Bearded Vulture *Gypaetus barbatus*

Background

The Bearded Vulture Action Plan was developed in 1997, adopted in 1999 (Heredia & Heredia, 1999) by the Ornis Committee and endorsed by the Bern Convention. This is the first review of the implementation of the action plan.

The action plan is intended for implementation in: Austria, France, Germany, Greece, Italy and Spain, but also contains information for Andorra, Switzerland, Turkey and Morocco. The geographical scope of this review covers Austria, France, Germany, Greece, Italy, Spain, Switzerland and Turkey**.** No status information has been provided by Spain.

General overview

Progress in the overall implementation of the action plan is good but further work is still needed (overall IS=2.6). No specific actions for the Bearded Vulture have been taken by Turkey (holding probably the majority of the European population) since the implementation of the action plan (National Implementation Score: 1.16). As such, the implementation and effectiveness in Europe cannot be evaluated, and so this review focuses more on the implementation within the EU range states. The SAP has been most successfully implemented in the Alps (Austria, France, Italy and Switzerland).

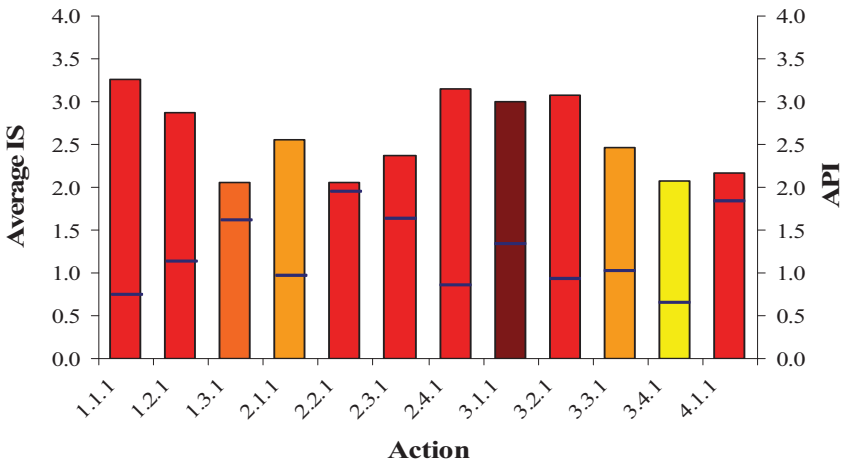

Figure xiv Average implementation score (IS) and Action Priority Index (API) for each Action listed in the Bearded Vulture species action plan. Colours represent Priority Score.

Status review

The Bearded Vulture was, and partly still is, widely distributed in Eurasia and Africa with a small proportion of its global range in Europe (Tucker and Heath 1994). Within Europe, the Bearded Vulture breeds in Armenia, Austria, Azerbaijan, France, Georgia, Greece (Crete), Italy, Macedonia (FYRO), Russia, Spain, Switzerland and Turkey - which hopefully still holds the majority of the European breeding population (100-500 pairs[119]).

[119] Estimate calculated using data obtained from this review

Despite the increases in the Alps and the Pyrenees, overall the population trend is mostly negative or remains unknown, as there has been little effort in Turkey to assess the population size and trend of the species.
The current European population estimate is 303-706 pairs[120] (excluding the very small populations in Andorra, and Azerbaijan). The overall population trend for the species in Europe is unknown.

Table 34 Population estimate and trend by country

Country	Population at the time of the 1999 SAP (pairs)	Year	Population in 2004 (pairs)	Year	Current population (pairs)	Year	Breeding trend	Reference
Austria	0	1999	2	2004	1	2008	Slowly Increasing	[121]
France	25	1996-1997	40	2003	45	2008	Strong Increase	[122]
Georgia	-	-	-	-	19-21	2005	-	[123]
Germany	-	-	-	-	0	2010	Extinct	[124]
Greece	12	1996	4	2002	6-7	1996-2010	20-25% Increasing	[125]
Italy	2	1999	6	2004	5	2010	Increasing	[126]
Russia	-	-	-	-	45	2009	-	[127]
Spain	56	1996	81	2001	81	2003	-	[128]
Switzerland	-	-	1	2004	4	2010	Increasing	[129]
Turkey	100	1996	400-700	2001	100-500	1996, 2006	Unknown	[130]

Objective(s)

1) In the short term, to maintain and enhance the existing Bearded Vulture populations in Europe.

2) In the long term, to encourage the recolonisation of the former range.

Evaluation

Although the populations in the Alps are increasing, without current population trend data from Turkey (the European population stronghold), it is not possible to say whether the short term target of maintaining or enhancing the population in Europe has been met.

[120] Using data obtained from this review and from additional sources in the case of France, Spain, Georgia and Russia.
[121] Data from R. Zink, pers comm.
[122] Population data for France was not obtained through this review but from de Seynes et al. 2009. Trend data from R. Zink, pers comm.
[123] Gavashelishvili, 2005.
[124] Henning Werth and Andreas von Lindeiner, Landesbund für Vogelschutz e.V. (LBV), NABU-Partner Bavaria
[125] Xirouchakis & Tsiakiris, 2009.
[126] Enrico Bassi for Stelvio National Park 3 breeding pairs Christian Chioso for Regione Autonoma Valle d-Aosta 1 breeding pair
[127] Based on repeated surveys from 1997-98 to 2008, Karyakin et al., 2009.
[128] Population data for Spain was not obtained through this review but from Martí and del Moral 2003
[129] Database of the International Bearded Vulture Monitoring. Note that this is the number of pairs that actually did start to breed in 2010.
[130] Kence & Bilgin, 1996; Guven et al., 2006.

The populations of Crete, mainland Greece, FYR Macedonia, and Corsica have decreased or gone extinct and natural recolonisation of former range has not taken place, meaning that the long-term target has not been met..

Conservation and Legal Status

The Global IUCN Red List Category of the Bearded Vulture is Least Concern as the species has an extremely large range covered by two subspecies. The species is listed as Vulnerable (SPEC 3) under criteria C1;C2a(i) in the European IUCN Red List (BirdLife International, 2004), and is listed in Annex I of the EU Council Directive on the Conservation of Wild Birds (79/409/EEC, 'Birds Directive'), in Appendix III of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), in Appendix II of the CMS and in Appendix II of CITES. The species is legally protected in all European range states covered by the plan.
In Andalusia, Spain, the species receives the highest degree of protection at regional level ("En peligro de extinción"/ "Endangered") by law 8/2003 and under the Deliberazione Giunta Regionale N. 7/4345 in Italy, the Bearded Vulture is considered as one of the most important species which is granted full protection and specific actions for its conservation.

Overview of past and current threats

In central Europe, there is high likelihood that the species will suffer from new human-caused threats such as wind turbines and poisoned baits aimed at reducing numbers of re-established wolves (e.g. in the Alps).
A recent study showed for the Alps that a decrease of the actual annual survival from 0.96 to 0.92 would endanger the success of the reintroduction project. This implies that only a few (presently less than 5) fatal collisions with wind farms per year would turn the slowly growing alpine Bearded Vulture population into a declining one and may even bring it to the verge of extinction (Schaub et al. 2009). The food searching strategy of this scavenger (distant and long lasting flights) and its low reproduction rate make the Bearded Vulture presumably more susceptible to collisions with wind farms than other species. The severe concern on the vulnerability of Bearded Vultures is supported by recent investigations on the endangered Egyptian Vulture in Spain (Carrete et al. 2009), demonstrating that wind farms significantly affect the extinction risk of this species.

Table 35 Table of importance of Bearded Vulture threats by country[131]. The current level of importance[132] of threats listed in 1999 SAP and newly identified threats are listed for each country. The original importance level of the threats as listed in the 1999 SAP are included in brackets

	Threats identified in 1999							Threats identified in 2010				
	Poisoning (potentially critical)	Decline in extensive livestock farming (high)	Habitat loss and deterioration (high)	Overhead cables (high)	Food shortage (locally high)	Disturbance (potentially high)	Illegal shooting (locally high)	Lead poisoning	Wind farms	Land use changes	Cattle medicines (antibiotics, etc.) ingestion	Rising dependance on local food by provision humans
Austria	L	L	L	M	L	M	M	H/M	M/L	L	U	L
France	M/L	L	L	M	L	L	L	H/M	M/L	L	U	L
Germany	L	H	M	L	L	H	L	H/M	M/L	L	U	L
Greece	H		C	M	M	M	L		C	C		L
Italy	M/L	M/L	L	M	L	M/L	L	H/M	M/L	L	U	
Spain - Andalusia	C	H	H	H	L	M	H	C			U	
Switzerland	L	L	L	M	L	M	L	H/M	M/L	L	U	L
Turkey	H	H	C	H	H	H	H					

Assessment of the implementation

National and regional species action plans

A national species Recovery Plan is in place in Spain (Decree 45/2003).

