

Geronticus eremita -- (Linnaeus, 1758)

ANIMALIA -- CHORDATA -- AVES -- PELECANIFORMES -- THRESKIORNITHIDAE

Common names: Northern Bald Ibis; Bald Ibis; Hermit Ibis; Ibis chauve; Ibis Eremita; Waldrapp

European Red List Assessment

European Red List Status

RE -- Regionally Extinct, (IUCN version 3.1)

Assessment Information

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Assessor(s):	BirdLife International
Reviewer(s):	Symes, A.
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Assessment Rationale

European regional assessment: Regionally Extinct (RE)

EU27 regional assessment: Regionally Extinct (RE)

This species is listed as Regionally Extinct in both Europe and the EU until any reintroductions are considered fully self-sustaining and countable.

Occurrence

Countries/Territories of Occurrence

Reintroduced:

Turkey

Vagrant:

Germany; Montenegro; Portugal; Serbia; Spain

Population

The species is considered to be regionally extinct in Europe and the EU27. The species became extinct in Germany, Austria and Switzerland during the 16th and 17th centuries. It is thought that the species also used to breed in Spain more than 500 years ago (Hirschfeld 2008). Since the beginning of the 20th century there have been sharp declines in the North Africa and Middle East populations. The wild population in Birecik, Turkey, declined from 3,000 birds in 1930 to 400 in 1982 and was declared extinct by 1989 (Akçakaya et al. 1992), mainly as a result of poisoning by pesticides, loss of feeding habitat due to agricultural intensification, and human disturbance at the colonies, probably as well hunting pressures especially during migration.

Trend

The species became extinct in Germany, Austria and Switzerland during the 16th and 17th centuries. It is thought that the species used to breed in Spain, more than 500 years ago (Hirschfeld 2008). Since the beginning of the 20th century there have been sharp declines in the population. The wild population in Birecik, Turkey, declined from 3,000 birds in 1930 to 400 in 1982 and was declared extinct by 1992 (Akçakaya et al. 1992), mainly as a result of poisoning by pesticides and human disturbance, as well a hunting during migration.

Habitats and Ecology

This species inhabits arid and semi-arid plains and plateaux with rocky escarpments as well as cultivated fields and formerly high-altitude meadows or pastures. It roosts and nests in cliffs, adjacent to watercourses or along the sea coast. It is also found nesting on man-made structures such as castles, walls and towers (Matheu et al. 2014). Breeding begins February to March and finishes late June or early July, however dispersal does not start until August (Cramp et al. 1977). It breeds in colonies of up to 40 pairs. Nests are a loose platform of branches lined with grass, straw, wool, rags and other rubbish. Clutch size is usually two to four eggs (Bowden et al. 2003, Matheu et al. 2014). It feeds on invertebrates such as beetles, snails, scorpions and vertebrates such as amphibians, lizards and snakes, and occasionally even small rodents. Its broad high protein diet also includes some vegetation such as berries, shoots, duckweed, and rhizomes of aquatic plants (Hancock et al. 1992, Bowden et al. 2003). The population is mainly migratory.

Habitats & Altitude			
Habitat (level 1 - level 2)		Importance	Occurrence
Artificial/Terrestrial - Arable Land		major	non-breeding
Artificial/Terrestrial - Pastureland		major	non-breeding
Caves and Subterranean Habitats (non-aquatic) - Caves		suitable	breeding
Marine Coastal/Supratidal - Sea Cliffs and Rocky Offshore Islands		suitable	breeding
Rocky areas (eg. inland cliffs, mountain peaks)		major	breeding
Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)		suitable	resident
Altitude	0-1400 m	Occasional altitudinal limits	

Threats

It has declined at least for several centuries, perhaps partly owing to unidentified natural causes. However, the more recent rapid decline was undoubtedly the result of a combination of factors, including land-use change and agricultural intensification (Akçakaya 1990, Bowden et al. 2008, Collar and Stuart 1985). In Turkey, a major historical threat was poisoning and reduced breeding success caused by pesticides (DDT) used against locusts and mosquitoes (Murdoch 2010). Human disturbance (building development) at nest sites was also an important driver of decline in Turkey (Akçakaya 1990). Electrocution by powerlines and poorly designed electricity pylons pose a threat to the population in Birecik, as well as to the Central Europe and Spanish release projects (Fritz and Unsöld 2013, Serra et al. 2013).

