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Agenda Item 25.1

# PROPOSAL FOR THE INCLUSION OF FOUR VULTURE SPECIES OCCURING IN ASIA ON APPENDIX I OF THE CONVENTION

Summary:

The Government of Pakistan has submitted the attached proposal* for the inclusion of four vulture species occurring in Asia, namely the Red-headed Vulture (*Sarcogyps calvus*), White-rumped Vulture *(Gyps bengalensis)*, Indian Vulture *(Gyps indicus)* and Slender-billed Vulture *(Gyps tenuirostris)*, on Appendix I of CMS.

**PROPOSAL FOR THE INCLUSION OF FOUR VULTURE SPECIES OCCURING IN ASIA ON APPENDIX I OF THE CONVENTION**

## A. PROPOSAL

Listing the entire populations of four Asian vultures (Indian Vulture *Gyps indicus*, Slender-billed Vulture *Gyps tenuirostris*, White-rumped Vulture *Gyps bengalensis* and Red-headed Vulture *Sarcogyps calvus*) on CMS Appendix I.

**B. PROPONENT :** Government of Pakistan.

## C. SUPPORTING STATEMENT[1]

### 1. Taxonomy

| | | | | |
|---|---|---|---|---|
| 1.1 Class: | Aves | | | |
| 1.2 Order: | Accipitriformes | | | |
| 1.3 Family: | Accipitridae | | | |
| 1.4 Genus, species or subspecies, including author and year: | *Gyps indicus* (Scopoli, 1786) | *Gyps tenuirostris* (Gray, 1844) | *Gyps bengalensis* (Gmelin, 1788) | *Sarcogyps calvus* (Scopoli, 1786) |
| 1.5 Scientific synonyms: | *Gyps indicus* (Sibley and Monroe, 1990, 1993) has been split into *G. indicus* and *G. tenuirostris* following Rasmussen and Parry (2001) | *Gyps indicus* (Sibley and Monroe, 1990, 1993) has been split into *G. indicus* and *G. tenuirostris* following Rasmussen and Parry (2001) | No scientific synonyms | No scientific synonyms |
| 1.6 Common name(s), when applicable: | EN-Indian Vulture, Long-billed Vulture<br>FR-Vautour Indien<br>ES-Buitre indio | EN-Slender-billed Vulture<br>FR-Vautour à long bec<br>ES-Buitre picofino | EN-White-rumped Vulture, Asian White-backed Vulture, Oriental White-backed Vulture and White-backed Vulture<br>FR-Vautour chaugoun<br>ES-Buitre dorsiblanco bengalí | EN-Red-headed Vulture, Indian Black Vulture and Pondicherry Vulture<br>FR-Vautour royal<br>ES-Buitre cabecirrojo |

### 2. Overview

In the early 1990s, some Asian vulture species were among the most abundant large raptors in the world. However, within a decade, the populations of three *Gyps* species (Indian Vulture, Slender-billed Vulture and White-rumped Vulture) and of the Red-headed Vulture had declined so precipitously that all four are considered Critically Endangered, largely as a result of feeding on carcasses of animals treated with the veterinary drug diclofenac, perhaps in combination

[1]Unless otherwise referenced, this proposal draws on information from BirdLife International (2016).

with other causes.

The four Asian vulture species included in this proposal were added to the Raptors MOU Annex 1 (List of Species) on the basis of evidence of their migratory behaviour (according to CMS definition) and categorized in Annex 3 (Action Plan), Table 1 as Category 1 (globally threatened species) at Raptors MOU MOS2 (October 2015).

While many vulture species may not traditionally have been seen as migrants, it is clear that some of the movements made by Asian vulture species are consistent with the CMS definition of a 'migratory species'. Use of satellite tracking to elucidate Asian vulture movement ecology is still in its relative infancy and considerable knowledge gaps remain. In addition, their catastrophic population declines may have reduced densities of Asian vulture species to such an extent that their normal movement patterns have been disrupted. Even so, research is revealing that individuals of Asian vulture species make movements of thousands of kilometres, including crossing national boundaries. Age-related and seasonal changes in movement pattern are perhaps better understood in a number of African vulture species with which three of the above Asian vulture species share a genus. However, there is emerging evidence that movements of Asian vultures may also differ between seasons and among age groups within the population.

International cooperation will be an essential ingredient in the recovery and long-term conservation of Asian vulture species.

## 3. Migrations

### 3.1. Kinds of movement, distance, the cyclical and predictable nature of migration

Vulture movement patterns are not well understood (Monadjem *et al.* 2012). However, our knowledge is expanding rapidly with the spread in use of satellite tracking technology and many of the commonly held assumptions about the scale of vulture movements have been over-turned by recent evidence from satellite tracking. There has been a proliferation of satellite tracking studies, particularly of African vultures, in recent years. In Asia, research has tended to focus on understanding the causes of massive observed population declines and so our knowledge of movements of Asian vulture species is perhaps less complete. Movements of Asian vulture species are not well understood and indeed the range of movement patterns many of these species show may have reduced in tandem with their disappearance (Naoroji 2006) from much of their former range.

Vultures are necrophagous and individuals can travel vast distances in a short space of time as a response to a high degree of spatial and temporal variation in their food resources (Urios *et al.* 2010; Murn *et al.* 2013). Use of soaring flight allows vultures to maintain large foraging ranges and there is increasing evidence that vultures may undertake predictable, cyclical seasonal movements (del Hoyo *et al.* 1994; Ferguson-Lees & Christie 2001; Schultz 2007) driven perhaps by food availability and detectability (Cronje 2002; Gilbert *et al.* 2007; Schultz 2007; Kendall *et al.* 2013; Phipps *et al.* 2013).

Seasonal altitudinal movements have been described in most of the Asian vulture species (Ferguson-Lees and Christie 2001; del Hoyo 1994; Naoroji 2006). These movements may be related in part to food availability, but also to seasonal changes in the availability of thermals to aid sustained soaring flight (Boshoff *et al.* 1984; Mundy *et al*. 1992; Gilbert *et al.* 2007) and seasonal temperature changes driving movement patterns related to thermoregulation (Gilbert *et al.* 2007). In many vulture species different patterns of movement may be observed in adults during breeding versus non-breeding seasons, with movements of adults often being more constrained during the breeding season, not least by ties to the nest-site.

Vultures tend not to breed in their first three years and, partly because their foraging ranges are not restricted by ties to a nest site (Mundy *et al.* 1992; Houston 1976), in general immature birds tend to range over much larger areas than adults (Ogada 2014; Margalida *et al*. 2013;

Phipps *et al*. 2013;Duriez *et al.* 2011; Bramford *et al*. 2007;Meyburg *et al.* 2004; Mundy *et al.* 1992). With satellite tracking of vultures in its relative infancy in Asia, the early indications are that individuals are making movements of thousands of kilometres and crossing national boundaries (as detailed in species-specific summaries below). More established satellite-tracking of African congeners have indicated that immature individuals are making wider-ranging movements than adults. This behaviour is likely to affect exposure of immature individuals to risk from various threats and have consequences for their survival prospects (Grande *et al.* 2009; Ortega *et al.* 2009). The threats outlined in 5.3 affect both adult and immature vultures. The demographic consequences of high mortality among breeding adults along with high mortality of immatures and consequent reduction in recruitment to the breeding population are potentially significant.

### *3.1.1. Movements of Indian Vulture*

Indian Vulture is categorized by Bildstein (2006) as an irruptive and local migrant, and Naoroji (2006) showed a distribution map of the species where it is present across much of India, described as an uncommon to rare resident (with local migration). Ferguson-Lees and Christie (2001) describe the species as mostly sedentary, with individuals foraging over considerable areas and immatures perhaps more nomadic. However while the movements made by this species are not well understood, recent satellite tracking has revealed that individuals regularly cross between Pakistan and India (T. Galligan pers. comm.). The range of movement patterns showed by this species may also have reduced in tandem with its disappearance (Naoroij 2006).

