

FOURTH MEETING OF SIGNATORIES TO THE MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION OF MIGRATORY BIRDS OF PREY IN AFRICA AND EURASIA

(Victoria Falls, 30 November- 2 December 2026)

UNEP/CMS/RAPTORS/MOS4/Doc.12.3

RESULTS OF THE SITE NETWORK ANALYSIS FOR PRIORITY SPECIES

(Prepared by the Coordinating Unit of the Raptors MOU)

Summary:

This document presents the results of a site network analysis for all 31 Category 1 species, building on the pilot analysis presented at MOS3. It identifies assessed gaps in the network of sites listed under the Raptors MOU, taking account of species' seasonal distributions and congregatory behaviour. Summary results are presented in Annex 1 to this document. The full report is available as information document UNEP/CMS/RAPTORS/MOS4/Inf.25.

The Meeting of Signatories is invited to take note of the findings, encourage follow-up on the gaps identified and request a phased approach to extending the analysis to additional species listed in Annex 1 to the MOU, supported by resource mobilisation and reporting to MOS5.

1. Task 2.5 of Activity 2 of the Technical Advisory Group (TAG) Workplan 2016-2020 (see Annex A to document [UNEP/CMS/Raptors/TAG4/Doc.6.1](#) [only available in English]) called for advice on information gaps concerning important sites along raptor flyways, recommendations for filling those gaps, and approaches to conserving and managing critical areas.
2. To assess gaps in the network represented by the List of Sites in Table 3 of Annex 3 to the MOU, the TAG agreed to undertake a pilot site network analysis (see document [UNEP/CMS/Raptors/TAG3/Doc.4.2b](#) [only available in English]).
3. The pilot analysis overlaid the sites proposed at MOS3 for inclusion in Table 3 of Annex 3 to the MOU with the distribution maps of Annex 1 species. Information on the congregatory behaviour of the species was used to assess whether apparent gaps reflected a lack of listed sites or ecological circumstances in which a site-based approach was less appropriate.
4. The pilot analysis was first applied to a small subset of 11 Annex 1 species selected to represent different ecological and migratory strategies and a broad geographical spread across the MOU area. It tested an approach that could subsequently be applied to other Annex 1 species.
5. MOS3 recognised the value of the pilot in identifying major gaps in the listed site network and recommended extending the analysis to all species covered by the MOU, subject to available resources ([UNEP/CMS/RAPTORS/MOS3/Report/Annex XIII](#), paragraph 16).
6. Action 13 of the TAG Workplan 2023–2026 ([UNEP/CMS/RAPTORS/MOS3/Doc.15.3\(Rev.1\)](#)) provides for identifying information gaps concerning important sites along raptor flyways. In light of funding constraints, TAG9 (Spain, 18–20 February 2025) favoured a modular approach, prioritising Category 1 species.
7. Annex 1 presents the main results of the analysis. The full report in English and a courtesy translation in French are available as information document ([UNEP/CMS/RAPTORS/MOS4/Inf.25](#))

Recommended Actions

8. The Meeting of Signatories is invited to:
 - a. take note of the analysis and the summary results presented in Annex 1 to this document, taking account of the methodology and limitations described in the [full report](#);
 - b. recognise the value of the analysis in informing further assessment of the listed site network, and encourage Signatories and relevant partners to review the findings for their countries, share updated site and species information, and support targeted surveys and assessment of potential additional sites against the applicable criteria;
 - c. Invite Signatories and relevant partners to undertake targeted surveys and monitoring in the priority areas identified in section 4 of Annex 1 to this document, including Africa, South and Central Asia, Mongolia and China, and during the non-breeding season, as appropriate.

- d. request the TAG, with facilitation by the Coordinating Unit, to develop a phased approach to extending the analysis to the remaining Annex 1 species, giving priority to Category 2 species and identifying expected outputs, resource requirements and opportunities for collaboration, consistent with the TAG Workplan 2027–2029;
- e. invite Signatories, Cooperating Partners and other interested contributors to provide financial or in-kind support for the prioritised follow-up work; and
- f. request the Coordinating Unit, drawing on TAG advice and information provided by Signatories and partners, to report to MOS5 on progress, remaining information gaps and priorities for further analysis.