National and international working groups coordinate the activities in the Alps and in the Pyrenees.

Species conservation

Poisoning, shooting and disturbance

Shooting has been a major historical threat and has been practised up until now e.g. in Crete, Austria, Italy, Switzerland and France. Nevertheless the limitation of disturbance at the nest and shooting has received a much better level of implementation in western and central Europe. Since shooting is a threat to the species in Spain (Heredia 2004), non-hunting areas have been declared from 1 December until the end of hunting season. Non-hunted areas have turned out to be the favoured breeding sites also in the Alps. In Spain the breeding grounds are regulated and monitored (for hunting, sports, forestry, etc.) between 1 December and 15 May. In the Italian regional Deliberazione Giunta Regionale N. 8/6648, the Lombardia Administration lists a set of activities that should be avoided for the conservation of the Bearded Vulture (including free climbing, fly-overs by airplanes, hand- and paragliding, etc.). In the proximity of the breeding cliffs it is

[131] Information on threats facing the Lammergeier for the Alpine Countrys was provided by R.Zink (International Bearded vulture Monitoring). No response on threats facing the Lammergeier was received from Spain (nationally).

[132] L= Low; M/L= Medium/ Low; M = Medium; H/M = High/ Medium; H = High; C = Critical; U = Unknown.

forbidden to build new powerlines and it is requirement to provide mitigation actions on existing powerlines. Breeding sites are thoroughly monitored within the International Bearded Vulture Monitoring carried out in the entire Alpine range. In Greece (Crete), regular patrolling and warding of the species nesting areas is carried out during the most critical stages of its breeding cycle
The Andalusian population of Bearded Vultures only includes individuals younger than 4 years old, so protection of breeding areas is not needed but foreseen in the near future.
Enforcing avoidance of disturbance and wardening of unsuccessful breeding pairs in Switzerland has been implemented by the Foundation for the Bearded Vultures in collaboration with the regional authorities.

Availability of food

In general the populations should be self-sustaining in terms of food resources in the long term. Wild ungulates and/or domestic livestock serve as a main food source. Promoting the provision of food sources (primarily bones) at feeding sites has helped to push forward the positive population trend in the French and Spanish Pyrenees. In some distribution ranges e.g. on the island of Corse (France), food shortage is know to be the main factor inhibiting population growth. In areas where the species has been reintroduced (e.g. the Alps (Zink, 2005c) and Andalusia) natural food sources (including domestic livestock) are expected to be sufficient to maintain self-sustaining populations. Traditional dumping sites are illegal in Andalusia (due to EU regulations) and were closed years ago. A Governmental Network of Feeding Sites for Scavenger Birds (RACAC- Red Andaluza de Comederos para Aves Carroñeras) has been developed but these sites are rarely used by the Bearded Vulture (less than 1% of the localizations in these feeding sites). New regional regulation is currently being developed to implement the more open EU regulations regarding carcass disposal, but no improvement has been achieved yet.
A viability study is needed for the Pyrenees. Artificial feeding might heavily influence the viability of this subpopulation.
Eight feeding stations are functioning on the island of Crete, Greece, which are run by the NHMC. However artificial feeding has not been an obligation of competent authorities (e.g. Dept of Environment, Region of Crete or Forestry Services). The NHMC has promoted the regular provision of carrion to these sites through the collaboration with stockbreeder associations or local farmers.
No actions have been taken to ensure provision of Bearded Vulture food sources in Switzerland since 1999, but illegal feeding by private persons is occurring.

Site conservation

There are 40 IBAs designated for the species in Europe, of which 33 are in the EU (the remaining 7 are in Turkey). There are 54 SPAs in the EU designated for the species. 10-50% of the most important European population (Turkey) is included in IBAs. In the region of Aragon (Spain) 90% of the Bearded Vulture breeding areas is included in SPAs and 100% of the population in Andalusia is included in SPAs.
In addition, the majority of the Italian breeding range is included in the network of the protected areas.

Several Bearded Vulture territories have also been declared as hunting reserves in Greece. As the total population of the species is located in Crete, statutory framework was prioritized for Bearded Vulture territories on the island. A LIFE project has been funded by EU for the management of the species and its habitats on Crete, including work on elaborating Special Environmental Studies in three SPA sites and Special Management Plans in three more Natura 2000 sites targeting the species.
In Andalusia, a common "Recovery and Management Action Plan for Scavenger Birds" at regional level has been drawn by the Andalusian Environmental Government, and it is expected to be passed in the following months.
Switzerland is not a member of the EU and so there are no SPAs, nor any protected areas formally included in the Natura 2000 network.

Habitat conservation

The distribution/density of Ibex (*Capra ibex*) and a combination of spacious pastures in close proximity to steep cliffs (preferably limestone) have been found to be key factors when modelling Bearded Vulture habitat in the Alps (Hirzel *et al.*, 2004, Zink, 2006). Conserving the species' habitat and ensuring the implementation of effective habitat protection policy has received a good level of implementation, with the exception of Turkey, where work has been limited.

In the year 2009 the European bearded vulture experts have agreed upon a resolution to mitigate the risks caused by wind turbines[133].
The Andalusian Environmental Government environmentally assesses and reports every project inside the Natural Protected Areas (including Natura 2000 Network). Additionally, the Andalusian Gypaetus Foundation assesses projects that potentially affect the Bearded Vulture in the foreseen reintroduction areas. These reports are issued to the environmental authorities in order to have Bearded Vulture-specific assessment to evaluate the projects. A "Manual for the Preventive conservation of the Bearded Vulture and its Habitat" in Spain have been published by the Gypaetus Foundation.

There have been no specific cases of damaging developments in Bearded Vulture areas in Italy, but mitigative or conservative measures have been implemented in the breeding areas.

Other specific conservation measures

The overall strategy of the Vulture Conservation Foundation is to preserve the remaining fragile populations and to boost connectivity by reintroduction (Zink, 2000, Zink, 2002, Zink, 2004, Zink, 2005b, Zink, 2009) among the remaining rather isolated population nuclei in central and Western Europe. Since 2010 new release sites have been chosen to bridge between the Alpine and Pyrenean populations. In the long term, the former distribution range in the Balkans could be re-established (cf. Balkan Vulture Action Plan - www.balkanvultures.net). The Andalusian Government has promoted a Reintroduction Program[134] that is being implemented by the Gypaetus Foundation. Currently all

[133] For more info see: see: http://www.stelviopark.it/Italiano/Convegno_Gipeto/Resolution_20091217.pdf
[134] For more info see: www.gypaetus.org (in spanish)

individuals released so far in Andalusia, as well as the Breeding Centre, are the result of this program.

Monitoring and Research

There has been significant progress made in monitoring and surveying the population. Monitoring programmes exist in most countries at a national level, in the Alps (Zink *et al.*, 2007) (www.gyp-monitoring .com) and in the Pyrenees also on the international level. The majority of work has focussed on annual monitoring of the breeding populations, defining population data and reproduction criteria (Fasce *et al.*, 2005, Zink, 2005a).

However, a lot of effort has been made to monitoring also individuals especially in the Alps (Zink 95-100) and more recently in Andalusia. In the Alps the monitoring is carried out within the framework of the "International Bearded Vulture Monitoring (IBM)" and is based primarily on the three pylons: common observations, satellite telemetry and genetic re-identification[135].

In addition to monitoring of the breeding populations in the Pyrenees, in Corsica and in Crete, all Bearded Vultures released in Andalusia and in the Alps are constantly monitored, including general public surveys, Satellite-GPS radio-tagging and direct observation on the field. Determining the causes of death are critical for the Andalusian population and this work is regularly implemented by the Regional Government. Future studies regarding seasonal food availability and future trends on extensive stockbreeding activity are needed.

Genotyping, telemetry and alpine monitoring are coordinated and sustained by International Bearded Vulture Monitoring and its partners for Switzerland, Austria, Italy and France.