### *3.1.2. Movements of Slender-billed Vulture*

Ferguson-Lees and Christie (2001) described this species as principally sedentary, with individuals foraging across vast areas, some seasonal altitudinal movements and immature birds possibly more nomadic than adults. It is categorized by Bildstein (2006) as an irruptive and local migrant. More recently, satellite-tracking (Wildlife Conservation Society) has revealed individuals crossing the border between Laos, Cambodia and Viet Nam (C. Bowden *in litt.* 2015), between India and Nepal and between India and Bangladesh (T. Galligan pers. comm.). A Slender-billed Vulture satellite-tracked in Cambodia ranged over 12,155km² over a period of less than three months (Clements *et al*. 2012). Naoroji (2006) reported that some southward winter movement exists, and in winter the species has been seen in India well south of the narrow range in the north where it is normally considered as resident. The range of movement patterns showed by this species may also have reduced in tandem with its disappearance (Naoroij 2006).

### *3.1.3. Movements of White-rumped Vulture*

Bildstein (2006) lists this species as a partial migrant, while Ferguson-Lees and Christie (2001) consider that it is 'largely sedentary, but forages over large areas and immatures are more nomadic'. Del Hoyo *et al.* (1994) mentioned some seasonal altitudinal movements in Nepal, with vagrants having reached Borneo. Vagrants have also been reported in Brunei and Russia (Botha *et al.* in prep.) Naoroji (2006) commented that Afghanistan attracts a migrant population during summer, presumably from Pakistan. Some indication of the likely scale of this species' movements in Pakistan is provided by an experimental study involving set-up of a vulture 'restaurant' (thereby reducing the scale of the birds' movements) where individual 3-month home ranges varied from 1,824 km² to 68,930 km² (Gilbert *et al.* 2007). In the same study, seasonal changes in use of a supplemental feeding station were thought to be related to nutritional requirements during the breeding versus non-breeding period, seasonal differences in availability of thermals for sustained soaring flight and possibly movement relating to thermoregulation. Initial maps of satellite-tracked individual movements (C. Bowden *in litt.* 2015) indicate that they range over 1,000 km and cross the border between Nepal and India (Bird Conservation Nepal, Bombay Natural History Society, Royal Society for the Protection of Birds) and Laos, Cambodia and Viet Nam (Wildlife Conservation Society). Clements *et al.* (2012) found that two White-rumped Vultures satellite-tracked from Cambodia ranged over 2,315km² in less than four months and 5,704km² in less than three months respectively. The

range of movement patterns showed by this species may also have reduced in tandem with its disappearance (Naoroij 2006).

*3.1.4. Movements of Red-headed Vulture*

Bildstein (2006) categorizes this species as an irruptive and local migrant. Ferguson-Lees and Christie (2001) regard it as largely sedentary, however individuals forage over considerable areas and there is some seasonal altitudinal movement. Immatures are perhaps more nomadic (Ferguson-Lees and Christie 2001). Very little is currently known about the movements of this species, but new satellite-tracking data (Bird Conservation Nepal, Bombay Natural History Society, Royal Society for the Protection of Birds) are indicating that at least some birds move between India and Nepal (C. Bowden *in litt.* 2015). The range of movement patterns showed by this species may also have reduced in tandem with its disappearance (Naoroij 2006).

3.2. Proportion of the population migrating and why that is a significant proportion

While efforts to satellite tag Asian vultures are increasing, significant information gaps remain in relation to the movement ecology of these species. Early indications are that Asian vulture species may, like their African congeners make relatively wide-ranging movements, following a predictable seasonal pattern that would be consistent with the CMS definition of 'migratory', but more research is needed. It also appears that there may be predictable differences in patterns of movements associated with different age groups (Ferguson-Lees and Christie 2001), with immature birds tending to make even more wide-ranging movements than adults (see 3.1). The evidence being amassed suggests that crossing of national boundaries does occur. Overall, on the basis of available information (and taking account of findings from other regions from satellite tracking congeners of three of the four Asian species) it seems likely that the majority of the populations of Asian vulture species are undertaking movements consistent with the CMS definition of migration at some, if not all stages of their life cycle.

## 4. Biological data (other than migration)

4.1. Distribution (current and historical)

*4.1.1. Indian Vulture distribution*

The Indian Vulture breeds in south-east Pakistan and peninsular India south of the Gangetic plain, north to Delhi, east through Madhya Pradesh, south to the Nilgiris, and occasionally further south (BirdLife International 2001). It is also present in Nepal, with sightings first recorded in 2011 (Subedi and DeCandido 2013). This species was common until very recently and since the mid-1990s has suffered a catastrophic decline (over 97%) throughout its range, probably owing to the effects of diclofenac (*cf. section 5 on threats*). This was first noticed in Keoladeo National Park, India (Prakash *et al.* 2003), where counts of feeding birds fell from 816 birds in 1985-1986 to just 25 in 1998-1999.

Just one tiny population in the Ramanagaram Hills of Karnataka is known to remain in inland southern India, and it is rare elsewhere within its former range (Prakash *et al.* 2007). The Indian Vulture is also rare in Pakistan, although a colony of 200-250 pairs was discovered in 2003 in Sindh Province (A.A. Khan *in litt.* 2003). Data indicates that the rate of population decline of Indian and Slender-billed Vultures combined has now slowed in India (Prakash *et al.* 2012).

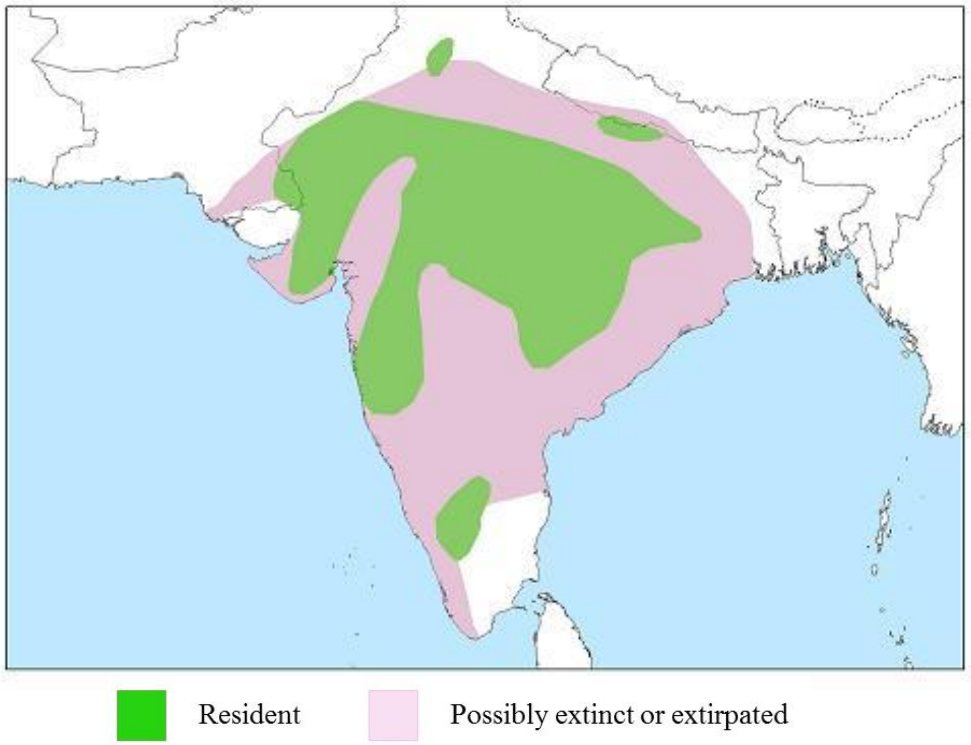


**Fig 4.1.1**. Range map of Indian Vulture (BirdLife International and Handbook of the Birds of the World 2017 modified with input from the Vulture MsAP review process).

