12.2 Results of the pilot site network analysis

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Technical Advisory Group

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12.2 Pilot Site Network Analysis

- TAG workplan Activity 2, Task 2.5 'Advise on gaps in current information on key breeding areas, stopover, refuelling, bottleneck, other congregational and non-breeding sites along raptor flyways, and: a) make recommendations on how these might be filled; and, b) advise on appropriate approaches for the conservation and management of critical areas'

- Looking at draft Table 3 as an ecological network of sites of international importance for an Annex 1 raptor species – how well does the network support this species? What are the knowledge gaps to be addressed?

- To help deliver advice and recommendations on gaps in the network of internationally important sites (Table 3 of Annex 3 to the MOU) for Annex 1 species, as well as on ways to strengthen the comprehensiveness of that network

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12.2 Pilot species selection

- Carried out pilot analysis using the amended draft Table 3 post MOS2 for a small set of Annex 1 species to test an approach that could potentially be applied to other Annex 1 species if deemed useful

- Sample of 11 pilot species selected by TAG covering a variety of different taxa, geographic ranges, Annex 3 Table 1 Categories (i.e. IUCN threat status) and strategies in terms of migratory movements / spatial distribution

- Rüppell's Vulture;
- Lappet-faced Vulture;
- Egyptian Vulture;
- Cinereous Vulture;
- Steppe Eagle;
- Wahlberg's Eagle;
- Mountain Hawk-eagle;
- Pallas's Fish-eagle;
- Grasshopper Buzzard;
- Amur Falcon;
- Lanner Falcon.

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12.2 Identifying genuine potential gaps

- Literature review to understand and document the congregatory behaviour of a pilot species at different stages of its annual cycle
- Draft Table 3 sites overlaid on species distribution map (BirdLife International 2019) to identify major gaps in different parts of the range
- Used information on the species congregatory behaviour to assess whether those gaps were genuine, or species not congregating during that part of its annual cycle, so not meeting thresholds for international importance at sites where it occurs – site based approach may not be appropriate for species in that part of annual cycle
- This approach could help us understand if there are significant and genuine gaps in the network of internationally important sites in draft Table 3 for Annex 1 species

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12.2 Literature review to characterise congregatory behaviour in different seasons