Annex 1

Summary of the Site Network Analysis for Category 1 species

This annex summarises the report “Raptors MOU Site Network Analysis for threatened and near-threatened migratory raptor species in Africa-Eurasia”, prepared by Luke Ozsanlav-Harris, Teja Curk, Tom Scott and Victoria Jones and reviewed by the Technical Advisory Group (TAG). The full report, including the species accounts, maps and supporting tables, is available as information document [UNEP/CMS/RAPTORS/MOS4/Inf.25](#) in English, with a courtesy translation in French.

1. Key findings and recommendations

1. **The analysis provides a basis for further work and could be extended to additional species.** Extending the pilot presented at MOS3 to all 31 Category 1 species helps identify where the List of Sites (Table 3 of Annex 3 to the MOU) could be strengthened, where site-based conservation may be particularly relevant, and where survey effort could be targeted.
2. **Twelve species are well covered, or have a level of coverage that fits their ecology.** For the remaining nineteen, the analysis identifies clear opportunities to extend the network: sixteen species with a genuine gap in at least one part of their range or annual cycle, and three with a potential gap.
3. **The greatest opportunities concern Africa’s most highly threatened vultures.** Hooded, white-headed, white-backed, Rüppell’s and lappet-faced vultures each have between one and seventeen listed sites. Their recent uplisting on the global IUCN Red List to Critically Endangered or Endangered means that a site now qualifies as internationally important with as few as 15 individuals or 5 pairs, so many more sites are likely to meet the criteria of international importance. Scissor-tailed kite, tawny eagle and Steller’s sea-eagle, with no listed sites, are in a similar position.
4. **Potentially relevant sites have already been identified and could be considered by Signatories.** Several Important Bird and Biodiversity Areas (IBAs) and Key Biodiversity Areas (KBAs) are identified for Category 1 species but are not yet on the List of Sites. These, together with additional species that may qualify at existing sites, are presented for consideration in [UNEP/CMS/RAPTORS/MOS4/Doc.14.4](#).
5. **Gaps are concentrated geographically and seasonally.** Most lie in Africa, South Asia, Central Asia, Mongolia and China, and in the non-breeding season, whereas coverage in Europe and of breeding and passage areas is generally relatively strong.
6. **Sites must deliver for the species.** Designation as protected areas or as areas subject to other effective area-based conservation is a first step; effective management, monitoring and threat reduction are needed for sites to benefit raptors. For wide-ranging or dispersed species, site networks need to be complemented by landscape-scale measures.

2. Scope and approach

The analysis responds to Task 13 of the TAG workplan adopted at MOS3 and was carried out using the latest available dataset (2024–2025) as the first module of the extension of the pilot, as agreed at TAG9. It covers the 31 species in Category 1 of Table 1 of Annex 3: eight Critically Endangered, six Endangered, eleven Vulnerable and six Near Threatened species, thirteen of which are vultures.

In brief, the sites on the List of Sites were overlaid on BirdLife International range maps for each species, ensuring sites of different types with significant overlap only counted once in the analysis. A rapid literature review established when in its annual cycle each species congregates and in what numbers. A shortage of sites was considered a genuine gap only where the species is known to gather in numbers meeting global IBA criteria (mainly Criterion A1 for threatened species) in that part of its range and annual cycle. Further sources (literature published since 2015, eBird count records and eBird modelled abundance maps) were used to point to areas that may qualify but require survey. Full details of the methods, their limitations and future possible steps are given in the full report ([UNEP/CMS/RAPTORS/MOS4/Inf.25](#)).