### *4.1.2. Slender-billed Vulture distribution*

The Slender-billed Vulture is found in India north of, and including, the Gangetic plain, west to at least Himachal Pradesh and Haryana, south to southern West Bengal (and possibly northern Orissa), east through the plains of Assam, and through southern Nepal, and north and central Bangladesh (BirdLife International 2001). In the north of its range, this species is regularly sighted in the Himalayan foothills adjoining the states Punjab, Himanchal Pradesh, Haryana and Uttaranchal, and is a resident of this area. North-west of Himanchal Pradesh this species is a rare resident along the southern side of the Himalayan foothills, and there have been winter sightings towards the northwest of this state at the border of Punjab. Previously a scarce resident of Jammu and Kashmir, the Slender-billed Vulture is now likely an occasional summer visitor of this state (Naoroji 2006). Ferguson-Lees and Christie (2001) treated the species as part of the Long-billed Vulture and suggests the species is found in south-east Pakistan, but formerly also north-east, now with a marked decrease'. Given the disjunct ranges of the two species split from the Long-billed Vulture (Slender-billed Vulture and Indian Vulture) historic records of Long-billed Vultures in north-east Pakistan could have been Slender-billed Vultures.

Formerly occurring more widely in South-East Asia, recent records of this vulture's distribution indicate its presence in Cambodia, southern Laos and Myanmar only, and is now thought to be extinct in Thailand and Malaysia. Considerable confusion over the taxonomy and identification of *Gyps* vultures has occurred, making it difficult to be sure of claims for this species. However, it appears to be allopatric or parapatric with Indian Vulture where their ranges abut (or potentially do so) in northern India.

This species was once common, however South-East Asian populations declined through the latter half of the 19th century and first half of the 20th century. These populations are now probably very small, restricted in distribution and limited mainly to Cambodia (where the first nests recorded in the country were recently found and surveys in 2008 recorded a total of 51 individuals at vulture 'restaurants', H. Rainey *in litt.* 2008) and Myanmar (counts made at vulture 'restaurants' suggest a population of c.21 individuals; Hla *et al.* 2011).

In India and Nepal the Slender-billed Vulture was common until very recently. Since the mid-

1990s it has suffered a catastrophic decline of up to 96.8 per cent, with a combined average decline in India of this species and Indian Vulture of over 16 per cent annually between 2000 and 2007 (Prakash *et al.* 2007). The species has also declined in Nepal, with recent surveys in the lowland districts of this country recording no birds (Chaudhary *et al.* 2012). However in 2014 and 2015, one and two individuals respectively were recorded along annual road transect surveys in Nepal (K. Paudel *in litt.* 2015). Data indicates that the rate of population decline of Slender-billed and Indian Vultures combined has now slowed in India (Prakash *et al.* 2012).

Probably owing to the effects of diclofenac (*cf. section 5 on threats*), breeding success in parts of its Indian range is reportedly low; of 14 nests found in Assam just four had chicks (Choudhury *et al.* 2005). Diclofenac is apparently entirely absent in Cambodia, adding greater importance to this remaining small population. Further, Cambodian census data indicate population stability since 2004 (Eames 2007b).

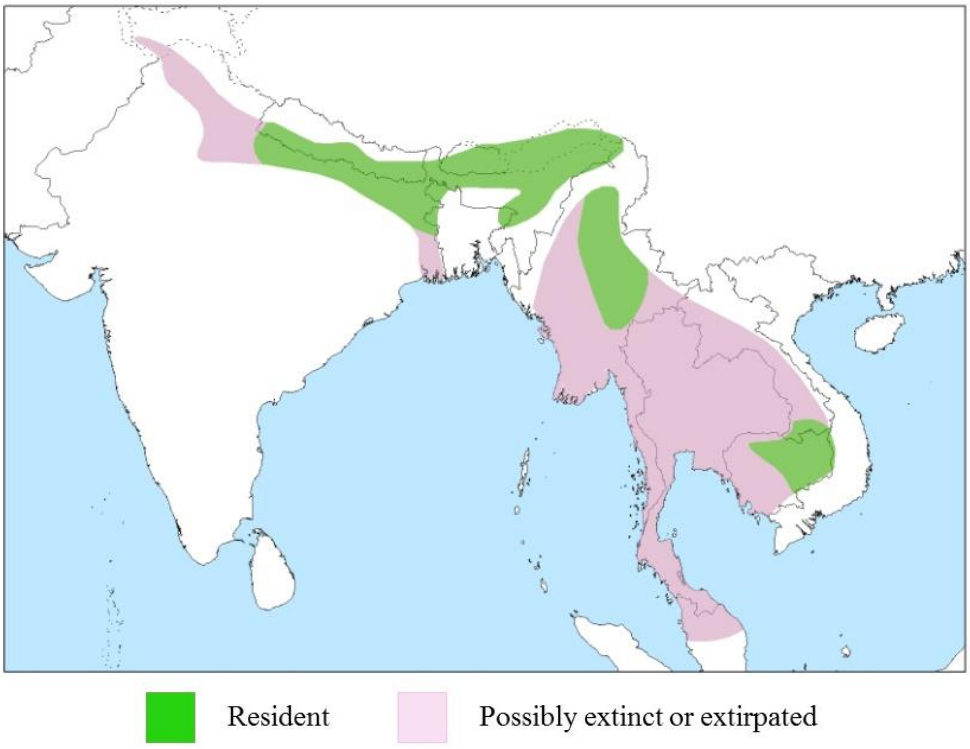


**Fig 4.1.2**. Range map of Slender-billed Vulture (BirdLife International and Handbook of the Birds of the World 2017 modified with input from the Vulture MsAP review process).

*4.1.3. White-rumped Vulture distribution*

The White-rumped Vulture occurs in Pakistan, India, Bangladesh, Nepal, Bhutan, Myanmar, Thailand, Laos, Cambodia and southern Viet Nam, and may be extinct in southern China and Malaysia (BirdLife International 2001). Sightings have also been recorded in south-east Afghanistan and Iran where its status is currently unknown.

As recently as 1985 this species was described as "possibly the most abundant large bird of prey in the world" (Houston 1985). However, it disappeared from most of South-East Asia in the early 21st century and now the only viable populations in the region are found mainly in the north of Myanmar and Cambodia (both probably in the low hundreds of individuals) (Hla 2003; Anon 2003; Eames 2007a, b; Hance 2009).

Probably owing to the effects of diclofenac (*cf. section 5 on threats*), the White-rumped Vulture has suffered a catastrophic decline (over 99 per cent) across the Indian Subcontinent (the majority of its historic range) since the mid-1990s and is now threatened with extinction (Prakash *et al.* 2007). These dramatic declines were first noticed in Keoladeo National Park, India (Prakash *et al.* 2003), followed by further population decreases in Pakistan (Gilbert *et al.* 2006) and Nepal (Baral *et al.* 2005; Chaudhary *et al.* 2012). In India, average population

decreases of 43.9% per year were recorded in 2000-2007 (Prakash *et al.* 2007), whilst over the same period population declines ranged between 11 per cent -61 per cent in Punjab province of Pakistan (Murn *et al.* 2008). Further, surveys of 23 known colonies in Punjab province in 2006 found a total of only 37 breeding pairs (Murn *et al.* 2008). In the lowland districts of Nepal this species declined at 14 per cent a year between 2002-2011 (Chaudhary *et al.* 2012), whilst in Bangladesh, it declined by 60 per cent between 2008-2009 and 2011-2012 (Khan 2013). In India and Nepal the rate of decline appears to have slowed, and may even have reversed (Prakash *et al.* 2012). Cambodia's remaining population is particularly important (171 counted at vulture 'restaurants' in 2008) as Diclofenac is not present in this range. (H. Rainey *in litt.* 2008). Census results from Cambodia suggest the population may have been increasing since 2004, or is at least stable (Eames 2007b; S. Mahood *in litt.* 2012). Surveys of vulture 'restaurants' in Myanmar in 2006 and 2007 estimated a minimum of 62 White-rumped Vultures were present (Hla *et al.* 2011).Additionally, vagrants are occasionally recorded from Brunei and the Russian Federation (BirdLife International 2016).