Research into threats

Research investigating causes of death and the threats to the species has received a moderate level of work in the EU. For each dead or injured individual recovered, the partners of IBM try to detect the real cause of death or disease. Lead poisoning caused by fragments of hunting ammunition remaining in shot carcasses has turned out to be a major threat for birds of prey (Fisher *et al.*, 2006). Lead poisoning can be a crucial factor determining the viability of reintroduced vulture species (Fry, 2003, Fry *et al.*, 2009, Green *et al.*, 2009) and are known to especially harm the European vulture (Mateo, 2009, Rodriguez-Ramos *et al.*, 2009) and eagle species (Fünfstück, 2006, Kenntner *et al.*, 2007). In the last years IBM and some partners focused their interest on lead poisoning after some cases of intoxication. In Spain, eggs were analyzed to check for problems with different substances. Since 2009 Stelvio National Park and Sondrio Administration Province (Italy) have been carrying out an experimental investigation assessing the level of threat posed by lead bullet fragments in from ungulates that have been shot during the hunting season.

As result of the analysis of the 5 Bearded Vulture carcasses died in the Andalusian Bearded Vulture Reintroduction Project, lead poisoning has been demonstrated as the first cause of death for the species in Andalusia. Currently Gypaetus Foundation, is implementing a Action Plan regarding lead intoxication. This includes the study of

[135] See: http://www.gyp-monitoring.com/cms/files/ibm_annual_report_2009.pdf

potential sources of lead or the promotion of lead free ammunition for big game in the reintroduction areas by means of target groups cooperation (hunter associations, hunting environmental officers, etc).
In France some of the released bearded vultures became victim of collision with aerial cables. Intensive research about the risk of aerial collisions has been made since that. In hot spot areas of the species (e.g. in the department of Savoie) aerial cables have been marked in order to avoid further collisions.

International cooperation

Every year the partners of IBM (International Bearded vulture Monitoring) in collaboration with Vulture Conservation Foundation and Alparc meets at a specific meeting on the Bearded Vulture to exchange information and experiences from the Alpine countries, Spain and other countries covering the distribution of the bearded vulture.
A Bearded Vulture network was established through LIFE projects' initiative from beneficiaries form Spain, the Alps[136] (France, Italy, Austria) and Greece. Its effectiveness has been key in improving field techniques and management tools as well as the production of common public awareness material.

The Andalusian reintroduction project is oriented to the recovery of the species at regional level, but is also part of an international initiative to recover all circun-mediterranean populations led by the Vulture Conservation Foundation (VCF), including conservation and reintroduction projects in France, Austria, Italy and Switzerland, between others. All this project shares best international breeding, monitoring and releasing methodologies and standards. All reintroduction projects in the frame of VCF are also part of the EEP (European Endangered Species Breeding Program), meaning a common Stud Book policy and a continuous exchange of exemplars when needed.

Public awareness and stakeholder involvement

Public awareness and stakeholder involvement actions have been fairly well implemented in the EU. Several conservation organizations and regional (Aragon, Andalusia, etc) and national (Spain) governments have made public awareness campaigns on the problem of the poisoning (seminars, conferences, etc) and have produced awareness-raising materials (internet information and other). Quarterly an email newsletter[137] (English) is distributed among all conservationists working on the bearded vulture. It intends to exchange relevant information all over Europe.
In Andalusia, strong awareness rising campaigns have been developed against shooting and disturbances in the frame of the Bearded Vulture Reintroduction Program, including promotion of hunters' and stockbreeder associations' prominence and participation in awareness raising initiatives.
In Greece, a massive public awareness campaign was implemented, targeting all big raptors on the island of Crete, with the Bearded Vulture being the flagship species.

[136] see http://www.gypaete-barbu.com/download/bilan.pdf
[137] The newsletter can be ordered free of charge at: gyp-monitoring@aon.at.

Disseminative actions took place in several protected areas where the species occurs in Italy. A general lack of information is apparent in large parts of the Italian mountains where the species is not common or rare.
A campaign is being implemented in Switzerland which attempts to reduce the use of lead ammunition (promoting the use of other, eg copper-based, ammunition). Also, the campaign advocates the removal of potentially lead-polluted body parts of animals shot for hunting purposes. The campaign will be further developed and adapted as needed.

Community financial support

Eleven LIFE projects[138] that benefit the Bearded Vulture have been implemented during the period 2000-2010 in France (2), Greece (2), Italy (1), Italy and Switzerland (1), and Spain (5), with a total budget of more than 7.7 million Euros, of which the total European Union contribution was more than 5 million Euros. In addition, over 220,000 Euros of national government and other funding has been invested in conservation of the Bearded Vulture.

Conclusions

The progress in the overall implementation of the action plan is good but further work is still needed (overall IS=2.6). The SAP has been most successfully implemented in the Alps. However, the country that holds the most significant proportion of the European population – Turkey – has made the least progress in the implementation of the action plan (National Implementation Score: 1.16), with no specific actions having been taken since the implementation of the action plan. The most progress has been made in implementing effective species and habitat protection policy as well as developing international Bearded Vulture conservation projects, promoting international co-operation and conducting of surveys and monitoring of the population. The least progress has been made in promoting the provision of wild and domestic food sources, including implementing effective policy to ensure provision of food sources. However, provision of food sources is not necessary in most of the distribution area. Only in Corsica (France) is severe lack of food thought to be the main factor for population decline (low reproduction).
National implementation scores are highest in Switzerland, Austria, average in Germany, Spain and Greece and lowest in Turkey.
Further measures/work still needed especially in the field of:

- Re-establishing the tradition of dumping animal carcasses at specific places near villages with full agreement and cooperation of local authorities, local farmers and hunters.
- Ensuring that livestock that dies in the field is left out for the Bearded Vulture.
- Carrying out specific supplementary feeding in island populations.

[138] LIFE94 NAT/GR/001557; LIFE98 NAT/GR/005276; LIFE02 NAT/GR/8492; LIFE03 NAT/F/000100; LIFE 98 NAT/E/005296; LIFE98 NAT/F/005197; LIFE07 NAT/IT/000436; LIFE02 NAT/E/008624; LIFE09 NAT/ES/000533; LIFE04 NAT/ES/000034; LIFE04 NAT/ES/000056.

- Determining causes of repeated breeding failure in island populations through detailed research.
- Reducing mortality risks such as wind turbines, aerial cables, poisoned baits and lead poisoning and preparing specific information materials and implementing and targeted campaigns where poisoning is a problem.

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Appendix 1

Table 36 Implementation of the action plan in the European range states[139]. PS = Priority Score; Ave. IS = Average Implementation Score; API = Action Priority Index; National IS = National Implementation Score.

Action	Measure	PS	AU	DE	FR	GR	IT	ES	CH	TR	Ave. IS	API
1.1.1	**Implement effective species protection policy for the Bearded Vulture**	**3**	**3.3**	**4**	**3.7**	**3**	**3.3**	**4**	**3.3**	**1.7**	**3.3**	**0.7**
	a. The Bearded Vulture receives the highest degree of legal protection at international and national level.	4	4	4	4	3	4	4	4	3	3.8	0.3
	b. National catalogues and inventories of threatened species are elaborated and recovery plans are incorporated into domestic legislation.	3	2	4	3	2	2	4	2	1	2.6	1.4
	c. All range states are party to relevant international treaties and conventions, in particular the Bern Convention.	2	4	4	4	4	4	4	4	1	3.4	0.4
1.2.1	**Implement effective habitat protection policy**	**3**	**2.8**	**3.5**	**2.8**	**2.5**	**3.5**	**3.5**	**0**	**1.5**	**2.9**	**1.1**
	a. Environmental Impact Assessment carried out for all activities likely to affect habitats or species on SPAs.	3	2.5	3	2.5	2	3	4	0	2	2.8	1.3
	b. The majority of Bearded Vulture territories are included in the European networks of protected areas.	3	3	4	3	3	4	3	0	1	3.0	1.0
1.3.1	**Implement effective policy to ensure provision of Bearded Vulture food sources**	**2.5**	**2**	**1**	**2.5**	**2**	**3**	**2**	**2.5**	**1**	**2.1**	**1.6**
	a. Common Agriculture Policy ensures maintenance of traditional farming practices in mountain areas throughout the EU.	3	2	1	3	2	3	1	4	1	2.2	1.8
	b. Traditional system of disposal of animal carcasses near villages is restored.	2	0	1	2	2	0	3	1	1	1.7	1.5
2.1.1	**Limit the threats to the Bearded Vulture**	**2**	**2.4**	**0**	**3.3**	**1.8**	**3.8**	**2.8**	**3.3**	**1.3**	**2.5**	**1.0**
	a. Disturbance at breeding sites during incubation and the early stages of breeding prevented.	2	2.5	0	3	2	4	2	3	1	2.4	1.0
	b. All human activity within 1 km around the nest restricted.	2	2	0	4	1	4	3	3	1	2.5	1.0
	c. Wardening campaigns undertaken at sites where Bearded Vultures regularly fail to breed succesfully.	2	3	0	3	1	4	3	4	1	2.6	0.9
	d. Prohibitions on shooting Bearded Vultures effectively enforced.	2	2	0	3	3	3	3	3	2	2.6	0.9
2.2.1	**Promote the provision of wild and domestic food sources**	**3**	**2**	**2**	**2.5**	**2**	**2**	**2**	**1.8**	**1.3**	**2.1**	**1.9**
	a. Specific supplementary feeding in all the European populations (especially island populations) carried out.	4	0	1	2	3	0	3	1	2	2.3	2.3

