A review of the distribution of the Crested Eagle, *Morphnus guianensis* (Daudin, 1800) (Accipitridae: Harpiinae), including range extensions

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**ABSTRACT:** Here we review the distribution of the Crested Eagle (*Morphnus guianensis*) in the Americas, and based on the Brazilian Harpy Eagle Conservation Program (PCGR) database, literature, online databases, zoos, wild and museum records, we provide an updated distribution map with 37 points outside the IUCN map; 16 were recorded close to the border of the map (up to 40 km), and do not expand or contribute to the distribution map. Far from the border (>40 km) we found 21 records, contributing to an expansion of the known range and habitat. At the northernmost extreme of distribution, the range was extended to southern Mexico; in Nicaragua, the range extension was farther south in the north, and two records extend the range to the southern border with Costa Rica. In Colombia, an old specimen is located between Darien Peninsula and the Perija Mountains. In Brazil a record from the ecotone between Cerrado and Gallery Forest, and another in an upland remnant of Atlantic Rainforest, expands the range towards central and southeastern Brazil, and to the Northeast, old records could expand the Atlantic Rainforest distribution towards the interior.

**KEY-WORDS:** Conservation, Falconiformes, Neotropics, Raptor.

Included in the order Accipitriformes, the Crested Eagle, *Morphnus guianensis*, and Harpy Eagle, *Harpia harpyja*, are the Neotropical representatives of the subfamily Harpiinae (CBRO 2014). The members of Harpiinae can be distinguished from other Accipitridae by large sizes and weight, length and wingspan, being traditional inhabitants of humid tropical forests (Ferguson-Lees & Christie 2001), preying on mid-sized mammals such as sloths, monkeys, and rodents (Ferguson-Lees & Christie 2001; Aguir-Silva et al. 2014).

The species occurs in low density, and is deemed rare to very rare in all areas of distribution, mainly inhabiting Neotropical dense humid forest, mountain slopes, coastal forest, from sea level to 2200 m; it is considered resident (Brown & Amadon 1968; Hilty & Brown 1986; Bierregaard 1994; Howell & Webb 1995; Ridgely & Greenfield 2001; Ferguson-Lees & Christie 2001; Hilty 2003; Hennessey *et al.* 2003; Jones & Komar 2007). It can also occur in forest patches and has been recorded nesting in a Brazilian forest fragment, located in a mosaic between soybean fields and forest fragments (Lees *et al.* 2013), and also has been found in forest mosaics within the Gran Sabana, Venezuela (Crease & Tepedino, 2013).

In Brazil, the Crested Eagle is known as “Uiraca-falso” or “Gavião-real-falso” [=False Harpy Eagle] (CBRO 2014). According to the literature, adults reach up to 89 cm in total length, wingspan up to 154 cm and weight up to 3 kg; females are larger and more robust (Bierregaard 1994; Ferguson-Lees & Christie 2001). The head is grayish with a crest tipped with a single larger medial black feather. In general the color pattern resembles that of Harpy Eagle, however the latter always has a black chest band (Sick 1997; Ferguson-Lees & Christie 2001). Adults most commonly are pale-morph, but may occur in two melanistic forms, dark-morph and extreme-dark-morph. During its 4-year sequence to attain adult plumage, birds become darker over time (Bierregaard 1994; Ferguson-Lees & Christie 2001).

Mauduyt (1782), described the *Aigle (petit) de La Guiane* in a systematic and comparative way, with
specimens coming from Cayenne [=French Guiana]. Based on this work, in 1800 Daudin described *Falcoguianensis* using Linnean nomenclature. Later, *Falco* was made a synonym of *Morphnus* by Dumont (1816), giving rise to the monotypic species *Morphnus guianensis*. In 1879, Gurney described *Morphnus taeniatus* as a full species, later synonymized because it was just a dark-morph (Lehmann 1943).

The Crested Eagle has a wide distribution over Central and South America (Ferguson-Lees & Christie 2001), however records are generally casual or by chance, being considered rarer than the Harpy Eagle in some regions where they coexist (Jones & Komar 2006).

More than 250 years after its description, few surveys include the species in their lists, and studies of its biology and ecology are rare, therefore understanding its distribution is the goal of this review. The Crested Eagle is a top predator, occurring in low densities, and is considered a Vulnerable (IBAMA 2014) and Near-threatened (IUCN 2014) species, due to habitat loss and hunting. The knowledge of its current distribution and ecological requirements could contribute as a basis for further conservation policies.

Currently, the most widely used distribution maps as a basis for conservation plans and determining the threat status of the vast majority of organisms are provided by the International Union for Conservation of Nature (IUCN 2014). However, recent records, very old ones, and those from gray literature or from birdwatchers, photographers or videographers are lacking consideration. Our goal is to review the distribution of the Crested Eagle, including new records, particularly for Brazil, which holds the largest continuous forests in the continent, and produce an updated map of its occurrence.

**MATERIAL AND METHODS**

The review follows the format of the database of the Global Raptor Information Network - GRIN (2013) for all countries. It is augmented with more details for the states of Brazil, old published records, information from the Brazilian Harpy Eagle Conservation Program (PCGR) database and online databases such as ORNIS, IBC and AVECOL, gray literature (such as Instituto Brasileiro de Meio Ambiente de Recursos Naturais Renováveis (IBAMA) [=Brazilian Environmental Agency] reports), birdwatcher reports, lodge lists, unpublished reports, photographs, and recently published studies. Those sources where the indication of the distribution of the species was very broad and poorly defined (for example, no specific localities mentioned) were not used in our final map.

The final map was created using the ArcGIS software at the “Laboratório de Agrimensura da Universidade Estadual do Amazonas”. Records were subdivided into New (after 2000), Old (prior to 2000), Nests, and Rescued individuals by IBAMA overlaid with distribution limits provided in the IUCN map (IUCN 2014). For published records, whenever possible, we used the exact date, and when the article did not provide this information, we used the publication date. Not all records had accurate locations. When this information was available, the exact locality was included on the map, following the exact geographical coordinates. For those records with no exact geographic coordinates, we used coordinates associated with the geographical center of the municipality where they were obtained. Seven museum specimens without collecting dates were assumed as Old records on the map (prior to 2000). All records are presented in the Appendices, but some were not included on the map because they overlapped, or had little accuracy.

