et al.* 1991), southern Turkey and north-west Africa (Cade 1982, Bergier 1987). The number of birds wintering in Spain appears to

depend upon the availability of food, which is in turn dependent upon climatic factors (Negro *et al.* 1991).

Information on wintering numbers in West Africa is limited, but it is possible that this region holds lower densities than other African winter quarters (Moreau 1972, Cade 1982). However, J. M. Thiollay (verbally 1992) believes that the species has never been looked for in this region, and that numbers could in fact be higher.

In eastern Africa, Lesser Kestrels winter from Ethiopia (Moreau 1972) and possibly Somalia (Ash and Miskell 1983), south to South Africa, with large numbers occurring in the highlands of western and central Kenya and in the less arid parts of eastern Kenya and northern Tanzania. The main wintering areas lie from Zimbabwe south to Botswana and, especially, South Africa (Cade 1982).

* **Population**

Cade (1982) estimated the world breeding population of the Lesser Kestrel to be 650,000–800,000 pairs. The European population is now estimated at only 15,000–20,000 pairs, and all west Palearctic breeding populations for which data are available have declined during the last thirty years, some dramatically. Population data for Turkey and the former USSR are very sparse.

Table 1. Population status of the Lesser Kestrel *Falco naumanni* in Europe and North Africa. Countries listed are those where breeding has been recorded in recent years (unconfirmed for those countries in brackets). The figure for Turkey covers central Anatolia only. Based on Biber (1994) and on information gathered at the workshop in Palma de Mallorca. Figure for Georgia from Abuladze (1994).

Country	No. of breeding pairs	Year
Albania	100–1,000	1994
Bulgaria	57–100	1994
Croatia	(5–10)	1994
France	31–33	1994
Georgia	700	1994
Greece	2,700–3,240	1994/5
Italy	1,300–1,500	1994
Moldova	7–12	1989
Morocco	1,000–1,000	1990
Portugal	150–150	1994
Romania	120–130	1989
Russia	(70–150)	1994
Slovenia	5–10	1994
Spain	8,000–8,000	1994
Tunisia	100–100	1994
Turkey	1,500–3,500	1994
Ukraine	(200–300)	1994
Total	15,045–19,935	

Life history

* **Breeding**

The Lesser Kestrel normally breeds in colonies in walls or roofs of old houses, stables, barns, castles or churches; also in tree holes, earth cliffs and in rocks, quarries or heaps of stones. Breeding occurs within and outside cities, but often in the vicinity of human settlements (González *et al.* 1990). With the decline of the species, small colonies of fewer than 10 pairs, and single pairs, have become more and more common. There are also mixed colonies, with Jackdaws *Corvus monedula*, and less frequently with Kestrels *F. tinnunculus*. Lesser Kestrels are monogamous, and male and female take an equal share in incubation and feeding the young. Clutch size is 2–8, usually 3–5. Some breeding sites are abandoned by late July, and most by mid–August. Lesser Kestrels are gregarious all year; they migrate and winter in flocks and roost communally in single trees or groups of trees.

* **Feeding**

The main food consists of invertebrates, chiefly large Orthoptera: field-cricket (Gryllidae), grasshoppers (Acrididae), bush-cricket (Tettigoniidae), mole-cricket (Gryllotalpidae) and beetles (Coleoptera). At some locations small lizards may form an important part of the diet (Cheylan 1991, Parr and Naveso 1994), though small mammals and birds are only rarely taken. In winter the Lesser Kestrel relies largely on swarms of locusts, mainly the large gregarious *Shistocerca* and *Locusta* species where available, and flying termites (Isoptera) (Brown and Amadon 1968). During breeding, as well as in winter, the Lesser Kestrel requires high densities of available prey concentrated in small areas.

* **Habitat requirements**

Throughout its range, the Lesser Kestrel occurs in open areas, avoiding closed forest, wetlands and farmland with tall crops. In the western Palearctic it is found in continental and forest steppes and semi-deserts at up to 500 m, primarily within the Mediterranean zone (Cade 1982). In these areas it forages in meadows, pastures, steppe-like habitats, non-intensively cultivated land and occasionally in scrub (garrigue) and open woodland. It prefers warm or hot areas with short vegetation and patches of bare ground where it can easily find its prey.