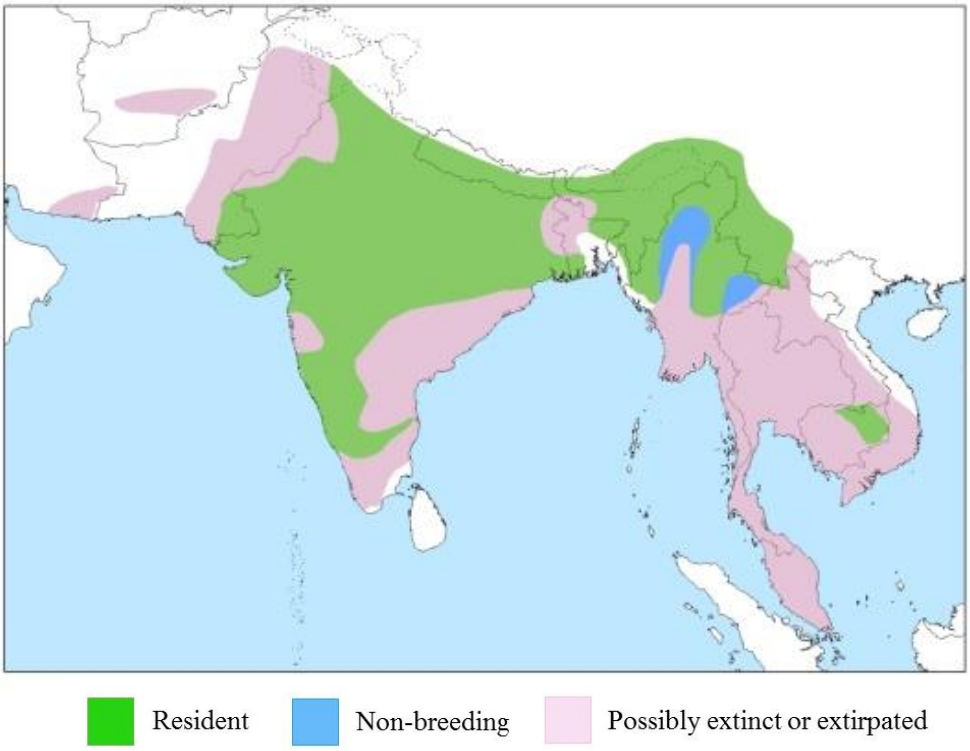


**Fig 4.1.3.** Range map of White-rumped Vulture (BirdLife International and Handbook of the Birds of the World 2017 modified with input from the Vulture MsAP review process).

### *4.1.4. Red-headed Vulture distribution*

The Red-headed Vulture occurs in Pakistan (previously regular, now a rare straggler with two in Tharparker in 2002 the first record since 1980; Nadeem *et al.* 2007), Nepal (uncommon, population estimated to be 200-400 individuals; Inskipp *et al.* 2013), India (sparsely distributed and declining, now rare or absent from some areas, e.g. parts of Gujarat and the north-eastern states but still fairly common in the western Himalayan foothills and reported in the Western Ghats between 2006-2010; Ramesh *et al.* 2011), Bangladesh (rare in the north-west), Bhutan, Myanmar (rare resident; recent records come mainly from Mount Victoria; Hla *et al.* 2011, with up to 11 in Shan state in 2003 - the first recent documented records in the east of the country; Bezuijen *et al.* 2010). There are also dwindling populations present in China (unrecorded in Yunnan since the late 1960s; S. Chan *in litt.* 2006; possibly occurs in south-east Tibet), Thailand (near extinct in the country; P. Round *in litt.* 2006), Laos (previously widespread and common but now only occasional wanderers from the Cambodian population), Viet Nam (previously regular in central regions but now only occasional wanderers from the Cambodian population), Cambodia (previously common, now rare and restricted to the northern and eastern plains), peninsular Malaysia (previously locally common in north, now absent), and Singapore (formerly occurred, apparently now absent; Ferguson-Lees and Christie 2001).

Historical reports indicate that Red-headed Vultures were once widespread and generally abundant, but have undergone a massive population and range decline in recent decades. Recent information indicates that in India the species started undergoing a rapid decline (41 per cent per year) in about 1999, and declined by 91 per cent between the early 1990s and 2003 (Cuthbert *et al.* 2006).

Census results from Cambodia suggest that the population there has been stable since 2004 at least (Eames 2007b).

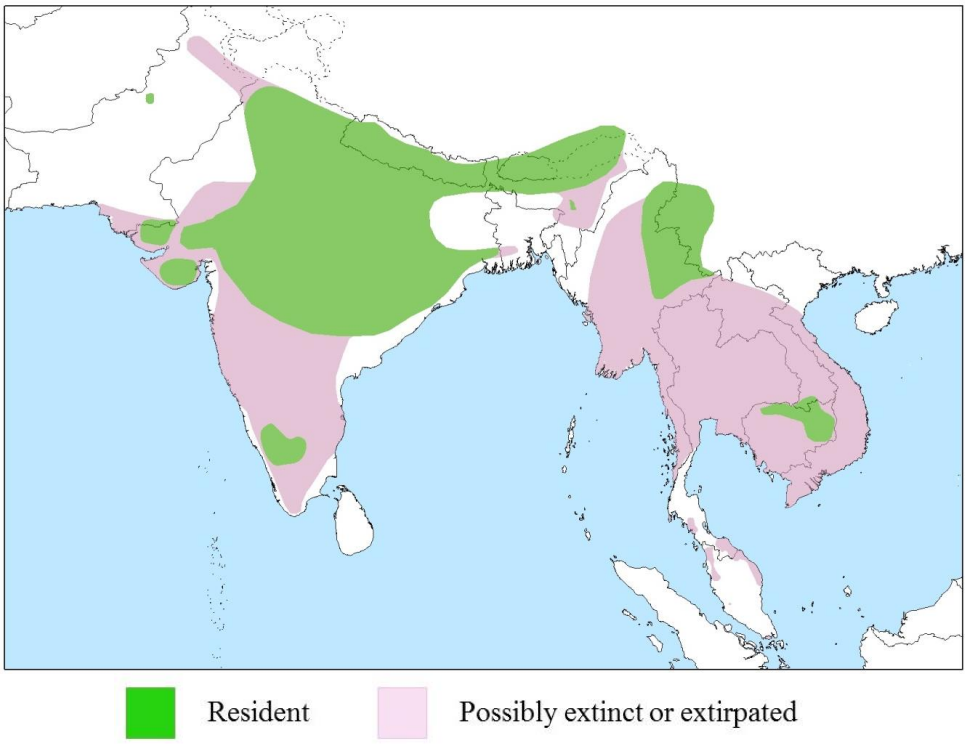


**Fig 4.1.4.** Range map of Red-headed Vulture (BirdLife International and Handbook of the Birds of the World 2017 modified with input from the Vulture MsAP review process).

## 4.2. Population (estimates and trends)

### *4.2.1. Indian Vulture population*

In 2007 the total Indian Vulture population, based on extrapolations from road transects (records of 337 individuals along 18,000 km of road transects), was estimated at 45,000 individuals (roughly equating to 30,000 mature individuals) with a combined average annual decline for this species and Slender-billed Vulture of over 16 per cent during 2000-2007 (Prakash *et al.* 2007). It is estimated that its relative abundance in Pakistan declined by 61% between 2003-2004 and 2006-2007, followed by a 55 per cent increase by 2007-2008 (Chaudhry *et al.* 2012).

Survey results indicate that declines throughout the Indian Subcontinent probably began in the 1990s and were extremely rapid, resulting in an overall population decline of greater than 97 per cent over a 10-15 year period (BirdLife International 2016).

### *4.2.2. Slender-billed Vulture population*

Considerable confusion over the taxonomy and identification of *Gyps* vultures has occurred, making it difficult to be sure of the population size. The Slender-billed Vulture is considered likely to number 1,000-2,499 mature individuals, equating to 1,500-3,750 individuals in total. This species declined across South-East Asia towards the end of the 20$^{th}$ century, and is estimated to have a combined average annual decline of over 16% with Indian Vulture during 2000-2007 (Prakash *et al.* 2007).