**Collections and Museums**

Since 2005, the “Programa de Conservação do Gavião-real” PCGR-INPA [=Brazilian Harpy Eagle Conservation Program; http://gaviãoreal.inpa.gov.br] visited collections researching specimens of Harpy Eagle, Crested Eagle, and Hawk-Eagles, to build a distributional database. Eight Brazilian collections housed specimens of Crested Eagle: Museu Paraense Emílio Goeldi (Belém, Pará – MPEG), Instituto Nacional de Pesquisas da Amazônia – Coleção Ornitológica (Manaus, Amazonas – INPA), Museu de Zoologia da Universidade de São Paulo (São Paulo, São Paulo – MZUSP), Museu de História Natural de Taubaté (Taubaté, São Paulo – MHNT), Universidade Federal de Santa Catarina – Coleção Ornitológica (Florianópolis, Santa Catarina – UFSC), Museu Frei Miguel (Luzerna, Santa Catarina), Museu de Biologia Prof. Mello Leitão (Santa Teresa, Espírito Santo – MBML), as well as small private collections as tourist exhibits, such as Museu do Índio (Florianópolis, Santa Catarina). Data from two collections, Museu Sete Quedas (Pato Bragado, Paraná) and Museu da Fauna (Rio de Janeiro, Rio de Janeiro, closed in 1983 and its collection transferred to Museu Nacional in 1993), were taken only from literature describing their holdings. Twelve collections outside Brazil had Crested Eagle specimens, and data were accessed directly from the institution’s website or from websites that replicate information from different collections, such as ORNIS, where we accessed the collections of the Academy of Natural Sciences of Philadelphia (Philadelphia, Pennsylvania – ANSP); the United States National Museum (Washington, D. C. – USNM); Field Museum of Natural History (University of Chicago, Chicago, Illinois – FMNH); Louisiana State University Museum of Zoology (Baton Rouge, Louisiana – LSUMZ); Museum of Comparative Zoology (Harvard University, Cambridge,
Massachusetts – MCZ); American Museum of Natural History (New York, New York – AMNH); Royal Ontario Museum (Toronto, Canada – ROM); Carnegie Museum of Natural History (Pittsburgh, Pennsylvania – CM); Los Angeles County Museum of Natural History (Los Angeles, California – LACM); Western Foundation of Vertebrate Zoology (Camarillo, California – WFWZ), and the Oklahoma Natural History Museum (Oklahoma City, Oklahoma – OMNH). Specimens with imprecise information about the collection site were not included on the map (Appendices 1 and 2).

**Rescued and Captive Birds in Brazil**

For the location of individuals rescued by wildlife authorities in Brazil (IBAMA), one point for the location of each bird’s origin was plotted on the map, with the date of rescue included only in the text. For individuals at conservation centers and zoos, we inserted a point on the map only if they had information on the origin/capture. Current or past individuals of Crested Eagle were at: Zoológico de São Paulo – São Paulo; Zoológico do Centro de Instrução e Guerra na Selva – CIGS, Manaus, Amazonas; Zooparque de Itatiba – Itatiba, São Paulo; Zoológico Municipal Dois Irmãos – Recife, Pernambuco; and Criadouro Conservacionista – CRAX in Belo Horizonte, Minas Gerais (Appendix 1).

**Online Databases**

Open access online databases were also consulted. Photo and sound files and videos were obtained from the following websites providing both records and accession numbers: www.wikiaves.com.br (WA), www.xeno-canto.org (XC), and Macaulay Library (MAC) Cornell Lab. of Ornithology, Ithaca, New York (http://macaulaylibrary.org); or less scientific sites, such as the Internet Bird Collection (IBC), and stock photos at the Visual Resources for Ornithology (VIREO) at the Academy of Natural Sciences, Philadelphia (http://vireo.acnatsci.org). Some records came from private photo collections (Flickr); the authors were asked for permission to use the records and in some cases provided additional data. Despite the chance of mistaken identifications between Crested and Harpy eagles, some unpublished sight records and sound recordings of Brazilian professional and amateur ornithologists alike were included in the distribution map (Appendices 1 and 2).

**RESULTS**

A total of 269 Crested Eagle records were found from Mexico to Argentina. Listed by locality, 129 records were obtained for Brazil and 140 records for Mexico, Central America and other South American countries. From the total, 45 records did not meet criteria and were rejected from our map when they did not have known origin (zoo or museum specimens), were repetitive (different years at the same point), or the literature listed only “general occurrence” (Appendices 1 and 2).

Listed by source, 156 records are from published literature in articles and books, 45 are records from museums and collections (ORNIS database), and 17 are records from our PCGR Database. The remaining 51 records were obtained from online photo and sound websites and personal communications (Appendices 1 and 2).

Listed by date, the records spanned 1898–2014. One hundred and thirty records are Old (before 2000), 113 are New (after 2000), and 26 records have no precise date (Appendices 1 and 2). A total of 37 records were placed outside the IUCN map, and are highlighted in bold in the appendices (Appendices 1 and 2).

**Review of the distribution of the Crested Eagle outside Brazil**

Of the 140 records obtained for Crested Eagle in Mexico, Central and South America, excluding Brazil, 96 were sourced from published literature in books or articles, 27 came from records in museums and collections, and 17 were obtained from online databases, recordings of vocalizations and photos from personal archives. From those records, 30 are located outside the distribution map provided by IUCN (Figure 1), enlarging the area of occurrence to southern Mexico, to the north of Nicaragua and to its southern border, and in Colombia, to include the region between Darien Peninsula and the Perija Mountains, and all are highlighted in bold in Appendix 2.

**North America**

**Mexico** – The first visual record in the country (a soaring adult), occurred in 1992 in Campeche (J. Sutter and J. M. Diaz cited in Whitacre et al. 2012). However the first documented record was a photo from 2004, at the Biosphere Reserve of Montes Azules, in Chiapas (Grosslet & Gutierrez-Carbonel, 2007). Whitacre et al. (2012) mentioned the probable occurrence in Chiapas and Quintana Roo.

**Central America**

Crested Eagle can be considered rarer than the Harpy Eagle in regions where they coexist, according to Jones & Komar (2006).

**Belize** – The first record occurred in 1995, at Orange Walk (Hall 1995), and is rarely seen in Toledo and Orange Walk, Cayo (Jones et al. 2000). A probable record was
made in December 2006 in the southeast at Hickatee Lodge, Punta Gorda, Toledo (Jones & Komar 2007).

**Guatemala** – The first record occurred in 1978, reported by Ellis & Whaley (1981), in Flores (Petén). Between 1994 and 1995 an active nest was found in Tikal National Park, also Petén (Whitacre *et al.* 2012) and observations of a young bird were made in the same place, with a juvenile reported (Grijalva & Eisermann 2006). Eisermann & Avendaño (2007) considered the species resident and restricted to low-lying areas in the Atlantic region. The AMNH has a specimen collected in 1978 in Flores, Petén, and ROM has a specimen collected in 1966, in the same location.

**Honduras** – Bangs (1903) reported collection of a young male at La Ceiba, and Monroe (1968) of another individual in San Pedro Sula. A juvenile was photographed by Russell Thorstrom in flooded forest in Quebrada Kahkatingni, Patauca River, in June 1999 (GRIN 2013). Bonta & Anderson (2002) consider it a rare and resident species. The MCZ listed a skin from La Ceiba collected in 1902.