Common name	Breeding Aggregatory Behaviour	Passage Aggregatory Behaviour	Non-breeding aggregatory behaviour	Aggregatory behaviour comment	Source?	Maximum known congregation
Steppe Eagle	D	D/C	D/C	Nest in breeding pairs. During passage - a broad front migrant, with concentrations at bottle necks, including Suez, and Bab el Mandeb (HBW), also Himalayan passes, with peak of 194 per hour (Den Besten, 2004). May form flocks of up to 400 on migration (Ferguson-Lees and Christie). Little work on non-Br - may from gatherings, ie roost at Swayambhunath temple (Decandido et al 2013), and widely reported winter roost at Jorbeer, Bikaner, where carcass dump sees a max wintering Steppe Eagle popn of 310 (Khatri).	Den Besten 2004 'Migration of Steppe Eagles Aquila nipalensis and other raptors along the Himalayas past Dharamsala, India, in autumn 2001 and spring 2002'; Ferguson-Lees and Christie 2001 'Raptors of the World.'; DeCandido et al 2013 The east–west migration of Steppe Eagle Aquila nipalensis and other raptors in Nepal and India; Khatri 2015 WINTER MIGRATION OF STEPPE EAGLES (AQUILA NIPALENSIS) AT JORBEER, BIKANER .	310 (rare)
Cinereous Vulture	C	D/C?	D	Normally forms loose breeding colonies, in Spain largest are 336, 287 and 165 pairs (Moreno-Opo et al). Much of popn is resident and sedentary, but small irregular bottlenecks at Bosphorus and Eilat (F-L and Christie). Groups may form at food sources - Moreno-Opo et al report average numbers attending placed carcasses in Spain as 23.	Ferguson-Lees and Christie 2001 'Raptors of the World.'; Moreno-Opo et al 2010 Factors influencing the presence of the cinereous vulture Aegypius monachus at carcasses: food preferences and implications for the management of supplementary feeding sites;	
Lappet-faced Vulture	D	D	D	Usually solitary, and pairs breed singly, often in acacia trees. Immatures are dispersive. May occassionally see few at a food source, if common location or watering hole, may have 25-50.	Ferguson-Lees and Christie, 2001 'Raptors of the World'	
Egyptian Vulture	D	D	C	Seems to nest in pairs (Amezian and El Khamlichi), reported as territorial, and often mating for life (Sen). Described as a non-flocking species on passage (Leshem and Yom-tov), but migratory birds do typically cross at bottlenecks, ie Gibraltar, Bosphorous and Dardanelles, Sicily, Suez and Bab el Mandeb (Arkumarev et al). Non-breeding birds form roosts, typically linked to areas of food availability, from roost of 40 in Morocco (Amezian and El Khamlichi), to a congregation of 900 in Afar region (Arkumarev), 341 at hadibu, Socotra (Island has largest conc of 1900 total)(Porter and Suleiman), up to 458 at Muscat's muncipal landfill (Al Fazari and McGrady), 1171 at keru dead animal dumping ground in Jodphur, also 511 at Bikaner (Chhangani).	Amezian and El Khamlichi 2016 - Significant population of Egyptian Vulture Neophron percnopterus found in Morocco; Sen, 2012 - BREEDING ECOLOGY OF THE EGYPTIAN VULTURE (Neophron percnopterus) POPULATION IN BEYPAZARI; Al Fazari and McGrady 2016 Counts of Egyptian Vultures Neophron percnopterus and other avian scavengers at Muscat's municipal landfill, Oman, November 2013–March 2015 ; Chhangani AK. 2009. Status of vulture population in Rajasthan, India. Indian Forester 135: 239–251; Arkumarev et al 2014 Congregations of wintering Egyptian Vultures Neophron percnopterus in Afar, Ethiopia: present status and implications for conservation; Leshem and Yom-tov 1996 – The magnitude and timing of migration by soaring raptors, pelicans and storks over Israel; Porter and Suleiman 2012 -	1,171

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12.2 Some species have no sites on draft Table 3

- 3 of the 11 pilot species had no sites listed on draft Table 3
  - Grasshopper Buzzard (LC – Gregarious on migration and during dry season, forming loose congregations of up to 50-100 near grass fires, on Table 3 is expected. Reports that in Sudan, the species moves north with the rains and 'very large numbers' concentrate in the Khartoum-Gadareg area in September-October)
  - Mountain Hawk-eagle (up until recently LC, not congregatory in any season so expected gaps, but now NT)
  - Wahlberg's Eagle (LC – dispersed so probably not generally occurring in 1% congregations sufficient to meet thresholds of international importance, but could occasionally occur in numbers approaching thresholds for international importance on passage)
- A further 28 species listed on Annex 1 were found not to have sites of international importance identified in draft Table 3
- This would warrant further investigation and analysis