3. Overview of results

Table 1 at the end of this annex shows, for each species, the number of listed sites in each part of its range and the assessment of coverage, colour coded by season. The species fall into the following groups:

- **Genuine gap in at least one season (16 species):** Egyptian, red-headed, white-headed, hooded, white-backed, Rüppell's, lappet-faced and cinereous vultures; Himalayan griffon; tawny eagle; steppe eagle; black harrier; pallid harrier; Steller's sea-eagle; scissor-tailed kite; and red-footed falcon.
- **Potential gap (3 species):** Beaudouin's snake-eagle, and the non-breeding range of sooty falcon and saker falcon.
- **Well covered, or coverage consistent with ecology (12 species):** bearded, white-rumped, Indian, slender-billed and Cape vultures; greater spotted, eastern imperial and Spanish imperial eagles; Pallas's fish-eagle; mountain hawk-eagle; forest buzzard; and snowy owl.

"Well covered" is relative to the other Category 1 species: all species for which a site-based approach is appropriate would still benefit from additional sites. Total site numbers also require careful interpretation, as large totals often reflect many small European sites in passage areas rather than balanced coverage across the range.

4. Priorities for strengthening the List of Sites

4.1 Highest priority: species with few or no listed sites

For these species the small number of sites is not explained by their behaviour, and the recommended action is to identify and add qualifying sites across the range.

- **African vultures.** Hooded vulture (one listed site) still occurs in large numbers in West Africa, notably Senegal, The Gambia and Guinea-Bissau, and in Ethiopia; 3,637 birds were counted at Diaobé, Senegal. White-headed vulture (one site) and white-backed vulture (three sites) are already trigger species at Kruger National Park, Gorongosa National Park and Marromeu Complex, and Murchison Falls National Park, with Mapungubwe also qualifying for white-backed vulture; these could be considered for inclusion in accordance with the applicable procedures. Six IBAs/KBAs qualifying for Rüppell's vulture (in Uganda, Niger and the Democratic Republic of the Congo) are not yet listed, and the Sahel is a priority. Lappet-faced vulture has declined by about 90% in Africa; priority countries include Ethiopia, Namibia, Botswana, Tanzania, South Africa, Mozambique, Kenya and Senegal. The Chad Basin, identified in the West African Vulture Conservation Action Plan 2023–2043, is important for several species (Egyptian, white-headed, hooded, white-backed, Rüppell's, lappet-faced vultures).

- **Scissor-tailed kite.** Communal roosts of 36,000 birds in Senegal (2008) and 10,000 in Mali (2012) far exceed the threshold of 30 individuals and are a high priority for formal recognition.
- **Tawny eagle.** Uplisted to Vulnerable in 2018 after steep declines, the species now qualifies at 30 individuals. Several existing African IBAs/KBAs, particularly in national parks, may qualify as internationally important for the species, while additional sites, especially in East Africa, warrant further investigation.
- **Steller's sea-eagle.** Fifty-four IBAs/KBAs are already identified for the species, many within the geographic scope of the MOU, and can be reviewed for inclusion.

4.2 Species well covered in part of their range, with clear opportunities elsewhere

- **Cinereous vulture:** strong coverage in Europe, Türkiye and the Caucasus (although two additional sites are suggested for Portugal); Mongolia, China and north-western India, likely global strongholds, have no listed sites.
- **Egyptian vulture:** strong coverage in the north of the range; opportunities in continental Africa and the Indian subcontinent, where 33 IBAs/KBAs are already identified for the species in India.
- **Red-headed vulture:** all 14 sites are in Nepal; 20 Indian IBAs which already list the species could be considered for inclusion in the List of Sites. Further assessment of sites supporting remnant populations in Gujarat and southern Karnataka could also help identify priorities for conservation.
- **Red-footed falcon:** strong coverage in Europe; more sites are likely across the breeding range in Central Asia; and the African non-breeding range, with only two sites in Botswana included in the List of Sites, offers the clearest opportunity, starting with the roost in Huambo province, Angola, estimated to hold up to one million birds.
- **Steppe eagle:** only one non-breeding site is listed; very large wintering gatherings occur in Saudi Arabia and Oman, and major migration counts at Eilat (Israel) and Ras Gharib (Egypt). Sixty-eight key sites from the Global Action Plan 2026–2035 which are supporting internationally important numbers are listed in the full report.
- **Pallid harrier, black harrier and Himalayan griffon:** non-breeding roosts in India, Pakistan, the Arabian Peninsula and East Africa (pallid harrier); 44 IBAs/KBAs (42 in South Africa and Lesotho) (black harrier); and high-abundance areas in the Himalayas of India and Pakistan and central China (Himalayan griffon).
- **Sooty falcon:** breeding and passage coverage is strong; potential non-breeding sites should be investigated, given the species' occasional gregarious behaviour in that season. For example, in Madagascar, gatherings of up to 315 sooty falcons have been recorded.
- **Saker falcon:** a potential gap in listed site coverage has been identified in the non-breeding range in India and Africa. However, further information is needed to assess the value of site-based conservation for this dispersed species during the non-breeding season.

