



CONVENTION ON MIGRATORY SPECIES

Distr: General

UNEP/CMS/AERAP-IGM1/5
14 September 2007

Original: English

MEETING TO IDENTIFY AND ELABORATE AN
OPTION FOR INTERNATIONAL COOPERATION
ON AFRICAN-EURASIAN MIGRATORY RAPTORS
UNDER THE CONVENTION ON MIGRATORY SPECIES
Loch Lomond, Scotland, United Kingdom, 22-25 October 2007
Agenda Item 8.0

CONSERVATION STATUS OF MIGRATORY AFRICAN-EURASIAN RAPTORS AND THE VALUE-ADDED OF CMS ENGAGEMENT

Background

1. Raptors¹ have had a long history of interaction with man. Since earliest times, several species, particularly the largest, have been persecuted owing to actual or perceived predation of stock and game. In contrast, the larger falcons have been highly prized for falconry, leading to the provision of strict protective measures in many countries.
2. They have become totemic species, highly valued by some sectors of society. In part at least this has been because of their importance as wider indicators, not only of chemical pollution in the environment (Newton 1998; Ratcliffe 2001), but also because their conservation status also tells us something about the ecology of the landscapes in which they occur.
3. Raptors and owls are generally large, long-lived species with low rates of reproduction: characteristics that appear to be associated with high risks of extinction (Bennett & Owens 1997). Species with low fecundity are particularly susceptible to factors that increase their adult mortality rates (Newton 1979). Furthermore, species with slow reproduction take a long time to recover from population losses, which lengthens the time over which reduced populations may be at risk from catastrophic chance events.
4. As predators - which typically occur at or near the top of food-chains — many raptor and owl species are naturally scarce, which further exacerbates their vulnerability to threats. The most important of these concern land use practices that reduce prey availability and suitable breeding habitat, but pollution, poisoning, hunting, persecution, illegal taking and trade (*e.g.* for falconry), collisions and electrocution from overhead power-lines, and general disturbance all impact on their welfare (Thiollay 1994; White *et al.* 1994; Goriup & Tucker 2007).
5. Many raptors are migratory, moving long distances between typically more northern breeding areas to typically more southerly areas used in the non-breeding season. These movements link countries and their annual cycle takes them through diverse biotopes and landscapes.

¹ “raptor” refers to all birds of prey, including owls, *i.e.* species in the Orders Falconiformes and Strigiformes.

6. Such migratory raptors face additional conservation problems because they need adequate networks of suitable habitat along their migration paths, and many species tend to congregate at land-bridges, mountain passes and along coastlines where they are especially susceptible to intensive hunting and trapping (Zalles & Bildstein 2000).

The status of African-Eurasian migratory raptors

7. Goriup & Tucker (2007) documented the fact that more than 50% of migratory birds of prey in the African-Eurasian region have poor conservation status, and many are showing either long-term, or sometimes more rapid declines in numbers. Status varies in different geographical regions (Table 1).

The status of raptors in Africa, Middle East and Asia

8. Knowledge of the current status of raptors and owls in Asia, the Middle East and Africa is much less complete and reliable than in Europe. Few countries in these regions have prepared bird atlases or established bird monitoring schemes. Where atlases have been produced they have yet to be repeated, and where monitoring schemes have been established they have not been undertaken for long enough to establish trends over a meaningful period (Goriup & Tucker 2007).

9. Intensive surveys and monitoring of raptor migration has been undertaken in some areas of the Middle East, especially in Israel, for several decades. These surveys have established better population counts for some species that are difficult to census on their breeding grounds, such as Levant Sparrowhawk *Accipiter brevipes*. They have also built up a considerable amount of data on migrant numbers, which can be analysed for trends (e.g. as reviewed by Shirihai *et al.* 2000). However, information on the numbers and trends of breeding populations in the Middle East itself is very fragmentary and incomplete, although recoveries have been documented of some species' populations since the widespread reduction of use of persistent pesticides.

10. Information on the status of raptor populations (both breeding and wintering) is particularly scarce and incomplete for much of Asia and Africa. Although there are numerous counts of raptors at particular sites, it is generally difficult to consolidate these and derive meaningful population trends in most species. A few exceptions include studies in South Africa (e.g. Harrison *et al.* 1997) where population trends have been established for breeding species and some wintering populations, e.g. Lesser Kestrel *Falco naumanni*; and in parts of West Africa Thiollay (2006a, b; in-press) has repeated roadside counts some 30 years apart to measure population changes. Such studies highlight the need for further monitoring of raptor populations in less well-known parts of Africa.