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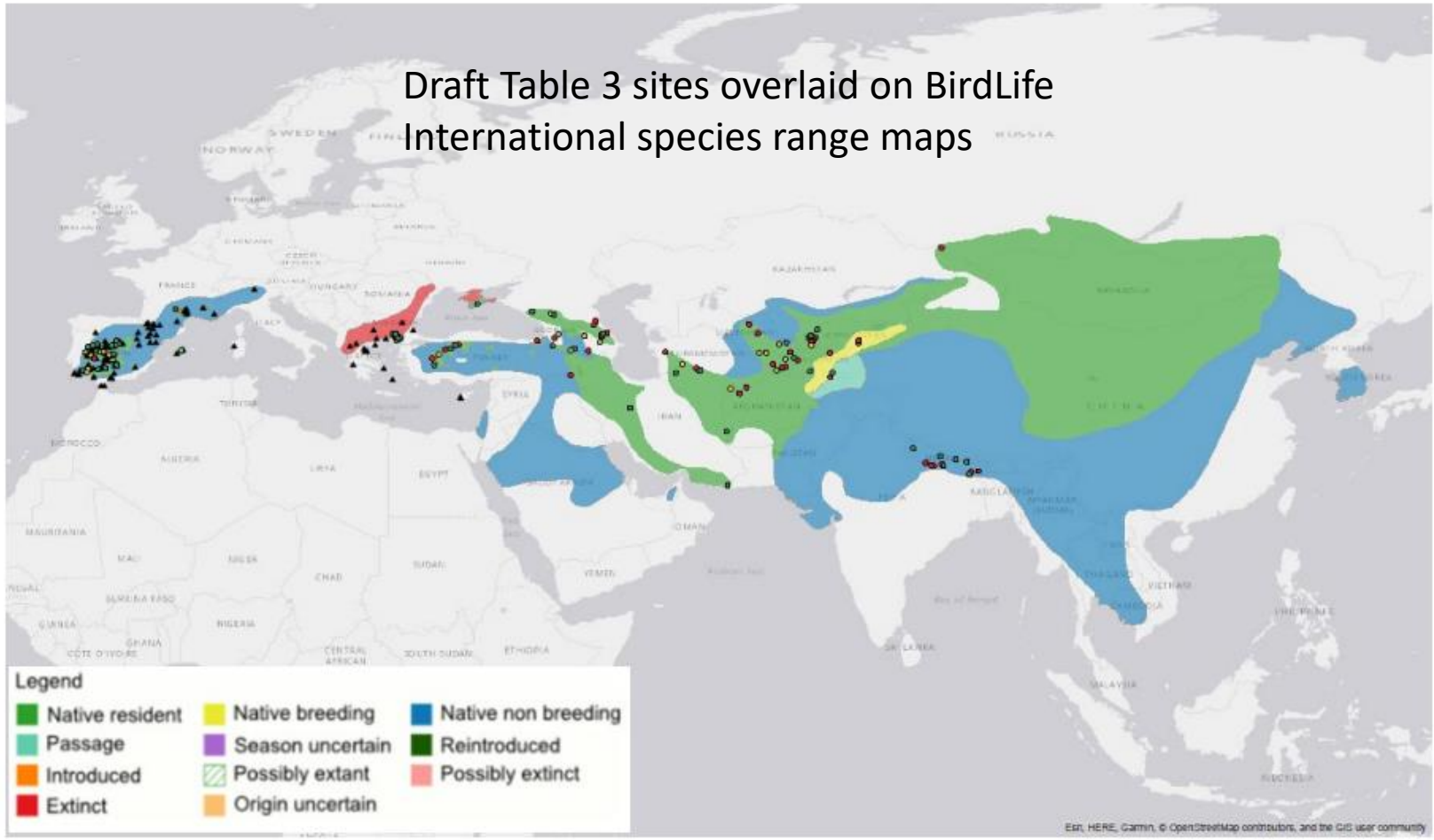
12.2 Cinereous Vulture (NT)