**Nicaragua** – An individual was seen in March 2001, near the community of Hormigero, Cerro Sasiaya, in the Bosawas Biosphere Reserve (GRIN 2013). Two other individuals were seen in May 1994 and May 1999 (Múnera-Roldán *et al.*, 2007) in the south, at Bartola Reserve; another individual was seen in 2001 in the “North Atlantic region” of the country, in the Alamikangban community, Prinzapolka, by Kjeldsen (2005).

**Costa Rica** – Birds were seen in the regions of Sarapiquí and Osa Peninsula (Stiles & Skutch 1989). There is a record of Carriker (1910) in Cuabre, near the Sacsoya River (probably Sicaola). Slud (1964) recorded an individual at Cañas Gordas, near Panama. There were

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**FIGURE 1.** Localities where the Crested Eagle (*Morphnus guianensis*) has been recorded until 2014 (see Appendices 1 and 2). White circles represent recent records, after the year 2000; black circles represent records prior to 2000; red circles represent nests; yellow circles represent individuals rescued by IBAMA. The white water mark denotes the range contained in the IUCN (2014) map.
also records at Finca La Selva and Rara Avis Jungle Lodge, around Braulio Carrillo National Park (Jones 2004). An adult dark-morph was photographed in 29 April 2011, in Crucitas, Curtis de San Carlos, Alajuela (photo by R. Vargas; P. Camacho, pers. comm.) There is a photograph of a subadult pale-morph in 2005 from Tortuguero near the Nicaraguan border (Jones & Komar 2006), including a pale and a dark-morph pair photographed in 2005 (G. Ocklind, pers. file); besides there are two recent records, one from March 2013 (in the park, photo and record by R. Osborne and E. Miranda) and January 2014 (Caño Harold, photo by C. C. Obando), both from Tortuguero National Park (P. Camacho pers. comm., Fundación Rapaces de Costa Rica Database). The CM has a specimen collected in Cuabre, Limón, in 1904.

Panama – It is considered very rare, occurring in continuous forest and on the Caribbean slope, from southeast to east (Wetmore 1965; Ridgely & Greenway 1989). There are occasional records from the southwestern Azuero Peninsula (Cerro Hoya region), in the provinces of Panama (eastern region) and Darién; those from Chiriquí and Coiba Island are unsubstantiated; there is a photographic record near Achiote Road in January 1975 (reported by W. Cornwell) (Ridgely & Greenway 1989). Kiff et al. (1989) notes an egg obtained in the wild from a nest located on the Chiquita River, central Panama, and passed to the CEPPEPE [=Center for Propagation of Endangered Panamanian Species]. Vargas et al. (2009) reported an adult Crested Eagle feeding a nestling Harpy Eagle in Quintin Darién. A young Crested Eagle was reported from San Lorenzo National Park, Colón, in March 2007 by Jones & Komar (2007). Two records were made in Darién National Park: an adult dark-morph was filmed at the Cana Camp in May 2010 (E. Groenerwood, IBC), and a female was sound-recorded by A. Spencer near her nest in March 2013, in Rancho Frio. The MAC has a sound recording made in 1981, of a dark-morph female perched in a tree, next to Pipeline Rd., northwest of Gamboa, in the Canal Zone (van den Berg 1981). The MCZ holds four old specimens from Panama: Changuinola (1928), Perme, in Darién (1929), Barro Colorado Island (1928) and Puerto Obaldia (1930). The FMNH has a pair collected in San Blas, Puerto Obaldia, in 1935. The AMNH has one specimen from Barro Colorado Island from 1936, and two from Tapalisa, eastern Panama, from 1915.

South America

Colombia – Considered rare by Hilby & Brown (1986), these authors cite localities of Chocó, Baudó mountains, Achicayá and Sinu valleys, Córdoba and Perijá mountains, Guajira (Carraipia), the eastern region of the Andes, and west of Meta (Villavicencio) and Caquetá. Márquez et al. (2005) provides records in museums, at least four specimens collected in Leticia, Caquetá and Chocó (Salaquí River and Juradó River). ANSP has a specimen listed from Morelia, Caquetá, undated. USNM maintains three complete specimens preserved in alcohol: one from Truandó, one from the Sinu River, in Rescues, Córdoba, 1949, and one from Ubará Gulf in Acandi, Chocó, 1949. FMNH maintains two specimens collected in Chocó in 1940, from Jampavado River and from Jurado River, plus one from Cuturu, Antioquia, in 1947.

Ecuador – Very rare, but has been recorded in the Pichincha region and at the base of the Andes (Ridgely & Greenfield 2001). Muñiz-López et al. (2007) cite its occurrence in Esmeraldas Province. In 2007, a pale-morph individual was seen preying on a snake (Spilotes pullatus) in Cuyabeno, Sucumbios Province (L. Vaincenbacher, IBC, 2007). In the Wildlife Center of Napo, the species has been seen by birdwatchers and is listed for the region (http://www.napowildlifecenter.com), plus a photographic record of an individual dark-morph in 2008 (T. Cloudman http://www.hargrove.org/2008/images/2008crestedEagle-edited-jpg). In 2014 a nest was found in the Cuyabeno Reserve (R. Muniz-Lopes pers. comm.). In the Quito Zoo there is a female dark-morph of unknown origin (Montalvo & Montalvo 2012).

Bolivia – Pearman (1994 In GRIN 2013) records the species for the first time in Beni. Then it was seen in Noel Kempff National Park (Bates et al. 1998) and subsequently in La Paz and Santa Cruz de la Sierra (Hennessey et al. 2003). In 2005 it was seen in Caparí Biological Station (Vidovz et al. 2010).

Peru – Considered rare, it occurs in the eastern region of the Andes (Clements & Shany 2001). Kiff et al. (1989) cite the capture of a female from a nest in Amazonas Department in 1978 (this individual became part of the breeding stock at the Oklahoma City Zoo). It is listed from the Tambopata-Candamo Reserve (Parker et al. 1994), where they have recorded breeding activity since 2002 (Raine 2007). In 1977 and 2006, two different nests with nestlings were photographed in Madre de Dios, near Manu Lodge (L. Fabbri, pers. comm.). In 2001 it was seen preying on small primates, at the Quebrada Blanco Biological Station (Vasquez & Heymann 2001), and in June 2012, a young on the ground was seen and photographed (Flickr) in National Park Pacaya-Samiria, Loreto (A. Morales, personal file). The species is listed by Foss & Huanauquiri on a birdlist at a forest reserve in Loreto (Tahuayo River – http://thinkjungle.com/amazon-jungle-tours/tahuayo-lodge). The Centro de Reproducción Huasco, in Lima, owned by Jose Antonio Otero, housed six individuals with no record of origin. LSUMZ maintains two specimens collected from Amazonas Department, two specimens from Loreto Department, and a feather from the same location, all without exact dates.
Venezuela – Rarely sighted, occurs widely over lowland forests and mountains, with records from Northern Orinoco, Caura River, Maracaibo Basin, Perijá Mts., Zulia, Mérida, Lara, Amazonas, Bolívar, and Margarita Island (Hilty 2003). In 2006 it was recorded in Obispos, Barinas (Vargas et al. 2009), and in 2011, a nest was found and monitored in the Gran Sabana, Bolívar, with documenting photos by Crease & Tepedino (2013).