11. In Asia, the situation is similar to that in Africa (Goriup & Tucker 2007). Apart from some detailed studies on some species of high conservation importance, such as Saker Falcon *Falco cherrug* (Galushin & Moseikin 2000; Galushin 2004; Gott *et al.* 2000; Levin *et al.* 2000; Shjirmaa *et al.* 2000), the status of most species is very poorly understood. This situation is highlighted by the large discrepancy in the recorded breeding populations of some species and the numbers actually counted during migration. For example, the number of Lesser Spotted Eagles *Aquila pomarina* observed on migration in Israel alone is many times greater than the total number of known breeding birds in Europe and Asia combined (even if possible double counting of migrants is taken into account).

12. Goriup & Tucker's (2007) assessment of the status of breeding migratory raptor and owl populations in Asia, the Middle East and Africa is summarised in Table 1, using CMS criteria for conservation status. However, Goriup & Tucker stressed that unless they are based on detailed referenced studies, these assessments should be treated with great caution since they are generally subjective assessments that are mostly based on general references (some of which are now over ten years old), or studies of relatively small parts of the species' range, which may therefore not be representative of the region.

Table 1: The status of breeding populations of migratory raptors in Europe, Asia, the Middle-East and Africa (from Goriup & Tucker 2007).

Conservation Status (CMS definition)	Europe	Asia ^{*1}	Middle East	Africa
Unfavourable	18	9	1	4
Unfavourable (uncertain) ^{*2}	11	5	1	2
Total unfavourable	29	14	2	6
Favourable	8	4	0	0
Favourable (uncertain)	10	9	4	8
Unknown	0	34	11	17
<i>Total migratory raptors</i>	<i>47</i>	<i>61</i>	<i>17</i>	<i>31</i>

Notes

*1 Excluding countries in the Middle East.

*2 This is defined for Europe as species that have a provisional European Threat Status (BirdLife International 2004b) and are not globally threatened.

13. Accordingly, it was not possible to assess reliably the status of most of the raptor and owl breeding populations in Asia, the Middle East and Africa using readily available published studies. However, a number of Asian populations are known or strongly suspected to be in an unfavourable status, including some Globally Threatened species such as Pallid Harrier *Circus macrourus* and Imperial Eagle *Aquila heliaca*. Similarly, we remain unsure of the status of most intra-African migrants, though there is evidence of declines in some like Black Harrier *Circus maurus*, Tawny Eagle *Aquila rapax* and African Swallow-tailed Kite *Chelictinia riocourii* (BirdLife International 2004b; del Hoyo *et al.* 1994; Ferguson-Lees & Christie 2001; Harrison *et al.* 1997).

14. Despite the data limitations, Goriup & Tucker (2007) concluded that a very large proportion (53%) of species of migratory raptor and owl have an unfavourable conservation status in some part of their African-Eurasian range and eight (25%) of these are Globally Threatened (BirdLife International 2004a). Furthermore, a high proportion of these species are in continued long-term and often rapid population declines.

The status of European raptors

15. BirdLife International defines three categories of Species of European Conservation Concern (SPEC), as follows:

SPEC 1 – Species of Global Conservation Concern, *i.e.* classified as Globally Threatened, Near Threatened or Data Deficient (BirdLife International 2004a; IUCN 2004).

SPEC 2 – Species that are concentrated² in Europe and have an unfavourable conservation status.

SPEC 3 – Species that are not concentrated in Europe but have an unfavourable conservation status.

16. Goriup & Tucker (2007) considered that the concept of unfavourable conservation status according to BirdLife International is equivalent to that defined under CMS. A species is considered to have an unfavourable conservation status by BirdLife International if its European population is considered to be any of the following:

- small and non-marginal;
- declining more than moderately (*i.e.* >1% per year);
- depleted following earlier declines; or are
- highly localised.

17. Depending on the rate of decline, population size and localisation, BirdLife International defines ten categories of European Threat Status (ETS). Seven of these categories include species in unfavourable status, namely: Critically Endangered, Endangered, Vulnerable, Declining, Rare, Depleted, and Localised. A species may be considered to be in a favourable status in three categories: Secure, Data Deficient or Not Evaluated.