*4.2.3. White-rumped Vulture population*

The global population of White-rumped Vulture almost certainly numbered several million individuals. However, following dramatic declines throughout the 1990s across its range, its global population is now estimated to fall within the band 2,500-9,999 mature individuals, equating to 3,750-14,999 individuals (rounded here to 3,500-15,000 individuals). This has resulted in an overall population decline of greater than 99 per cent over a 10-15 year period (BirdLife International 2016).

*4.2.4. Red-headed Vulture population*

Given its rarity in South-East Asia, it is probable that less than a few hundred individuals remain there, whilst across India the total population seems unlikely to exceed 10,000 mature individuals given the patchiness of its distribution and recent catastrophic declines. In light of this, it is placed in the band 2,500-9,999 mature individuals (BirdLife International 2016). This equates to 3,750-14,999 individuals in total, here rounded to 3,500-15,000 individuals. Cuthbert *et al.* (2006) calculate a decline in excess of 90 per cent within 10 years in India. Similarly Galligan *et al.* (2014) report a decline of 94% from 1992-2003 in India. Similar population trends are expected throughout the Indian Subcontinent.

4.3. Habitat (short description and trends)

*4.3.1. Indian Vulture habitat*

Indian Vulture is found in cities, towns and villages near cultivated areas, and in open and wooded areas. This species feeds almost entirely on carrion and often associates with White-rumped Vulture when scavenging at rubbish dumps and slaughterhouses. It nests predominantly in colonies on cliffs and ruins, although in one area, where cliffs are absent, it has been reported nesting in trees (BirdLife International 2016).

*4.3.2. Slender-billed Vulture habitat*

Slender-billed Vulture inhabits dry open country and forested areas usually away from human habitation. In South-East Asia, it was found in open and partly wooded country, generally in the lowlands. This species feeds mostly on carrion, scavenging at rubbish dumps and slaughterhouses, and at carcasses dumped in the fields and along rivers. It has only been recorded nesting solitarily in trees, usually large ones at heights of 7-25 m, sometimes near villages but mostly remotely. While feeding, mixed species aggregations can form and regular communal roost sites are used. It is a social species, usually found in conspecific flocks and interacting with other vultures at carcasses (BirdLife International 2016).

*4.3.3. White-rumped Vulture habitat*

The White-rumped Vulture occurs mostly in plains and less frequently in hilly regions where it utilizes light woodland, villages, cities, and open areas. It consumes carrion, both putrid and fresh, forming large aggregations and regular communal roost sites whilst feeding. This social species is frequently found in conspecific flocks, breeding in colonies up in tall trees, often near human habitation (BirdLife International 2016).

*4.3.4. Red-headed Vulture habitat*

The Red-headed Vulture frequents open country usually away from human habitation, in well-wooded hills and dry deciduous forest with rivers, often below 2,500 m. Nesting has been recorded in tall trees. It occurs at lower densities compared to *Gyps* vultures owing to its predominantly territorial behavior (BirdLife International 2016).

4.4. Biological characteristics

Vulture life history is characterized by delayed maturity, low productivity (a maximum of one fledgling per pair per year), and relatively high adult survivorship (annual adult survival >0.9; del Hoyo *et al.* 1994). Vultures have some of the lowest reproductive rates among birds. These demographic traits make their population trends very sensitive to additional mortality of adults

caused by non-natural factors.

Vultures' highly social feeding behaviour and use of cues from conspecifics and other scavenging species to find food sources mean that a single toxic food source can potentially cause high mortality (Green *et al.* 2004; Kendall *et al.* 2012, Ogada *et al*. 2012).

Although vultures have high visual acuity, their visual field and foraging ecology make them particularly vulnerable to collisions with power lines and wind turbines (de Lucas *et al.* 2012; Martin *et al.* 2012). Vulture visual fields contain a small binocular region and large blind areas above, below and behind the head, and whilst foraging, vultures adopt a slight downward in-flight head posture (Martin *et al.* 2012) making them susceptible to collision with man-made structures.

4.5. Role of the taxon in its ecosystem

The Asian Vultures provide a crucial ecosystem service through the disposal of livestock carcasses and their loss has had huge socio-economic impacts across the Indian Subcontinent. Without vultures, hundreds of thousands of animal carcasses have gone uneaten, left to rot in the sun, posing a serious risk to human health. Livestock carcasses provide a potential breeding ground for numerous infectious diseases, including anthrax, and encourage the proliferation of pest species, such as rats.

Most worryingly, the loss of vultures has resulted in an increase in the number of feral dogs around carcass dumps —the bites of which are the most common cause of human rabies in the region. A recent study in India estimates that, concurrent with the vulture die-off, there has been an increase in the feral dog population of at least 5.5 million (Markandya *et al.* 2008). It is calculated that this has resulted in over 38.5 million additional dog bites and more than 47,300 extra deaths from rabies. Researchers believe that the increased number of rabies victims may have cost the Indian economy $34 billion.

The Parsi religion prohibits the burial or cremation of their dead. Instead, they hold a 'sky burial' where the body is left in the open to allow nature to take its course. In India, vultures were responsible for cleaning the bodies left at the ceremonial centres such as the Towers of Silence in Mumbai, usually within a matter of hours. Since the decline in vulture numbers, the Parsi are having considerable difficulty in taking care of their dead. Similar sky burials are practices by the Buddhist communities on the Tibetan plateau, although it is not known if this practice has been affected by a decline in vultures.

## 5. Conservation status and threats

5.1. IUCN Red List Assessment

The Asian Vulture has been classified as Critically Endangered in the IUCN Red List Assessment; in 2000 for White-rumped Vulture; in 2002 for Indian and Slender-billed Vultures; and in 2007 for the Red-headed Vulture. All species have remained in this category since their uplisting (BirdLife International 2016).

5.2. Equivalent information relevant to conservation status assessment

N/A

5.3. Threats to the population (factors, intensity)

The four species of Asian vulture face similar threats, principally unintentional (secondary) poisoning from livestock carcasses treated with veterinary drugs, but also from poisoned baits used in response to human-wildlife conflict, reduction in food availability and electrocution on or collision with energy infrastructure. Other threats include pesticide use and habitat loss (Swan *et al.* 2006a; Hla *et al.* 2011; Clements *et al.* 2013).

**Table 5.3** Threats affecting Asian Vultures and their overall severity across their range based on outcomes of MsAP regional workshops and questionnaires (Botha et al. in prep.).

| Threats | Species and Level of Threat[2] | | | |
|---|---|---|---|---|
| | Red-headed Vulture | White-rumped | Indian Vulture | Slender-billed Vulture |
| **Unintentional Poisoning** | | | | |
| Human-animal conflict | | | | |
| Problem animal control | | | | |
| Poisoning from environmental contamination | | | | |
| Lead from ammunition | | | | |
| Industrial pollution | | | | |
| Poisoning from Pharmaceutical products | | | | |
| Veterinary Drugs (NSAIDs, tranquilization, livestock dips | | | | |
| Targeted Vulture Poisoning | | | | |
| Belief-based use and bushmeat | | | | |
| Sentinel Poisoning | | | | |
| Direct Persecution | | | | |
| Electrocution | | | | |
| Powerlines | | | | |
| Collisions with infrastructure & vehicles | | | | |
| Powerlines | | | | |
| Wind turbines | | | | |
| Communication Towers | | | | |
| Decline of Food Availability | | | | |
| Reduced availability of livestock | | | | |
| Decline of wild ungulates | | | | |
| Changes in carcass disposal | | | | |
| Improved sanitation (Abattoirs) | | | | |
| Change in cultural practices | | | | |
| Change in foraging patterns due to different spatial availability of | | | | |
| Habitat Loss | | | | |
| Loss of trees and cliffs | | | | |
| Bush | | | | |
| Human settlement expansion within historical foraging range | | | | |
| Degradation of rangelands | | | | |
| Disturbance from human | | | | |
| Recreation | | | | |
| Construction of infrastructure | | | | |
| Agricultural/Forestry | | | | |
| Research & Monitoring | | | | |
| Aviation | | | | |
| Mining & Blasting | | | | |
| Diseases | | | | |

| Threats | Species and Level of Threat[2] | | | |
|---|---|---|---|---|
| | Red-headed Vulture | White-rumped | Indian Vulture | Slender-billed Vulture |
| Diseases | | | | |
| Climate Change | | | | |
| Climate Change | | | | |
| Other threats | | | | |
| Drowning | | | | |
| Illegal Killing, Taking & Trade | | | | |
| Sport Hunting | | | | |
| Other collisions | | | | |
| Vehicle Collisions | | | | |
| Aircraft Collisions | | | | |
| Kite strings | | | | |
| Indirect threat - missing or ineffective policies, laws and enforcement | | | | |
| Lack of appropriate legislation | | | | |
| Lack of or limitations to enforcement | | | | |

[2]Threats are colour-coded as follows:

| Critical | High | Medium | Low | Unknown | Not applicable |
|---|---|---|---|---|---|

Ranking of threats is based on scope, severity and irreversibility. Based on outcomes from Regional Vulture MsAP Workshops and Questionnaires.