Guyana – Considered resident and scarce, occupying lowland forest environments (Braun et al. 2000). Pickles et al. (2011) recorded the species in the Chief Rewa Reserve, in Rupununi, in the south. Two specimens housed at ROM are from this same region, upper Takutu and upper Essequibo, Kwitara River, Rupununi, both from 1964. AMNH keeps a specimen from Kalacoon, undated.

French Guiana – It is widely distributed in forest areas, and is more common than Harpy Eagle in disturbed forests, however, it is not significantly more common in primary forest (Thiollay 2007). Julliot (1994) reports predation by the Crested Eagle on a young spider monkey (Atetes paniscus) at a Nouragues Station, which took place in 1992. In August 2011, an extreme-dark-morph individual was photographed on the banks of the Approuague River (J. Tascon, pers. comm.). The Macouria Zoo in Guyana maintains a live specimen, dark-morph, possibly a male, with unknown origin (Maxcobigo, In IBC).

Suriname – Apparently a rare bird in primary forest, sometimes seen wandering into areas of the coast (Haverschmidt & Mees 1994). Possibly a resident, but no reproductive activity has been noted in the country. On the list of birds from Raleigh Falls-Voltzberg Nature Reserve, Sipalawi District, where it was seen in a predation attempt on Guianan Cock-of-the-rock (Rupicola rupicola) (Traill 1987).

Argentina – Species considered to be resident (Mazar-Barnett & Pearman 2001). Pearman (2001) considers the species a casual visitor to Missiones, and reports the observation of an adult in El Piñalito Provincial Park. There are earlier records in Santa Ana (Bertoni 1913) and at Iguazú National Park, a pair displaying, recorded in September 1980 by Rumboll & Straneck (In Olrog 1985).

Paraguay – Del Castillo & Clay (2004) consider the species rare, but reproductively active in Alto Paraná. There are two visual diagrams during a survey conducted in the San Rafael del Parana National Park, in Itapúa (Madroño-Nieto et al. 1997). The first confirmed record occurred in 2002, at the same place, where a specimen was captured and donated to the Itaipu Binacional Zoo, which survived until 2002 (Del Castillo & Clay 2004, Museum of Natural History of Itaipu Binational). Another record also occurred near the Aurora Colony, in the same region of the San Rafael del Parana National Park, of an individual in flight in December 2003 (N. Lopes, In Del Castillo & Clay 2004).

Review of the distribution of the Crested Eagle in Brazil

Of the 130 records obtained for Crested Eagle from Brazil, 60 were sourced from published literature in books or articles, 18 came from records in museums and collections, and 34 were obtained from online databases, recordings of vocalizations and photos from personal archives, and 18 came from the PCGR Database. From these, seven records are located outside the distribution map provided by IUCN (Figure 1), enlarging the area of occurrence to the northeast, southeast and south, and are highlighted in bold in Appendix 1.

The majority of the records (70%) were outside conservation units, 27 records (21%) were from National Conservation Reserves and 12 (8%) were from County, Municipal or Private Reserves.

For each state we include the Brazilian region (South, Southeastern, Northeastern, Central and Northern Brazil) and abbreviations for the biome occupied (ARF-Atlantic Rainforest, AMZ-Amazonian Rainforest, and ECO – Ecotone Biome Cerrado/Gallery Forest).

Rio Grande do Sul (South-ARF) – There are only three historical records. The oldest comes from Ihering (1899), near the municipality of Taquara; its occurrence is also suggested at the Turvo River Reserve (Belton 1984). Bencke (1997) provides the last record from Santa Cruz do Sul in 1920. Considered very rare in the state by Sick (1997), it is currently classified as ‘Probably Extinct’ (Marques et al. 2002).

Santa Catarina (South-ARF) – There are five records of the species: in 1977 it was seen in Jordão Baixo (Siderópolis) by Albuquerque (1983); Rosário (1996) provides a record in Siderópolis; and another record in 2005, in Aiuíre, in the municipality of Grão-Pará, in the foothills of Serra Geral (Albuquerque et al. 2006). Records from museums in Santa Catarina are unreliable, since they come from private collections, without scientific identification of locality. There is a specimen in Frei Miguel Museum, in Luzerna, from the locality of Joinville, prepared in 1926 (Favretto 2008). Recently a specimen at the Universidade de Santa Catarina (UFSC) was analyzed, which had been previously classified as a Harpy Eagle. We confirmed that it was a Crested Eagle. This specimen was collected between 1965-1970 in the municipality of Lontras, by G. Knolle, also for his private collection, and was subsequently donated to the Ornithological Collection of UFSC. There is an adult mounted specimen, pale-morph, sex undetermined, unknown origin, in the private collection of Museu do Índio, in Florianópolis.
Paraná (South-ARF) – The occurrence of the species was registered only at Marechal Cândido Rondon in 1964. This is a mounted specimen, housed in the Sete Qudas Museum, and similar to the previous cases, it was from a private collection (Straube & Urben-Filho 2010). The species possibly occurs at Iguacu National Park, where well-preserved forest still remains (Forrestor 1993).

São Paulo (Southeastern-ARF) – The first citation found was Hering (1898), which dealt with the collecting a Harpy Eagle and likely (but not confirmed) occurrence of the Crested Eagle in the state. More recently, it was recorded in large reserves protected by the State government, known as State Parks (P. E.): twice in Jacuipiranga P.E. (1990 and 1992), once in the Morro do Diabo P.E. (1992) and, once in Intermares P.E. (1995). In the first two records the birds were soaring, and in the last, landing (Galetti et al. 1997). In both cases only visual records were made. At the MZUSP Collection, there is a specimen from Apiá, collected in 1900. MHNT has a mounted specimen displayed, however of unknown procedence. In the Itatiba Zoorpark, there is a pale and dark-morph pair on display, both with unknown origin.

Rio de Janeiro (Southeastern-ARF) – There is only one historical record, from Pinto (1964) for the locality of Cantagalo, and from this same location, there is a skin in the collection of Johann Natterer (Hellmayr & Conover 1949). At the National Museum of Rio de Janeiro there are five specimens listed, however all are of unknown origin.