In southern Spain the Lesser Kestrel forages in areas of non-intensive herbaceous dry cultures, avoiding areas with scrub and trees (Donázar *et al.* 1994). In its North African breeding areas and in its winter quarters it forages in savanna, steppe, thornbush vegetation, and on open grassland or farmland (sorghum, peanut, wheat and bean crops).

Threats and limiting factors

* **Habitat loss in the breeding areas**

Habitat loss through urbanisation and modification of agricultural practices has reduced the availability of food and forced Lesser Kestrels to abandon many traditional colony sites (e.g. González *et al.* 1990, Donázar *et al.* 1993). Pasture grasslands and non-intensively cultivated farmland with fallows are threatened by agricultural policies in

Europe; grassland is being converted into intensively cultivated farmland (e.g. sunflowers in Spain or maize in Bulgaria), while non-intensively farmed areas are losing their uncultivated patches. Irrigation schemes and the disappearance of formerly traditional culture rotation have serious effects on Lesser Kestrel habitat. The abandonment of agricultural land causes habitat loss through the growth of scrub and trees. Afforestation on agricultural land can also lead to loss of habitat.

In the last thirty years, the number of sheep grazing in La Crau (southern France) has halved. As a consequence vegetation grows higher and more densely, with a detrimental effect on Orthoptera populations. Overgrazing is also known to have damaging consequences, notably in Italy, Kazakhstan and in eastern Africa.

In North Africa the drought of the early 1980s caused severe habitat deterioration which had negative effects on the Lesser Kestrel. The building of dams has led to the loss of inundation zones and thus to the destruction of grasslands with the consequent disappearance of food sources.

Importance: critical

* **Habitat loss in the winter quarters and at stopover sites**

The increasing desertification in the Sahel zone since 1968 has caused the loss of large areas of savanna, an important habitat for migrating and wintering Lesser Kestrels. This has been compounded by overgrazing and by increasing human use of the already stressed watertable. Dams and other hydrological works have destroyed large areas of river floodplains (e.g. Senegal and Niger) which are important foraging areas for the Lesser Kestrel as soon as they dry out after the wet season (Ledant *et al.* 1986).

Locusts which form such an important part of the diet in the West African savannas formerly occurred in large swarms, but have disappeared from many areas, partly because of the destruction of grassland as a consequence of drought and overgrazing, and partly due to heavy pesticide application throughout their range.

Importance: unknown

* **Loss of nest-sites**

The most important cause of nest-site loss in man-made structures is the obstruction or destruction of cavities during renovation or demolition. Such action generally results in the colony being deserted or at least a reduction in the number of breeding pairs, both in Europe (Cheylan 1990, González *et al.* 1990, Negro and Hiraldo 1993) and in North Africa. Many old tiled roofs are replaced with flat roofs which no longer provide nest-sites. However, recent work by Forero *et al.* (in prep.) in Andalucía and Aragón (Spain) showed that nest-site cavities were not a scarce resource even in decreasing Lesser Kestrel populations.

Importance: low/medium

* **Pesticides**

The results of a study analysing residues of organochlorines, PCBs and heavy metals in Lesser Kestrel eggs from Spain showed that, although contaminants were detected in all eggs, the levels were generally below those known to have negative effects on reproduction (Negro *et al.* 1993).

An important consequence of pesticide use is the reduction in prey populations (Palma 1985, Negro *et al.* 1993). Decline in invertebrates in Africa has been attributed to large-scale locust control schemes (J. P. Ledant pers. comm.).

Importance: direct influence, low;
influence on prey, critical

* **Interspecific competition**

Jackdaws may contribute to colony desertion through disturbance of nesting birds, egg predation and kleptoparasitism of adults feeding young, these having been noted in both Spanish and French colonies (Cheylan 1990). Competition for nest-sites has been demonstrated between Lesser Kestrel and Jackdaw (Hallmann 1985, Bijlsma *et al.* 1988, Lucchesi 1990). However, in Andalucía and Aragón (Spain), the presence of presumed competitors (Jackdaws and feral pigeons) did not limit nest-site availability, and breeding success was not lower in colonies with competitors than in colonies without (Forero *et al.* in prep.). Predation by rats has been noted in Portugal, and was averted in 1995 by more careful siting of artificial nest sites (A. Araújo, pers. comm. 1995).

