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AND NATURAL HABITATS

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International Action Plan for the Saker Falcon (*Falco cherrug*)

Document prepared by BirdLife International

BirdLife INTERNATIONAL

Saker Falco cherrug

European Single Species Action Plan

3rd Draft, 27 September 2005

Workshop for the Conservation of the Saker in its European Range, *Csákvár, Hungary, 11-13 February 2005; hosted by MME BirdLife Hungary and the Pro-Vértes Foundation*

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Geographical scope

*The action plan covers the entire European breeding range of the Saker (*Falco cherrug*), including the following countries (in alphabetical order): Armenia, Austria, Bulgaria, Croatia, Czech Republic, Georgia, Germany, Hungary, Macedonia, Poland, Romania, Russia* (*European part only*), *Serbia and Montenegro, Slovakia, Turkey, Ukraine.*

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1. BIOLOGICAL ASSESSMENT

General information

The Saker *Falco* cherrug qualifies as Globally Endangered because it has undergone a very rapid population decline, particularly on the central Asian breeding grounds, owing to inadequately controlled capture for the falconry trade. It is a large falcon roughly between Gyrfalcon *F. rusticolus* and Peregrine *F. peregrinus* in size. In the Western Palearctic, occurs across continental middle latitudes; mainly in wooded steppe, steppe, and foothills, often bordering or overlapping forests.

Taxonomy

Falco cherrug Gray, 1834, Order: Falconiformes, Family: Falconidae
Polytypic. Nominate *cherrug* Gray, 1834, Central and South-East Europe eastward; *milvipes* Jerdon, 1871, Central Asia, accidental in west Palearctic.
The validity of many subspecies ascribed to this species is still disputed, and there are difficulties with the taxonomic status of birds at points where they intergrade with Lanner Falcon *F. biarmicus.* They only interbreed with Gyr Falcon *F. rusticolus* in captivity as there is no zone of overlap in the wild (A Dixon in litt 2006).

Population development

The species has declined significantly during the 20th century, including, at global level by about 61% (48-70%) from 1990 to 2003, especially in Central Asia (BirdLife International 2006).

Historical population data are sparse, but it is likely that Europe held some 5–10 thousand pairs in the second half of the 19th century. After 1945 it has declined markedly in its European distribution (Baumgart et al. 1992). Now, the European breeding population is very small (as few as 600-700 pairs), and declined substantially between 1970–1990. Although several central European populations were stable or increased during 1990–2000, the species continued to decline throughout eastern Europe, and underwent a large decline overall (>20% in two generations). (BirdLife International 2004). Because of these changes, the historical range has contracted and is fragmented now.

Distribution throughout the annual cycle

Occurs in a wide range across the Palearctic region from eastern Europe to western China. In Europe, five more or less isolated fragments of the range can be distinguished: (1) a fairly continuous population in Central Europe ranging from the Czech Republic through Eastern Austria, Slovakia and Hungary to Serbia and Western Romania (over 200 pairs); (2) in southern Ukraine, Moldova and Dobrogea in Romania (260-280 pairs) and (3) close to the Ural mountains in Russia (10-20 pairs, disappearing). Heavily depleted and fragmented populations are (4) in Bulgaria and Macedonia, as well as (5) in Turkey and the Caucasus where little information is available.
Adult birds are sedentary (Turkey), part-migratory (Central Europe) or fully migratory (parts of Russia), depending largely on the availability of food in winter. They are more or less sedentary in southern part of range, but may straggle away from the breeding areas in winter. Juvenile dispersal/migration is probably ubiquitous across global range. Birds leave breeding grounds in October and return in March-April. In the central Mediterranean some birds pass through Italy and winter in south. Also irregular visitor in Malta, occurs in Libya and Tunisia mainly in winter. Small numbers crosses the Bosporus in autumn and spring (Snow & Perrins 1998).

Survival and productivity

The annual survival rate of adults is estimated to vary between 82% in Kazakhstan (Wink et al. 1999) and 78% in Hungary (Halmos pers comm.). Minimum first-year survival estimate of 23% in Kazakhstan (Kenward et al., In Press). Generation length 5 years (BirdLife International 2004). Birds start breeding already in the second calendar year. Clutch size varies from two to six, with means from 3.2 to 3.9 in different circumstances. Breeding success varies with year (especially in areas where rodents cycle).

Life history

Breeding: On trees, cliffs, electric pylons (sometimes even the ground) in other species' old nests. It also readily accepts artificial nests. Egg-laying: March-April; incubation: 30-32 days; fledging: ~45 days.

Feeding: Physically adapted to hunting close to the ground in open terrain, specialising on small to mid-sized diurnal rodents (especially suslik, ground squirrels *Citellus*) of open grassy landscapes; in some areas, especially near water, it switches to birds eg starlings as key prey;, and has recently substituted domestic pigeons for rodents in parts of Europe.

Outside breeding season: On migration moves to the south, as far as the Middle East and North Africa.

Habitat requirements

It breeds in forest-steppes, grasslands, agricultural areas, hills or open mountain ranges and hunts over open grassland, wetlands, and even cultivated land where more or less dense populations of diurnally active small and medium-sized rodents or birds provide ample prey biomass for rearing young. In non-breeding season, hunts over a wider range of open habitats extending to coasts and deserts.

2. AVAILABLE KEY KNOWLEDGE

The Saker *Falco cherrug* qualifies as Globally Endangered because it has undergone a very rapid population decline, particularly on the central Asian breeding grounds, owing to inadequately controlled capture for the falconry trade (BirdLife International 2006). It is also Endangered in Europe due to large declines and its very small population size (BirdLife International 2004).

The total European breeding population of the species is estimated at 584-686 pairs by the workshop participants. This is slightly higher than presented by BirdLife International (2004) mainly due to discovering some 120 new pairs in Ukraine. Data quality is mostly good in Central Europe, but less so in the Balkans and Eastern Europe (see Table 2). Europe holds about 8% of the global population of Sakers, estimated at 7,200-8,800 (BirdLife International 2006).

Habitat use and food requirements are generally well known in countries with larger breeding populations. In general, it may be that birds in Central Europe feed more on birds and are associated more with cultivated land while in the east small rodents are more important in the species' diet (Table 3).

In most countries, the species breeds in only a few IBAs or protected areas. Usually, the breeding pairs in existing or potential protected areas represent a relatively small proportion of the national breeding population, which reflects the species fairly dispersed distribution pattern (Table 3).

3. THREATS

Description of threats

This section reviews the threats identified as affecting the Saker in its European range and migration and wintering areas. It is an overview of the threats and their causal relationship. (problem tree at Fig. 2).

3.1 Habitat loss

3.1.1 Conversion of grasslands into arable land

Importance: High

The key prey species for Saker in the eastern part of the range, i.e. suslik *Spermophilus citellus*, starling *Sturnus vulgaris* and lapwing *Vanellus vanellus*, are all associated with grassland habitats, at least in part of their life cycle. Therefore, the conversion of grasslands to arable land (or to vineyards in Bulgaria) leads to the reduction of prey availability for Saker. In the western part of the range, birds become a more important component of the species' diet due to habitat changes. However, it is not yet well understood the impact of this change on foraging efficiency and breeding success. Based on the information from other species, it can be assumed that having suslik colonies within the territories of breeding pairs reduces searching time during the rearing period compared to avian prey. Futhermore, feeding on domestic pigeons can cause direct persecution of the species (see below).

3.1.2 Decrease in grazing animal stock

Importance: High

Without grazing, pasture vegetation becomes taller and denser and thus unfavourable for susliks and other important prey, such as starlings and lapwings. The reduction in the number of grazing animals is a result of lower profitability of animal husbandry in the countries that went through social and economic transition. As with conversion of pastures to other land use, the impact of this threat is greater where the availability of alternative prey for Saker is more limited (e.g. in steppic areas). Possibly it is a significant threat in Russia (Galushin et al. 2001; Galushin 2003; Antonchikov, Piskunov 2003; Chernobay 2004; Karyakin 2005), Ukraine and Bulgaria, as well as, locally in Romania and Serbia (Ham 1980).

3.1.3 Overgrazing

Importance: Local

Overgrazing of pastures by domestic livestock decreases the food source for the suslik thus leading to the decrease in their numbers. It is reported as a recent threat only from Turkey and Georgia.

3.1.4 Eradication of rodents

Importance: Currently local, but historically and potentially high

The suslik used to be considered as a pest in areas where it caused damage in crop fields or to dykes or where it was supposed to be a grazing competitor with livestock. Eradication campaigns have contributed significantly to the decline of the suslik in parts of Russia and the Ukraine (Belik 1999; V.Vetrov pers. comm.), but were abandoned in the European range of the species recently. However, eradication of rodents, especially Brandt's vole (Fox et al. 2003), are reported from Asia.