4.3 Species with good coverage

Pallas's fish-eagle, greater spotted eagle, Cape vulture, bearded vulture, eastern imperial eagle and Spanish imperial eagle are represented by numerous sites across their ranges and annual cycles. Targeted improvements are still suggested, for example for bearded vulture in Central Asia and Africa, for Pallas's fish-eagle in Kazakhstan and Uzbekistan, and for eastern imperial eagle in parts of East Africa. White-rumped, Indian and slender-billed vultures are

also well covered within the MOU area, although the very small slender-billed vulture population means that any additional site would be valuable.

4.4 Species for which site-based conservation has a limited role

Mountain Hawk-eagle, Forest Buzzard and Snowy Owl are largely solitary, and relatively few sites may hold internationally important numbers. Further information is needed to assess site coverage for Beaudouin's Snake-eagle. Large protected or appropriately managed areas may offer important conservation opportunities. Saker Falcon in its non-breeding range, and Spanish Imperial Eagle in North Africa, are similarly dispersed. For these species, wider landscape and policy measures addressing key threats can complement site-based conservation and may be particularly important where birds occur at low densities.

5. Sites ready for consideration

The analysis highlights three sources of sites that Signatories can consider now:

- **IBAs/KBAs already identified** for Category 1 species but not yet on the List of Sites, and new qualifying species at listed sites, presented country by country in UNEP/CMS/RAPTORS/MOS4/Doc.14.4. The number of such sites is expected to grow as countries update their national IBA and KBA inventories.
- **Sites documented in the literature since 2015**, compiled in the full report, including key roosts and areas for vultures, harriers, red-footed falcon and sooty falcon identified using observational or tracking data.
- **Areas suggested by eBird data**, where counts above the A1 threshold were recorded outside existing sites. These indicate where surveys could confirm international importance, keeping in mind that citizen-science data are scarcer in less-surveyed regions such as West Africa and that this work could be extended to include other sources of citizen science data.

Some listed sites lie outside current range maps, reflecting a need for updated monitoring or updates to range maps to keep pace with a changing situation including sometimes range contraction. Rather than removing sites that no longer host Category 1 species owing to range contraction, the report recommends retaining those with restoration potential, such as former bearded vulture sites in the Balkans, as part of a forward-looking conservation strategy, while reviewing their current status.

6. From listing to effective conservation

A more comprehensive List of Sites is most valuable when the sites are effectively protected and managed. Action 3.2 of the Raptors MOU Action Plan makes this link explicit: it calls on Signatories to designate nationally and internationally important sites for birds of prey, including those listed in Table 3, as protected areas with management plans or as areas under other effective area-based conservation or restoration measures, including at the landscape scale where appropriate. The List of Sites shows where such action should be prioritised, and progress is tracked in the Conservation Status Assessment Report ([UNEP/CMS/RAPTORS/MOS4/Doc.12.4](#)).

Implementing Action 3.2 can also contribute to Target 3 of the Kunming-Montreal Global Biodiversity Framework (30% of land and sea conserved by 2030), whose combination of protected areas and Other Effective Area-based Conservation Measures (OECMs) closely mirrors the Action. For wide-ranging species such as vultures, protecting key breeding

colonies and communal roosts should be combined with landscape-scale measures such as Vulture Safe Zones.