Importance: low/medium

* **Human persecution and disturbance**

In the Mediterranean, the main direct destruction of Lesser Kestrels by man is for sport (Greece, Italy, Malta, Morocco, Spain), out of tradition (Malta, Spain) and for sale of live or mounted birds (Malta, former Yugoslavia).

Egg-collecting has been a major problem in Morocco, Portugal, Slovenia and Spain (Andalucía). In Portugal it has been reported that up to 200 eggs have been taken from one colony in a single season (Palma 1985).

In Russia, Ukraine, Kazakhstan and the Caucasian Republics small colonies are sometimes disturbed by shepherds and tourists (V. Galushin, pers. comm. 1995). In several range states, renovation of historic buildings can also be a source of disturbance.

Importance: low

Conservation status and recent conservation measures

* **Albania**

The population of the Lesser Kestrel in Albania is believed to be between 100 and 1000 pairs (Tucker and Heath 1994) but little is known of its present status. Surveys and clarification of its legal status and any threats are needed.

* **Bulgaria**

The Lesser Kestrel is protected under the Hunting Law since 1962 and by the Special Act 342 of 1986 with a fine of US\$460 for killing a bird plus an additional penalty. It is included in the national Red Data Book (1985) as Endangered. About 10% of the breeding population is located in protected areas (Iankov *et al.* 1994). During the period 1992–1994 some new Lesser Kestrel breeding sites have been included in protected areas.

BSPB started a complete survey in 1995. A project to provide artificial nest-boxes has already started in some regions of the Trakia lowlands and the eastern Rhodopi mountains. BSPB has been conducting a study on the autumn migration of birds of prey along the Black Sea coast for the past 18 years.

* **Croatia**

The legal status is unknown at the moment. Two of the IBAs where the Lesser Kestrel occurs are National Parks: Nacionalni Park Kornati (IBA 020) and Nacionalni Park Krka (IBA 021), and two are proposed ornithological reserves: Klisura reke Babune i Topolke i Crn Kamen (IBA 050) and Demir kapija (IBA 053) (Grimmett and Jones 1989).

* **France**

The only breeding area is in the plain of La Crau, east of the Rhône delta. The Lesser Kestrel has been legally protected in France since 1972. It was included in the Red Data Book in 1983 as a species having reached a critical population level.

The population of La Crau is in a Specially Protected Area (11,500 ha), and steps have been undertaken to declare it a Natural Reserve. Agri-environment measures have been taken and 250 ha have been bought by NGOs, the Conservatoire du Littoral and Conseil Général des Bouches du Rhône. The site is being wardened. Artificial nests have been provided in several places, with holes small enough to prevent Jackdaws from entering. The population has been monitored and studied since 1984, and a ringing programme was started in 1994. Relations with landowners are good.

* **Greece**

Breeding occurs mainly in Thessaly, the biggest colony being of 200 pairs. The species is legally protected and included in the Red Data Book (1990) as Vulnerable. It is present in Kalamas Gorge (Thesprotia, IBA 050) and Mount Dirfis and the peaks of Xirovouni, Skotini, Mavrovouni, Alokteri, Ortari and the vicinity of Kimi (Evia, IBA 071) (Grimmett and Jones 1989). A full survey involving schoolchildren was carried out in 1994, as well as a study on sexual dimorphism, including ringing. A complete survey of Thessaly in 1995 identified 104 colonies containing 2679 pairs (Hallmann 1996)

* **Israel**

All birds of prey have been protected since 1955 by the Wild Animal Protection Law. The Lesser Kestrel breeds mainly in the Jordan valley. Prior to 1950 it was the most common breeding bird of prey in Israel, but from the 1960s became extremely rare though remaining a common migrant.

* **Italy**

The Lesser Kestrel has been protected under the hunting law since 1976. Three separate populations can be identified: Sicily (320 pairs, decreasing), Sardinia (c.100 pairs, decreasing) and Apulia-Basilicata (500–1,000 pairs, increasing/fluctuating). LIPU carried out a census in Sicily, Apulia and Basilicata in 1994. With EU financial support, a census in Sardinia is planned. Artificial nests were provided in Matera (Basilicata) but these have not been successful. New designs are being tested by LIPU in Apulia and Basilicata. A public awareness campaign has been launched in this area involving local communities. A national action plan has been drafted by LIPU and is being considered for adoption by local authorities in Apulia and Basilicata.