3.1.5 Afforestation

Importance: Local

Large scale afforestation may reduce the availability of open hunting grounds for the Saker. It has an especially adverse impact when it is targeted at grasslands in areas where the availability of this habitat is limited. Afforestation is usually subsidised by the governments, especially in the EU Member States through the funds for rural development as a tool to reduce agriculture surpluses. Carbon sequestration attempts in the context of mitigating impacts of climate change are also encouraging the increase of forest cover. However, negative impacts associated with afforestation are the consequence of poor planning and the fact that afforestation aid is often granted without considering the Saker and other open land specialists' requirements. Example for the impact of afforestation can be found in the Deliblato sand plains (Serbia) with decreasing Saker breeding population (Ham 1980, Puzović 2000).

3.1.6 Tree felling

Importance: Low

In lowland areas, especially in steppe and pseudo-steppe areas, trees are scarce and might limit the nest availability for Saker locally. This can be made worse by legal or illegal felling of large isolated trees, tree lines, shelterbelts and woodlots. This problem has been exaggerated by the privatisation of agricultural land and declining living standards in Hungary, Slovakia, Romania, Turkey and Georgia. However, it was not reported from Bulgaria, the Ukraine and Russia. Forest fires also present a potential threat. Tree-felling can, however, be counteracted because Saker readily accept pylons and other artificial nest platforms (Bagyura et. al. 2003, Puzović 1988, 2003).

3.1.7 Infrastructure development

Importance: Local

The construction of roads, motorways, railways, urban and industrial development or tourist facilities directly destroy breeding and feeding habitats of the Saker. Wind turbines or communication towers may also lead to effective habitat loss (but see under direct threats).

3.1.8 Quarrying, mining

Importance: Local

Quarrying of rocky hillsides is reported as a problem from the north of Dobrogea, Eastern Romania and results in the disappearance of suitable cliff nest-sites for the Saker.

3.2 Threats related to destruction/taking of individuals - adults, immatures, chicks or eggs

3.2.1 Shooting

Importance: Medium

The Saker is legally protected in all of the range countries in Europe. Therefore, only illegal shooting occurs, mainly in relation to game keeping or for taxidermy purposes. This threat has been significantly reduced in the western part of the range such as the Czech Republic, Slovakia and Hungary over the last three decades, although isolated cases still occur also there. Little is known about the extent of the problem in Romania, Ukraine, Russia and Turkey where the problem may still be severe. In Bulgaria the threat could be less apparent due to the current rarity of the species (Ruskov 1998d). However, many other raptor species are still shot there. Also little is known about the problem in countries where Sakers migrate to in winter, where the threat is possibly high. This threat is likely to affect the migratory eastern populations more than the Central European one where adults are more sedentary.

3.2.2 Poisoning by pesticides or chemicals

Importance: Unknown

Besides reducing prey availability (see above), pesticide use may adversely affect Sakers through the accumulation in the food chain and direct poisoning. Poisoning can result in decreased productiveness of pairs or even in the death of individuals. It is well documented that DDT had adverse effects on the Saker in the past. However, there is few data available from the European range countries due to lack of research, although some information is available from the Czech Republic and Slovakia (Mrlík 1997). Saker is probably less exposed to poisoning by rodenticides than e.g. Red Kite *Milvus milvus* because its mammalian prey occurs mostly on grasslands where rodenticide use is more limited currently, but see Threat 3.14 above.

3.2.3 Electrocution

Importance: Medium

Birds can be electrocuted on medium-voltage power lines (usually 10-35 kV) when trying to perch on electric poles. By simultaneously touching two energized conductors or a conductor and any grounded hardware the bird is electrocuted and dies instantly. The problem is most severe in open areas with high prey abundance and with few natural perches. Although bird-friendly design can significantly reduce or even eliminate electrocution, national standards still require dangerous pole configurations in many countries. There were more than 20 Sakers found killed by electrocutions in Hungary during the last ten years; however the vast majority of the casualties remain undetected due to lack of regular monitoring of power lines. It is estimated that without electrocution adult and juvenile survival rate would be about 10% higher in Hungary and it is not causing a decline of the population only because of the high reproductive success there.

3.2.4 Collision with man-made structures

Importance: Unknown

Electric power lines (both high- and medium-voltage), transmission towers, wind turbines and other man-made structures pose a risk of collision to flying birds, especially when hunting. Collisions usually lead to instant death or cause severe injuries to birds with no hope for survival. These structures (wind turbines above all) may also be related to increased stress on birds, as well as increased energy loss, associated with their circumnavigation in various atmospheric conditions (Ruskov 2004). Also, wires in vineyards seem to be dangerous for the Saker. In the last 10 years, we have two proved cases of injuries of Saker from such wires in the Czech Republic. The latter aspects are difficult to assess and currently hardly known, but may pose a significant threat to breeding Sakers in certain territories as well as along migration routes (Dereliev and Ruskov 2005).

3.2.5 Trapping

Importance: Potentially high

Sakers are trapped in large numbers in Central Asia and on migration routes, especially in the Middle East, Pakistan and North-Africa for use in falconry, where it is considered an important threat (CITES Secretariat 2004). It is this trapping in Central Asia, caused by the heavy demand for falcons in the Middle-East since the 1970s-1980s, which has lead to the Saker falcon being listed as Globally threatened (BirdLife International 2006). Very little information is available on the extent of trapping of European Sakers on migration.

The use of wild-caught Sakers in falconry is not allowed in the following European range states: Bulgaria, Czech Republic, Georgia, Hungary, Russia, Romania, Slovakia, Ukraine. However, some illegal trapping may take place even in Europe, especially in Ukraine (V.Vetrov, Ju.Milobog pers. comm.), Bulgaria (Ruskov 1998b), Georgia, Romania and Turkey. There is little opportunity for passage trapping in European Russia although it takes place in Asian Russia (Fox et al. 2003; Galushin 2003, Karyakin 2005). In Arabic countries such as Saudi Arabia and Kuwait, most Sakers are wild-caught. This market is fed by the trappers (many from Pakistan and Syria) who catch birds on autumn migration and during post-breeding dispersal eg in Russia, Kazakhstan, China and Mongolia as well as other areas during migration. Turkey probably is/was also an area heavily frequented by trappers. (A Dixon in litt 2006).

In Europe, some trapping might also take place by pigeon-breeders who consider Sakers as a threat to their pigeons.

3.2.6 Nest robbing

Importance: Potentially high

Robbing of Saker nests used to be to some extent a critical threat in the western part of the range (i.e. in the Czech Republic, Slovakia and Hungary) where its importance has decreased drastically since the 1980s. Nest robbing is likely to have greatly contributed to the species' fast decline in Bulgaria. It is suspected that during the 1990s almost all known nests were regularly robbed there (Ruskov 1995, 1998a, 1998b). A similar situation occurred in Hungary where the Saker population has started to increase only after nest robbing was strictly controlled. Currently, nests are supposed to be regularly robbed in Ukraine (V.Vetrov, Ju.Milobog pers. comm.), Russia (Karyakin 2005), Bulgaria and Turkey as well as in Kazakhstan (Karyakin et al. 2004b). They are also occasionally robbed in Austria (A Ranner in litt 2006)

It is probable that most eggs or chicks are stolen by locals under the misapprehension that they have a high value when traded illegally. Nowadays it is unlikely that there is a falconry market for Saker eggs or chicks in the Middle East or Europe. The falconry market in Arabia is mainly for wild-caught passage birds bought. Any stolen chicks need to be laundered through captive breeding projects and sold as captive bred in Autumn and there is no evidence of this. Thus, with properly regulated falconry and strict application of the legislation nest robbing should not pose a threat to the conservation of the species.

3.2.7 Disturbance

Importance: High

Intentional or accidental disturbance at nest sites during sensitive parts of the breeding period can lead to failure of the breeding attempt. If the adults are scared from the nest, eggs or small chicks can be exposed to cold or hot weather or to predators. Disturbance can occur from agricultural or forestry activities, hunting, uncontrolled tourism, cliff climbing, road construction, bird watching, photography, etc. Disturbance seems to be a significant threat throughout the Saker's European range. On average 26% of breeding attempts are unsuccessful in Hungary and most failures can be related to human disturbance (Bagyura et al. 2003).

3.2.8 Predation

Importance: Low

Predation itself is a natural mortality factor. Ravens *Corvus corax*, crows C*orvus corone*, rooks *Corvus frugilegus*, martens *Martes martes*, goshawks *Accipiter gentilis*, Eagle owl *Bubo bubo* or other animals can take eggs or small chicks from Saker nests. Eagle owls may take fledged juveniles or even adults on cliffs where the two species occur together. Casualties from most of these species usually happen to inexperienced Saker breeding pairs. However, in the case of experienced breeding pairs predation of the clutch is usually the secondary consequence of human disturbance.

3.2.9 Collapsing nests

Importance: High

Sakers may occupy weak nests of ravens or crows or old, unstable nests of other birds of prey such as buzzards. These nests may not hold up until the end of the nestling period, collapsing and usually causing the failure of the breeding attempt (chicks die). Provision of artificial nests has been proven as the fastest way to increase the number of successfully breeding Saker pairs and so it is an effective way to increase Saker populations in areas where abundant food is available. Population modelling supports this observation and suggests that, although higher egg and chick mortality caused by collapsing nests is a natural phenomenon, addressing this issue can effectively compensate for higher adult and juvenile mortality caused by other threats within certain limits (Nagy, *unpubl.*).