18. A comparison of the proportion of European migratory raptors that fall into each SPEC and ETS category with the overall European avifauna clearly indicates that a particularly high proportion of these species have an unfavourable status in Europe: some 62% of migratory raptors and owls have an unfavourable conservation status compared to 43% of all 526 regularly occurring European species (Table 2). Furthermore, 12 (25%) of these are in high threat categories, with one Critically threatened species (Pallid Scops Owl *Otus brucei*) and six Endangered species and five Vulnerable species (Goriup & Tucker 2007).

19. An assessment of population trends in the European populations of migratory raptors and owls (Table 3) also indicates that nearly a third of species are declining. Furthermore, 21% have suffered large declines averaging over 3% per year in the last 10 years. Although this is a slightly lower percentage of species showing large declines than over the 1970-90 period, the overall proportion of species that have undergone moderate or large declines is unchanged (Goriup & Tucker 2007). These findings supported similar conclusions reported by Stroud (2003) based on earlier data collated by BirdLife International.

² *i.e.* more than half of its global breeding or wintering population or range occurs in Europe.

Table 2: The European conservation status of migratory raptors and owls. SPEC = Species of European Conservation Concern. See Goriup & Tucker (2007) for details of the status of individual species.

SPEC Category	Migratory raptors and owls		All European species	
	Number	%	Number	%
1	8	17%	40	7.6%
2	5	11%	45	8.5%
3	16	32%	141	26.8%
Total SPEC	29	62%	226	43.0%
Non-SPEC	18	38%	300	57.0%
TOTAL	47		526	
European Threat Status				
Critical (CR)	1	2%	9	1.7%
Endangered (EN)	6	13%	20	3.8%
Vulnerable (VU)	5	11%	38	7.2%
Declining (D)	4	8%	62	11.8%
Rare (R)	9	19%	33	6.3%
Depleted (H)	4	8%	51	9.7%
Other (localised, data deficient, not evaluated)	0	-	12	2.3%
Secure (S)	18	38%	301 ³	57.2%

Source: BirdLife International (2004b)

³ The total for Non-SPECs does not equal the total for Secure species in Europe because the Pygmy Cormorant *Phalacrocorax pygmeus* is Near Threatened globally but is considered to have a Secure population in Europe (BirdLife International 2004b).

Table 3: Population trends in European migratory raptors (from Goriup & Tucker 2007).

Trend ^{*1}	% of raptors (n = 47) in trend class	
	1970–1990	1990–2000
Large increase ($\geq 3\%$ per year)	15%	6%
Moderate increase (1-3% per year)	8%	13%
Small increase ^{*2} (<1% per year)	Na	6%
Stable ^{*3}	40%	23%
Small decline ^{*2} (<1% per year)	Na	6%
Moderate decline (1-3% per year)	2%	10%
Large decline ($\geq 3\%$ per year)	29%	21%
Fluctuating	0%	8%
Unknown	4%	4%
Total % in moderate or large decline	31%	31%

Sources:

1970-1990 trends, Tucker & Heath (1994).

1990-2000 trends, BirdLife International (2004b).

Notes:

*1 Based on worst case scenario calculation taking into account the effects of calculations using minimum and maximum population estimates.

*2 This trend category was not distinguished in 1994.

*3 Only distinguished if <10% decline and <10% increase, and worst-case and best-case scenario trends are in opposite directions.

Threats to African-Eurasian migratory raptors

20. Goriup & Tucker (2007) document threats known to be impacting on African-Eurasian migratory raptors based on an extensive review of relevant literature (*e.g.* Chancellor & Meyburg 1998; Meyburg & Chancellor 1989, 1994; Newton & Chancellor 1985; Salathé 1991; Thiollay 1994; Tucker & Evans 1997; Tucker & Heath 1994; White *et al.* 1994; Zalles & Bildstein 2000).

21. Goriup & Tucker (2007) stress the general lack of information on threats to these species in Asia, the Middle East and Africa, and further highlight that the assessment of threats to species in these regions should be treated with caution, because they only considered documented threats, rather than those that were suspected might occur (*e.g.* those that could be inferred from habitat change).

22. These threats are fully documented by Goriup & Tucker (2007) and are summarised in Table 4.

Table 4. Summary of threats to migratory raptors of the African-Eurasian region that have an Unfavourable Conservation Status (from Goriup & Tucker 2007).