* **Morocco**

The Lesser Kestrel has been legally protected since 1980. There has been a strong decline since the beginning of the century, and this continues.

* **Portugal**

The Lesser Kestrel is legally protected and classified as vulnerable in the Portuguese Red Data Book (1990). Mértola and Castro Verde are the most important areas for the species, with up to 100 pairs. The population is concentrated in two major colonies, Mértola with 60 pairs and Belver with 17 pairs. Productivity in Mértola is causing concern and research into limiting factors at the site is underway. Some juveniles have been colour ringed. The Belver colony is on land recently purchased by LPN with assistance from the EU.

* **Romania**

The Lesser Kestrel is legally protected under Law 26/1976, covering all birds of prey. It breeds in one IBA, Padurea Niculitel-Babadag (Tulcea, IBA 002).

* **Russia**

The species is proposed for listing as Endangered in the new edition of the Red Data Book. The species is considered a high priority therefore an action plan and national programme have already been prepared. Restoration of previous nesting areas has been carried out and further work is proposed in 1996. A group of ornithologists are developing a captive breeding plan.

* **Spain**

The Lesser Kestrel is considered as 'of special interest' in the national legislation (Royal Decree 439/90) and it is listed as Vulnerable in the Red Data Book (Blanco and González 1992).

In 1988–1989 a national survey was carried out under the coordination of ICONA. A comprehensive research programme carried out by the Estación Biológica de Doñana has been going on for several years in Andalucía and Aragón, including population surveys (in Andalucía), limiting factors, foraging habitat selection, nest-site selection, reproductive strategies, breeding success, patterns of winter distribution, organochlorine and heavy metal contamination, etc. These studies have involved colour-ringing and radio-tracking of numerous individuals.

Zonal Programmes under EU Regulation 2078/92 have been approved for steppe areas containing Lesser Kestrels in Castilla y León, Cataluña, Castilla-La Mancha, Madrid and Extremadura. A land management programme is in operation in Cataluña including the payment of subsidies for agricultural extensification and colony restoration.

In Barcelona and Lérida more than 100 young Lesser Kestrels are bred in captivity every year and a reintroduction project has been underway since 1989. Two private initiatives, FICAS in Madrid and CERCA in Extremadura, are also involved in captive breeding and reintroduction and have carried out environmental education, particularly CERCA.

* **Tunisia**

The Lesser Kestrel is protected by the Tunisian Hunting Law. The population is divided between two main colonies with 30 and 40 pairs and smaller colonies of 2–5 pairs.

* **Turkey**

All raptors are legally protected. The Lesser Kestrel is not included in the Draft Red List of Threatened Animals prepared by the Ministry of Environment. Only a very small portion of the Lesser Kestrel colonies in Turkey benefit from protected area status.

In 1992 some public awareness activities were carried out by DHKD near a colony in Eregli-Konya, with good coverage in press and television. In 1993 a baseline survey was carried out in central Turkey suggesting a population decline probably due to increased pesticide use (Parr *et al.* 1995). As a follow-up of this study, a survey on food and habitat requirements at randomly selected sites was carried out in 1994 (Parr and Naveso 1994).

PART 2. AIMS AND OBJECTIVES

AIMS

1. In the short term, to maintain all known Lesser Kestrel breeding colonies at their 1994 levels or larger.
2. In the medium to long term, to increase the population size of the Lesser Kestrel to a level at which it no longer qualifies as a globally threatened species.

OBJECTIVES

1. POLICY AND LEGISLATIVE

1.1. Agricultural policy

The threats of habitat loss and food depletion in the breeding areas as well as during migration and in the winter quarters are similar for a number of threatened species. Conservation measures for the Lesser Kestrel are likely to have positive effect also for the globally-threatened Great Bustard *Otis tarda* as well as other declining species such as the White Stork *Ciconia ciconia*, Little Bustard *Tetrax tetrax*, Gull-billed Tern *Gelochelidon nilotica*, Pin-tailed Sandgrouse *Pterocles alchata*, Roller *Coracias garrulus*, shrikes *Lanius* and other species hunting in the

open landscape for large invertebrate prey. Thus steppe and dry grasslands are included in the Agricultural Conservation Strategy currently being prepared by BirdLife International (Tucker *et al.* in press.).