3.2.10 Extreme weather

Importance: Low

Strong windstorms can throw nests from trees or fell the entire tree. Cold or rainy weather in the period of hatching can lead to death of embryos or small chicks. Large amounts of rain can flood thick nests and especially breeding niches on cliffs leading to the death of either eggs or chicks. Occasionally lightning can also hit nest-trees. Losses caused by extreme weather conditions are rare, but occur regularly throughout the Saker's range. The threat is largely unpredictable and can cause only some fluctuations in the population.

3.2.11 Destruction of artificial nests

Importance: Local

Game keepers may occasionally destroy artificial nests in order to prevent the breeding of Sakers which they consider to be a threat to small game. This threat is reported to occur only from the Czech Republic.

3.3 Genetic introgression

3.3.1 Hybrid falcons breeding with wild Sakers

Importance: Unknown

Hybrid falcons escape from aviaries of falconers. They may form pairs with Sakers in the wild. Hybrids are known to produce offspring with wild falcons. Three cases are known from Germany from recent years; in one case the brood was removed from the nest. In 2003 in Slovakia a wild female Saker produced offspring with a Peregrine x Saker hybrid male. Altogether at six places there has been assumed cross-breeding between Sakers and hybrids in Slovakia. Eight out of 30 registered Saker hybrids escaped in Slovakia in 2004 only (Chavko, J. pers. comm.).

Many falconers, especially in the countries such as the United Arab Emirites , prefer hybrids due to their enhanced performance. Therefore, it is feared that this may cause introgression of other species genes into natural Saker populations. However. it is also assumed that most escaping hybrids do not survive long in the wild. Hence, more information is needed to evaluate the possible effect of escaping hybrids on wild falcon populations.

4. POLICIES AND LEGISLATION RELEVANT FOR MANAGEMENT

The Saker is an Endangered globally threatened species due to its very rapid population decline, particularly on the central Asian breeding grounds. It is also Endangered in Europe. The species is listed under the EU Birds Directive, the Bern, Bonn and CITES Conventions (see Table 5). The following section briefly reviews the range states obligations arising from these international treaties.

The species is also affected by national and EU agricultural and/or forestry policies.

4.1 Member States / Contracting parties obligations

EU Directive (79/409/EEC) on the Conservation of Wild Birds (Birds Directive)

As the Saker is listed on Annex I of the Birds Directive, Sakers should be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution in the EU. Member States should classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species.

In addition, they should protect the species in particular against (a) deliberate killing or capture by any method; (b) deliberate destruction of, or damage to, their nests and eggs or removal of their nests; (c) taking their eggs in the wild and keeping these eggs even if empty; (d) deliberate disturbance of these birds particularly during the period of breeding and rearing, in so far as disturbance would be significant having regard to the objectives of this Directive; (e) keeping birds of species the hunting and capture of which is prohibited. Derogation from this general protection can be only permitted in the interests of public health and safety, in the interests of air safety, to prevent serious damage to crops, livestock, forests, fisheries and water, for the protection of flora and fauna if there is no other satisfactory solution; or for the purposes of research and teaching, of re-population, of reintroduction and for the breeding necessary for these purposes; or for judicious use of certain birds in small numbers. However, this cannot undermine maintaining the species' population at a satisfactory level.

Member States shall also see that any introduction of species of bird which do not occur naturally in the wild state in the European territory of the Member States does not prejudice the local flora and fauna. In this connection they shall consult the Commission.

Convention on Biological Diversity (Biodiversity Convention)

The Biodiversity Convention requires Contracting Parties to establish a system of protected areas; promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings; as well as to rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other management strategies.

Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

As the Saker is listed on Appendix II of the Bern Convention, Contracting Parties should take appropriate and necessary legislative and administrative measures to ensure the special protection of the species. The following will in particular be prohibited for these species: a) all forms of deliberate capture and keeping and deliberate killing; b) the deliberate damage to or destruction of breeding or resting sites; c) the deliberate disturbance of wild fauna, particularly during the period of breeding, rearing and wintering, insofar as disturbance would be significant in relation to the objectives of this Convention; d) the deliberate destruction or taking of eggs from the wild or keeping these eggs even if empty; e) the possession of and internal trade in these animals, alive or dead, including stuffed animals and any readily recognisable part or derivative thereof.

Convention on Migratory Species (Bonn Convention)

As the Saker is listed on Appendix I of the Bonn Convention, Range States should endeavour: a) to conserve and, where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction; b) to prevent, remove, compensate for or minimize, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species; and c) to the extent feasible and appropriate, to prevent, reduce or

control factors that are endangering or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating, already introduced exotic species.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

As the Saker is listed on Appendix II of CITES, the regulation of trade in Saker specimens requires the prior grant and presentation of an export permit. An export permit shall only be granted when the following conditions have been met: (a) a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species; (b) a Management Authority of the State of export is satisfied that the specimen was not obtained in contravention of the laws of that State for the protection of fauna and flora; and (c) a Management Authority of the State of export is satisfied that any living specimen will be so prepared and shipped as to minimize the risk of injury, damage to health or cruel treatment.

In 2002 CITES imposed a trade ban on the UAE, strongly affecting the unregulated market there.

Within the EU stricter measures apply through council regulations 338/97 and 1332/2005. The Saker is listed here in annex A. This is legally more binding for the Member States.

CITES held a consultative meeting on trade in falcons for falconry in Abu Dhabi, 16-19 May 2004 which has discussed issues related to establishment and management of catch quotas, enforcement matters, use of certificates of ownership, captive breeding and marking. The CITES Animal Committee at the 13th Conference of the Parties in Bangkok (2-14 October 2004) has entered the species into a Review of Significant Trade immediately as an exceptional case.

4.2 National policies, legislation and ongoing activities

The Saker is listed in most European countries' Red Data Book and it is legally protected from killing in all countries. However, enforcement differs to a large extent is problematic in most countries and various level of illegal exploitation exist in most countries (Table 6).

Usually less than half of the national breeding population occurs in protected areas or IBAs (Table 7). However, it is expected that more IBAs will be selected for the species in the future as the listing as globally threatened species will trigger selection of sites holding at least 2 pairs.

National protection plans exist only in the Czech Republic, Hungary, Serbia & Montenegro and Slovakia. National working groups and projects exist in the same countries plus Russia (Table 8). National surveys and monitoring programmes in protected areas were implemented in Romania and Turkey. There have been surveys in Ukraine, Moldova, Russia and in 2006 in Bulgaira. In most countries, except the Czech Republic and Slovakia, there are no official routines to inform responsible authorities about nest sites or nesting areas, but in many cases, this happens through the national ornithological societies.

There is some form of conservation activity in place in most countries but FYR of Macedonia, Turkey and Ukraine. Conservation measures mostly include monitoring, nest safeguarding, provision of artificial nests, reducing the possibility of electrocution, translocation of suslik, captive breeding and contact with gamekeepers (Table 8).

The attitude varies largely across the European breeding range. In some countries, the species is little known. In some cases, it attracts some interest amongst falconers. In a few countries, gamekeepers and pigeon breeders regard the Saker as a risk to game species (Table 8).

There are plans to establish a web forum for researchers interested in Sakers in SE Europe (including researchers from the Balkans, Romania, Moldova, Ukraine the Caucuses and Turkey) to be administered by the Central Laboratory of General Ecology, Bulgarian Academy of Sciences.[1]

[1] Contact Dimitar Ragyov

5. FRAMEWORK FOR ACTION

The **goal** of the action plan is to restore the favourable conservation status of the Saker in Europe.

The **purpose** or overall objective of the action plan is to achieve a population of minimum 860 breeding pairs of Saker in Europe by 2015. These population targets in each of the range countries are presented in Table 9 and population models suggest that these targets are achievable by implementing the activities recommended in Section 6 below.