[139] AU = Austria; DE=Germany; FR = France; GR=Greece; IT=Italy; ES=Spain (National); CH =Switzerland; TK=Turkey.

	b. Restoration of wild ungulate populations promoted and poaching of them controlled.	2	4	4	3	1	3	0	4	1	2.8	0.8
	c. Livestock that dies in the field is left out for the vultures.	3	1	1	2	3	1	1	1	1	1.6	2.4
	d. Tradition of dumping animal carcasses at a specific place near the villages is re-established with full agreement and cooperation of local authorities, local farmers and hunters.	3	1	0	3	1	0	0	1	1	1.7	2.3
2.3.1	**Conserve the species' habitat**	**3**	**2**	**0**	**3**	**2**	**3.5**	**2.5**	**2**	**1**	**2.4**	**1.6**
	a. IBAs which include the Bearded Vulture are designated as Special Protection Areas.	3	2	0	3	3	3	3	0	1	2.6	1.4
	b. Damaging developments (eg. road construction) prohibited or appropriately modified in Bearded Vulture areas.	3	2	0	3	1	4	2	2	1	2.3	1.8
2.4.1	**Develop international conservation projects that benefit the Bearded Vulture**	**3**	**4**	**0**	**4**	**2**	**4**	**0**	**4**	**1**	**3.1**	**0.9**
	International conservation projects submitted to the EU LIFE regulation or other funding agencies.	3	4	0	4	2	4	0	4	1	3.1	0.9
3.1.1	**Promote international cooperation and exchange of experience among experts working on the species.**	**4**	**4**	**3**	**4**	**2**	**4**	**1**	**4**	**1**	**3.0**	**1.3**
	International cooperation and exchange of experience occurs among experts working on the species.	4	4	3	4	2	4	1	4	1	3.0	1.3
3.2.1	**Conduct surveys and monitoring of the population**	**3**	**4**	**2**	**3.6**	**2.6**	**3.3**	**4**	**4**	**1.2**	**3.1**	**0.9**
	a. Baseline surveys of population status conducted in countries where the species is less known.	3	4	2	4	2	3	4	4	2	3.1	0.9
	b. Regular monitoring of the breeding population, including breeding success, carried out.	3	4	0	4	3	4	4	4	1	3.4	0.6
	c. Annual searches conducted to identify new pairs.	3	4	2	4	3	2	4	4	1	3.0	1.0
	d. Attendance at feeding stations monitored.	2	0	2	2	2	0	4	0	1	2.2	1.2
	e. Adequate monitoring and follow up of reintroduction projects in place.	2	4	2	4	3	4	4	4	1	3.1	0.6
3.3.1	**Undertake research on requirements and factors influencing population trends sufficient to prepare national recovery plans.**	**2**	**4**	**0**	**2.2**	**1.8**	**3**	**2.4**	**3.3**	**1**	**2.5**	**1.0**
	a. Studies on population dynamics and age structure and complete PVA carried out on islands and countries where the species is decreasing.	2	0	0	1	1	0	2	0	1	1.4	1.7
	b. Causes of repeated breeding failure in island populations determined through detailed research.	3	0	0	1	1	0	1	0	1	1.4	2.6
	c. Causes of mortality, survival rates and dispersal patterns determined by satellite tracking.	3	4	0	4	3	4	3	3	1	3.1	0.9
	d. Research developed on genetic variation at European and global level, with genetic studies determining the degree of inbreeding in isolated populations.	2	4	0	2	2	3	3	4	1	2.6	0.9
	e. Research conducted on food availability, especially in winter, where scarcity is believed to be factor.	2	4	0	3	2	2	3	3	1	2.5	1.0
3.4.1	**Examine specimens to determine cause of death/failure and levels of environmental**	**1**	**3.0**	**1.0**	**2.3**	**1.3**	**2.7**	**3**	**3.3**	**1**	**2.1**	**0.6**

	contaminants											
	a. Pathological examinations of dead specimens conducted to determine cause of death.	2	4	0	4	2	4	3	4	1	3.0	0.7
	b. Examinations of failed eggs/ eggshells with suspected or confirmed high pesticide levels or from pairs with repeated breeding failure conducted, to determine fertility and embryo development.	1	3	0	2	1	2	3	2	1	1.9	0.7
	c. Exposure and incidence of lead poisoning in untested populations or in susceptible populations investigated.	1	2	1	1	1	2	3	4	1	1.8	0.7
4.1.1	**Improve and maintain public awareness of the Bearded Vulture, its habitats and conservation needs**	**3**	**2.3**	**0**	**2.7**	**2.3**	**2**	**2**	**2**	**1**	**2.2**	**1.8**
	a. Information and education materials about the threats to Bearded Vulture prepared, targeted at landowners, hunters and livestock farmers.	2.5	2	0	3	3	2	2	3	1	2.3	1.4
	b. Where poisoning is a problem, specific information materials prepared and targeted campaign implemented.	4	2	0	2	3	1	2	2	1	2.1	2.5
	c. Special section on the Bearded Vulture incorporated in information centers within PAs where the species occurs.	2	3	0	3	1	3	2	1	1	2.0	1.3
	National & Average IS		**3.0**	**2.6**	**3.1**	**2.2**	**3.2**	**2.6**	**3.1**	**1.2**	**2.6**	

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Lesser Kestrel *Falco naumanni*

Background

The Lesser Kestrel International Species Action Plan was adopted in 1996 (Biber, 1996) by the Ornis Committee and endorsed by the Bern and Bonn Conventions. The implementation of the action plan was last reviewed in 2004 (Nagy & Crockford, 2004).
This review evaluates the implementation of the Species Action Plan from 2004 to 2010, in the European range states of the lesser kestrel. It covers the majority of the breeding population in Albania, Armenia, Azerbaijan, Bosnia-Herzegovina, France, Georgia, Gibraltar, Greece, Italy, Former Yugoslav Republic of Macedonia, Portugal, Spain, Turkey and Ukraine, as well as Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia. Replies to the evaluation questionnaire were received from national and regional (in the case of Italy and Spain) experts. Since the lesser kestrel is extinct in Slovakia, only information on the population status was provided by this country. Population data for Spain was obtained through compilation of different censuses carried out at regional level between 2000 and 2007 and it is probably underestimated (Inigo *pers. com*). No information was provided by Albania, Gibraltar, Moldova and Russia. Population data for European Russia was obtained from Galushin (2009).

General overview

Progress in the overall implementation of the action plan is fairly poor (Average IS= 1.9) and much more work is still needed. Spain which holds the majority of the population has made significant progress in some actions, but weak coordination at national level makes it difficult to evaluate the effect of these actions on the population.