Espírito Santo (Southeastern-ARF) - There are two records: an observation at Sooretama Biological Reserve, Sooretama, by Parker & Goerck (1997) and another in Itaúnas State Park (Petroff 2001). At the Museu Biológico Mello Leitão, Santa Teresa (MBML) there is one mounted specimen of unknown origin and without registration number.

Minas Gerais (Southeastern-ARF) – There are two records. The first record is listed on the state list (Mattos et al. 1993), as having been seen in Mata Escura Biological Reserve, in Jequitinhonha (T. Mattos, pers. comm). The second record occurred in the Caparão National Park, in Alto Caparão, in 1997, in which two individuals were seen flying, which was probably a pair (Zorzín et al. 2006). CRAX maintains a live female dark-morph, previously paired with a male pale-morph borrowed from the São Paulo Zoo, but which died later (individual donated to Universidade Federal de Minas Gerais-UFGM, however it has not yet been taxidermized), both of unknown origin. Recently CRAX received another dark-morph female, from Pará (ICMBio).

Bahia (Northeastern-ARF) – There are two records: Willis & Oniki (2003) comment on an aural record in Porto Seguro, in 1974. There is also a visual record in the municipality of Barrolândia, municipality of Belmonte, 1995 (Galetti et al. 1997).

The remaining Brazilian Northeastern states generally do not have records of the species, whether historical or recent ones; however, Dois Irmãos Zoo in Recife, Pernambuco, exhibits an adult pale-morph, of unknown origin.

Mato Grosso do Sul (Central Brazil-ECO) - P. Scherer and C. Ribas report the species in April 2001, flying over a road near the Private Natural Reserve (RPPN) Buracos das Araras, in the municipality of Jardim (In Pivatto et al. 2006). This region is savanna (Cerrado) with Gallery Forest.

Mato Grosso (Central Brazil-AMZ) – There are nine records for the species. The oldest record comes from Chapada dos Parecis, in Juruena (Sick 1997). In 2005, an individual was photographed along the Cristalino River (A. Lees, pers. file), and in 2006, two individuals were seen and photographed on the CEPLAC Farm (Executive Board of the Cocoa Crop Plan), both in Alta Floresta (A. Lees, pers. comm.). In 2011 one individual was photographed at the Jardins da Amazônia Inn, in São José do Rio Claro (E. Endrigo, pers. comm.), and in 2012, a pair was recorded responding aggressively to playback, in the same locality, where possibly there was a nest (M. Pádua, pers. comm.); in October 2012 in the Cristalino RPPN, an adult was drying itself in the canopy, after a heavy rain (J. Silva, pers. comm.). In addition to these, photographic records were also made in 2012 in the municipality of Comodoro, (D. Motu and V. Castro, pers. comm.). In September 2012, a nest with a nestling (4–5 months old) was located in the municipality of Paranaitá, at the Ouro Reunido Farm (P. Bernardo, pers. comm. and D. Oliveira, pers. comm.). At MZUSP, one specimen is listed from the Ipê Farm, in Vila Rica. CETAS-IBAMA pre-release facility in Guaranitá do Norte is housing a live young female pale-morph from the municipality of Novo Progresso, PA, currently still being held.

Rondônia (North-AMZ) – There are nine records. Between 1987 and 1988, the Crested Eagle has been registered at the Cachoeira Nazaré, close to the Ji-Paraná River by Stott et al. (1997). In 2003, Olmos et al. (2011) recorded three individuals in Serra Cutia, between the municipalities of Guajarâ-Mirim and Costa Marques, besides having verified the existence of native craftsmanship using feathers of the bird. In January 2010 an adult individual was seen in Chupinguai (K. Okada, pers. com.); at the same locality, in September 2010, a nest was found close to the previous record, with an active pair and a nestling (M. Canuto, pers. file). The nest was visited in October by the PCGR Team, who found it on the ground, because the tree had fallen. In January 2012, at the same locality, an adult was seen during an aviatura inventory (R. Hippolito, pers. comm.), possibly one of the members of the resident pair. In 2011, next to the Ramal do Rio das Garças, in Porto Velho, an individual was
photographed (F. Pereira). In March 2012, in Guaporé Biological Reserve, between São Francisco do Guaporé and Alta Floresta D’Oeste, an individual dark-morph was recorded calling next to a group of small primates (S. Alves, ICMBio/ReBio Guaporé, pers. comm. and file).

Acre (North-AMZ) – There are seven records. The first citation comes from Catuaba Experimental Farm – Universidade Federal do Acre-UFAC, near Rio Branco, between 1994 and 2004 (Rasmussen et al. 2005). The second record comes from the Alto Juruá Extractive Reserve, in Marechal Thaumaturgo (Whittaker et al. 2002). In 2008, DeLuca (2012) registers, through interviews with the locals, the presence of Harpy Eagle and Crested Eagle at the Chico Mendes Extractive Reserve and environs, comprising Assis Brazil, Brasiléia and Xapuri municipalities. In addition to this, and confirmed with a photograph, an adult dark-morph was seen in Rio Croa Community, municipality of Cruzeiro do Sul, in August 2012 (J. Filho), and Guilherme (2012) cites the species as resident for the whole State, using bamboo forests and rainforests with palm trees. In April 2013, a young pale-morph was seen flying in the municipality of Porto Acre (L. Rondini and T. Nascimento, pers. comm.). In 2009 a young specimen was rescued near Rio Branco, and forwarded to CETAS-IBAM of Rio Branco, and later transferred to permanent capitivity, but we were not able to determine if it is still alive.