Expected results and means of verification

The Action Plan		**Monitoring indicators**	**Sources of verification**	**Assumptions / risks**
Goal	Restore the favourable conservation status of the Saker in Europe by 2020	Number of breeding pairs, area of occupancy and the trend in these variables	European application of the IUCN Red List criteria based on national surveys	
Purpose	Achieve a population of 860 breeding pairs of Saker in Europe by 2015	Number of known breeding pairs throughout the European range of the Saker	National surveys	Conservation efforts are maintained beyond 2015 in all range countries.
Results to be achieved	Maintain adequate food supply	No significant malnutrition observed amongst nestlings	National surveys of suslik population and other key prey species	CITES recommendations on Saker trade are properly implemented
	Improve survival of nestlings	Breeding success (>70% of breeding attempts are successful)	Protection of active nests	
	Increase adult and immature survival	Survival of marked individuals (>70%)	Survival studies based on radio-telemetry, colour ringing or genetic markers	
	Avoid genetic introgression into wild Saker populations	No sign that hybrids reproduce in the wild	Observations of breeding hybrids; genetic analysis of feathers	
	Identify and fill in knowledge gaps	Number of knowledge gaps addressed in peer reviewed scientific papers.	Research reports; scientific publications	

6. ACTIVITIES BY COUNTRY

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

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

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

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

Results	National activities	Priority	Time scale	Responsible organisations
Maintain adequate food supply	**Identify and designate all sites that qualify as Important Bird Area for the species as protected areas under national and international instruments such as the EU Birds Directive and the Bern Convention's Emerald Network.**	Medium	Medium	National conservation authorities
	Apply legal restrictions to prevent conversion of permanent grasslands into other land use. To this end it is recommended to use cross-compliance rules in the EU Member States in accordance with Article 5 of Council Regulation (EC) 1782/2003 to prevent the loss of permanent grasslands. Afforestation of grasslands in Saker territories, especially they hold Suslik, shall be avoided.	High	Short	National agricultural authorities
	Maintain short sward structure favourable for Suslik and other key prey species such as Lapwing and Starling through promoting the continuation of appropriate level of grazing. To this end, increase the economic viability of the relevant forms of livestock farming through appropriate targeting of the appropriate CMO measures, agri-environmental schmes or other rural development measures in EU Member States or developing similar schemes or Integrated Conservation and Development Projects in other countries.	High	Short	National agricultural authorities
	Relocate/reintroduce suslik to appropriate areas.	Low	Long	Governmental and non-governmental conservation organisations
	Study the causes of the decline of Suslik and based on the results prepare and implement Suslik recovery plans. The recovery plan should provide guidelines on conflict resolutions where suslik may cause problems (e.g. on airfields, dykes and agricultural fields)	Medium	Medium	Governmental and non-governmental conservation organisations, research institutions
	Reduce overgrazing through regulating maximum livestock density where overgrazing is a problem (e.g. Georgia, Turkey). Produce guidelines for sustainable pasture/range management where necessary.	Low	Long	National agriculture authorities
	Maintain and restore well-structured agricultural habitats with abundant marginal features such as shelterbelts, shrubby habitats, field margins, grasslands and wetlands. To this end apply physical planning, adopt appropriate cross-compliance rules and introduce agri-environmental programmes. Agri-environmental programmes should promote the creation of favourable habitat structure for key prey species. Conversion of arable land to grasslands, non-rotational set aside with short grass, grassy field margins may also benefit the prey species.	Medium	Long	National agriculture and conservation authorities
Increase adult and immature survival	**Provide adequate protection to the species according to the requirements of the EU Birds Directive, the Bern and CMS conventions.** (See Section 4).	High	Short	National conservation authorities
	Change national standards for new electric pylons with bird-friendly structures according to the guidelines provided by the Bonn and Bern Conventions	Medium	Medium	National authorities responsible for standards
	Replace existing pylons with safer ones. Until their replacement apply insulators and other bird protection devices on existing unsafe pylons	Medium	Long	Power suppliers

Results	National activities	Priority	Time scale	Responsible organisations
	Avoid crossing important habitats for Saker when routing new power lines through EIA process and through appropriate assessment in accordance with the Article 6(3) if the project affects Natura 2000 areas in EU Member States.	Medium	Short	National environmental and conservation authorities.
	Promote a CMS Agreement or MoU on migratory raptors in Africa and Eurasia to address the species conservation at wintering places.	Medium	Medium	National governments
	Raise awareness amongst hunters, gamekeepers, taxidermists and pigeon breeders about the conservation status of the species. Put in place conflict resolution measures when Saker causes damage to pigeon breeders.	Low	Ongoing	Governmental and non-governmental conservation organisations
	Ban pesticides which cause poisoning of Saker	Low	Ongoing	National agricultural authorities
	Ensure monitoring of potentially dangerous structures (e.g. wind turbines) during operation and take corrective measures if necessary	Low	Medium	Governmental and non-governmental conservation organisations
	Reduce demand for wild caught birds by providing captive bred birds.	High	Ongoing	Falconry organisations
	Raise awareness amongst falconers about the value of captive bred birds.	High	Ongoing	Falconry organisations
	No legal trapping should be allowed as long as the species has unfavourable conservation status. Sustainable harvest should be considered, in accordance with the EU Sustainable Hunting Guide, only if the species has already recovered to favourable conservation status. Non-EU countries are encouraged to adopt similar policies.	High	Short	National conservation authorities
	Appropriate marking for identification should be introduced for birds both in wild and in captivity (including released birds)	Medium	Medium	Falconry and conservation organisations
	Elaborate proper registration and marking system of birds in captivity including breeding centres, zoos, etc.	Medium	Medium	National conservation authorities
	Develop an appropriate system for genetic identification of individuals	Medium	Ongoing	Falconry and conservation organisations with scientific institutions
Increase survival of nestlings	**Raise public awareness about the value and protection status of Saker to discourage taking from nests** (see also above)**.**	Medium	Ongoing	Falconry organisations
	Raise public awareness of the low value of poorly raised birds for falconry.	Medium	Medium	Falconry organisations
	Enforce existing conservation legislation and do not give permission for taking from the nest even for "judicial use" as long as the species has unfavourable conservation status (see also above**).**	Medium	Medium	National conservation authorities
	Organise guarding of threatened nests.	Medium	Immediate	Governmental and non-governmental conservation organisations
	Regularly monitor nests during the breeding period.	Medium	Ongoing	Governmental and non-governmental conservation organisations
	Strengthen natural nests to increase breeding success.	High	Immediate	Governmental and non-governmental conservation organisations
	Construct artificial nests near to feeding habitats to increase nest site availability and to increase breeding success. To this end, construct sturdy artificial nests and nest boxes that provide protection against adverse weather (e.g. hail).	High	Ongoing	Governmental and non-governmental conservation organisations

Results	National activities	Priority	Time scale	Responsible organisations
	Reach agreement on timing and routing of potentially disturbing activities such as agriculture, forestry or hunting near nest sites. If necessary restrict access to the nest sites.	High	Immediate	Conservation authorities
Prevent genetic introgression into wild saker populations	**Evaluate the possible threat of genetic introgression, set up a working group and prepare a strategic document within 2 years after adoption of this action plan with the involvement of the IAF.**	Medium	Medium	European Commission, Bern Convention, Bonn Convention (?), CITES Secretariat (?), national conservation authorities, IAF, BirdLife International
Fill in knowledge gaps	**Carry out regular population surveys.**	High	Ongoing	Governmental and non-governmental conservation organisations, scientific institutions
	Monitor breeding populations and breeding success at least at selected study sites.	High	Ongoing	Governmental and non-governmental conservation organisations, scientific institutions
	Research the movements of individuals (wintering areas) and possible gene flow between populations by applying marking techniques such as colour rings, radio tags, PTTs.	Medium	Short	Governmental and non-governmental conservation organisations, scientific institutions
	Carry out research on the food preference of the Saker and on the availability and distribution of prey species.	High	Ongoing/ Immediate	Governmental and non-governmental conservation organisations, scientific institutions
	Carry out research on the habitat use and home range size of the Saker.	High	Medium	Governmental and non-governmental conservation organisations, scientific institutions
	Study the effect of trapping (also outside Europe).	Medium	Short	Governmental and non-governmental conservation organisations, scientific institutions
	Study the extent and effect of electrocution.	Medium	Short	Governmental and non-governmental conservation organisations, scientific institutions
	Study the potential and actual effects of chemicals.	Low	Medium	Governmental and non-governmental conservation organisations, scientific institutions
	Study the survival rate in different populations.	High	Short	Governmental and non-governmental conservation organisations, scientific institutions

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8. TABLES

Table 1.: Geographical distribution during the year.

Breeding	**Formerly breeding** (date of extinction)	**Migrating** (period)	**Non breeding visitor** (*period*)**:**
• Armenia • Austria • Belarus • Bulgaria • Croatia • Czech Republic • Georgia • Germany • Hungary • Macedonia • Moldova • Poland • Romania • Russia • Serbia & MN • Slovakia • Turkey • Ukraine	• Greece?	• Bulgaria • Cyprus (very scarce) • Greece • Italy • Macedonia • Malta	• Syria • Turkey • Jordan • Lebanon • Israel • Iraq • Iran • Afghanistan • Pakistan • India • Saudi-Arabia • UAE • Oman • Yemen • Egypt • Libya • Ethiopia