1.1.1. Promote agricultural policies which maintain and enhance Lesser Kestrel habitat

Lesser Kestrel conservation is largely dependent on practices which are heavily influenced by international or national agricultural policy. In the EU, the Agri-environment Regulation 2078/92 should be promoted and EU range-states should be encouraged to prepare Zonal Programmes under this regulation which will benefit the Lesser Kestrel. The European Commission could assist by preparing guidelines for the implementation of this regulation, which should be applicable to farms bigger than 50 ha.

Funding for agri-environment measures is generally not available for countries in Central and Eastern Europe. EU and other funds, incentives and subsidies destined for support in these countries should promote specific measures to maintain or restore Lesser Kestrel habitat through mechanisms such as environmentally sensitive areas and set-aside of agricultural land.

Coordination between agriculture and nature conservation administrations must be improved. Subsidies for extensive agriculture often clash with much bigger intensification programmes involving irrigation or monocultures. In Thessaly, Greece, a sudden change in cotton subsidies stimulated very sudden, widespread changes in land-use in 1995 (Hallmann 1996) with probable negative consequences for Lesser Kestrels.

Priority: high
Time-scale: medium

1.1.1.1. Grazing levels on pasture land

Low-density grazing should be promoted in Lesser Kestrel areas and overgrazing must be avoided. Pastures should be maintained with reduced use of fertilizers and should be grazed non-intensively to allow for a high diversity of vegetation and consequently of prey insects. In areas with fast and abundant vegetation growth the grazing pressure should be strong enough to keep down vegetation so that invertebrate prey remain accessible. In steppe areas the recommended stocking density is 0.1 to 0.3 ULM which corresponds to 1.5 livestock units per hectare.

Priority: high
Time-scale: ongoing

1.1.1.2. Recommended cultivation practices

Uncultivated plots, road verges and edges between fields with short grass or steppe-like structure should be maintained within 4 km of colonies. In cultivated farmland, a fringe of at least 1–2 m of uncultivated land with short grass and hedges should be provided and maintained between cereal fields and along roads and tracks to allow good populations of insects to develop. Strips of short grass render prey easily accessible to Lesser Kestrels. Those agricultural practices which lead to high densities of prey, especially Orthoptera, should be promoted. Cultures of herbaceous Leguminosae should be maintained where they already exist. Fencing of fields should be avoided.

Priority: critical
Time-scale: ongoing

1.1.1.3. Pesticides

It is recommended that the use of agrochemicals in feeding habitats of the Lesser Kestrel should be strictly regulated and monitored.

Priority: medium

Time-scale: ongoing

1.2. Promote forestry practices which do not conflict with Lesser Kestrel conservation

In the EU, afforestation under Regulation 2080/92 should be zoned so that sites important for the Lesser Kestrel are avoided. It is recommended that afforestation (and deforestation) programmes in Lesser Kestrel areas are subject of an environmental impact assessment. Better coordination is necessary between forestry and agriculture administrations responsible for the implementation of regulations 2080 and 2078.

Cutting of trees where Lesser Kestrels roost (before breeding, on migration or in the winter quarters) must be avoided.

Priority: high

Time-scale: short

1.3. Promote the full legal protection of the species and important sites

Ensure that the Lesser Kestrel is listed as a strictly protected species according to international agreements and national laws, and that legal instruments for the protection of the species and its habitats are being implemented.

Priority: high

Time-scale: medium

1.4. All range-states should be encouraged to produce a national action plan for the Lesser Kestrel

Using this international action plan as a basis, each range-state should be encouraged to prepare a national plan. The national action plan should set national targets and identify organisations which will be responsible for implementing different actions.

Priority: high

Time-scale: short

2. SPECIES AND HABITAT PROTECTION

2.1. Promote the designation of protected areas for the Lesser Kestrel

Agricultural surpluses in many parts of Europe offer a good opportunity to create new protected areas or to extend and improve existing ones. There is a need for more protected areas to be established in steppe and dry grassland habitats.