Amazonas (North-AMZ) – There are 16 recognized records/locations. The first record cites the occurrence of species in “Barra do Rio Negro” [=Manaus] and in Manaquí [=Manaquiri] Lake (Manacapuru municipality) (Von Pelzeln, 1871), localities also replicated by Pinto (1964). In this same state one of the best-known papers about the species, Bierregaard (1984) described nesting of a pair, the male being pale-morph and the female, dark-morph, at the ZF-3 Reserve, 60 km north of Manaus (Gavião Camp-PDBFF Biological Dynamics of Forest Fragments Project) but the pair has not been registered subsequently. In 2004 an adult was observed at the Mamirauá Sustainable Development Reserve (RDS), in Tefé, Amazonas state, in varzea forest (Cintra et al. 2007 and R. Cintra, pers. comm.). Olmos et al. (2006) also cite seeing two individuals resting and feeding, in the municipality of Alvarães. Cohn-Haft et al. (1997) cites its occurrence in large forest fragments of the PDBFF Project (Esteio, Dimona and Porto Alegre Farms) near Manaus. In the Adolpho Ducke Forest Reserve, Manaus, in 2005, an individual was spotted (J. Valsko, pers. comm.) and recorded vocalizing (W. Magnusson, pers. comm. and file at PCGR Database). There is also a record of the species in the Juami-Jupará Ecological Station, in 2006 (T.M.S. In Soares et al. 2008: 76). In July 2009 an adult pale-morph was photographed in the Anavilhanas National Park, perched on treetops in flooded forest (S. V. Wilson, pers. comm. and photo), and in June 2012, at the same location, a pair was seen carrying prey, probably for a nest (A. Whittaker, pers. comm.); however on a visit in 2013 the nest was not found (FBRG). On the banks of the Roosevelt River in Novo Aripuanã, on 2 July 2007, a pale-morph adult was seen in the canopy of a tree (B. Whitney, video IBC & pers. comm.), and on 12 September 2007 a pair and 17 September a subadult. Whittaker (in 2009) recorded an individual on the banks of the same river, and another around the lodging. In 2008, it was seen on the Uruçu River, and also a nest (not studied by PCGR) (Whittaker et al. 2008). In 2011, an individual was photographed in Tapauá, in Nascentes do Lago Jari National Park (L. Condriti, pers. comm., ICMBio). In April 2013, a sub-adult pale-morph was seen on ZF-2 Road, 10 km from the Cuieiras Reserve nest known in the locality, interacting aggressively with a flock of Red-throated Caracaras (Ibycter americanus). Possibly this is a nestling from this nest, which has dispersed for two or three years (whitish general plumage, with wing coverts still grayish) (FBRG). In Amazonas, PCGR monitors four nests of this species, one in Manaus and three in the nearby town of Manacapuru. In Manaus, the nest is located in the Cuieiras Reserve (INPA), and was found by members of the TEAM Project – INPA in 2006, and has been monitored by PCGR since then (In Soares et al. 2008). The nests in Manacapuru, located on Cururu Lake, in a rural area of the municipality, were found and reported by local residents, and have been monitored since 2007. Recently a nest was discovered in August 2013, which is being monitored in Amanã RDS (Sustainable Development Reserve), under the auspices of the Mamirauá Sustainable Development Institute (IDSM). In addition to these in vivo records, the Instituto Nacional de Pesquisas da Amazônia INPA - Ornithological Collection, holds a 1982 pale-morph female specimen, from the ZF-3 Reserve. Listed in MZUSP are a female, from October 1902, and a male, from January 1937, from the Juruá River (for our map assumed as near Carauari), and another female from Manacapuru, dated October 1936. FMNH holds two skins of females: one from Lábrea, on the Purus River, 1935, and another from Lago do Baptistia, in Itacoatiara, 1937. CM maintains a mounted specimen, collected in Tonantins, on the left bank of the Solimões River, in 1923. The CIGS Zoo (Manaus), kept a pale-morph male, however it died 17 July 2012 and was not preserved.

Roraima (North-AMZ) – The species was recorded at the Maracá Ecological Station by Moskovits et al. (1985). In 2004, an adult was photographed in the Viruá National Park, in Caracará (R. Czaban, IBAMA). In 2011, during a MZUSP expedition, an adult pale-morph was recorded, near the community of Caicubí, in the Jufari River, near Caracará (L. F. Silveira, pers. comm.).
Pará (North-AMZ) – There are 28 recognized localities/records for the species. The first reference is prior to the date of its description, Daudin (1800). In “Memórias de Dom Lourenço Álvares Roxo de Potifis”, from 1752, translated and analyzed by Teixeira et al. (2010), the author makes a detailed description of the Harpy Eagle, and then describes the “ouyra ouassù meri ou ouassù pea” a very similar bird to the Harpy Eagle, except for its more slender appearance (Teixeira et al. 2010). In the description, he is obviously describing the Crested Eagle however the “Memories” is not a scientific paper. In our most recent records, the species was seen in 2000, Taboca Island, Xingu River, and in 2008, in an Aquatic Bird Survey, Xingu River, both in forest (Henriques et al. 2008 and L. M. P. Henriques, pers. comm.); in September 2013, an adult pale-morph was photographed in Vitória do Xingu (V. Castro, pers. comm.). In February 2014 an adult pale-morph was observed on the left bank of the Xingu River, in Brasil Novo, near Altamira (TMS, PCGR Database). In Tapajós National Forest, by Henriques et al. (2003); in the Tapajós-Arapuãnts Extractive Reserve, by Peres et al. (2003) and, in the municipality of Tailândia (Soares et al. 2008). Between 1998 and 2005, individuals were recorded in Tailândia, at the Agropalma Forest Reserve; between 2004 and 2006, in the municipality of Tomé-Açu, on the Caixau Farm; and between 2005 and 2007, also in Tailândia, on the Capim Farm (Portes et al. 2011). Throughout 2008, individuals were recorded in several forest reserves, Trombetas, Grão-Pará, Maicurú (female pale-morph collected) and in Faro State Forest (Aleixo et al. 2011). In Santan do Araguaia, at the Fartura Farm, the species was recorded between 2009 and 2010 (Somenzari et al. 2011). Between 2010 and 2011, the species was also recorded in Paragominas by Lees et al. (2012). In mid-2012 an adult was seen on the banks of the Tapajós River, in the municipality of Itaituba (G. Leite, pers. comm.). In mid-2012, a nestling female, dark-morph was rescued by IBAMA-Marabá, from the municipality of Tucuruí, and delivered to the Parque Zona Botânico VALE in Parauapebas-Carajás, and from there transferred to recovery at the CRAX Conservation Center (F. Martins, pers. comm. ICMBio, PCGR). In the same year, a second nestling, also female from an unknown nest in the municipality of Novo Progresso, is still being held in the IBAMA-CETAS pre-release facility from Guaranantá do Norte. In 2010 a nest was recorded in Belterra municipality. It was found during an inventory of birds in the region, and reported to PCGR, which we monitored for a few months, since the nestling was approximately four months old and out of the nest (C. Andrétti, pers. comm.); the record was subsequently published with details by Lees et al. (2013). In 2011 there was a record in Jacareacanga, near the Téles Pires River (C. Borges, pers. comm.). In 2012, another nest of the species was located in the municipality of Oriximiná during mining activities of Mineração Rio Norte. This nest is located in an area of bauxite ore extraction within Porto Trombetas National Forest and following the recommendations of the PCGR and IBAMA-Oriximiná, the area will be maintained and protected. The Museu Paraense Emílio Goeldi holds a primary feather collected in 2000, from Altamira, Xingu River, and the skin of a female pale-morph adult from 2008, collected in Almeirim, in the Maicuru Biological Reserve, besides two skins of young males without provenance; and two specimens from the collection of the Museu Goeldi Zoo Botanical Park, one in 1916 and another from 1975. The FMNH keeps two skins of Piquiátu in Belterra, collected in 1937: a female and a male with enlarged gonads, possibly being a pair in reproductive condition.