9. TABLES

Table 2.: Population figures

Country	Known breeding pairs	Year of count	Breeding pairs (estimate)	Quality	Year(s) of the estimate	Breeding Population trend in the last 10 years	Quality	No. of Migrating or Non Breeding populations (individuals)	Quality	Year(s) of the estimate	Baseline population (pairs)	Reference
Armenia	?		?									
Austria	8	1999	20	Medium	2005	Possible increase	Poor	Unknown	-	-	15-20	Berg 2000 Ranner 2005
Bulgaria	20	1997	4-10	Good	2004	-90%	Good	?		2004	"most widespread", "numerous"	Floericke 1918
Croatia			5	Poor	2003	Unknown, possible decline		Unknown				
Czech Republic	13	2004	15-18	Good	2004	+30%	Good	8-10	Medium	2004	0-5	1958
Georgia	3	2003	4-5	Good	2003	?		?			(1999)	
Germany		2001	0-1	Good	2006	1997-2001 is only known breeding	Good					H Haupt in litt 2006
Hungary	140	2004	140-145	Good	2004	+75%	Good	?			30	1980 (Bagyura et al. 1994a, 2003)
Macedonia	0	2004	0-3	Poor	2000-2004	Unknown	Poor	0-10	Poor	2004	Unknown	
Moldova			4-7		2000	Decrease						
Poland			0-2		2000							
Romania	4	2004	8-15	Medium	2004	0	Medium	20-40	Poor		Unknown	
Russia	2	2004	10-20	Medium	2003-2004	-90%	Medium	?	Unknown	2004	100-150	1980s
Serbia & MN	50	2004	55-60	Good	2002-2004	+10%	Good	unknown			26-36	1977-1979 (Puzović 2000)
Slovakia	23	2004	23-25	Good	2004	+20%	Good	?			70-120	19th century
Turkey	0	2004	50-70	Medium	2001	No data		20-100	Poor		10-100	
Ukraine	140	2004	250-280	Good	2004	No data		?				
Totals			**584-686**									

Table 3.: Knowledge on habitat and diet of the Saker

Country	Habitat use	Diet
Armenia	Semiarid, semidesert areas with rocks and open grasslands, cliffs of river gorges and in dry mountain landscapes with sparse forests. In the north, prefers open woodlands with high cliffs and marshy lakeshores. In the Araks Valley, birds prefer parks and semidesert areas. Avoids high mountain habitat.	Birds eg linnet and including domestic fowl and small mammals eg of Common Vole (Microtus arvalis) (Dal 1954). Heavy snow cover results in these falcons hunting closer to towns and villages.
Austria	*Open land with agriculture in pannoninan landscape (nests often on electric pylons), riverine forests, deciduous forests in foothill zone; former breeding sites on prealpine cliffs have become abandoned in the eighties.*	*Insufficiently known; feral pigeon seems to be main prey (cf.Berg 2000), others are partridge, suslik (Frey & Senn 1980).*
Bulgaria	*Breeding – mostly mountainous areas, nesting on rocks, but tree nesting also documented, with open pastures in the immediate area. On migration – all types of habitats.*	*Susliks are the main or exclusive diet. Other prey include mostly medium sized birds such as blackbird, partridge, chukar (Ruskov 1998a).*
Croatia	*Alluvial floodplain old growth forest – primarily* Quercus robur *and* Populus nigra *associations*	*Primarily birds*
Czech Republic	*Alluvial forests or open agricultural landscape*	*Mostly feral pigeons*
Georgia	*Semiarid areas with rocks and open grasslands*	*No data available*
Hungary	*Most of the population breeds in agricultural land, but also in steppes and mountains/foothills.*	*Formerly suslik used to be dominant prey, nowadays mainly birds: pigeons, starlings, corvids, pheasants, etc. (Bagyura et al. 1994b)*
Macedonia	*Unknown*	*Unknown*
Romania[2]	*In SE Romania (Dobrogea) open landscapes near forests, hills and gorges – mountains with low altitudes.* *In W Romania meadow forests near pastures, huge open landscapes (occasionally breeding sites)*	*Insufficiently known. W Romania: hamster, suslik, pigeon, SE Romania: young herons, pigeon (sporadic information, no study performed)*
Russia	*Small forests and cliffs*	*Mostly susliks and some birds (occasional observations)*
Serbia & MN	*Mainly agricultural land (near villages nest on electrical pylons).* *In some areas in Banat region sandy areas (Deliblato sand) also in some areas (not so often) floodplain forest (Danube region). In south-eastern Serbia in mountain region of Stara planina mountain and Vlasina Sakers live on mountain pastures (plateaus) and breed on rocks.*	*Mainly pigeons, and other small-medium sized birds, and small mammals. Also Cricetus and Spermophilus spp., etc.*
Slovakia	*Typical agrocoenosis in the Pannonian lowland* *80-90% of pairs use nest boxes on electric pylons*	*Main prey items:* Columba livia f.domestica *(65 %),* Sturnus vulgaris *(20 %) others (15 %)*
Turkey	*Likely to prefer primary steppes for breeding*	*No data*
Ukraine	*Steppe, forest-steppe*	*Small to medium sized rodents (suslik), small mammals, doves, corvids, gulls*

[2] Daróczi and Zeitz 2004

Table 4.a.: Threats importance at national level

For each population, the importance of each human activity is assessed according to the following ranking system:

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

Special note for interpretation: stating that for a given population, the importance of a given factor is e.g. High ***does not imply*** that it has ***currently*** a High impact, but simply that the population is highly sensitive to this factor, which may or may not be currently under control.

Threat score	**Austria**	**Bulgaria**	**Croatia**	**Czech Republic**	**Georgia**
1. Habitat Loss/Degradation (human induced)	*Threat score*	*Threat score*	*Threat score*	*Threat score*	*Threat score*
Afforestation	-	-	-	Low	-
Infrastructure development	Low	Low	Low	Low	Local
Conversion of grasslands into arable land	Low	Low	?	Low	Low
Decrease in grazing animal stock	-	Medium	?	Low	-
Overgrazing	-	-	-	-	Low
Eradication of rodents	-	Local	?	-	
Tree felling	Low	Local	?	Medium	
Quarrying, mining	-	?	?	Low	Low
2. Direct mortality					
Shooting	?	Local	Unknown	Local	Unknown
Poisoning by pesticides or chemicals	Unknown	Unknown	Unknown	Unknown	Unknown
Electrocution	Low	?	Unknown	Medium	?
Collision with man-made structures	Low (may increase by recent enlargement of wind power stations	Unknown	Unknown	Medium	Unknown
Trapping	suspected (known in some cases) (Low to Medium)	Low?	Unknown	Local	Unknown
Nest robbing	Occasional	Critical	Unknown	Local	Unknown
Disturbance	Low	Low	High	Medium	High
Predation	Unknown (Low?)	Local	Local	Medium	Local

Threat score	Austria	Bulgaria	Croatia	Czech Republic	Georgia
Collapse of natural nests	Medium	?	?	Medium	-
Extreme weather	Unknown (Low?)	Local	Local	Local	Local
Destruction of artificial nests	(at present no artificial nests with breeding pairs are known. There are plans to offer nest aids on electric pylons	-	?	Local	-
2. Hybridisation					
Hybrids interbreeding with wild Sakers	Unknown	Unknown	Unknown	Unknown	Unknown

Table 4.b.: Threats importance at national level

Threat score	Germany	Hungary	Macedonia	Romania
1. Habitat Loss/Degradation (human induced)	*Threat score*	*Threat score*	*Threat score*	*Threat score*
Afforestation	?	Low	-	-
Infrastructure development	?	Low	Local	-
Conversion of grasslands into arable land	?	Low	Unknown	Low
Decrease in grazing animal stock	?	Medium	Unknown	Medium
Overgrazing	?	-	?	-
Eradication of rodents	?	-	?	Local
Tree felling	?	Medium	?	Local
Quarrying, mining	?	Local	?	Local
2. Direct mortality				
Shooting	?	Local	Unknown	Medium
Poisoning by pesticides or chemicals	?	Unknown	?	Unknown
Electrocution	?	Medium	Unknown	Unknown
Collision with man-made structures	?	Unknown	Unknown	Unknown
Trapping	?	Local	Unknown	Unknown
Nest robbing	?	Local	Unknown	Unknown
Disturbance	?	Medium	?	High
Predation	?	Low	?	-
Collapse of natural nests	?	Low	?	Unknown
Extreme weather	?	Local	?	-
Destruction of artificial nests	?	Local	?	-
2. Hybridisation				
Hybrids forming pairs with wild Sakers	?	Unknown	Unknown	Unknown

Table 4.c.: Threats importance at national level

Threat score	Russia	Serbia &MN	Slovakia	Ukraine	Turkey
1. Habitat Loss/Degradation (human induced)	*Threat score*	*Threat score*	*Threat score*	*Threat score*	*Threat score*
Afforestation	-	Local(in steppe habitat Deliblato sand)	Local	?	?
Infrastructure development	-	?	Medium	?	?
Conversion of grasslands into arable land	Low	?	High	?	Unknown
Decrease in grazing animal stock	High	High? Medium?	Medium	?	?
Overgrazing	-	-	-	-	Low?
Eradication of rodents	Medium in the past	Low??	-	?	?
Tree felling	Local	Local?	Medium	?	?
Quarrying, mining	-	-	-	?	?
2. Direct mortality					
Shooting	Occasional	Medium Unknown	Medium	Unknown	Medium
Poisoning by pesticides or chemicals	-	Medium?	Unknown	Unknown	Unknown
Electrocution	Medium	Low Unknown	High	Unknown	Unknown
Collision with man-made structures	Unknown	Unknown	Medium	Unknown	Unknown
Trapping	Medium	Low ?	Unknown	?	High
Nest robbing	High	Local	Low	?	Medium?
Disturbance	High	Medium?	Medium	Local	Medium
Predation	Low	?	Low	Local?	?
Collapse of natural nests	Unknown	Medium (nests on pilons of ravens?	Low	?	?
Extreme weather	Unknown	?	Local	?	?
Destruction of artificial nests	-	- no artificial nests still	Low	?	?
2. Hybridisation					
Hybrids forming pairs with wild Sakers	Unknown	Unknown	Local	Unknown	Unknown

