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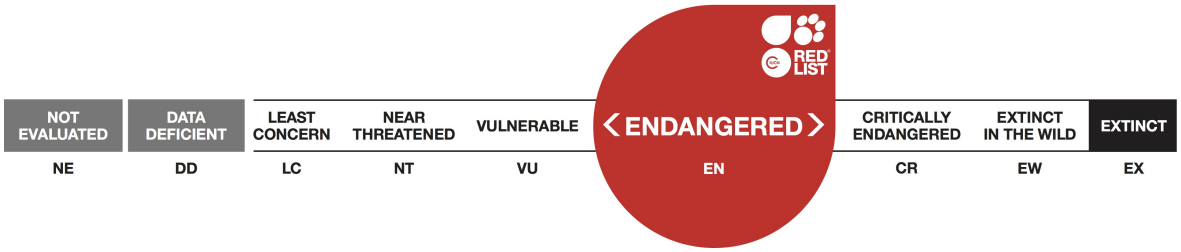
Scope: Global
Language: English

Leptoptilos dubius, Greater Adjutant

Assessment by: BirdLife International



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Aves	Ciconiiformes	Ciconiidae

Taxon Name: *Leptoptilos dubius* (Gmelin, 1789)

Common Name(s):

- English: Greater Adjutant

Taxonomic Source(s):

del Hoyo, J., Collar, N.J., Christie, D.A., Elliott, A. and Fishpool, L.D.C. 2014. *HBW and BirdLife International Illustrated Checklist of the Birds of the World*. Lynx Edicions BirdLife International, Barcelona, Spain and Cambridge, UK.

Identification Information:

145-150 cm. Huge, dark stork with very thick bill and pendulous neck-pouch. Pinkish naked head, white neck-ruff. Pale grey greater coverts and tertials contrasting with otherwise dark upperwing. Underwing-coverts paler than flight feathers. Juvenile has narrower bill than adult, denser head and neck-down and, initially, all dark wings. **Similar spp.** Lesser Adjutant *L. javanicus* is smaller, lacks neck pouch, has black greater coverts and tertials.

Assessment Information

Red List Category & Criteria: Endangered A2bcd+3bcd+4bcd;C2a(ii) ver 3.1

Year Published: 2016

Date Assessed: October 1, 2016

Justification:

This wide-ranging and long-lived species has a very small population which is declining very rapidly. For these reasons it is classified as Endangered.

Previously Published Red List Assessments

2013 – Endangered (EN) – http://dx.doi.org/10.2305/IUCN.UK.2013-2.RLTS.T22697721A48055015.en

2012 – Endangered (EN)

2008 – Endangered (EN)

2007 – Endangered (EN)

2006 – Endangered (EN)

2004 – Endangered (EN)

2000 – Endangered (EN)

1996 – Endangered (EN)

http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22697721A93633471.en

1994 – Endangered (EN)

1988 – Threatened (T)

Geographic Range

Range Description:

This species was previously widespread and common across much of South and continental South-East Asia but declined dramatically during the first half of the 20th century (Birdlife International 2001). It is known to breed in Assam (at least 650-800 birds, or more [Choudhury 2000]) and Bihar (more than 350 birds [A. Choudhury *in litt*. 2016]), **India**, and at the Tonle Sap lake (c.150 pairs [Visal and Mahood 2015]), **Cambodia** (T. Clements *in litt*. 2007). The species was reported to be breeding in Bihar, India, in 2004, and a small breeding population was discovered in the state on the Ganga and Kosi river floodplains in 2006 (Mishra and Mandal 2009). The population there appears to be increasing, with at least 156 estimated in 2008 and over 300 individuals in 2011, up from 78 in 2007 (Mishra and Mandal 2009, Kahn 2011). Kamrup District in Assam is known to be a stronghold for the species, with almost 75% of its population in Assam found in this district (Barman and Sharma in press). Recent records from **Nepal**, **Bangladesh**, and **Thailand** are presumed to refer to wanderers from India and Cambodia. Huge numbers once bred in **Myanmar**, but there have been just two recent reports from Meinmahla Kyun in 1998 and Kachin State in 2006 (G. Chunkino *in litt*. 2006). There are no confirmed records from Laos in recent years. Breeding success had been extremely poor in Assam with the number of nests in colonies declining sharply and for unknown reasons (Goswami and Patar 2006). However it is now considered to be breeding successfully in Assam with numbers increasing at a slow but steady rate (J. Mandal *in litt*. 2016). Large flocks of a few hundred birds are still noted around the city of Guwahati, which may provide feeding areas for around half of the species's world population (Choudhury 2008). Available data suggest that Cambodian populations declined heavily in the decades up to and including the 1990s. By 2001, several breeding sites recorded in the 1990s had been abandoned. Since 2001, protection measures were put in place at two known breeding sites (Prek Toal on the Tonle Sap and Kulen Promtep in Preah Vihear) which led to a stabilisation of national population declines and possible minor recoveries (Clements *et al*. 2007a,b). However the colony at Kulen Promtep is now extinct owing to forest clearance within the area (S. Mahood *in litt*. 2016).