Amapá (North-AMZ) – There are four different records. The first two, in 1994 and 2000, individuals were alone, resting and feeding, in the municipality of Serra do Navio (Olmos et al. 2006). The other two records were provided by Schunck et al. (2011), one in 2008 and another in 2010. These are in the Carajá Extractive Reserve, in the municipality of Laranjal do Jari, western Amapá. CM maintains a skin of a specimen collected in 1918, in the upper Arucuau River, a tributary of Uacu River, in Oiapoque.

Maranhão (North-AMZ) – The oldest record is that of a male from the mouth of the Flores River, Mearim River, municipality of Pedreiras, listed in the collection of birds of the Museu da Fauna (No. 1576), from 1956 (Aguirre & Aldrighi 1983, same specimen under Rio de Janeiro). A slightly more recent record is of a nest found and monitored for a few days in November 1997, in the municipality of Buriticupu (Martínez 2008). Recently, in 2009, during the movement of mobbing by a mixed bird species flock, after tape playback of Amazonian Pygmy-Owl (Glaucidium hardyi), a young Crested Eagle was attracted and registered in the municipality of Açailândia (F. Olmos and B. Lima, pers. comm.).

DISCUSSION

Up to 2006 M. guianensis was recorded at nine Brazilian National and State Reserves (ESEC, RESEX, FLONA, REBIO, PARNa, State Park) (Soares et al. 2008). Based on the compilation presented herein, the number of conservation areas of the same category as above harboring stocks of M. guianensis increased to 27, three times the previous study. Besides this increase, we also added 11 private reserve localities.

From 37 New records outside the IUCN map, 16 were recorded close to the border of the known range (up to 40 km); of those, 13 records were Old records and
three were New, and do not expand or contribute to the distribution map, and could be an artefact of the border between our datapoints and the IUCN map, or were provided as only general occurrence in the literature, and therefore will not be discussed in detail.

Far from the border of the IUCN map (> 40 km), we found 21 records, contributing to an expansion of the known range; of these, 10 are New records and 11 are Old, and noted in bold face in the Appendices.

Mexico, at the northernmost extreme of distribution, the range was extended north to Southern Mexico, at Montes Azules, in 2004 with a photo (Grossetel & Gutierrez-Carbonel (2007), confirming the record (No. 132, Appendix 2).

Nicaragua, in 2001 a visual record in Prinzapolka (Kjeldsen 2005: 39) extended the range farther south than the IUCN map (No. 155, Appendix 2). In addition, there are currently two records at the southern border with Costa Rica, in 1994 and 1999 (Old records), published only in 2007 (Munera-Roldan 2007: 155), which extends the distribution of the Crested Eagle to Reserva Bartola, (Nos. 153 and 154, Appendix 2).

Costa Rica, an Old record not considered on the IUCN map was a visual record of Slud (1964) at Cañas Gordas (No. 159, Appendix 2), located between the Sirena Biological Station (Corcovado N. P) on the Osa Peninsula (No. 157, Appendix 2) and the Caribbean lowland distribution.

Colombia, an Old record not considered on the IUCN map is a skin from Cuturu (FMNH 190728; No. 212, Appendix 2) from 1947, located between Darien Peninsula and Perija Mountains.

Brazil, there is a New overhead visual record at Buraco das Araras Private Natural Reserve, Mato Grosso do Sul (No. 63, Appendix 1) in Pivatto et al. (2006), an ectocone between Cerrado Biome and Gallery Forests, and could have been an individual dispersing, or transient, from Bodoquena Forest, where there are Harpy Eagles recorded, and which could possibly also support populations of Crested Eagle (PCGR Database). Bodoquena Forest is a upland remnant of Atlantic Rainforest on the ectocone with Semideciduous Forest, previously connected with Morro do Diabo, São Paulo (Galletti et al. 1997) (No. 125, Appendix 1), an Old record not included on the IUCN map. In Minas Gerais, there are two records far from the border of IUCN, but near the Atlantic Rainforest, and the IUCN distribution could incorporate these records, which are two visual records, in Mata Escura Reserve before 1993 (Matsos et al. 1993) (No. 65, Appendix 1), and Caparaó Park in 1997 (Zorzin et al. 2006) (No. 64, Appendix 1). In southern Brazil, in Rio Grande do Sul, there is a confirmed Old record, a specimen collected in 1920 from Santa Cruz do Sul, housed in a private collection (Bencke 1997) (No. 101, Appendix 1), and another collected in 1899 by Ihering (cited by Belton 1984 for Taquara, without details of the record).

Final Remarks

The most commonly cited publications for studying birds of prey, Ferguson-Lees & Christie (2001) and Amadon & Bull (1988), and more recently Whitacre et al. (2012), indicate the distribution of Crested Eagle in parts of North and Central America, and throughout South America, however the most commonly used tool for conservation strategies, the IUCN map, presents this distribution in a far more conservative form. Here it is possible to add the southernmost part of North America (Chiapas and Campeche), in southern Mexico to the range of the Crested Eagle, as well as three records in between the Amazon and Atlantic Rainforests, and one record in a forest patch within the Gran Sabana, Venezuela.

Our review suggests new data to be added in the compilation of the IUCN map, which from now on provides a database for the production of an updated species distribution map, extending known area of occurrence of the Crested Eagle. In southeastern Brazil, there are records previously not considered in the States of Minas Gerais and Bahia, in the central State of Mato Grosso do Sul and to the North, new habitat records in Roraima, Maranhão and Mato Grosso. Understanding the distribution of the Crested Eagle is indispensible for the efficient development of conservation strategies for the species and the ideal determination of the risk the species runs of extinction.

The Amazon is one of the current strongholds where large vertebrate populations find conditions to persist for ongoing generations (Reed et al. 2003). The prospect is of a future ideal for the conservation of large forest eagles (Crested Eagle, Harpy Eagle and Hawk-Eagle spp.). Predictive modelling scenarios for the next decades, according to current development policies, indicate an increase in the “arc of deforestation”, the reduction of forest cover together with climate change (Laurance et al. 2001; Salazar et al. 2007), which could seriously reduce its distribution.

Brazilian law requires preservation of forest on private land (called Legal Forest Reserve) in the Amazon rainforest to be 80% of the propriety (“Lei N° 12.651, de 25 de maio de 2012”). Landowners who cut beyond the allowed percentage are supposed to replant with trees. The majority of Brazilian records come from private land, therefore a large effort should be carried out to maintain Legal Forest Reserves, areas which are not protected in conservation reserves. The Crested Eagle is listed as Near-Threatened (NT) by the IUCN (2014) and has already been proposed for the status of “Endangered” for the Brazilian List of Species threatened with Extinction,
under review (PCGR and ICMBio), since the habitat that holds the largest populations is also under great risk, particularly in the future. Owing to the current scarcity of knowledge on the distribution and ecology of the Crested Eagle, it is possible that populations living in poorly sampled or little known areas could go extinct even before conservation programs or policies for the species' preservation are devised.