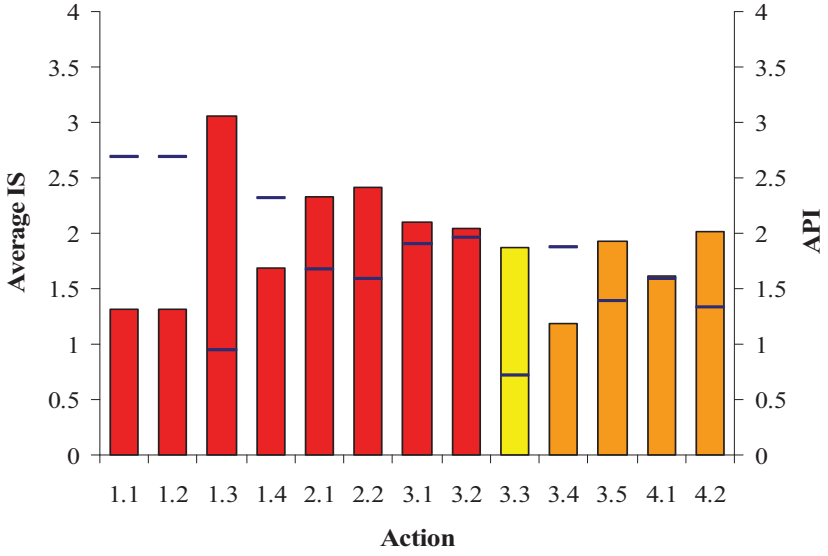

Figure xv Average implementation score (IS) and Action Priority Index (API) for each Action listed in the Lesser Kestrel species action plan. Colours represent Priority Score.

Status review

The European population is estimated at 25,000-42,000 pairs, with roughly half of these in Spain (BirdLife International, 2010). The overall population trend for the European population is increasing. Information for this implementation report was collected through a questionnaire. An approximate estimate for the European breeding range of 29,900-34,500 pairs can be extracted from this data (Table 1).

Table 37 Population estimate and trend by country

Country	Population at the time of the 1996 SAP (pairs)	Year	Population at the 2004 review (pairs)	Year	Current population (pairs)	Year	Breeding trend	Reference
Albania*	100-1000	1994	0-20	1998-2002	-	-	-	-
Armenia	-	-	15-60	2000-2002	20 - 35	2003-2010	30 - 80% Increasing	[140]
Azerbaijan	-	-	500-3,000	1996-2000	1,000	2007-2010	Fluctuating	[141]
Bosnia & HG	-	-	0-250	1990-2000	10 - 50	2010	Unknown	
Bulgaria	57-100	1994	0-5	1995-2000	0	2000-2010	Decreasing	[142]
Croatia	5-10	1994	0	2002	>20	2010	Unknown	[143]
Cyprus	-	-	-	-	0	2005 - 2009	Unknown	
Czech Republic	-	-	-	-	0	2001-2003	Stable	[144]
France	31-33	1994	72	2003	259	2009	370-432% Increasing	[145]
Georgia	700	1994	20-100	1994-2003	80 - 120[146]	2005-2008	10 - 15% Decreasing	[147]
Gibraltar*	-	-	4-10	2000	-	-	?	?
Greece	2,700-3,240	1994/5	2,000-3,480	2000	2,480 - 2,900	2004-2009	Small decrease	
Hungary	-	-	-	-	0	2000-2010		
Italy	1,300–1,500	1994	3,640-3,840	2001	4,500 - 5,500	2007-	19 - 31%	[148]

* Indicates countries for which no information on population status was received
- Indicates no data available

[140] www.aspbirds.org
[141] Survey conducted in 2007-2008.with >50 breeding colonies and 20 nests in average recorded. Survey covered < 20% of suitable habitat.
[142] Atlas of Breeding Birds in Bulgaria (BSPB, 2007) and Green Balkans Ornithological Database (2010)
[143] Personal observation
[144] Stastny et al., 2006.
[145] Data from LPO
[146] Data from Pilard et al., 2008
[147] IBA project in Georgia. 2005-2008

						2009	Increasing	
Macedonia	-	-	1,500-3,000	2002	1,000 - 1,500	2002-2003	Decreasing	[149]
Moldova*	7-12	1989	3-6	1990-2000	-	-	-	-
Montenegro	-	-	0-6	1990-2002	0	1990-2010	Unknown	
Poland	-	-	-	-	0	2009		[150]
Portugal	150	1994	349-376	2003	427 - 462	2006	54% Increasing	[151]
Romania	120-130	1989	0-5	1990-2002	0 - 2	2010	Decreasing	[152]
Russia (European)*	70-150	1994	300-400	2004	1,100[153]	2009	Increasing	
Serbia	-	-	0-6	1990-2002	0	2009	Decreasing	[154]
Slovakia	-	-	-	-	0	2000-2009	Stable	
Slovenia	5-10	1994	0	1994-2000	0	1994-2009		[155]
Spain*	5,000-8,000	1994	12,000-20,000	1994-2002	14,072-14,686 pairs[156]	1997-2005	8.6% Increasing	[157]
Turkey	1,500-3,500	1994	5,000-7,000	2001	5,000 - 7,000	2004	21 - 30% Decreasing	[158]
Ukraine	200-300	1994	5-10	1990-2000	0	2004-2010	Unknown	[159]

Objective (s)

The short term target of the 1996 action plan is to maintain all known Lesser Kestrel breeding colonies at their 1994 levels or larger. In the medium to long term, the target is to increase the population size of the Lesser Kestrel to a level at which it no longer qualifies as a globally threatened species.

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[148] Sigismondi et al., 2001; Mascara & Sarà, 2006; Sigismondi et al., 2003 ; Bux, 2008 ; Sarà, 2008.

[149] unpublished data of M. Velevski, B. stumberger, T. Lisicanec, E. Stoynov, B. Grubac

[*] Indicates countries for which no information on population status was received

- Indicates no data available

[150] Once a sporadic breeder, now accidental. Tomialojc & Stawarczyk, 2003; Komisja Faunistyczna, 2008.

[151] Henriques et al., 2006.

[152] published record for 1-2 breeding pairs in the Danube Delta at the beginning of the 2000s; no other confirmed/records of breeding during the last 20 years

[153] Data from Galushin et al., 2009

[154] Grubac, pers. comm..

[155] Personal observations from members of DOPPS, Natural History Museum and Nature Conservation Institute of the Rep. of Slovenia

[156] Data from SEO, 2008.

[157] 4.7 – 12.5 Del Moral et al., 2010.

[158] Kılıç & Eken, 2004

[159] Data on numbers of 1-2 breeding pairs in Donetsk Region were not proved by checking

Evaluation

The short term target of 'maintaining all known Lesser Kestrel breeding colonies at their 1994 levels or larger' has been met in most areas, at least in the European range, where the majority of the breeding populations have increased since 1994, except in those countries where the species has gone extinct (e.g. Bulgaria, Romania). However, population estimates from outside of Europe (notably Turkey, Kazakhstan and Uzbekistan) need to be obtained or improved in quality in order to confirm this trend in the rest of the breeding range.

To evaluate the achievement of the target 'increasing the population size to a level at which it no longer qualifies as a globally threatened species' the up-to-date population estimates from the countries contributing to this review have been used. In order to be down-listed to Near Threatened on the IUCN Red List, the population should have been stable or should have not declined more than 30% over the last 10 years/ 3 generations (whichever is longer). The data presented in Table 1 shows that at least in the key populations this decline has been halted: these populations are either fluctuating, increasing or experiencing small declines. Therefore, if population estimates from outside of Europe (notably Turkey, Kazakhstan and Uzbekistan) confirm these results, the long term target of the plan should also be achieved. However, quantitative data from these range states was not available for this review[160].

Conservation and Legal Status

The Global IUCN Red List Category of the Lesser Kestrel is Vulnerable with criteria A2b,c,e; A3b,c,e; A4b,c,e (IUCN, 2010), because it has undergone rapid declines in Western Europe, equivalent to c.46% in each decade since 1950, on its wintering grounds in South Africa, equivalent to c.25% in each decade since 1971, and possibly in parts of its Asian range. It is suspected that this decline is ongoing on the basis of rates of habitat loss and degradation on its breeding and wintering grounds.

The species is listed as Depleted (SPEC 1) in the European IUCN Red List (BirdLife International, 2004), and is listed in Annex I of the EU Council Directive on the Conservation of Wild Birds (79/409/EEC, 'Birds Directive'), Appendix III of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), Appendix I and II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS/ Bonn Convention) and Appendix II of the Convention on International Trade of Wild Fauna and Flora (CITES).

The lesser kestrel benefits from complete legal protection across Europe, as well as in Morocco, Tunisia, and Turkey. However, enforcement of the legal requirements needs improvement, particularly in Azerbaijan, Italy, Macedonia FYR, and Spain, as well as in Bosnia and Herzegovina, Croatia and Romania.