Country Occurrence:

Native: Bangladesh; Cambodia; India; Nepal; Thailand; Viet Nam

Possibly extinct: Lao People's Democratic Republic; Myanmar

Regionally extinct: Pakistan

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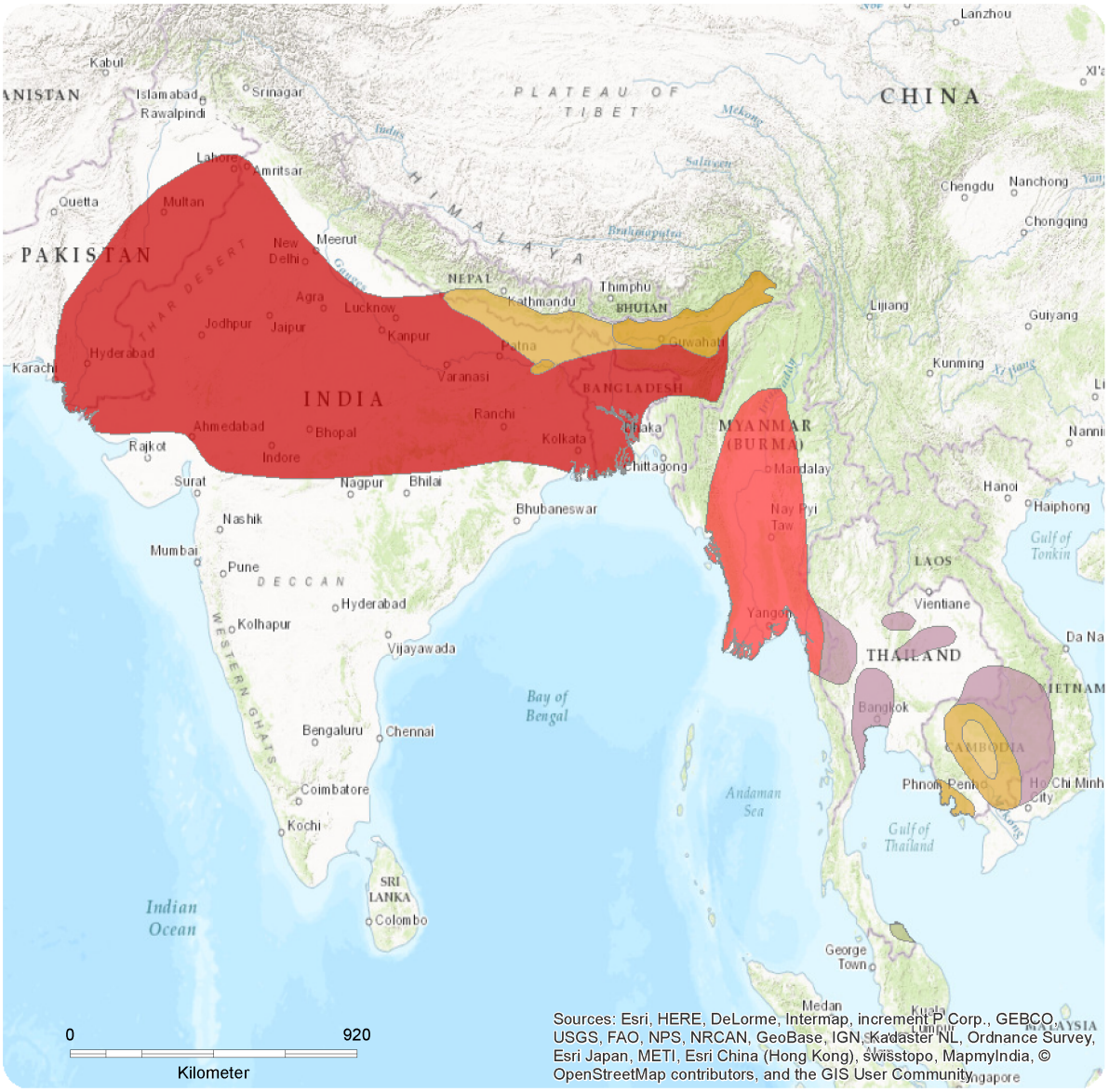
Distribution Map