- Gaps in the site network, including in the eastern part of the species range

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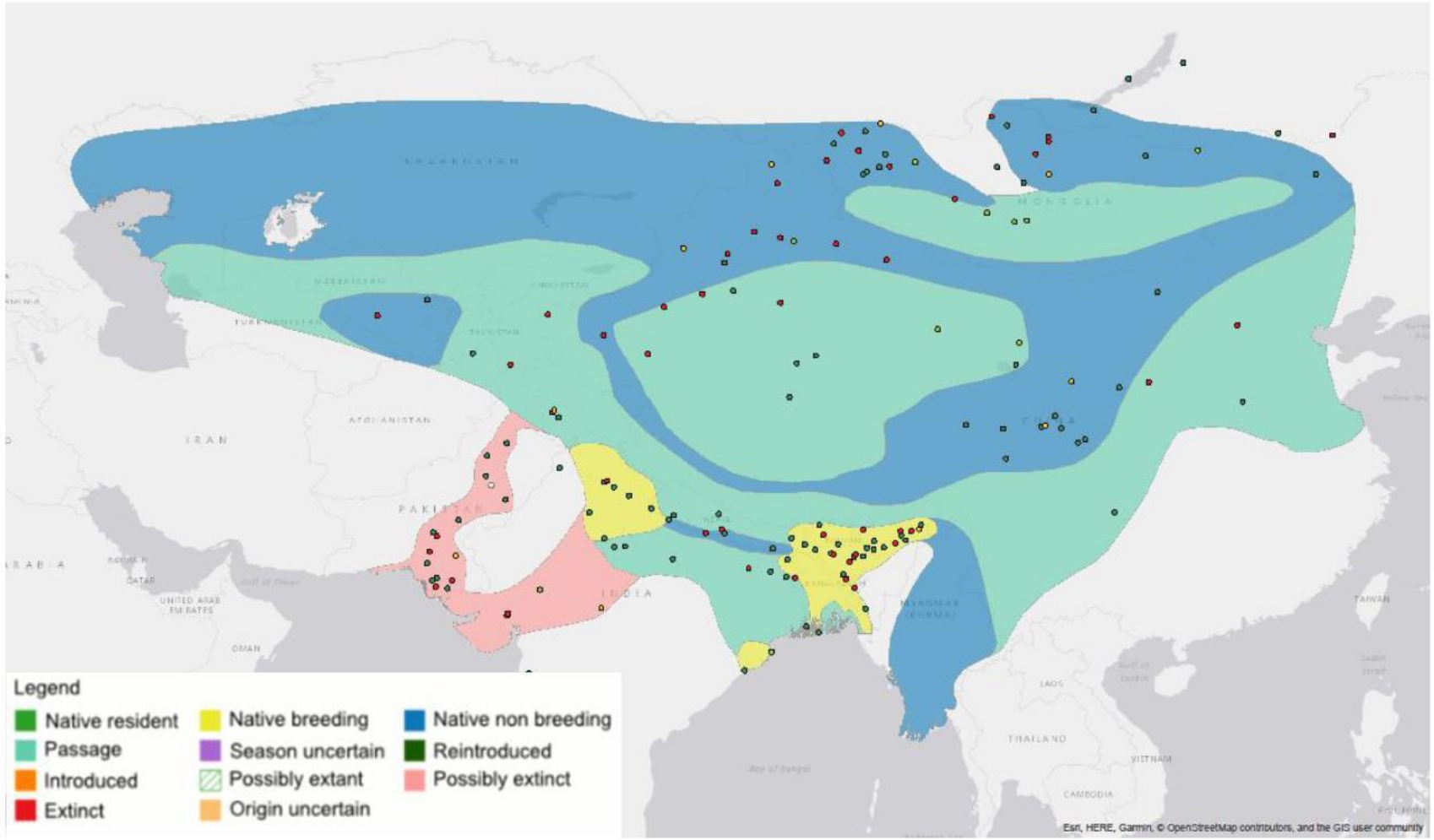
12.2 Pallas's Fish-eagle (EN)



- Reasonable representation of sites for this species, though gaps in west of range
- Sites with the species recorded in 'possibly extinct' area, so need monitoring to confirm
- Potential for re-establishment/ restoration