Table 5. International conservation and legal status of the species

World Status[3] (Criteria)	European Status[4]	SPEC category[5]	EU Birds Directive Annex	Bern Convention Annex	Bonn Convention Appendix	Convention on International Trade in Endangered Species
EN	EN	1	I.	II.	II.	II. (Annex A for EU)

[3] World Status should be based according to the latest BirdLife International/IUCN Red List assessment (available at www.redlist.org or www.birdlife.net). Categories: CR = Critically endangered, EN = Endangered; VU = Vulnerable; NT = Near threatened; DD = Data deficient; LC = Least concern. Include also the criteria met

[4] BirdLife International (2004). *Birds in Europe: Population estimates, trends and conservation status*. Cambridge UK: BirdLife International (BirdLife Conservation series no. 12)

[5] BirdLife International (2004). *Birds in Europe: Population estimates, trends and conservation status*. Cambridge UK: BirdLife International (BirdLife Conservation series no. 12)
SPEC 1: Species of global conservation concern. Species which are globally threatened, conservation dependent or data deficient, according to Collar et al. (1994).
SPEC 2: Species whose world populations are concentrated in Europe (i.e. over 50% of the total population or range occurs in Europe) and which have an unfavourable conservation status.
SPEC 3: Species whose world populations are not concentrated in Europe, but which have an unfavourable conservation status in Europe.

Table 6.:National conservation and legal status

Country	Status in national Red Data Book	Legal protection from killing	Year of protection status	Penalties for illegal killing or nest destruction	Annual take	Highest responsible national authority
Armenia	Endangered.	Yes	Since 1987 in Red Data Book	Yes		Ministry of Environment
Austria	Critically endangered (J. Frühauf in press)	Yes (nationally, huntable with no open season; fully protected by hunting law of the Provinces of Lower Austria, Burgenland & Wien)		Yes, but no fixed amount	Unknown	Government of the Provinces of Lower Austria, Burgenland, Wien (conservation issues); Federal Ministry for Agriculture, Forestry, Environment and Water Management (CITES)
Bulgaria	Threatened (1985) A new edition of the National Red Book is under preparation.	A fine; 2 year imprisonment, but not enforced despite efforts of conservation organizations. Highest level of protection from direct persecution under Bulgarian Law. (Ruskov 1998d)	1962	100- 5000 BGN private individuals; 500 – 10000 BGN juridical bodies	Unknown	Ministry of Environment and Waters
Croatia[6]	Critically endangered breeding population (CR)	Yes	Since the 1980s	Yes	Unknown	Ministry of Culture, Department for Nature Protection
Czech Republic	Critically endangered	YES (Act. No. 114/1992)	1965	Penalty up to 500 000 (approx. 15 000 Euros)	1 nest robbing recorded in past 20 years; 1 bird shot	Since 2004: Agency for Nature Conservation and Landscape Protection.
Georgia	Endangered	Yes	Since 1982 included in Georgian Red Data Book	From 150-to 850 GL (83-470 $)	No data	Ministry of Environment
Germany	Not included because	Yes				

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Country	Status in national Red Data Book	Legal protection from killing	Year of protection status	Penalties for illegal killing or nest destruction	Annual take	Highest responsible national authority
	irregular breeder					
Hungary	Directly threatened (Red Data Book 1989); Conservation dependent (MME red list 1999).	Imprisonment and fine of up to ~4000 EUR (1000000 HUF).	Strictly protected since 1954	~4000 EUR (1000000 HUF)	2-3 nests robbed in the last 20 years	Ministry of Environment and Water
Macedonia	No red data book	None	-	None	Unknown	Ministry of Environment and Physical Planning
Romania	Critically endangered	Yes	1996	Only fine (contravention), 500.000 ROL (ca. 13 Euro)	No data.	Ministry of Environment and Water Management
Russia	Category 2 – decreasing in number	All raptors including the Saker are legally protected since 1964	1964, 1978, 1964 – two editions of USSR Red Data Book 1983, 2000 – two editions of Red Data Book of Russia	Not less than 5 minimal salaries: Rubles 5000 (Euro 150) for one bird. Rubles c 15000 (Euro 500) for destruction of one nest (Approved in 1994). Few guilty verdicts with 1-3 yrs in prison (on probation)	No legal taking from the wild; Probably 1-2 broods per year could be taken illegally	Ministry of Natural Resources
Serbia & MN	In S&MN previous LR-cd (Vasic, 1995), and now VU (Puzovic, 2000)	Yes (In Serbia and Montenegro both)	1993 - Official Natural rarities, Strictly protected since 1947.	Penalty depends of level of violation, by new environmental law very strict	about 3-5 (?)	The Institute for nature Conservation of Serbia
Slovakia[7]	Critically Endangered /1998/ /according to IUCN categories from 1995/	Legal protection is regulated by the Parliamentary Law No.543 of 2002 on Nature and Landscape Conservation	1955	Slovak Criminal Code No 300 of 2005 imposes up to 8 years of imprisonment. For criminal law purposes the societal value of the Saker is regarded as 100 000 SKK	1965-1999 175 nests were robbed (=5 nests/year on average); 2 individuals/year proven to be shot.	Ministry of Environment
Turkey	Critically endangered	Positive. All birds of prey protected from killing.	-	5,000 ytl (appr. 3,000 €); difficulties in law enforcement.	No data. Illegal capturing exists. No official trade allowed.	Ministry of Environment and Forestry
Ukraine	3rd category	Yes	Red Book (1994)	Penalty for illegal take or causing harm – 2,500 UAH (about 471.7 USD)	No permissions for capture. Up to 12 birds taken illegally.	Ministry for Environmental Protection

[7] Kristín et al. 2001

Table 7.: Site (and habitat) protection and research including occurrence in Important Bird Areas and Protected Areas

Country	% of national population in IBAs	% of population in SPAs[8]	% of population in Ramsar sites	% of national population in protected areas	Number of IBAs where the species breeds	Research carried out in the last 5 years
Armenia						Population distribution surveys
Austria	*>50 % (8-11 pairs)*	*>40% (4-8 pairs)*	*>10%*	*>40%*	6	Research includes annual survey of national breeding population and studying influence of hybrid-falcons on native population (Nittinger et al. in press, 2004)
Bulgaria	~25% (p*ossibly 2 pairs)*	N/a. Many former breeding sites are proposed for inclusion.	None	~75%	The IBA network is undergoing expansion and a new inventory is being prepared. Currently two territories are in IBAs.	Research includes the survey of autumn and spring migration. Other observations were made under various national bird monitoring programmes. BPPS had a project, funded by the British Embassy, for guarding Saker nests in 2002 – 2004; most appropriate habitats and the last known territories were checked. No breeding was recorded.
Croatia	N.a.	N.a.	~80% (4 pairs)	~80% (4 pairs)	3	None
Czech Republic	2-5 pairs (20-40%)	2-5 pairs (20-40%)	2-5 pairs (20-40%)	20-40%	1	Since 1995 countrywide Rescue programme for Peregrine and Saker
Georgia	1 pair	0	0	20% - 1 pair in proposed nature park (in process)	1	Breeding pair survey Georgian Centre for the Conservation of Wildlife
Germany						
Hungary	~30% (40-50 pairs)	68%	?	~45% (60-70 pairs)	13	Annual monitoring of breeding pairs; identification of prey remains.
Macedonia	-	N.a.	0	0	0	-
Romania	25% (3 pairs) in actual IBAs and 40% (5 pairs) in proposed new IBAs		0-1 pairs	25% (3 pairs)	3 actual IBAs and 5 proposed new IBAs	Studies performed in SE Romania only: - population distribution surveys, - prey species density surveys; - threat factor estimation.
Russia	*~27% (*3-5 pairs, Galushin 2003)		None	None *(Galushin 2004)*	*2-3*	Annual surveys between the Volga and Ural rivers mostly for assessment of raptor populations as well as special surveys in neighboring North-Western Kazakhstan supported by MEFRG, Abu Dhabi. Regular surveys under

[8] This is relevant only for European Union member states. Any other regional (legal) protection instruments should be mentioned in this table

Country	% of national population in IBAs	% of population in SPAs[8]	% of population in Ramsar sites	% of national population in protected areas	Number of IBAs where the species breeds	Research carried out in the last 5 years
						IBA program of Russian Bird Conservation Union as well as irregular studies by expeditions and local researchers.
Serbia & MN[9]	*~20% (*10-12)		only 2-3 (5 %)	*~26% (15 pairs)* now 15% and in 2010 will be only 20% of all breeding pairs (Puzović et al 2003)	7	monitoring of breeding population since 1987 until now (not every years)
Slovakia[10]	*~30% (7-8 pairs)*	1-2	0	17% *(3-5 pairs*	4	Annual survey since 1980, identification of prey remains.
Turkey[11]	*~12% (6-7 pairs)*		1 pair (Van lake)	3% *(2 pairs)*	*6 (4 actual, 2 proposed)*	IBA surveys
Ukraine	*~2% (4-6 pairs)*	**NA**	No data available	*Up to 4% (10 pairs in Crimea)* No full information.	2	2003-2004 population surveys along hgh-voltage power lines (140 new pairs found).