7. Suggested next steps

1. Signatories consider adding the already-identified sites and qualifying species presented in UNEP/CMS/RAPTORS/MOS4/Doc.14.4 to the List of Sites, giving priority to the species in section 4.1.
2. Signatories and partners target surveys and monitoring at the priority areas identified in section 4, in particular in Africa, South and Central Asia, Mongolia and China, and in the non-breeding season.
3. The TAG extends the analysis, subject to resources, to Category 2 species and, for both categories, to areas meeting regional thresholds of international importance.

Summary Results of the Site Network Analysis

The table summarises the assessment of listed site coverage for the 31 Category 1 species by mapped range category, taking account of site numbers, congregatory behaviour and conservation status. the classification “Relatively comprehensive listed site coverage” does not establish that all important sites have been identified or that existing sites are effectively protected and managed. Limited site representation may be consistent with a species’ non-congregatory behaviour, while a “potential gap” indicates that further information is needed to assess coverage.

Table 1. Number of sites on the Raptors MOU List of Sites associated with each Category 1 species, by mapped range category, following the site-overlap analysis described in section 2.1.3 of the full report. Colours indicate the assessment of listed site coverage, taking account of site numbers, congregatory behaviour and global conservation status.

Common name	Range category on distribution map								Outside range
	Native resident	Native breeding	Native passage	Native non-breeding	Reintroduced	Possibly extant	Possibly extinct	Extinct	
Bearded vulture	109	NA	NA	0	33	0	1	46	23
Egyptian vulture	41	264	271	0	NA	NA	0	5	23
Beaudouin's snake-eagle	0	NA	NA	NA	NA	NA	NA	NA	NA
Red-headed vulture	14	NA	NA	NA	NA	NA	0	NA	NA
White-headed vulture	1	NA	NA	0	NA	0	0	0	NA
Hooded vulture	1	NA	NA	0	NA	NA	0	0	NA
Himalayan griffon	29	NA	NA	0	NA	NA	NA	NA	2
White-rumped vulture	166	NA	NA	0	NA	NA	35	NA	NA
White-backed vulture	3	NA	NA	2	NA	0	0	0	NA
Indian vulture	51	NA	NA	NA	NA	NA	38	NA	6
Slender-billed vulture	52	NA	NA	NA	NA	NA	10	NA	7
Cape vulture	27	NA	NA	7	NA	NA	0	0	NA
Rüppell's vulture	4	NA	NA	3	NA	NA	0	0	NA
Cinereous vulture	126	4	2	98	13	NA	NA	19	23
Lappet-faced vulture	10	NA	NA	2	NA	0	0	1	5
Mountain hawk-eagle	0	NA	NA	NA	NA	NA	NA	NA	NA
Greater spotted eagle	NA	124	126	164	NA	NA	NA	NA	69

Common name	Range category on distribution map								Outside range
	Native resident	Native breeding	Native passage	Native non-breeding	Reintroduced	Possibly extant	Possibly extinct	Extinct	
Tawny eagle	0	NA	NA	NA	NA	NA	NA	NA	NA
Steppe eagle	NA	11	5	1	NA	NA	NA	NA	9
Spanish imperial eagle	80	NA	9	NA	NA	NA	NA	NA	3
Eastern imperial eagle	11	195	121	80	NA	NA	NA	NA	29
Black harrier	12	NA	NA	10	NA	NA	NA	NA	NA
Pallid harrier	NA	64	142	45	NA	NA	NA	NA	19
Pallas's fish-eagle	NA	41	42	59	NA	NA	22	NA	8
Steller's sea-eagle	0	0	NA	0	NA	NA	NA	NA	NA
Forest buzzard	6	NA	NA	7	NA	NA	NA	NA	NA
Scissor-tailed kite	0	0	NA	0	NA	NA	NA	NA	NA
Red-footed falcon	NA	127	281	2	NA	NA	NA	NA	24
Sooty falcon	NA	26	10	0	NA	NA	NA	NA	8
Saker falcon	101	83	102	21	NA	NA	NA	NA	13
Snowy owl	NA	4	NA	1	NA	NA	NA	NA	NA

Colour Key

	Assessed gap in listed site coverage
	Limited site representation consistent with species ecology
	Relatively comprehensive listed site coverage
	Potential gap requiring further information
NA	Not Applicable
	Sites not considered as outside current confirmed range