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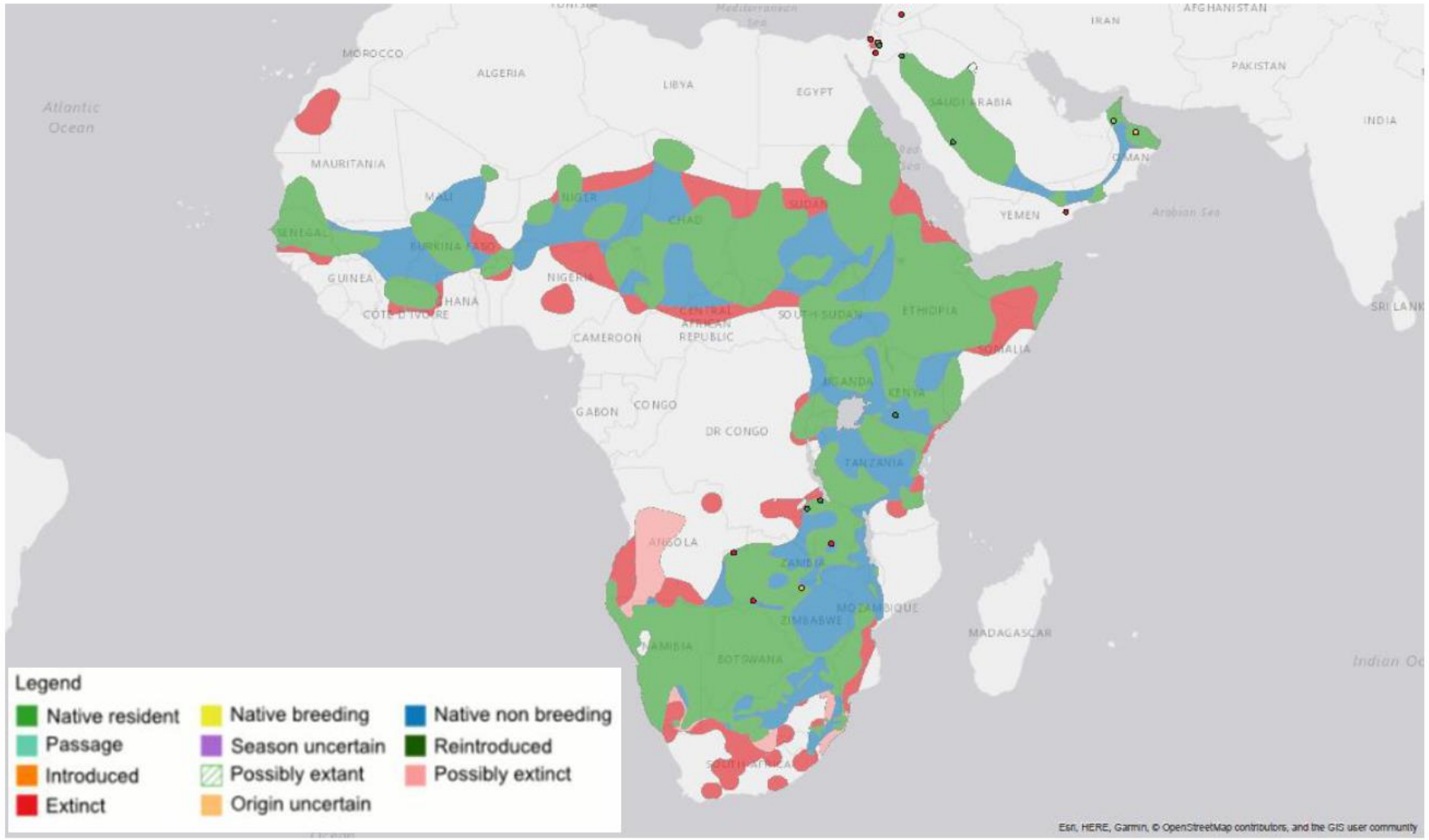
12.2 Lappet-faced Vulture (EN)



- Low coverage
- Some sites with the species listed as breeding where it may no longer occur
- Now Endangered so thresholds for international importance lower