Ensuring full legal protection for the species was of a high priority and was fully implemented in all relevant countries. This action was also reported to have the most positive impact on the lesser kestrel population, with significant improvements

[160] The threat category of Falco naumanni has been proposed for revision in 2011

contributing to the recovery of the affected population reported in Aragon and Andalucía, Spain; Portugal and Cyprus; and slight improvement reported in two other countries containing significant populations). This action therefore requires little future work, but enforcement of legal protection needs to be maintained and increased.

Overview of past and current threats

The breeding output of the Lesser Kestrel population has been identified as the key factor determining the population growth rate. Therefore factors affecting breeding success and survival of juveniles to breeding age (recruitment) were found to have the greatest impact on the population. Table 2 reviews the past and current threats to the lesser kestrel.

Table 38 Table of importance of lesser kestrel threats by country[161]. The current level of importance of threats listed in 1996 SAP and newly identified threats are listed for each country. The original importance level of the threats as listed in the 1996 SAP are included in brackets.

	Threats identified in 1996							Newly identified threats in 2010			
1996 Assessment (priority indicated in brackets)	**Habitat loss in breeding areas (CR)**	**Reduction in the availability of prey due to pesticide use (CR)**	**Habitat loss in winter quarters and stopover sites (unknown)**	**Loss of nest-sites (L/M)**	**Interspecific competition (L/M)**	**Pesticide toxicity (L)**	**Human persecution and disturbance (L)**	**Windfarms**	**Shooting**	**Electrocution powerlines**	**Climate change**
2010 Assessment											
Armenia					L		L				
Azerbaijan	L	L		L		L	L				
Bosnia and Herzegovina	CR	CR	CR	L	L	L	H				
Bulgaria	H/ M	CR	H	L	M	M	L	H			
Croatia	H	M	H	M	M	L	M				
Cyprus			L				L				
France	M	M	H	H	M	L	L				H
Georgia	H	L	L	L	L	L	L				
Greece	H	H		H	L	M	M				
Italy	CR	CR	CR	M	M	M	M	H	M		M
Macedonia	M	M		H	L	M	L				
Montenegro											

[161] No response on threats facing the lesser kestrel were received from Albania, Spain, Moldova, Poland, Russia or Gibraltar.

Portugal	CR	L		CR	M	L	L			M	M
Serbia	CR	H	L	M	M	M	M				
Slovenia	H	CR		M	L	M	L				
Turkey	H	H	M	M		L	L				
Ukraine	M	H				H	M				

Assessment of the implementation

National and regional species action plans

The production and effective implementation of national action plans for the lesser kestrel were listed as high priority actions in the action plan, but have so far received little implementation and so remain a priority for future work. France adopted and implemented a national action plan (*Plan National de Restauration du Faucon Crécerellette*, 2002-2006), and also developed of a second Action Plan for the period 2010-2014, while in Azerbaijan and Bulgaria such plans are produced by NGOs and are not officially adopted by the Governments. Portugal began developing a national action plan for steppe bird species (including the lesser kestrel) in 2002, but this was never concluded. The Caucasus Regional Species Action Plan for the lesser kestrel was developed in 2008 and includes Armenia, Azerbaijan and Georgia. This plan is pending approval.

Species conservation

Management at breeding colonies

Management of breeding colonies has been successfully done to some extent in all countries which have them: Spain, Portugal (in Castro Verde region only), Italy (in Basilicata region only), France, Gibraltar and Armenia as this measure has been incorporated in a number of LIFE projects. Thorough experience with restoration and management of colonies has been gained locally. For example, artificial nests have been installed by DEMA at the Iglesia de la Purificación de Almendralejo (80-85 pairs) making it probably the largest colony in Europe located in one building and breeding in artificial nest boxes and SEO/BirdLife has developed a restoration project to install in abandoned church (Iglesia de Nuestra Señora del Rosario, Madrigal de las Altas Torres) 120 artificial nest. Some work has been carried out in Italy to promote management at breeding colonies, mainly due to the local LIFE Nature Project 'Rapaci lucani' (2005-2009). This project included the adjustment of building codes of the municipalities of Matera and Montescaglioso, in order to protect and increase lesser kestrel breeding and roosting sites; and the installation of artificial nests integrated with the historical buildings (2,000 artificial nests designed and produced). Portugal has made some progress in promoting appropriate management at breeding colonies, with significant results achieved in providing artificial nests to secure breeding sites. In Portugal one of the most successful actions, despite the licence constraints, is the construction of new buildings that contain nest cavities. Between 2003 – 2006, with the support of a LIFE

project[162], more than 800 new breeding sites were made available in the two main SPAs where the species occurs.
Further implementation of regional management is needed in the rest of Spain, Italy and Portugal.
A booklet has been produced in France which for maintaining awareness of cavities under the roofs of human habitation in collaboration with architecture (in Hérault). Agreements have been reached with landowners, breeders and hunting associations for the management of land that favours the Lesser Kestrel in Crau and Aude, France. Putting up of artificial nesting sites in the Crau and Aude.
In Greece, nest boxes have been provided in several areas with success by University research projects, Hunting Associations and recently by Hellenic Ornithological Society, but a general overview of the significance of these actions still remains unpublished. In Turkey and Macedonia further work is still needed to protect colonies both in and outside of human settlements. However, FWFF (Fund for Wild Flora and Fauna) have provided nest boxes in Macedonia, with success.

Reintroduction and recolonisation
Reintroduction was seen as low priority although some positive examples were reported. In Spain, a breeding centre was created by DEMA in 1990 to reinforce the population and facilitate release programmes in Portugal and France (Aude).
Potential Reintroduction of Lesser Kestrel in Bulgaria is in its initial stage, with a feasibility study initiated by the Green Balkans Federation; a habitat model for identifying potentially suitable lesser kestrel restoration sites developed; and lesser kestrel captive-breeding stock obtained.
Although low priority overall, reintroduction can help restore the former range of the species, where natural recolonisation is not imminently feasible (unfortunately in some cases the foraging habitat is no longer suitable).

[162] LIFE project code: LIFE 02/NAT/P/8481

Site conservation

The protection of key sites has been implemented to different degrees in each of the countries. Of the countries holding significant populations (>50 pairs), the majority of the respective national populations are protected in Greece (95-96%), Italy (50-90%), Spain (50-90%), Portugal (91-92%) and France (100%). In 2004 Spain [give figure] designated a new SPA in Extremadura (2004) especially for the lesser kestrel, but further work is required in designating key habitats and breeding/ feeding areas as SPAs, and particularly in acquiring land or reaching agreements with landowners for suitable management for the species. In 2006, France designated a new SPA in Hérault especially for the lesser kestrel.

Only 5-10% of the national population is protected in Azerbaijan, and only 0-10% is protected in Macedonia. Key breeding areas have been designated as Important Bird Areas (IBA) in Turkey, resulting in 50-90% of the national population now being included in IBAs. However, further work is needed to protect steppes and dry grassland habitats in Turkey, as well as ensuring suitable management on privately owned land. A habitat management guide has been created for the lesser kestrel population in Aude, France.

Table 39 Coverage of the key national populations with protected areas.

Country	% of national population in IBAs	% of national population in SPAs	% of nat. population in protected areas
Azerbaijan	5 - 10%	5 - 10%	
France	62%	100%	100%
Macedonia, FYR	50-90%	0	0-10%
Greece	95 - 96%	95 - 96%	0
Italy	10-50%	50-90%	0-10%
Portugal	91 - 92%	91 - 92%	6%
Russia	?	?	?
Spain	50-90%	30-50%	0-10%
Turkey	50-90%	n/a	0-10%

For countries holding small (<50 pairs) or no breeding populations, progress has been made in designating key (former) breeding/ feeding sites as SPAs, however, further work is still needed in protecting steppes and dry grassland habitat, and ensuring appropriate management on agricultural land.

Habitat conservation

Agricultural and forestry policies

Ensuring that agricultural policies are sympathetic to wildlife and are compatible with the conservation of the lesser kestrel and other threatened/ declining species is a high priority

action. Only Spain has made significant progress in implementing it by ensuring the species benefits from targeted agri-environment measures.