In the EU, the designation of key breeding and foraging habitats of the Lesser Kestrel as SPAs should be encouraged and the enforcement of protective measures in existing SPAs should be promoted.

Acquisition or lease of land, or agreements with landowners, for conservation management by NGOs should be promoted.

Priority: high

Time-scale: medium

2.2. Promote appropriate management at breeding colonies

2.2.1. Cooperate with departments responsible for historic buildings

Conservation agencies and NGOs should pursue cooperation agreements with those departments dealing with the restoration of old or historic buildings in order to preserve Lesser Kestrel colonies. Such agreements already exist in some regions of Spain. Restoration work on buildings with nesting Lesser Kestrels should not take place during the breeding season. The competent authorities should consider technical and financial assistance to the owners of buildings in need of restoration with Lesser Kestrel colonies.

Priority: high
Time-scale: ongoing

2.2.2. Artificial nests

Artificial nests should be provided only where the feeding conditions are good and if there are no natural holes in the area. The design of the boxes and the materials used should be carefully chosen to avoid overheating, predation and interspecific competition. Nest-boxes should be installed outside the breeding season.

Priority: medium
Time-scale: ongoing

2.2.3. Protection of colonies in the countryside

Accidental and deliberate disturbance at colonies outside built-up areas should be prevented through provision of information and, in special cases, wardening.

Priority: high
Time-scale: ongoing

3. MONITORING AND RESEARCH

3.1. Surveys

Surveys of breeding, migration and wintering areas should be undertaken to get a better picture of population status and to identify important sites. In large countries the only possible method is to carry out surveys in pilot areas and then extrapolate to the remainder of the suitable habitat. A standard methodology for Lesser Kestrel surveys should be developed and published.

Priority: Europe - high
Africa - medium
Time-scale: short/medium

3.2. Research into limiting factors

More research is necessary on the factors limiting Lesser Kestrel populations, especially habitat requirements. This research is to take place in areas which are currently populated by Lesser Kestrels as well as in areas which have been abandoned. It is also important to carry out research and monitoring on habitat management to ensure the appropriate practices are being promoted.

Priority: high
Time-scale: short/ongoing

3.3. Reintroduction and recolonisation

Reintroduction attempts should only be carried out where conditions are suitable in accordance with IUCN criteria (Kleiman *et al.* 1994). These experiments provide a unique opportunity to study the process of recolonisation of empty areas and the establishment of new populations.

Priority: low

Time-scale: long

3.4. Pesticides

Pesticide and heavy metal residues in Lesser Kestrel eggs and tissue should be carried out routinely. The impact of pesticides on prey should be studied further.

Priority: medium

Time-scale: ongoing

3.5. Information exchange

Cooperation and information exchange between research institutions working on the Lesser Kestrel should be promoted, as well as exchange of workers. Training on research techniques and methodologies should be provided by those institutions which are carrying out intensive research programmes with the Lesser Kestrel.

Priority: medium

Time-scale: short/ongoing

4. PUBLIC AWARENESS

4.1. Raise awareness of Lesser Kestrel feeding habitats

Public awareness campaigns targeted at local authorities, landowners, farmers, shepherds and hunters concerning the protection of feeding habitats should be carried out. The Lesser Kestrel should be used as a flagship species for the conservation of steppes, grasslands and traditional agricultural systems.

Priority: medium

Time-scale: short

4.2. Raise awareness of the importance of breeding colonies

Information and awareness campaigns should be carried out directed at householders, archaeological and historical building authorities, architects, construction companies, etc., responsible for the maintenance or restoration of buildings where the Lesser Kestrel breeds. A leaflet on restoration practices which favour the Lesser Kestrel and other birds should be produced.

Priority: medium

Time-scale: short

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ANNEX 1. RECOMMENDED CONSERVATION ACTIONS BY COUNTRY

*** Albania**

- 1.3. Promote legal protection.
- 3.1. Carry out surveys in order to establish the status of the Lesser Kestrel and identify key areas.

*** Algeria**

- 3.1. Carry out surveys in order to establish the status of the Lesser Kestrel and identify key areas.

*** Armenia, Azerbaijan, Georgia, Kazakhstan and Uzbekistan**

- 1.1.1. Encourage land management programmes to prevent overgrazing.
- 1.3. Promote the legal protection of the Lesser Kestrel.
- 3.1. Carry out surveys in order to establish the status of the Lesser Kestrel and identify key areas.