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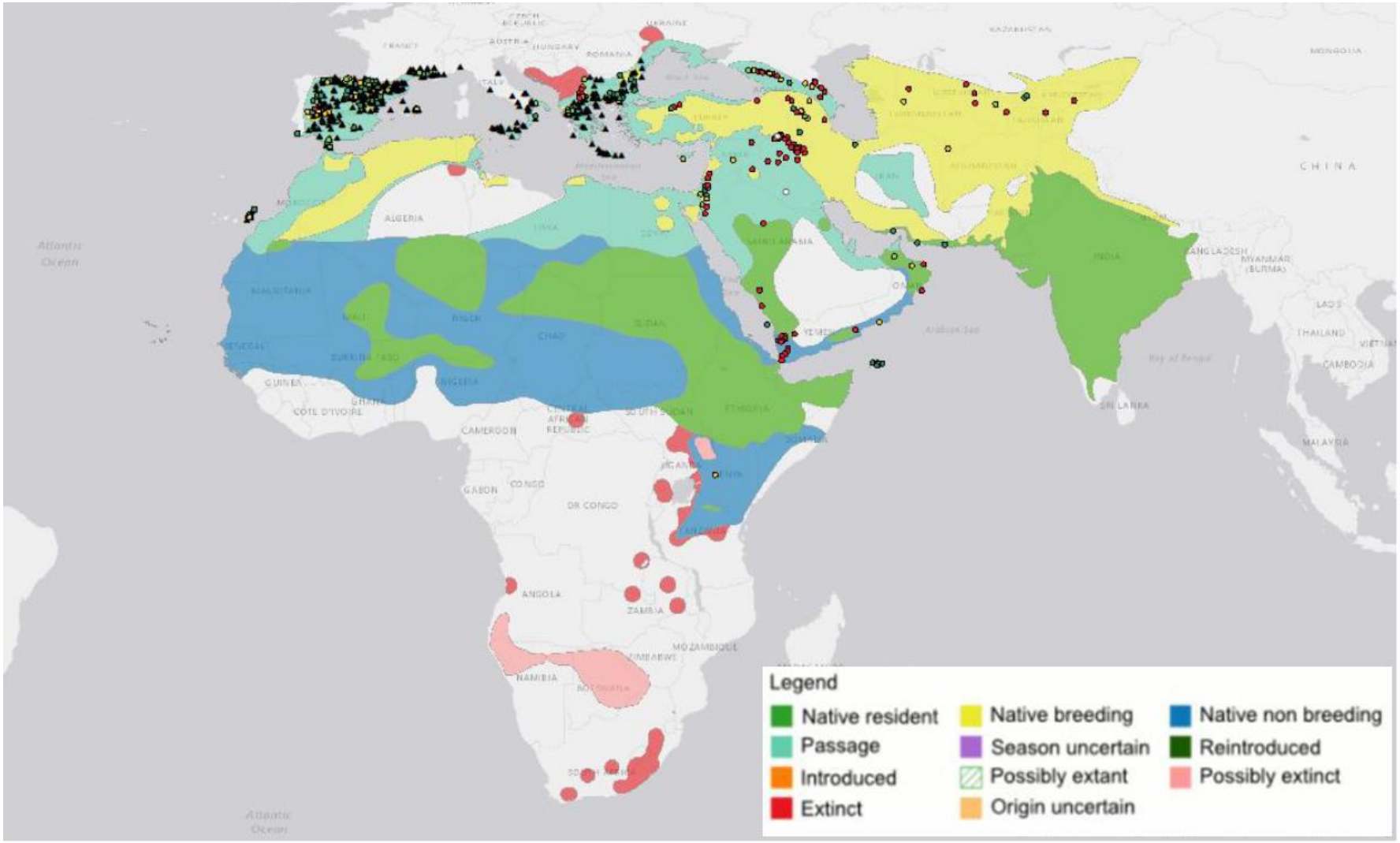
12.2 Egyptian Vulture (EN)