Threats & Impacts					
Threat (level 1)	Threat (level 2)	Impact and Stresses			
Invasive and other problematic species, genes & diseases	Unspecified species	Timing	Scope	Severity	Impact
		Ongoing	Whole (>90%)	Negligible declines	Medium Impact
		Stresses			
Reduced reproductive success					
Natural system modifications	Other ecosystem modifications	Timing	Scope	Severity	Impact
		Past, Unlikely to Return	Majority (50-90%)	Rapid Declines	Past Impact
		Stresses			
Ecosystem degradation					
Pollution	Agricultural & forestry effluents (type unknown/unrecorded)	Timing	Scope	Severity	Impact
		Past, Likely to Return	Majority (50-90%)	Rapid Declines	Past Impact
		Stresses			
Ecosystem degradation; Species mortality					

Conservation

Conservation Actions Underway

CITES Appendix I. CMS Appendix I and II. In 1999 an International Advisory Group (IAGNBI) was created to coordinate efforts and provide scientific advice (Bowden 2001, www.iagnbi.org). An International Species Action Plan was published in 2006. In Turkey hunting of the species is prohibited and 180 hectares of habitat in Birecik was designated as “Wildlife Improvement Area” in 2011. The management plan has been prepared and waiting for approval (Bowden, C. in litt. 2015). Over 2,000 individuals of the western (Morocco) population exist in captivity worldwide but birds from the eastern population are much rarer in captivity (very small numbers held in Turkish zoos [Bohm 2004]). A European Endangered species captive breeding Programme (EEP) was initiated in 1988 (Boehm and Bowden 2010). An in situ breeding programme at Birecik, Turkey has established a partially captive population of c. 190 birds and a number of unsuccessful trial releases of small numbers of birds have taken place since 2007 (Boehm & Bowden 2010, Serra et al. 2014). Most released birds were tagged or satellite tagged and colour-ringing of young birds at Birecik is ongoing (J. Tavares in litt. 2007, Hatipoglu 2010). Reintroduction programmes have focused on developing methodology, and are underway in Austria and Spain (also involving Germany and Italy) (UNEP/CMS 2008, Fritz 2010, Boehm and Bowden 2010). These trials have more recently evolved into reintroduction efforts on site in each case. In Cádiz, southwestern Spain, a total of 190 birds were released between 2004 and 2009 (Boehm and Bowden 2010). Although juvenile mortality was been high, the first breeding pair was formed on nearby cliffs in 2008 and a small independent non-migratory colony is becoming well established in the area (Matheu et al. 2014). There have been experimental field studies of the feeding ecology of hand-raised individuals in potential summer and winter habitat in Europe (Zoufal et al. 2006). In Austria, a small

migratory breeding colony has been established and a European LIFE+ project is in place aiming to establish three self-sustaining breeding colonies north of the Alps by the end of 2019 (<http://waldrapp.eu/>). In Turkey, efforts have focused on increasing the semi-wild population through better husbandry, and now awareness-raising activities are ongoing, targeting locals and particularly farmers, focusing on the ecological importance of the species and the negative effects of using pesticides (Hatipoglu 2009, Bowden, C. in litt. 2015).

Conservation Actions Proposed

Explore the possibility of conservation translocation and reintroduction of captive-bred birds into previously occupied sites (when detailed information on ecological requirements is available) (Mendelssohn 1994, Brindley et al. 1995, Bowden 2001, Bowden, C. in litt. 2015). Research feasibility of re-establishing wild (preferably migratory) population in Turkey (J. Tavares in litt. 2007). A similar project in Syria has initiated a research and protection programme in collaboration with local communities and better links between the Birecik and Syrian populations and projects could be established; research potential to supplement Syrian colony with birds from Turkey (J. Tavares in litt. 2007, Serra et al. 2009, Bowden et al. 2012). Continue with current husbandry at Birecik to increase colony to 150-200 birds (J. Tavares in litt. 2007). Continue to monitor numbers and breeding success (Bowden et al. 2003). Protect key breeding and roosting sites from disturbance and development (Bowden et al. 2003), making sure to involve local people (Serra et al. 2009). Raise awareness among hunters on the migration route (Anon. 2006). Protect wintering areas in Ethiopia. Conduct research into feeding and breeding biology, and habitat requirements (Brindley et al. 1995). Employ management techniques such as the provision of drinking water (Smith et al. 2009, Serra et al. 2009). Common Raven (*Corvus corax*) populations around breeding sites should be controlled where they are identified as causing significant nest predation (Serra et al. 2009).