*5.3.1. Poisoning*

*5.3.1.1 Unintentional (secondary) poisoning*

Unintentional poisoning is the unintentional killing or harming of vultures through consumption of contaminated carcasses or remains. Although lead poisoning has been noted as an issue for a number of other vulture species, for Asian vultures the key unintentional poisoning issue appear to be those of veterinary drugs in domestic livestock food sources and poisons intended to control other species as a response to human-wildlife conflict of some kind.

*Veterinary drugs*

The main driver of declines in the formerly relatively common and relatively widespread *Gyps* species (Indian, White-rumped and Slender-billed Vultures) is thought to have been the non-steroidal anti-inflammatory drug (NSAID), diclofenac used in livestock. Many *Gyps* vulture species worldwide have become more reliant on domestic livestock as their traditional wild ungulate food sources have disappeared (Pain *et al.* 2008).

Some treated domestic livestock die out in the open before the drug is metabolized and their carcasses are available for vultures to feed on. Vultures feeding on those carcasses then die of kidney failure resulting in visceral gout within a few days of exposure (Oaks*, et al.* 2004a and b; Shultz, *et al.* 2004; Green, *et al.* 2004; Green *et al.* 2006; Swan *et al.* 2006a).

Modelling has shown that to cause the observed rate of decline in these species, just one in 760 livestock carcasses need to contain diclofenac residues (Green *et al.* 2004). It is suspected that exposure to diclofenac could also have been a factor in driving declines of Red-headed Vulture (which belongs to a different genus to the Gyps species known to be susceptible to diclofenac). Evidence for this is so far indirect; Red-headed Vulture population declines in India

had slowed and were possibly increasing following a ban on diclofenac (Galligan *et al*. 2014), which suggests that the species is also adversely affected by the drug. It may be that this species previously had less exposure to the toxin owing to competitive exclusion from carcasses by *Gyps* spp. vultures (Cuthbert *et al.* 2006).

Evidence is mounting that as well as diclofenac, other NSAIDs in veterinary use, including nimesulide, carprofen, ketoprofen and aceclofenac (Cuthbert *et al.* 2015; Naidoo *et al.* 2010; Cuthbert *et al.* 2007; Galligan *et al.* 2016) are also toxic to vultures and possibly other scavenging raptors. New NSAIDs continue to be released onto the market in Asia.

*Human-wildlife conflict*

In Assam, Northeast India, mass poisoning events have result in many unintentional vulture deaths. Across South Asia poison is used to control problem animals such as feral dogs which spread disease to people and kill livestock. Poisoned livestock carcasses are used to target these problem animals, however this results in the poisoning of non-target animals including vultures. In 2014 alone, 179 vultures were killed in seven separate poisoning incidents across north-east India. The frequency of poisoning events like these are likely to be increasing as mammalian scavengers are increasing (particularly feral dogs) vulture population are decreasing, and human populations are encroaching upon wild areas. In Cambodia, unintentional poisoning is the greatest threat to vultures (Loveridge *et al.* in prep.). As well as pest control, poisoning is used to hunt wildlife and facilitate crime (killing guard dogs to enable burglary). For example, between2005-2016 15 recorded poisoning events occurred killing 32 White-rumped Vultures, nine Red-headed Vultures and ten Slender-billed Vultures (Sum and Loveridge 2016).

*5.3.1.2 Targeted vulture poisoning*

*Belief-based use and the bushmeat trade*

Although targeted poisoning is a minor threat to Asian vultures overall, species such as the Red-headed Vulture are vulnerable to persecution for direct meat consumption in China. This persecution also extends to some belief-based use which is considered a more serious threat to vultures (Ma and Xu 2015; Ma *et al.* 2017).

Belief-based use of vultures (and their body parts) for ‘traditional medicine’ in South Asia is localised and not thought to be sufficiently intense to be responsible for observed nationwide declines (Botha *et al.* in prep). In South-East Asia, some persecution may take place to supply this trade but this does not currently appear to be a significant threat. Belief-based use is known in Cambodia, but appears to be exceptional and was treated as a ‘low priority’ threat in the national vulture action plan (Sum and Loveridge 2016).

*5.3.2. Reduction in food availability*

Although food availability is gradually reducing throughout the Indian Subcontinent, the amount of livestock carrion available is not thought to be significantly influencing vulture population trends at current densities. For example, a study in India (Prakash in prep.) showed that through combining vulture survey data with information about carcass dumps and cattle mortality, that there is enough livestock carrion available to support a vulture population far in excess of current population sizes, indicating that other factors are driving vulture population declines.

In South-East Asia the large areas of suitable habitat for vultures remain, but a reduction in large wild ungulates and in the availability of domestic livestock carcasses (owing to improved animal husbandry) are thought to have contributed to vulture population declines (Pain *et al.* 2003; Clements *et al.* 2013). In Cambodia for example, vultures are threatened by extremely low population densities of wild ungulates and a decline in the number of free-ranging domestic ungulates. In Bangladesh, 61 per cent of cattle owners surveyed said that they now buried dead cattle or used them as food in shrimp farms, which could lead to a reduction in food supply for vultures (Khan 2013).

Addressing issues of food availability in Asia may become more pressing if efforts to tackle more immediate threats such as poisoning are successful in increasing population size and density.

*5.3.3. Electrical infrastructure*

Energy infrastructure can be detrimental to vultures if bird-friendly designs and careful placement of turbines and power lines are not observed (Rushworth and Krüger 2014; Jenkins *et al.* 2010). Electrocution and collision with power lines can cause significant levels of vulture mortality (Anderson and Kruger 1995, Janss 2000, van Rooyen 2000). The recent proliferation of wind farms as a source of green energy production has also had some adverse effects on vultures (Ogada and Buij2011). Characteristics of their visual field, head carriage in flight and foraging ecology increase the susceptibility of vultures to collision (de Lucas *et al.* 2012; Martin *et al.* 2012).There are several studies that highlight the growing impact of energy infrastructure to raptors across Asia, including impacts of wind energy infrastructure on birds including large raptors in India (Kumar *et al*. 2012), electrocutions of Griffon Vulture (*Gyps fulvus*) in India (Saran *et al*. 2015) and electrocution of Cinereous Vulture (*Aegypius monachus*) in Mongolia (Dixon *et al*. 2013 and collisions in South Korea;(Botha *et al.* in prep). There is little documentation of to the impact of this threat on the four Asian vulture species listed in this proposal, but there is ample evidence from other regions and among congeneric Gyps species that vultures are vulnerable to energy infrastructure, and participants at the MsAP Asia regional workshop ranked the threat of powerlines and communication towers as 'high' (Botha *et al.* in prep.).

*5.3.4. Other threats*

Other potential contributory threats include felling of nesting trees for timber, direct persecution through nest destruction, hunting and poisoning (Hla *et al.* 2011), and diseases like avian malaria (Poharkar *et al.* 2009), but these are probably of relatively minor significance.