- Many more sites than many other Annex 1 species
- Significant gaps in southern parts of the range, including African non-breeding grounds

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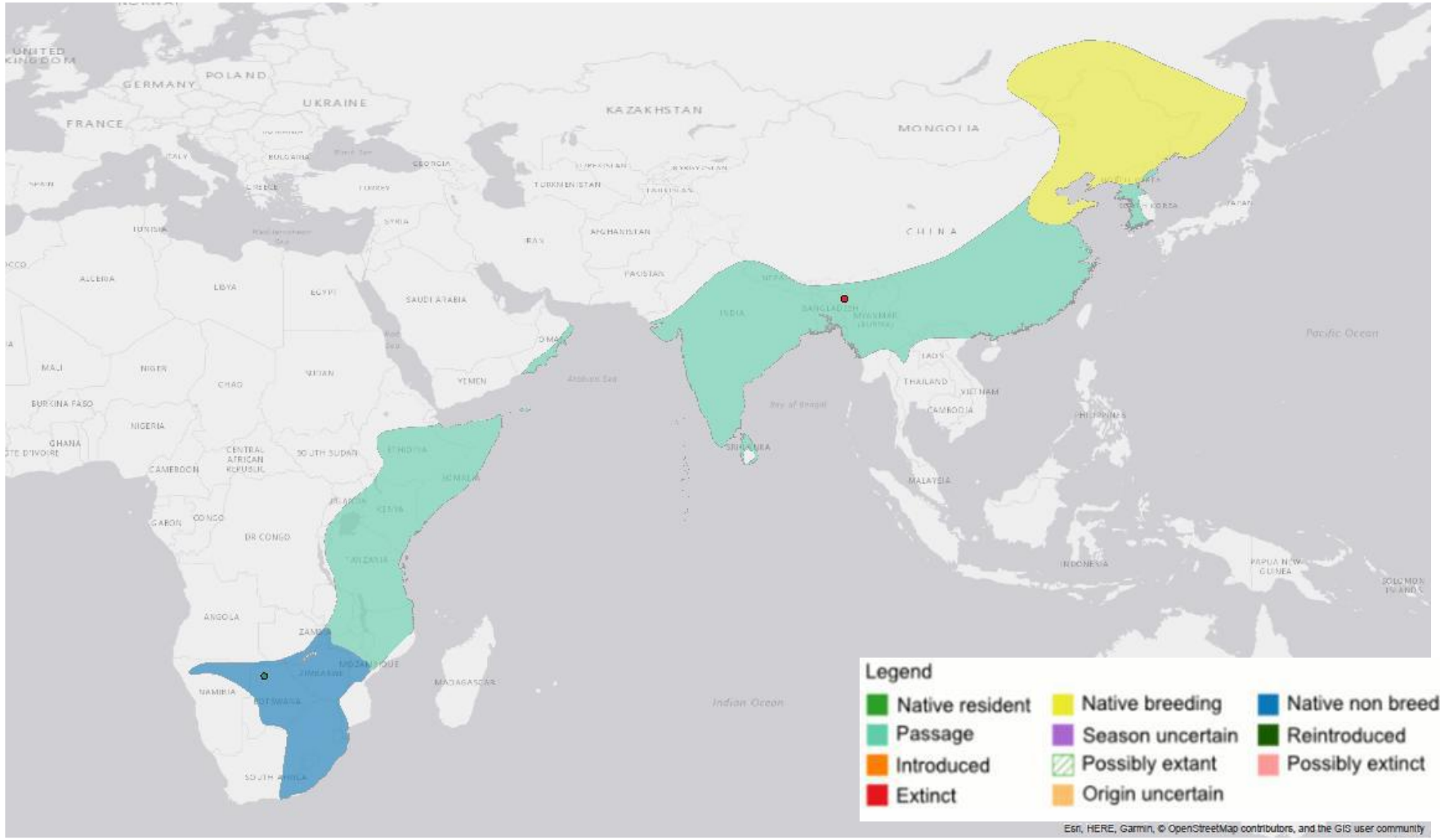
12.2 Amur Falcon (LC)