The agri-environmental scheme for the main SPA in Portugal has continued (beginning in 1995) and has slightly improved in 2007, but still needs amendments. No other agri-environmental schemes were initiated in other areas where the species breeds in Portugal (these will begin in 2011).
There are measures to maintain agri-environmental intensive livestock rearing on the plains of Crau in France.
In Bulgaria, agri-environmental measures that support the conservation of pastures (which may benefit the lesser kestrel) are included in the Bulgarian Rural Development Program.
The first agri-environmental schemes implemented in Slovenia in 2001 had no special conservation measures for the lesser kestrel and were poorly implemented in both of the Natura 2000 sites that previously may have held lesser kestrels.
Little work has been carried out to prevent afforestation of lesser kestrel habitats (an important threat), with the exception of Azerbaijan and Portugal, despite this being a high priority. No particular progress has been made by Turkey in preventing the use of toxic chemicals as well as encouraging land management programs to prevent overgrazing, construction and afforestation in lesser kestrel breeding and foraging areas.

Monitoring and Research

Overall, despite being a high priority action and recent scientific interest, the conducting of surveys and monitoring of the lesser kestrel has been patchy. In the key country Spain, only regional surveys have been carried out. The development of a standard methodology for monitoring the species and the carrying out of national surveys at breeding/migrating/wintering areas is acutely needed. More detailed studies on the ecology, monitoring of demographic parameters and habitat management have been done (e.g. France, Portugal, Italy) largely within LIFE projects. Roosting places are currently being studied in Extremadura, Spain and Sicily, Italy. There has also been research analysing the contamination of eggs and individuals by pesticides in France. National censuses have been conducted every year since 1983 in France.

Information exchange

Most of the recent scientific publications on the lesser kestrel originate from Spain, where strong research programmes existed in the 1990s. At present, species working groups exist Armenia, Bulgaria, Croatia, Italy (e.g. Palermo university and/or individuals in other regions). Several species experts in Portugal do not form a formal national working group. In Hungary, scientific information was exchanged between MME's Red-footed Falcon conservation team and Lesser Kestrel experts from Spain between 2006 and 2009.
There has been participation of several scientific organisations in France in the study and monitoring of the lesser kestrel in both France and in Senegal.

Public awareness and stakeholder involvement

Significant progress has been made in raising the awareness of lesser kestrel and their feeding and breeding habitats in Spain, Portugal, France and Armenia.. Websites (e.g. http://www.demaprimilla.org, www.liferapacilucani.it), 'lesser kestrel awards' (Premios Primilla de Barros 2009), interpreting centres, information brochures, environmental awareness campaigns, including workshops with children and adults, and 'lesser kestrel days' have been developed.

Community financial support

Nine LIFE projects have been implemented in the period of 2004 – 2010 which benefitted the lesser kestrel: one in France[163], three in Italy[164] (in Matera Province, Parmesan lowlands; and the National Park of Gargano); two in Portugal[165] (covering four SPAs: Castro Verde; Vale do Guadiana; Piçarras; and Mourão/ Moura/ Barrancos); and three in Spain[166] including one joint with France (in Aude and Extremadura; and Aragon).

The total budget was more than 11.6 million Euros, of which the total European Union contribution was more than 7.9 million Euros.

The species has also benefited from some other Community funding for projects such as lesser kestrel breeding centres in Spain and Portugal; an EU funded project in Portugal on the conservation and reestablishment of lesser kestrel in the Evora region; the Norwegian Embassy funded SOS lesser kestrel project in Armenia; Participatory conservation and recovery of an important roost in Senegal through the establishment of a Community Nature Area, assisted by LPO/BirdLife France; as well as general conservation measures in Bulgaria for target species of the EU Birds Directive, including lesser kestrel (as well as the project 'lesser kestrel – a bird with no past but with a future'). An internationally funded project assessing the current status and distribution of imperial eagle and lesser kestrel has been carried out in Azerbaijan, and National Government funds have been secured to conduct research on the lesser kestrel at the Croatian coast.

Conclusions

The species has stabilized and started to recover but still major gaps in the implementation of the planremain. The following actions remain priority for implementation:

- Promoting the compatibility of agricultural policies with conservation of the lesser kestrel and other steppic species, particularly ensuring that appropriate land cultivation techniques and traditional extensive pastoral systems are maintained (e.g. those that promote high insect densities)

[163] LIFE project code: LIFE05NAT/F/000134
[164] LIFE project codes: LIFE05 NAT/IT/000009; LIFE07 NAT/IT/000499; LIFE06 NAT/IT/000026
[165] LIFE project codes: LIFE 02/NAT/P/8481; LIFE07/NAT/P/000654
[166] LIFE project codes: LIFE05NAT/F/000134; LIFE00 NAT/E/007297; LIFE04 NAT/ES/000034

- Production, and in particular implementation, of national action plans for the lesser kestrel.
- Acquisition of land or agreements reached with landowners for suitable management.
- Results from LIFE projects in Italy and Portugal should be continued, strengthened and expanded to other regions of the country, e.g. extending building codes to municipalities where the species occurs in the rest of Italy.

Taking into account the current prioritisation of old and new threats, priority work should be carried out on measures that maintain population growth in SW Europe, consolidate the distribution range across Europe by stopping decline and restoring populations in SE Europe, and begin coordinated monitoring of key populations (Turkey, Spain, and S. Balkans).
This is to be achieved by implementing targeted actions that improve breeding success; increase survival; improve habitats conditions outside of breeding areas; restore the range of the species to pre-decline areas (as far as possible); and improve international coordination of conservation actions, monitoring and sharing of knowledge (this also applies to regions, e.g. Spain).

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Appendix 1

Table 40 Implementation of the action plan in different countries[167]. PS = Priority Score; Ave. IS = Average Implementation Score; API = Action Priority Index; National IS = National Implementation Score.

Action	PS	AR	AZ	BA	BG	HR	CY	FR	GI	GR	IT	MK	MNE	PT	RO	SI	ES	RS	TR	UA	Ave. IS	API
1.1 Agricultural policies are sympathetic to wildlife and are compatible with the conservation of the lesser kestrel as well as other threatened or declining species	**3**	**1**	**1**	**1**	**1**	**0**	**1**	**2**	**0**	**1.6**	**1**	**1**	**0**	**1.2**	**1**	**1**	**3**	**0**	**1**	**2**	**1.3**	**2.7**
a. The species benefits from targeted agri-environment measures, or similar programmes outside the EU.	3	1	0	1	1	0	0	3	0	1	1	1	0	2	1	1	3	0	1	0	1.4	2.6
b. Farming incentives and subsidies are favourable to the habitats of the species (e.g. help maintenance of semi-natural grasslands and fallow land).	3	1	1	1	1	0	1	3	0	0	1	1	0	1	1	1	0	0	0	0	1.2	2.8
c. Grazing regimes maintain suitable habitat for the species (no overgrazing or abandonment).	3	1	1	1	1	0	1	2	0	1	1	1	0	1	1	1	0	0	1	1	1.1	2.9
d. Appropriate land cultivation techniques are used (e.g. those that promote high LK prey densities	4	1	1	1	1	0	0	1	0	0	1	1	0	1	1	1	0	0	0	3	1.2	3.8
e. Use of pesticides in feeding habitat strictly regulated and monitored.	2	1	1	1	1	0	1	1	0	1	1	1	0	1	1	1	0	0	1	0	1	2
1.2 Promote forestry practices which do not conflict with lesser kestrel conservation	**3**	**1**	**2.5**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**1.7**	**1**	**1.7**	**0**	**0**	**1.5**	**0**	**1.3**	**2.7**
a. Afforestation projects avoid sites	3	1	1	1	1	0	1	0	0	0	1	1	0	3	0	1	0	0	2	0	1.3	2.7

[167] AR = Armenia; AZ = Azerbaijan; BG = Bulgaria; BA = Bosnia & Herzegovina; HR = Croatia; CY = Cyprus; FR = France; GI = Gibraltar; GR = Greece; IT = Italy; MK = Macedonia; MNE = Montenegro; PT = Portugal; RO = Romania; SI = Slovenia; ES = Spain; RS = Serbia; TR = Turkey; UA = Ukraine. Countries that do not have confirmed breeding populations are shaded orange.