5.4. Threats connected especially with migrations

As a result of their wide movements, Asian Vultures can come into contact with large numbers of carcasses over a relatively short period, and only a tiny proportion need be contaminated with NSAIDs to have a population level effect.This is not least because vultures are slow-breeding, long-lived species (Mundy *et al.* 1992). Indeed, simulation modelling of *Gyps* vulture populations has shown that even a very low prevalence of ungulate carcasses containing lethal levels of diclofenac is sufficient to cause rapid population declines. Contamination of just 0.3–0.7 per cent of ungulate carcasses with a lethal level of diclofenac was shown to be sufficient to cause the population of the White-rumped Vulture to decline at a rate of about 50 per cent per year (Green *et al.* 2004). A highly social feeding strategy and reliance on cues from conspecifics and other scavenging species to find food sources mean that large numbers of individuals of several vulture species can congregate at a single carcass (BirdLife International 2016). As a result, vultures can suffer particularly high mortality at poisoning incidents (Ogada *et al*. 2012). The vast areas covered by individuals of many Asian vulture species during month to month foraging, and particularly during age-related and seasonal movements, increase the likelihood of encountering toxic food sources somewhere within their range. With individuals crossing national boundaries there is a clear need for a consistent approach to addressing the most significant threat of poisoning across all Asian range states.

The extent of vulture movements means that in parts of their ranges their encounter rate with energy infrastructure is likely to be relatively high. Proliferation of energy infrastructure within the ranges of vulture species is likely to exact a cumulative and in increasing toll on vulture populations.

5.5 National and international utilization

As mentioned under 5.3 Red-headed Vultures are vulnerable to hunting for meat consumption in China, which also extends to some belief-based use (Ma and Xu 2015; Ma *et al.* 2017).

There is some belief-based use of vultures (and their body parts) for 'traditional medicine' in South Asia (Botha *et al.* in prep; Sum and Loveridge 2016). Asian Vultures are caught and used as pets/display animals (BirdLife International 2016).

## 6. Protection status and species management

### 6.1. National protection status

Asian vultures are listed as being nationally protected in many but not all countries of their ranges and in some countries where they enjoy national protection by law, enforcement measures are insufficient.

### 6.2. International protection status

All migratory species within the Accipitridae Family are listed on CMS appendix II. Since October 2015, the four Asian Vulture species appears on Raptors MOU Annex 1 and are categorised in Annex 3 (Action Plan), Table 1 as category 1 (globally threatened or near-threatened species).

CMS and the Raptors MOU are key intergovernmental conservation mechanisms working with a coalition of national governments, organizations, and vulture experts to develop a Multispecies Action Plan to Conserve African-Eurasian Vultures (Botha *et al*. in prep). This aims to provide a framework and to act as a vehicle for international cooperation to address threats to vultures and improve their conservation status.

### 6.3. Management measures

*Government action (BirdLife International 2016):*

The governments of India, Nepal and Pakistan passed legislation in 2006 banning the manufacture and importation of diclofenac as a veterinary drug, with India passing further legislation in 2008 banning the manufacture, sale, distribution or use of veterinary diclofenac. In 2008, the Indian government ordered a crackdown on companies selling diclofenac. A letter from the Drug Controller General of India warned more than 70 drugs firms not to sell the veterinary form of diclofenac, and to mark human diclofenac containers 'not for veterinary use' (BirdLife International 2008). In October 2010, the government of Bangladesh banned the production of diclofenac for use in cattle, and distribution and sale of the drug were due to be outlawed during the first half of 2011 (M.M.H. Khan *in litt.* 2010). These bans have led to a reduction of diclofenac within ungulate carcasses (the principal food source for vultures) in India (Cuthbert *et al.* 2011a and 2011c) and a study of 11 administrative districts in Nepal found diclofenac use dropped by 90 per cent since 2006 following the introduction of measures to reduce its use (Anon 2008). The availability of diclofenac in veterinary drug stores in Bangladesh decreased from 100% in 2008-2009 to 53 per cent in 2011-2012 (Khan 2013). However, levels of diclofenac contamination remain high and human forms of the drug are still sold for veterinary use (Cuthbert *et al.* 2011a, b). Efforts to replace diclofenac with a suitable alternative are on-going and are showing signs of success with evidence for a decrease in the use of diclofenac and an increase in the use of a safe alternative (Cuthbert *et al.* 2011c). An alternative drug, meloxicam, which is out of patent and manufactured in Asia has been tested on vultures with no ill-effects (Swan *et al.* 2006b, Swarup *et al.* 2007).

In 2012 the governments of India, Pakistan, Nepal and Bangladesh adopted a number of priority actions for the conservation of vultures, proposed by SAVE. These include banning large multi-dose vials of human diclofenac, testing other NSAIDs for toxicity to vultures and expanding the 'Vulture Safe Zones' initiative (Galligan 2013).

advocating additional bans on NSAIDs; continual education programmes; continual monitoring of NSAID use; swapping diclofenac with meloxicam; collection of veterinarian pledges to stop using diclofenac; operation of seven vulture safe feeding sites; and maintaining and expanding 'Vulture Safe Zones'. Advocacy to reduce the use of poisons and poisoned bait to catch fish

and waterfowl has succeeded in reducing the number of vultures being poisoned accidentally (S. Mahood *in litt.* 2012).

*Conservation and research actions underway (BirdLife International 2016):*

SAVE (Saving Asia's Vultures from Extinction) has developed the concept of 'Vulture Safe Zones'; areas (with a minimum of 100 km radius, equating to 30,000 km²) around important vulture breeding colonies where education and advocacy efforts are focused on eliminating the use of diclofenac and other vulture-toxic drugs (Galligan 2013; Mukherjee *et al.* 2014). There are currently 12 provisional 'Vulture Safe Zones' being established in India, Nepal, Pakistan and Bangladesh (Mukherjee *et al.* 2014). These areas will provide a safe environment into which birds bred in captivity can be released (Bowden *et al.* 2012).

Vulture 'restaurants' are increasingly used as ecotourism attractions in parts of the vulture species' range to raise awareness and fund supplementary feeding programmes and research (e.g. Masphal and Vorsak 2007). The exchange of diclofenac with meloxicam near breeding colonies is taking place in Nepal in combination with diversionary feeding with diclofenac-free carcasses (Chaudhary *et al.* 2010). Diversionary feeding has been shown to reduce but not eliminate vulture mortality from diclofenac poisoning, and uncertainty over the movements of vultures makes the effectiveness of measures such as these uncertain (Pain *et al.* 2008).

Birds have been satellite tagged in various parts of their range to improve understanding of their movements, foraging range, site fidelity etc., and to aid the development of suitable conservation strategies for the species (Ellis 2004).

Socioeconomic surveys in Nepal have shown that local people are strongly in favour of vulture conservation because of the associated ecological services that vultures provide (Gautam *et al.* 2003).

The Report of the International South Asian Vulture Recovery Plan Workshop in 2004 gave a comprehensive list of recommendations including establishing a minimum of three captive breeding centres, each capable of holding 25 pairs (Bombay Natural History Society 2004) - ultimately at least 150 pairs of the three *Gyps* species should be held in captivity to ensure sufficient birds are available to re-establish wild colonies in the future (Lindsay 2008). Captive breeding efforts are on-going and met with success when two chicks hatched in early 2007 at a breeding centre in Pinjore, Haryana (V. Prakash *in litt.* 2007, Bowden 2009). Three more birds hatched in 2009 (Bowden 2009). The centre is part of a captive breeding programme established by the RSPB and the Bombay Natural History Society. A website has been set up to allow researchers to contribute data on known colonies to identify founder individuals for captive flocks that will ensure the full geographical spread of the *Gyps* species is represented in captive breeding efforts (M. Gilbert *in litt.* 2004). By April 2008, there were 88 in captivity at three breeding centres in India, as well as 11 at a centre established by WWF-Pakistan and 14 in captivity in Nepal (Pain *et al.* 2008). During 2009, these numbers increased to 120 in India, 43 in Nepal and 14 in Pakistan (Bowden 2009). In late 2009, trials of artificial incubation methods were due to start soon (Bowden 2009). By November 2011, the total number held in breeding centres affiliated to SAVE stood at 221 birds (SAVE 2012), of which 20 juveniles had successfully fledged (Bowden *et al.* 2012). Captive breeding centres often receive vultures that have been found poisoned and then rehabilitated by rescue centres such as the Centre for Wildlife Rehabilitation and Conservation, Assam, which is run by the International Fund for Animal Welfare (IFAW) and the Wildlife Trust of India.