9 Puzović and Grubač, 2000
10 Chavko 2002
11 Kılıç and Eken 2004

Table 8.: Recent conservation measures and attitude towards the species.

Country	National protection plan for the species	Is there a national Saker project / working group?	Is there a national survey / monitoring programme?	Is there a monitoring programme in protected areas?	Routines for informing the responsible authorities regarding nesting areas and nest sites	Conservation efforts over the last ten years	General attitude towards the species
Armenia	No	No	Yes	Yes (organized by Ministry of Environment)	No	Population survey;	Neutral - not popular among falconers
Austria	A "National Action Plan" is planned for the near future by BirdLife Austria	No	Yes (organized by Birdlife Austria on voluntary basis)	(see left)	No	Monitoring, offering artificial nests on electric pylons (it is planned to enlarge this activity), caring for injured birds, nest guarding in some cases	Unfamiliar to most people but ornithologists and falconers; unpopular in some parts to game keepers due to possible predation on pheasant, partridge and hare
Bulgaria	To be prepared - BPPS is officially hired to develop Saker Action Plan for Bulgaria.	Continued efforts since 1987 from members of the current BSPB and EABC Bulgaria; establishment of nest protection group with participants from other NGOs in 1997 (Ruskov 1998b, 1998c). First nest guarding in	BSPB proposed it for inclusion in a monitoring scheme of the Ministry of Environment.	Partially (Central Balkan National Park)	No	Continued specific efforts since 1987 from members of the current BSPB and EABC Bulgaria (Ruskov 1995, 1996); BSPB / EABC Bulgaria tried to involve the National Service Against Organized Crime at the Ministry of Interior Affairs and the	Unfamiliar

Country	National protection plan for the species	Is there a national Saker project / working group?	Is there a national survey / monitoring programme?	Is there a monitoring programme in protected areas?	Routines for informing the responsible authorities regarding nesting areas and nest sites	Conservation efforts over the last ten years	General attitude towards the species
		Bulgaria organized by the BSPB 1997.				Commission on Law Enforcement, National Fish and Wildlife Service, USA in coordinated efforts against nest robbers. BPPS' work against the bird crime in Bulgaria directly supported the species. Several nest robberies were prevented. One chick was confiscated and returned to its' nest.	
Croatia	Not available	No	No	No	No	Unknown	Generally positive for protection, species unknown to many except ornithologists and falconers
Czech Republic	Yes	Yes-together with Peregrine falcon	Yes	Yes	Yes- monitoring is provided by ornithologists cooperating with state nature protection institutions	Monitoring, nest guarding, construction of artificial nests, captive breeding (just adding of captive bred young to the nests where the young were lost due to predation, bad weather or nest collapse) mitigation of electrocution.	One of the favourite birds for falconry in the CZR (over 600 birds without hybrids).

Country	National protection plan for the species	Is there a national Saker project / working group?	Is there a national survey / monitoring programme?	Is there a monitoring programme in protected areas?	Routines for informing the responsible authorities regarding nesting areas and nest sites	Conservation efforts over the last ten years	General attitude towards the species
Georgia	No	No	No	No	No	Population survey; keeping contact with locals	Neutral - not popular among falconers
Germany							
Hungary	Published in 2003	Working group	Yes, coordinated by MME	-	No	Monitoring, nest guarding, insulation of electric poles, construction of artificial nests, suslik reintroduction, awareness raising.	Neutral
Macedonia	None	No	No	No	No official routines established; sharing of information based on personal contacts	None	Unknown
Romania	None	No	Only regional one, started in 2004.	Yes	No	Construction of artificial nests. First steps made towards the insulation of dangerous elctricity poles	The species is more or less unknown, considered to be predator of small game species by hunters.
Russia	None	Raptor Working Group	Raptor surveys; regular data collection for regional red data books	No sakers in protected areas	No reporting of exact locations (deliberately)	Captive breeding (one centre) and release programme (without direct results); suslik reintroduction planned; electric pole insulations initiated.	Positive by the general public. However, amateur falconers try hunting with

Country	National protection plan for the species	Is there a national Saker project / working group?	Is there a national survey / monitoring programme?	Is there a monitoring programme in protected areas?	Routines for informing the responsible authorities regarding nesting areas and nest sites	Conservation efforts over the last ten years	General attitude towards the species
							sakers.
Serbia & MN	Plan of the Institute for Nature Conservation of Serbia for research and monitoring of the species and for development of active conservation measures	No but in proces of preparation (building of artificial nests on pylons with support of electrical companies from Serbia)	Programme of the Institute for Nature Conservation of Serbia and Bird Protection Society of Vojvodina with financial support from the Provincial Secretariat for Environment of Vojvodina province	Partially	No concrete obligations, but many members of ornithological societies inform authorities about found nests or birds.	Education of game keepers (hunters) and pigeon keepers, public awareness raising	The species is generaly unknown, except ornithologists, falconers and in some areas pigeon keepers. Some of them have positive some other negative attitude
Slovakia[12]	On December 9. 2003 the National Action Plan for Saker was approved by the Ministry of Environment	Raptor Protection of Slovakia	Raptor Protection of Slovakia coordinate the national Saker monitoring programme	Yes	According to Law No.543 of 2002 on Nature and Landscape, permit from Ministry of the Environment is needed to carry out monitoring programme. The requirement for the annual report is included in the Ministry permit.	Regular annual monitoring of population parameters, identification of mortality factors and threats, construction of artificial nests, insulation of electric pylons, reintroduction of suslik.	Many hunters still consider Saker to be a harmful species. About 200 birds in captivity including hybrids.
Turkey	None	No	Yes, IBA monitoring programme	Not regularly	Important Bird Areas of Turkey (EKEN G.; KILIC D:T; 2004);Red	No species oriented efforts	Illegal capturing and hunting is

12 Chavko and Adamec 2003

Country	National protection plan for the species	Is there a national Saker project / working group?	Is there a national survey / monitoring programme?	Is there a monitoring programme in protected areas?	Routines for informing the responsible authorities regarding nesting areas and nest sites	Conservation efforts over the last ten years	General attitude towards the species
					list of Turkish Birds (EKEN G; 2004) Distributed among decisionmakers and relevant government Authorities. Press releases on Saker Conservation.		popular due to high prices paid by Arabs if nest sites are known by locals. Generally seen as an asset. Locals would like to sell birds (without proper identification of species)
Ukraine	None	No	No	As part of general monitoring of birds of prey; no publications. (Private initiative with private money)	No	None	Pigeon keepers occasionally shoot illegaly - they consider falcons responsible for hunting pigeons.

Table 9.: Population targets by country

Country	2010	2015	2020
Austria	To keep population stable	?	?
Bulgaria	15-20	25-30	50-60
Croatia			
Czech Republic	20-25	25 - 30	30 -35
Georgia	5	10	20
Hungary	200	260	320
Macedonia			
Romania	25-30	60	80
Russia	20-30	50	100
Serbia & MN	70-80	80-100	100-120
Slovakia	30-35	45-70	70-90
Turkey	20	30	60
Ukraine	300	350	400
Total	640-680	860-895	1135-1170