Leptoptilos dubius

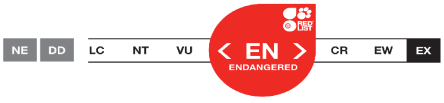


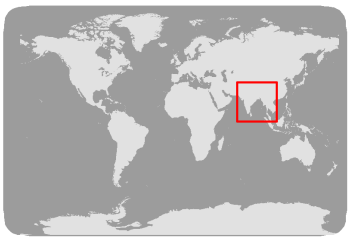
Range

- Extant & Vagrant (non-breeding)
- Extant (breeding)
- Extant (non breeding)
- Extant (resident)
- Extinct
- Possibly Extant (non breeding)
- Possibly Extinct

Compiled by:

BirdLife International and Handbook of the Birds of the World (2016)





The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

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Population

The total population is estimated to number 800-1,200 mature individuals, roughly equivalent to 1,200-1,800 individuals in total. This is based on estimates of 650-800 birds in Assam, India, plus 150-200 birds in Cambodia, as well as at least 156 birds in Bihar state, India, which may have dispersed from the Assam population.

Trend Justification

This species's population is suspected to be decreasing very rapidly, in line with levels of direct exploitation and habitat destruction, particularly lowland deforestation and the felling of nest-trees, and drainage, conversion, pollution and over-exploitation of wetlands. Given the species's longevity, population trends are measured over a three-generation period of 45 years and hence the impacts have been severe.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

While breeding in the dry season (October-April/May) it inhabits wetlands, nesting in tall trees with closed canopies and bamboo clumps around nesting trees, and historically on cliffs. Breeding is thought to coincide with the dry season in order to take advantage of abundant prey as water levels recede (Singha *et al*. 2003). In north-east India, it occurs close to and within urban areas (Barman and Sharma in press, A. Choudhury *in litt*. 2016), feeding around wetlands in the breeding season, and dispersing to scavenge at rubbish dumps, abattoirs and burial grounds at other times. In Cambodia, it breeds in freshwater flooded forest and areas of dry forest with ephemeral pools, otherwise dispersing to seasonally inundated forest, carcass dumps, tall wet grassland, mangroves and intertidal flats. It generally inhabits the lowlands but is occasionally found up to 1,500 m (Elliott and Kirwan 2016).

Systems: Terrestrial, Freshwater

Threats (see Appendix for additional information)

The key threats are direct exploitation, particularly at nesting colonies, habitat destruction, including felling of nest-trees, and drainage, conversion, pollution and over-exploitation of wetlands. Additionally, the Indian population is threatened by contaminated open rubbish dumps where pollutants are disposed along with carcasses and foodstuffs and it is also known to accidentally ingest polythene bags if food is wrapped inside (J. Mandal *in litt*. 2016). It has been suggested that recent nesting failures in Assam may be due to disease (Goswami and Patar 2006), which may have a negative impact upon the species in the future. Young birds may also become entangled in fishing nets and the species may suffer from the disturbance of arboreal animals, competition for nesting habitat from the Lesser Adjutant *L. javanicus* and the exacerbation of persecution levels owing to its pest status (Mishra and Mandal 2009). Poisoning of small wetlands to catch fish in the dry forests of northern and eastern Cambodia potentially poses a significant threat, and in Guwahati, India, pesticide use at open rubbish dumps where storks flocked to feed led to several mortalities in 2005. The population at Kulen Promtep Wildlife Sanctuary in the Northern Plains of Cambodia is now extinct owing to clearance of forest in the area (S. Mahood *in litt*. 2016). A major fire occurred in Prek Toal in early 2016. It is not yet known how this has impacted on the species (S. Mahood *in litt*. 2016).

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Conservation Actions (see Appendix for additional information)

Conservation Actions Underway

In Assam, it occurs in Kaziranga, Manas and Dibru-Saikhowa National Parks, and Pabitora, Deepor Beel, Laokhowa, Burhachapori and Pani-Dihing Sanctuaries (A. Choudhury *in litt*. 2016). Since 1991, there have been conservation awareness programmes in Assam. In Nagaon district, Assam, Green Guards (a local NGO) had a project to protect nesting trees and rehabilitate chicks fallen from nests but this has now stopped (A. Choudhury *in litt.* 2012). In Cambodia, the breeding colony at Prek Toal is a core area of the Tonle Sap Biosphere Reserve. Greater Adjutants historically bred at other sites on the Tonle Sap, but these colonies were abandoned by 2001. Conservation actions to reduce chick and egg collection and other forms of disturbance to the breeding colony at Prek Toal have been in place since the late 1990s, with permanent teams of protectors employed since 2001. Since 2001, c.95% of waterbird egg and chick collection has been prevented at Prek Toal. It is included in waterbird conservation awareness material in Laos and Cambodia. In Kamrup District, Assam a successful community conservation programme ran from 2009 to 2014 and during this period there were no records of nesting trees being cut down and the number of successful nests grew from 65 in 2010-2011 to 148 in 2013-2014 (Barman and Sharma in prep.).**Conservation Actions Proposed**