Bibliography

- Akçakaya, H.R. 1990. Bald Ibis *Geronticus eremita* population in Turkey: an evaluation of the captive breeding project for reintroduction. *Biological Conservation*. 51: 225-237.
- Anon. 2006. Bald Ibises tagged in Syria. *Birding World* 19(7): 308.
- Arihan, O. 1998. Recent information on the occurrence of the Northern Bald Ibis *Geronticus eremita* in Turkey. *Turna* 1:10-15.
- Boehm C. and Bowden C. G. R. (eds). 2010. Northern Bald Ibis Conservation and Reintroduction workshop. *Proceedings of 3rd Meeting of International Advisory Group for Northern Bald Ibis (IAGNBI)*, Palmyra, Syria November 2009.
- Böhm, C. 2004. *Waldrapp ibis (Geronticus eremita)*.
- Bowden, C. 2001. An update on current projects involving wild and captive Northern Bald Ibis *Geronticus eremita*. *International Advisory Group for Northern Bald Ibis Newsletter*.
- Bowden, C. G. R., Aghnaj, A., Smith, K. W., Ribí, M. 2003. The status and recent breeding performance of the critically endangered Northern Bald Ibis *Geronticus eremita* population on the Atlantic coast of Morocco. *Ibis* 145: 419-431.
- Bowden, C.G.R., Hamoud, A., Jbour, S., Fritz, J., Peske, L., Riedler, B., Lindsell, J.A., Al Shaiesh, M., Abdallah, A., Boehm, C., Hatipoglu, T., Tavares, J. P., Al Salamah, M., Shobrak, M. and Serra, G. 2012. Attempted supplementation of the relict wild Eastern population of Northern Bald Ibis in Syria with Turkish semi-wild juveniles. *IUCN Reintroduction Specialists Group Case Studies Part III*: 130-134.
- Brindley, E., Dimmick, C., Bowden, C., Ribí, M., Hoffmann, D. and del Nevo, A. 1995. The Bald Ibis: a species on the brink? *RSPB Conservation Review* 9: 76-79.
- Collar, N. J. and Stuart, S. N. 1985. *Threatened birds of Africa and related islands: the ICBP/IUCN Red Data Book*. (Third edition, part 1). Cambridge, U.K.: International Council for Bird Preservation, and International Union for Conservation of Nature and Natural Resources.
- Cramp, S. and Simmons, K.E.L. 1977. *Handbook of the birds of Europe, the Middle East and Africa. The birds of the western Palearctic, vol. I: ostriches to ducks*. Oxford University Press, Oxford.
- Fritz, J. 2010. Ultraleichtflieger weisen den Weg - Der Waldrapp in den Alpen. *Der Falke* 57: 95-105.
- Fritz, J. and Unsöld, M. 2013. Aufwind für den Waldrapp: Von der Wiederansiedlung eines europäischen Zugvogels. *Verein zum Schutz der Bergwelt, Jahrbuch 2013*: 121-138.
- Hancock, J.A., Kushlan, J.A., and Kahl, M.P. 1992. *Storks, ibises and spoonbills of the world*. Academic Press, London.

- Hirschfeld, E. 2008. *Rare Birds Yearbook 2009: the world's 190 most threatened birds*. MagDig Media Ltd., Shrewsbury, UK.
- Hatipoglu, T. 2010. Northern Bald Ibis Project at Birecik Breeding Centre: yesterday, today and tomorrow. In: Boehm, C. and Bowden, C. G. R. (eds). 2010. *Northern Bald Ibis Conservation and Reintroduction workshop. Proceedings of 3rd Meeting of International Advisory Group for Northern Bald Ibis (IAGNBI), Palmyra, Syria November 2009*.
- Jimenez Armesto, M.J., Boehm, C. and Bowden, C. (Compilers). 2006. International Single Species Action Plan for the Conservation of the Northern Bald Ibis *Geronticus eremita*. *AEWA Technical Series No. 10*. Bonn, Germany. http://www.unep-awea.org/sites/default/files/publication/ts10_ssap_nbi_complete_0.pdf
- Matheu, E., del Hoyo, J., Kirwan, G.M. and Garcia, E.F.J. 2014. Northern Bald Ibis (*Geronticus eremita*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. and de Juana, E. (eds.) (2014). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona.
- Mendelssohn, H. 1994. Experimental releases of Waldrapp Ibis *Geronticus eremita*: an unsuccessful trial. *International Zoo Yearbook* 33: 79-85.
- Serra, G., Peske, L., Abdallah, M.S., al Qaim, G. and Kanani, A. 2009. Breeding ecology of the last oriental N. Bald Ibises in the Syria desert. *Journal of Ornithology* 150: 769-782.
- Serra, G., Bruschini, C., Peske, L., Kubsa, A., Wondafrash, M. and Lindsell, J.A. 2013. An assessment of ecological conditions and threats at the Ethiopian wintering site of the last known eastern colony of Critically Endangered Northern Bald Ibis *Geronticus eremita*. *Bird Conservation International*. 23 (4): 399 – 413.
- Serra, G., Peske, L., Fritz, J., Lindsell, J., Bowden, C.G.R., Bruschini, C., Welch, G., Tavares, J. and Wondafrash, M. 2014. Accounting for the low survival of the Critically Endangered northern bald ibis *Geronticus eremita* on a major migratory flyway. *Oryx* doi:10.1017/S0030605313000665 (1):1-9.
- Smith, K. W., Aghnaj, Al., Bekkay, M. E., Oubrou, W., Ribí, M., Jimenez Armesto, M. and Bowden, C. G. R. 2008. The provision of supplementary fresh water improves the breeding success of the globally threatened Northern Bald Ibis *Geronticus eremita*. *Ibis*. 150: 728-734.
- UNEP/CMS. 2008. Northern Bald Ibis (*Geronticus eremita*). In: Vagg, R. (ed.), *CMS Family Guide: the encyclopaedia of the Convention on the Conservation of Migratory Species of Wild Animals*, pp. Species 22. UNEP-CMS Secretariat, Bonn, Germany.
- Zoufal, K., Fritz, J., Bichler, M., Kirbauer, M., Markut, T., Meran, I. and Riedler, B. 2006. Feeding ecology of the Northern Bald Ibis in its European winter and summer habitat: an experimental field study with hand-raised individuals. *Journal of Ornithology* 147(5): 279.