Figure 1.: Distribution of the Saker in Europe

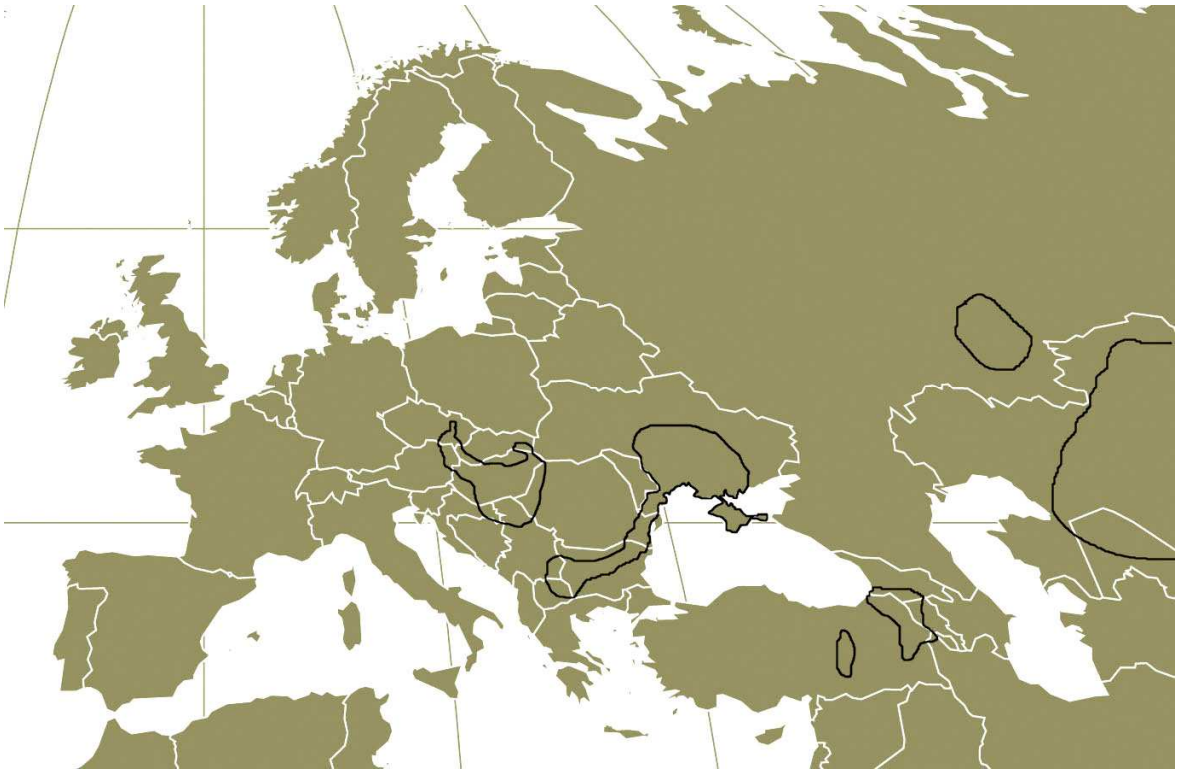
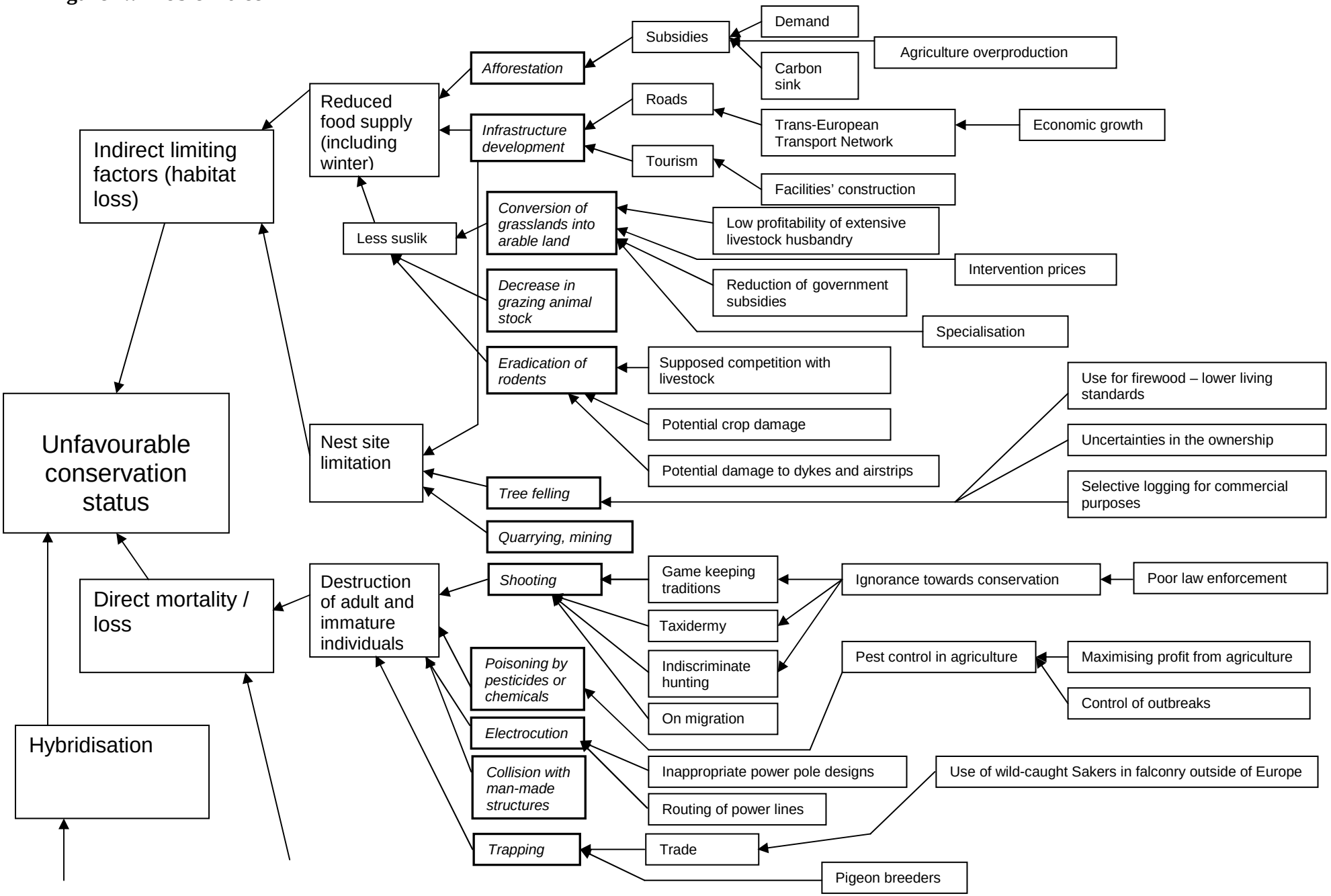
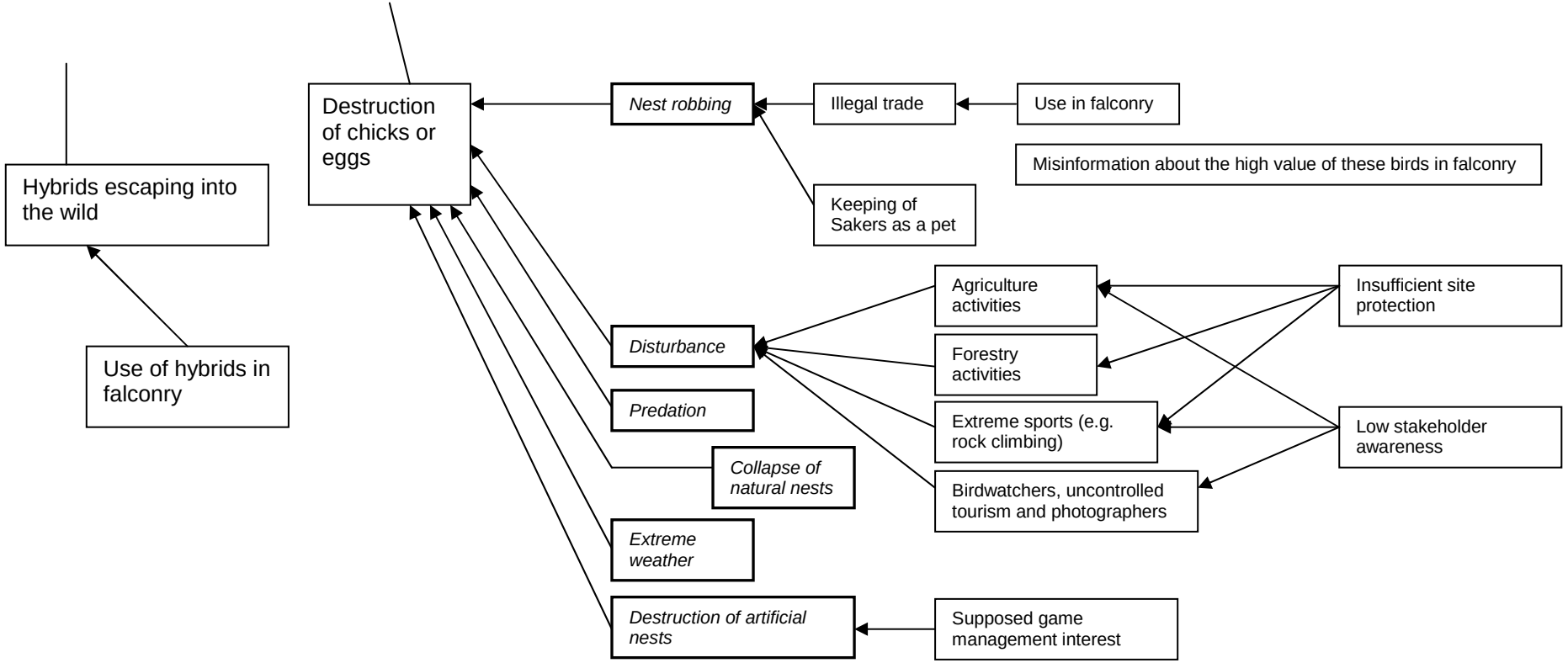


Figure 2.: Problem tree




Hybrids escaping into the wild
Use of hybrids in falconry
Destruction of chicks or eggs
Nest robbing
Illegal trade
Use in falconry
Misinformation about the high value of these birds in falconry
Keeping of Sakers as a pet
Disturbance
Agriculture activities
Forestry activities
Extreme sports (e.g. rock climbing)
Birdwatchers, uncontrolled tourism and photographers
Insufficient site protection
Low stakeholder awareness
Predation
Collapse of natural nests
Extreme weather
Destruction of artificial nests
Supposed game management interest