Key. Magnitude of impacts: **Low** = unlikely to cause detectable population impacts in most species; **Moderate** = likely to cause local population impacts in most species, or population declines in some species; **High** = likely to cause population declines in most species. Blank = threat currently unknown in region.

Threat type (primary and secondary types)	Species impacted ^{*1}		Magnitude of impacts ^{*2}			
	Breeding	Non-breeding	Europe	Asia ^{*3}	Middle-East	Africa
Habitat Loss/Degradation						
Loss to agriculture & agricultural intensification	28	12	H	H	M?	H
Abandonment	10	1	M	M	?	-
Over-grazing	5	5	L	M?	M?	H?
Forest loss & management	9	1	M	M	L	M
Afforestation	12	0	M	-	-	-
Wetland loss and degradation	13	4	M	H	H	M
Burning / fire	6	2	M	L	-	M
Developments	6	0	M	M	M	-
Taking of birds (harvesting / hunting)						
Trade (collections, falconry)	8	8	L	M	M	L
Egg-collection	7	0	L	L	L	-
Shooting and trapping	6	17	M	L?	H	L
Accidental mortality^{*4}						
Collision with man-made structures	3	3	L	L	L	L
Electrocution on power lines	11	0	M	H	L	L
Poisoning (e.g. by baits for other species)	12	14	L	M	M	L (H in parts)
Nest destruction	0	0	L	L	-	L
Persecution						
	22	4	L	M	M	L
Pollution						
Land pollution ^{*5}	3	1	L	L	L	-
Water pollution ^{*5}	5	5	L	M	L	L
Toxic pesticides	17	13	L	M?	M?	M?
Disturbance (human)						
	21	2	H	L	M	M
Other						
	7	5				

Notes:

*1 From Table 7 of Goriup & Tucker 2007.

*2 A subjective assessment for the next 10 years, taking into account each threat's average extent, severity and predicted trends across all African-Eurasian migratory raptors listed in Table 7 of Goriup & Tucker 2007.

*3 Excluding countries in the Middle-East.

*4 Individuals are killed accidentally (but see Pollution where this may also be the case) rather than intentionally (see Hunting, Persecution).

*5 Other than pesticides.

Conservation measures for raptors and the benefits of international co-operation

23. In some countries, legislation to protect some birds of prey has existed since the Middle Ages (Ratcliffe 2001). However, many species are migratory, undertaking extensive movements during the year that encompass many countries. As for other such migratory species, there are strong benefits from the taking of co-operative international approaches to raptor conservation — which builds on national actions. For raptors this has long been recognised and the potential role of the Bonn Convention in facilitating such co-operation was clearly articulated by Boere (1991):

“**Raptors** (Falconiformes). Many species all over the world are long-distance migrants, generally concentrating during migration at well-known places. Although raptors are generally all protected, there is intensive illegal shooting. A [CMS] AGREEMENT could in the first place focus on the protection of sites where mass concentrations occur, and as a second goal promote joint efforts to stop the illegal shooting and killing of species (education programmes, assistance with law enforcement, etc.).

Migration routes and threats are very well known within the Western Palearctic, but concentrated migration is also known from several places in Asia (Himalaya Region) and the preparation of an AGREEMENT for Asia migratory raptors has already been suggested (in 1978).”

24. Conservation actions in some parts of the international range of a migratory species can be negated by inappropriate activities or lack of conservation measures in other parts of a species migratory range.

25. The Bonn Convention provides a range of mechanisms through which international co-operation can be facilitated (see Legal and Institutional Options under CMS for International Cooperation on Migratory African-Eurasian Raptors [UNEP/CMS/AERAP-IGM1/6]).

26. The conservation benefits of such co-operation include:

1. the creation of a framework for international conservation co-operation including agreed priorities for action, with respect to:
 - establishment of single species action plans for most threatened species;
 - development and implementation of research and monitoring needs;
 - the development and facilitation of joint projects between Range States;
 - the agreement of international common standards as related to relevant conservation policies and practices;
2. the establishment of formal mechanisms for international consultation and collaboration between Range States;
3. the creation of mechanisms to assist in the funding of relevant conservation activities at various scales; and
4. the enhancement of the profile of necessary conservation requirements for migratory birds of prey and owl, not least through encouragement of relevant communication, education and public awareness activities.

27. All of these activities, individually and collectively, have the potential to deliver positive conservation benefits for migratory raptor species.

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