- Very few sites identified for species
- Congregatory throughout its annual cycle, particularly on passage
- Should be possible to identify other sites

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12.2 Automating parts of the analysis

Current number of Table 3 sites (IBAs) falling within different polygons of the BirdLife species range map											
Species	Red List Status	Potential threshold for international importance	Native Breeding	Native Non Breeding	Passage	Native Resident	Extinct	Possibly Extinct	Reintroduced	Total no. IBAs outside BL Range Maps	% IBAs outside BL Range Maps
Pallas's Fish-eagle	EN	5 pairs/ 15 individuals	39	52	33	n/a	n/a	20	n/a	11	7.10
Amur Falcon	LC	≥1% of population present on a regular or predictable basis	0	1	1	n/a	n/a	n/a	n/a	n/a	n/a
Lanner falcon	LC	≥1% of population present on a regular or predictable basis	n/a	6	n/a	25	n/a	n/a	n/a	14	31.11
Egyptian Vulture	EN	5 pairs/ 15 individuals	118	13	67	30	1	n/a	n/a	19	7.66
Lappet-faced Vulture	EN	5 pairs/ 15 individuals	n/a	2	n/a	10	n/a	n/a	n/a	6	33.33
Ruppell's Vulture	CR	5 pairs/ 15 individuals	n/a	2	n/a	4	n/a	n/a	n/a	0	0.00

Seasonal occurrence of species at IBA for sites falling outside current range map	Total	Maximum Congregation	Provisional 1% of global population threshold	Provisional Global Population Size Min (2021)	Provisional Global Population Size Max (2021)	Provisional Global Population size mean (2021)
Breeding (4) Resident (3) Unknown (1)	155	Not congregatory	17.495	1000	2499	1749.5
n/a	2	10,000 + (Passage)	4335	200000	667,000	433500
Resident (7) Breeding (6) Winter (1)	45	~20 (HBW, Native Resident)	3685	67000	670,000	368500
Breeding (4) Passage (2) Winter (2) Redisdent (1) Non-breeding (1)	248	1,171 (Native Resident-India)	242	12,400	36,000	24200
Non-breeding (4) Resident (1) Winter (1)	18	?	65	6500	6,500	6500
n/a	6	2000 (Native Resident)	220	22000	22,000	22000

Genuine gap where sites of international importance could be identified for this species in this season

Where congregatory information is lacking from the literature

Where sufficient sites exist across the species range to not constitute a total gap

Lack of sites justified by species ecology in this season

- TAG felt analysis gave a useful overview, scaling up to other Annex 1 species could be feasible
- Could be worth looking further into complementing comprehensiveness analysis with assessment of protection status of site network

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12.2 Conclusions re: pilot species

- Taking a species view, some of the pilot species are unrepresented on draft Table 3 in significant parts of their range and many species lack sufficient sites to represent an adequate ecological network
- Several species have undergone significant range contractions over time, alongside worsening conservation status
- More comprehensive monitoring needed to give latest picture, but if numbers have dipped below threshold levels for some trigger species at sites, could still be a focus for restoration
- Site-focus not appropriate for all species, securing policy measures to reduce threats in wider landscape may be more important for some species
- It may be possible to identify further site of international importance to increase comprehensiveness of site networks for Annex 1 species
- Further surveys needed and literature, particularly tracking literature can be informative

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12.2 Pilot site network analysis

- The Meeting is invited to:

(a) Review the information presented in Annex 1 of Doc 12.2;

(b) Discuss the value of the analysis employed; and

(c) **Determine whether such analysis should be expanded to all other Annex 1 species**

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