*** Bulgaria**

- 1.1.1.3. Prevent the use of chemicals toxic to the Lesser Kestrel or its prey in the breeding and foraging areas.
- 2.1. Seek legal protection for breeding sites.
- 2.2.1. Prevent the destruction of nest-sites during building restoration.
- 2.2.2. Provide artificial nest-boxes in suitable areas of the Trakia lowlands and the eastern Rhodopi mountains.
- 2.2.3. Prevent disturbance to colonies outside built-up areas.
- 2.2.3. Monitor quarrying activities at breeding sites.
- 3.1. Complete a national survey (starting in 1995).
- 3.1. Continue the current study of autumn migration along the Black Sea coast.
- 4.1./4.2. Undertake national public awareness campaigns about the Lesser Kestrel.

* **Croatia**

- 1.3. Promote legal protection of the Lesser Kestrel.
- 2.1. Promote the establishment of a network of protected areas.
- 3.1. Carry out surveys in order to establish the status of the Lesser Kestrel and identify key areas.

* **Egypt**

1.1.1./1.1.1.1./

1.1.1.2. Promote extensive agriculture (pastures, fallow land and uncultivated margins of fields in areas of intensive agriculture).

- 1.3. Promote legal protection of the Lesser Kestrel.

* **France**

- 2.1. Encourage the designation of the breeding area in La Crau as a protected area.
- 2.2./
- 2.2.2. Promote the preparation and implementation of a management plan for La Crau, emphasising habitat measures (especially grazing) and provision of nest-sites.
- 3.1./3.2. Continue current studies (ecological requirements) and monitoring of the species.
- 3.3. Undertake a feasibility study for reintroduction in Provence and Languedoc-Roussillon.
- 4.1./4.2. Undertake public awareness campaigns on the Lesser Kestrel with landowners, farmers, shepherds, hunters and tourists.

* **Greece**

- 1.1./1.3. Promote better coordination among ministerial departments responsible for nature conservation.
- 2.1. Encourage the designation as protected areas of the key sites for breeding and foraging.
- 2.2.1. Prevent the destruction of nest-sites during restoration work on buildings.
- 2.2.2. Provide new nest-sites for breeding (holes in roofs, nest-boxes, etc.).
- 3.1. Complete a national survey of the Lesser Kestrel.
- 3.2. Analyse conservation status and limiting factors in colonies and foraging habitat.

4.1./4.2. Undertake public awareness campaigns with local authorities, house- and landowners, farmers, shepherds, hunters and tourists.

* **Israel**

1.1.1.3. Encourage control and reduction in the use of pesticides.

3.1. Carry out a national survey.

3.2. Investigate the reasons for the decline of the species and in particular analyse current conservation problems in colonies and foraging habitat.

* **Italy**

1.1.1./1.3./

2.1. Prevent habitat loss at important feeding areas through ploughing up, monocultures, construction, afforestation or other developments.

2.2.3. Prevent human disturbance at breeding sites (rocky slopes) in Sardinia and Sicily.

3.1. Undertake a national survey to assess population status and distribution and to locate important breeding and feeding areas.

3.1. Initiate a long-term monitoring scheme including ringing.

4.1. Use the Lesser Kestrel as a flagship species for the conservation of steppes and grasslands in Italy.

4.2. Undertake a public awareness campaign directed at authorities responsible for the historic heritage (especially in Puglia-Basilicata), architects, construction companies and householders.

* **Libya**

1.3. Promote legal protection of the species.

3.1. Carry out surveys in order to establish the status of the Lesser Kestrel and identify key areas.

* **Moldova**

1.3. Promote legal protection.

3.1. Carry out surveys in order to establish the status of the Lesser Kestrel and identify key areas.

* **Morocco**

- 2.2.1. Prevent the destruction of old walls and buildings in old towns.
- 2.2.3. Prevent human persecution and disturbance at colonies.
- 3.1. Carry out a national survey and identify key areas.
- 3.1. Study migration through Morocco.
- 3.2./2.2.2. Study and prevent interspecific competition for nest-sites with Jackdaws.
- 4.1./4.2. Undertake public awareness campaigns directed at the local population, especially schoolchildren.