A five-year captive breeding and reintroduction scheme for Red-headed Vulture to be run by the Zoological Park Association and Kasetsart University was due to begin in 2007 in Uthai Thani, Thailand (Anon 2007), but captive breeding efforts were not as advanced as they for Critically Endangered *Gyps* vultures.

Implementation of the second Vulture Conservation Action Plan (VCAP) for Nepal 2015-2019 (DNPWC 2015).

6.4. Habitat conservation

There are currently at least 12 provisional 'Vulture Safe Zones' being established in India, Nepal, Pakistan and Bangladesh (Mukherjee *et al.* 2014). These areas covering 30,000 km² around important vulture breeding colonies benefit from education and advocacy efforts focused on eliminating the use of diclofenac and other vulture-toxic drugs (Galligan 2013; Mukherjee *et al.* 2014).

The four Asian Vultures species in this proposal have been reported from many protected areas across their ranges. A number of Important Bird Areas (IBAs) of global significance have been identified partly on the basis of their importance for these four species of Asian vulture (BirdLife International 2016):

- 85 IBAs for Indian Vulture
- 78 IBAs for Slender-billed Vulture
- 221 IBAs for White-rumped Vulture
- 28 IBAs for Red-headed Vulture

6.5. Population monitoring

Monitoring of vultures has been conducted in a number of protected areas in India (BirdLife International 2016)

Cambodia Vulture Conservation Project (CVCP) was initiated in 2004 as national working group engaged specifically in vulture conservation, and is comprised of BirdLife International, WCS Cambodia, WWF Cambodia and The Angkor Centre for Conservation of Biodiversity (ACCB). The first vulture action (2005-2015) plan was successfully delivered and a new action plan has now been developed and finalized for next ten-year period (2016-2025), entitled "Securing the long-term future of Vulture conservation in Cambodia" (comprising vulture restaurants, NSAID survey, population monitoring, nest protection, awareness campaign)

Surveys utilizing vulture 'restaurants' were carried out in Myanmar: 1) 2006/2007, accompanied by research into the locations of nesting colonies, causes of vulture deaths and potential that diclofenac was being used in livestock (Eames 2007a) and 2) in 2014/2015, accompanied by awareness campaign (CEPF project). Further research on the causes of decline in this species was being proposed in 2011 (R. Cuthbert *in litt.* 2011).

Monitoring of vulture populations is currently carried out in Nepal: road transect surveys, nesting site surveys. NSAID availability in veterinary pharmacies is also surveyed, through open and undercover surveys, as well as NSAID prevalence in livestock and vulture carcasses (DNPWC 2015).

Monitoring of at least some vulture species takes place in Bangladesh and in Pakistan.

## 7. Effects of the proposed amendment

7.1. Anticipated benefits of the amendment

International recognition of the precarious conservation status of these four Critically Endangered Asian vulture species by countries that support remaining populations is an important step towards reversing population declines. The greatest threats facing these species are anthropogenic, so can be effectively addressed through government action. It is clear that international cooperation will be an essential ingredient in the recovery and long-term conservation of this species. Most of the key threats thought to be driving declines in Asian vulture populations are shared by many countries in Asia and trans-national conservation measures will be required to successfully tackle the issues. A Multi-species Action Plan to Conserve African-Eurasian Vultures (Vulture MsAP) is currently being developed under the framework of CMS, as a broad multi-stakeholder approach to increase and coordinate conservation efforts for these species (Botha *et al*. in prep). Listing the four

Critically Endangered Asian vulture species on CMS Appendix I will support the effective implementation of the Vulture MsAP and assist in encouraging range state governments to engage in efforts to reduce threats and work together to restore vulture populations in Asia.

All four Asian vulture species included in this proposal are listed on CITES Appendix II. Appendix II species require an export permit or re-export certificate to be traded internationally, but can be imported without an import permit (unless required by national law). Export permits are only granted if the export is not detrimental to species' survival, the species was not obtained illegally, and transportation is conducted appropriately. Authorisation of trade should only be granted in highly exceptional situations. Listing these species on CMS Appendix I would reinforce the provisions already in place under CITES by prohibiting the taking of these species unless for scientific purposes, for the purpose of enhancing propagation or survival, to accommodate the needs of traditional subsistence users or if extraordinary circumstances so require.

7.2. Potential risks of the amendment

Despite the provisions under CMS Article III to avoid this, listing on Appendix I could unintentionally constrain (or increase the logistical/ bureaucratic burden associated with) captive breeding/ rearing/ rehabilitation or moving of Asian vultures and their eggs between countries should this be a necessary conservation action. It could also unintentionally constrain (or increase the logistical/ bureaucratic burden associated with) useful research activities such as capture, marking, tracking, health screening, and research into impacts of toxic substances on vultures. All of the above activities can and do contribute greatly to increasing our understanding of this species and promoting its conservation. However, given the restrictions on export already in place by virtue of CITES Appendix II listing and the provision under CMS Article III for exceptions to prohibition of taking for scientific or enhanced propagation/ survival, the conservation benefits of CMS Appendix I listing are likely to far outweigh the risks. The provision under CMS Article III for potential exception to prohibition of taking to accommodate the needs of traditional subsistence users is a potential risk. In the case of these four species of Asian vulture traditional belief-based use currently constitutes only a minor threat to the species in few countries of its range. However, it is worth noting that any belief-based use is highly unlikely to meet the requirements for exception to prohibition of taking on grounds of 'subsistence use'.

7.3. Intention of the proponent concerning development of an Agreement or Concerted Action

A regional agreement under CMS already exists, which covers these four species of Asian vulture. The Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU) was concluded in 2008. It has so far attracted 57 Signatories (56 countries and the European Union). Pakistan signed the Raptors MOU on 22 October 2008.

The proponent is actively engaged in development of the Vulture MsAP, which will provide a framework for range states to engage and cooperate on a wide range of key activities to address threats and promote conservation of these four Asian vulture species throughout their ranges.

## 8. Range States

| **Country** (*CMS parties) | **Indian Vulture** | **Slender-billed Vulture** | **White-rumped Vulture** | **Red-headed Vulture** |
|---|---|---|---|---|
| Afghanistan* | Vagrant | - | Possibly extinct | - |
| Bangladesh* | - | Resident | Resident | Resident |
| Bhutan | - | - | Resident | Possibly extinct |
| Brunei Darussalam | - | - | Vagrant | - |
| Cambodia | - | Possibly extinct | Resident | Resident |
| China | | | | Resident |
| India* | Resident | Resident | Resident | Resident |
| Iran, Islamic Republic of* | - | - | Vagrant | - |
| Lao People's Democratic Republic | - | Possibly extinct | Possibly extinct | Resident |
| Malaysia | - | Possibly extinct | Possibly extinct | Possibly extinct |
| Myanmar | - | Resident | Resident | Resident |
| Nepal | Vagrant- | Resident | Resident | Resident |
| Pakistan* | Non-breeding | Vagrant | Resident | Vagrant |
| Russian Federation | - | - | Vagrant | - |
| Thailand | - | Possibly extinct | Non-breeding | Possibly extinct |
| Viet Nam | - | - | Possibly extinct | Possibly extinct |

-: *not present in the country*

## 9. Consultations

This Listing Proposal was developed in close cooperation with the Coordinating Unit of the CMS Raptors MOU. An earlier draft was reviewed by the Technical Advisory Group of the CMS Raptors MOU and revised in light of the comments received from this group of specialists. At the request of the Government of Pakistan, this final version was circulated by the Coordinating Unit to all Range States of the four vulture species covered by the Proposal, in advance of its submission to the CMS Secretariat.

## 10. Additional remarks

## 11. References


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