Conduct further surveys in Cambodia, Bangladesh, India and Myanmar. Investigate seasonal movements and threats. Protect nesting and feeding-sites outside protected areas, and plant trees in suitable areas; the nest payment system in Cambodia may be a suitable model. Rewarding the owners of nesting trees may be a means to encourage pride in the conservation of the species (A.R. Rahmani *in litt.* 2012). Promote strict control of pesticide use around feeding areas. Continue and strengthen on-going conservation actions at the Prek Toal colony, Tonle Sap lake. Establish a wildlife protection office at Tonle Sap lake. Draft and enforce waterbird conservation legislation at Tonle Sap lake. Expand conservation awareness programmes and develop a structured captive breeding programme to support future reintroductions and population supplementation. Initiate a relief programme and promote alternative livelihoods to communities dependent on harvesting large waterbird colonies in Cambodia. Widely implement a long-term policy of rescuing, rehabilitating and releasing chicks that fall from nests for natural reasons, such as during thunder storms (Singha and Rahmani 2006, Singha *et al*. 2006, J. Mandal *in litt*. 2016), and consider placing nets under nest-trees and conducting regular checks at colonies (Singha *et al*. 2006).

Credits

Assessor(s):	BirdLife International
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Contributor(s):	Choudhury, A., Chunkino, G., Clements, T., Htin Hla, T., Li, Z., Rahmani, A., Mandal, J. & Mahood, S.
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External Resources

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Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	Breeding	Suitable	No
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	Non-breeding	Suitable	No
1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland	Breeding	Suitable	Yes
1. Forest -> 1.7. Forest - Subtropical/Tropical Mangrove Vegetation Above High Tide Level	Non-breeding	Suitable	No
4. Grassland -> 4.6. Grassland - Subtropical/Tropical Seasonally Wet/Flooded	Non-breeding	Suitable	No
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Non-breeding	Suitable	Yes
5. Wetlands (inland) -> 5.5. Wetlands (inland) - Permanent Freshwater Lakes (over 8ha)	Non-breeding	Suitable	Yes
5. Wetlands (inland) -> 5.7. Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha)	Non-breeding	Suitable	Yes
14. Artificial/Terrestrial -> 14.1. Artificial/Terrestrial - Arable Land	Non-breeding	Suitable	No
14. Artificial/Terrestrial -> 14.5. Artificial/Terrestrial - Urban Areas	Non-breeding	Suitable	Yes

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.2. Small-holder farming	Ongoing	Minority (50%)	Negligible declines	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing	Majority (50-90%)	Negligible declines	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	Minority (50%)	Negligible declines	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		

		1. Ecosystem stresses -> 1.2. Ecosystem degradation		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	Majority (50-90%)	Rapid declines	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
5. Biological resource use -> 5.3. Logging & wood harvesting -> 5.3.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Minority (50%)	Slow, significant declines	-
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Minority (50%)	Negligible declines	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
7. Natural system modifications -> 7.3. Other ecosystem modifications	Ongoing	Majority (50-90%)	Slow, significant declines	-
	Stresses:	1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.3. Herbicides and pesticides	Ongoing	Minority (50%)	Negligible declines	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.4. Type Unknown/Unrecorded	Ongoing	Majority (50-90%)	Slow, significant declines	-
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: No
Systematic monitoring scheme: Yes
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range
Occur in at least one PA: Yes
Invasive species control or prevention: No
In-Place Species Management
Successfully reintroduced or introduced beningly: No
Subject to ex-situ conservation: Yes
In-Place Education
Subject to recent education and awareness programmes: No

Conservation Actions in Place
Included in international legislation: No
Subject to any international management/trade controls: No

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions Needed
2. Land/water management -> 2.1. Site/area management
3. Species management -> 3.2. Species recovery
3. Species management -> 3.4. Ex-situ conservation -> 3.4.1. Captive breeding/artificial propagation
4. Education & awareness -> 4.3. Awareness & communications
6. Livelihood, economic & other incentives -> 6.1. Linked enterprises & livelihood alternatives
6. Livelihood, economic & other incentives -> 6.4. Conservation payments

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats

Additional Data Fields

Distribution
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): No
Estimated extent of occurrence (EOO) (km^2): 1200000
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): No
Number of Locations: 11-100
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: No
Lower elevation limit (m): 0

Distribution
Upper elevation limit (m): 550
Population
Number of mature individuals: 800-1200
Continuing decline of mature individuals: Yes
Extreme fluctuations: No
Population severely fragmented: No
No. of subpopulations: 1
Continuing decline in subpopulations: Unknown
Extreme fluctuations in subpopulations: No
All individuals in one subpopulation: Yes
No. of individuals in largest subpopulation: 100
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 15
Movement patterns: Full Migrant
Congregatory: Congregatory (and dispersive)

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