* **Portugal**

- 1.1.1. Promote the application of EU Regulation 2078/92 to farms larger than 50 ha to allow them to receive subsidies for extensive agriculture.
- 1.1.1. Encourage agriculture and trade policies which divert subsidies for intensive monocultures (sunflower, maize, etc.) away from Lesser Kestrel areas.
- 1.2. Encourage zoned afforestation under EU Regulation 2080/92 avoiding Lesser Kestrel areas.
- 2.1. Finalise the designation of the Convento de S. Francisco and surrounding area a Protected Area of Legal Private Status.
- 2.2.2. Continue the artificial nest-site experimentation in Mértola and Belver.
- 3.1. Undertake a population survey in the Alentejo.
- 3.1. Start a ringing programme in coordination with other countries.
- 3.2. Investigate limiting factors, notably feeding habitat, as a basis for appropriate land management schemes.

* **Romania**

- 1.3. Promote legal protection of the Lesser Kestrel.
- 3.1. Carry out a national survey and identify key areas.

* **Russia**

- 1.3. Promote the inclusion of the Lesser Kestrel in the new edition of the Red Data Book.
- 3.1. Carry out a national survey and identify key areas particularly steppe and river bank IBAs with Lesser Kestrel colonies.
- 3.2. Study limiting factors and ecological constraints.
- 3.3. Develop a captive breeding and release programme if the IUCN criteria for reintroductions are met.
- 4.1./4.2. Undertake a public awareness campaign.

* **Slovenia**

- 1.3. Promote legal protection of the species.
- 2.1. Encourage the establishment of a network of nature reserves.
- 3.1. Carry out a national survey and identify key areas.

* **Spain**

- 1.1.1. Promote the preparation and submission to the EU of regional Zonal Programmes under regulation 2078/92 and include the Lesser Kestrel in these programmes.
- 1.1.1./
- 1.1.1.2. Use appropriate management prescriptions and incentive schemes to promote dry cultures in one year fallow rotation system within c.3 km of colonies containing more than 30 pairs.
- 1.1.1./
- 1.2. Use appropriate management prescriptions and incentive schemes to prevent the abandonment of agriculture, natural succession and afforestation programmes in Lesser Kestrel areas.
- 2.2.2. Provide artificial nest boxes where necessary.
- 3.1. Design and implement a monitoring programme at national level.

- 3.1. Prepare guidelines for Lesser Kestrel surveys.
- 3.2. Continue current studies on breeding ecology, feeding ecology, population ecology and limiting factors.
- 3.3. Undertake reintroduction in areas suitable for the Lesser Kestrel outside urban areas if the IUCN criteria for reintroductions are met. Such reintroductions should be followed by research on recolonisation and the settlement of new colonies.
- 4.2. Undertake public awareness campaigns directed at town councils, householders and departments responsible for the historic heritage, in order to prevent damage to Lesser Kestrel nesting sites during restoration work.

* **Tunisia**

- 1.3./2.1.
- 2.2.2. Promote adequate protection of colonies.
- 3.1. Complete a national survey and collect data from foreign ornithologists visiting Tunisia in order to establish the status of the Lesser Kestrel and identify key areas.
- 3.4./1.1.1.3 Monitor and encourage reduced pesticide use in Lesser Kestrel areas.
- 4.1./4.2./
- 2.2.1. Undertake a public awareness campaign and prevent disturbance of colonies at archaeological sites.

* **Turkey**

- 1.1.1./2.2. Identify IBAs in central Turkey which hold important Lesser Kestrel populations and establish pilot conservation areas within the most important IBAs.
- 3.1. Carry out a large-scale survey of the Turkish population.
- 3.1. Undertake an inventory of semi-natural lowland habitats, marshes, pastures and dry grasslands with the help of satellite photography to help identify previously unknown breeding/foraging areas.
- 3.2./2.2. Assess the impact of development schemes on the Lesser Kestrel and its habitat.
- 4.1./4.2. Undertake public awareness campaigns to secure the availability of nest-sites and to promote the ecological value of steppes and grasslands.

* **Ukraine**

- 1.3. Promote the legal protection of the species.
- 3.1. Carry out a national survey and identify key areas.