Action	PS	AR	AZ	BA	BG	HR	CY	FR	GI	GR	IT	MK	MNE	PT	RO	SI	ES	RS	TR	UA	Ave. IS	API
important for the LK.																						
b. Afforestation and deforestation programmes in LK areas are subject to environmental impact assessment.	3	1	4	1	1	0	1	0	0	0	1	1	0	1	0	2	0	0	0	0	1.4	2.6
c. Co-ordination between agriculture and forestry authorities in place.	3	1	0	1	1	0	1	0	0	0	1	1	0	1	1	2	0	0	1	0	1.1	2.9
1.3 Promote the full legal protection of the species and important breeding sites.	**3**	**3**	**2.5**	**1**	**3**	**2.5**	**3.5**	**4**	**4**	**0**	**2.5**	**2.5**	**3**	**3.5**	**2.5**	**4**	**2.5**	**0**	**4**	**4**	**3.1**	**0.9**
a.The species is fully legally protected.	3	4	4	1	4	4	4	4	4	0	4	4	4	4	4	4	4	0	4	4	3.8	0.2
b. Enforcement of legal protection is effective	3	2	1	1	2	1	3	4	4	0	1	1	2	3	1	4	1	0	4	0	2.2	1.8
1.4 All range-states should be encouraged to produce a national action plan for the lesser kestrel	**3**	**1**	**2**	**1**	**2**	**0**	**1**	**3.5**	**4**	**0**	**1**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	1.7	2.3
a. National action plan produced.	3	1	2	1	3	0	1	4	4	0	1	1	0	1	1	0	0	0	0	0	1.8	2.2
b. National action plan effectively implemented.	3	1	2	1	1	0	1	3	0	0	1	1	0	1	1	0	0	0	0	0	1.3	2.7
2.1 Promote the designation of protected areas for the lesser kestrel	**3**	**2**	**1.5**	**1**	**1.7**	**3**	**0**	**4**	**4**	**4**	**1.3**	**1**	**0**	**2.3**	**2.3**	**2.5**	**0**	**0**	**2**	**0**	**2.3**	**1.7**
a. New protected areas have been designated on steppes and dry grasslands (since 2000)	3	0	2	1	1	0	0	0	4	0	2	1	0	1	3	0	0	0	1	0	1.8	2.2
b. Key breeding and feeding areas designated as SPAs.	3	1	1	1	3	3	0	4	0	4	1	0	0	3	3	4	0	0	4	0	2.7	1.3
c. Land acquired or agreements reached with landowners for suitable management.	3	3	0	1	1	0	0	4	0	0	1	1	0	3	1	1	0	0	1	0	1.7	2.3
2.2 Promote appropriate management	**3**	**3.7**	**1.5**	**0**	**0**	**0**	**0**	**3**	**4**	**1**	**1.7**	**1.3**	**0**	**2**	**0**	**0**	**4**	**0**	**2**	**0**	**2.4**	**1.6**

Action	PS	AR	AZ	BA	BG	HR	CY	FR	GI	GR	IT	MK	MNE	PT	RO	SI	ES	RS	TR	UA	Ave. IS	API
at breeding colonies																						
a. Co-operation with departments responsible for historic building resulting in conservation of breeding sites.	3	3	0	1	0	0	0	2	0	0	2	1	0	1	0	0	4	0	0	0	2	2
b. Artificial nests provided where necessary to secure breeding sites.	2	4	1	1	1	0	0	3	0	1	2	2	0	3	0	0	4	0	0	0	2.2	1.2
c. Colonies outside human settlements are protected.	3	4	2	1	1	0	0	4	4	0	1	1	0	0	0	0	4	0	2	0	2.4	1.6
3.1 Conducting of surveys	**3**	**2**	**2**	**1**	**2**	**1**	**4**	**4**	**3**	**0**	**2**	**1**	**0**	**3**	**1**	**1**	**0**	**0**	**1.5**	**3**	**2.1**	**1.9**
a. Standard methodology for monitoring the species developed and published.	3	3	2	1	0	0	4	4	2	0	2	1	0	4	1	1	0	0	2	3	2.3	1.7
b. Surveys carried out at breeding, migrating and wintering areas.	3	1	2	1	2	1	4	4	4	0	2	1	0	2	1	1	0	0	1	3	2	2
3.2 Research into factors limiting lesser kestrel populations	**3**	**2**	**3**	**1**	**2**	**0**	**0**	**3**	**3**	**0**	**2**	**1**	**0**	**3.5**	**1**	**1**	**0**	**0**	**1**	**3**	**2**	**2**
a. Research on habitat requirements carried out.	3	3	2	1	2	0	0	3	0	0	2	1	0	4	1	0	0	0	1	3	2.1	1.9
b. Appropriate habitat management for the species identified and promoted.	3	1	4	1	2	0	0	3	3	0	2	1	0	3	1	1	0	0	1	3	2	2
3.3 Reintroduction and recolonisation of lesser kestrel under suitable conditions	**1**	**1**	**0**	**1**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**1**	**4**	**0**	**0**	**0**	**1.9**	**0.7**
a. Reintroduction programmes carried out closely following IUCN criteria	1	1	0	1	1	0	0	4	0	0	0	0	0	2	1	1	4	0	0	0	1.9	0.7
3.4 Impact of pesticides on lesser kestrels	**2**	**1**	**0**	**1**	**0**	**0**	**0**	**2.5**	**0**	**0**	**1**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**1.2**	**1.9**
a. Pesticide residuals and heavy metal contamination in eggs and tissue monitored.	2	1	0	1	0	0	0	4	0	0	1	1	0	1	1	0	0	0	0	0	1.4	1.7

Action	PS	AR	AZ	BA	BG	HR	CY	FR	GI	GR	IT	MK	MNE	PT	RO	SI	ES	RS	TR	UA	Ave. IS	API
b. Impact of chemical pollutants studied.	2	1	0	1	0	0	0	1	0	0	1	1	0	1	1	0	0	0	1	0	1	2
3.5 Information exchange on the lesser kestrel and its conservation needs	**2**	**3**	**2**	**1**	**1**	**2**	**0**	**3**	**0**	**0**	**1.5**	**2**	**0**	**4**	**1**	**1**	**0**	**0**	**1.5**	**2**	**1.9**	**1.4**
a. Scientific information and expertise between researchers exchanged.	2	3	2	1	1	2	0	3	0	0	2	3	0	4	1	1	0	0	2	2	2.1	1.3
b. Training on research techniques and methodologies provided by institutions carrying out intensive research programmes with the LK.	2	3	2	1	0	0	0	3	0	0	1	1	0	0	1	1	0	0	1	2	1.6	1.6
4.1 Raise awareness of lesser kestrel feeding habitats	**2**	**3**	**1**	**1**	**0**	**0**	**1**	**2**	**1**	**0**	**1**	**1**	**0**	**3**	**1**	**1**	**4**	**0**	**1**	**0**	**1.6**	**1.6**
a. Awareness campaign on the species targeted at local authorities, farmers, shepherds and hunters carried out.	2	3	1	1	0	0	1	3	1	0	1	1	0	3	1	1	4	0	1	0	1.7	1.5
b. lesser kestrel used as a flagship for the conservation of steppe, grasslands and traditional agricultural practices.	2	3	1	1	0	0	0	1	0	0	1	1	0	3	1	1	4	0	0	0	1.7	1.5
4.2 Raise awareness of the importance of lesser kestrel breeding colonies	**2**	**3.3**	**2**	**2**	**1**	**0**	**0**	**3.3**	**2.5**	**1**	**1**	**1.7**	**0**	**3.3**	**1**	**1**	**4**	**0**	**1**	**0**	**2**	**1.3**
a. Awareness campaigns on the importance of breeding colonies carried out.	2	3	0	2	1	0	0	3	1	0	1	1	0	3	1	0	4	0	1	0	1.9	1.4
b. Leaflet on restoration practices which favour the species produced.	2	3	2	2	1	0	0	3	0	0	1	1	0	4	1	1	4	0	1	0	2	1.3
c. No cases of intentional destruction of colonies, shooting and persecution registered	2	4	0	2	0	0	0	4	4	1	1	3	0	3	1	0	0	0	1	0	2.4	1.1
National & Average IS		**2.1**	**1.9**	**1**	**1.5**	**2.1**	**2**	**3.2**	**3.3**	**1.8**	**1.5**	**1.3**	**3**	**2.4**	**1.3**	**1.6**	**3.5**	**0**	**1.7**	**2.9**	**1.9**	

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