We believe that the greatest impact on populations of Crested Eagle is habitat loss and destruction, hunting pressure and consequently, pressure on their prey and nesting areas, mainly on the southern edges of the Amazon Rainforest and in the Southeast region of Brazil, in the remnants of Atlantic Rainforest.

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A review of the distribution of the Crested Eagle, *Morphnus guianensis* (Daudin, 1800) (Accipitridae: Harpiinae), including range extensions

Felipe Bittiolô R. Gomes and Tânia M. Sanasiotti

Associate Editor: Caio Graco Machado
## APPENDIX 1

Databases, museums and personal communications of Crested Eagle records from Brazil were cited using the following nomenclatures. **State:** (M. G. do Sul) – Mato Grosso do Sul; (R. G. do Sul) – Rio Grande do Sul. **Locality:** RESEX – Extractive Reserve; ESEC – Ecological Station; ARIE – Relevant Interest Ecological Area; PARNA – National Park; RDS – Sustainable Development Reserve; RPPN – Private Natural Reserve; REBIO – Biological Reserve; FLONA – National Forest; CEPLAC – Executive Board of the Cocoa Crop Plan; CIGS – Jungle Instruction Army Center; CETAS – Wildlife Center of Ibará – IBAMA – Brazilian Environment Agency; CRAX – Criadouro Conservacionista Center; PCGR – Harpy Eagle Conservation Program - Brazil. **Museums and Collections:** MZUSP – Zoology Museum of the University of São Paulo; MNRJ – National Museum of Rio de Janeiro; UFSC – Federal University of Santa Catarina; MHNT – Taubaté Natural History Museum; ORNIS – Online database of Ornithological Collections; CM – Carnegie Museum of Natural history; FMNH – Field Museum of Natural History; MPEG – Museu Paraense Emílio Goeldi; INPA – Intituto Nacional de Pesquisas da Amazônia Collections; WA – www.wikiaves.com data; IBC – The Internet Bird Collection. **Record Type:** Occu – general region of occurrence cited in literature, without specific records, number of sights, number or data on individuals, Ind. – one specimen record, 2nd – two specimen records. **Sex/ Age/Plumage:** n.a. – not available, Ppale – pale-morph plumage, Pdark – dark- morph plumage.

| No. | State | Municipality | Locality | Date       | Record Source | Sex / Age / Plumage/Nest |
|-----|-------|--------------|----------|------------|---------------|--------------------------|
| 1   | Acre  | Rio Branco   | Catuaba Farm | 1999-2004 | Rasmussen et al. 2013 | Literature                      |
| 2   | Acre  | Marechal Thaumaturgo | Alto Jurú RESEX | 2002 | Whittaker et al. 2002 | Literature                      |
| 3   | Acre  | Assis Brasil, Brasileia and Xapuri | Chico Mendes RESEX | 2008 | De Luca 2012 | Literature                      |
| 4   | Acre  | Rio Branco |          | 2009 | IBAMA Report - Rio Branco, AC | PCGR Database report young |
| 5   | Acre  | Porto Acre  |          | 2013 | L. Rondini (photo); T. Nascimento (visual) | WA 959961 photo young |
| 6   | Acre  |          | Bamboo and Palm forest - occurrence in the state not on map | n.a. | Guilherme 2012 | Literature                      |
| 7   | Acre  | Cruzeiro do Sul | Rio Croa Community | 2012 | João D. Filho pers. comm. | WA 722798 photo adult/Pdark |
| 8   | Amapá | Oiapoque   | Uaca River  | 1918 | CM | CM P68846 skin n.a. |
| 9   | Amapá | Serra do Navio |          | 1994 | Olmos et. al. 2006 | Literature                      |
| 10  | Amapá | Serra do Navio |          | 2000 | Olmos et. al. 2007 | Literature                      |
| 11  | Amapá | Laranjal do Jari | Rio Carajá RESEX | 2008 | Schunck et al. 2011 | Literature                      |
| 12  | Amapá | Laranjal do Jari | Rio Carajá RESEX | 2010 | Schunck et al. 2012 | Literature                      |
| 13  | Amazonas | Japurá | Juami-Jupará ESEC | 2005 | Soares et al. 2008, Sanaiotti per.obs. | PCGR Database visual/predation adult |
| 14  | Amazonas | Cuieiras and Manacapuru | Cuieiras and Manacapuru - not on map | 2006, 2007 | Soares et al. 2008, Sanaiotti per.obs. | PCGR Database nest nest |
| 15  | Amazonas | Novo Aripuanã | Rio Roosevelt Lodge | 1988 | Whittaker 2009 | Literature                      |
| No. | State      | Municipality     | Locality            | Date  | Record Source | No. Collection / Museum/Source | Record type | Sex / Age / Plumage/Nest |
|-----|------------|------------------|---------------------|-------|---------------|--------------------------------|--------------|--------------------------|
| 16  | Amazonas   | Manacapuru       | Purus River         | 1936  | MZUSP         | MZUSP 16442                    | skin        |                          |
| 17  | Amazonas   | Librea           | Baptista Lake       | 1935  | FMNH          | FMNH 100819                    | skin        | female                   |
| 18  | Amazonas   | Itacoatiara      | Solimões River      | 1937  | FMNH          | FMNH 101835                    | skin        | female                   |
| 19  | Amazonas   | Tonatins         | Reserve ZF3 - ARIE  | 1982  | INPA          | INPA 590                       | skin        | n.a.                     |
| 20  | Amazonas   | assumed near Carauari | Juruá River         | 1902  | MZUSP         | MZUSP 2593                    | skin        | female                   |
| 21  | Amazonas   | assumed near Carauari | Juruá River         | 1937  | MZUSP         | MZUSP 18113                    | skin        | male                     |
| 22  | Amazonas   | Novo Aripuaná    | Roosevelt River     | 2007  | Bret Whitney pers. comm. | IBC Video          | adult/Palear  |
| 23  | Amazonas   | Coari            | Urucu River         | 2008  | Whittaker et. al. 2008 | Literature visual   |                      |
| 24  | Amazonas   | Alvarães         |                     | 1993  | Olmos et. al. 2006 | Literature visual   | 2 individuals   |
| 25  | Amazonas   | Barra do rio Negro  | Citation von Pelzeln - not on map | n.a.  | Pinto, 1964 | Literature occurrence | n.a.         |
| 26  | Amazonas   | Manacapuru       | Manaqueri [=Manaquiri] Lake - not on map | n.a.  | Von Pelzeln 1871 | Literature occurrence | n.a.         |
| 27  | Amazonas   | Rio Preto da Eva | ZF3 Reserve, Gavião camp - PDBFF Project - ARIE | 1980  | Bierregaard 1984 | Literature visual/photo | pair/nest     |
| 28  | Amazonas   | PDBFF Project Forest Fragments - ARIE |                     | n.a.  | Cohn-Haft et. al. 1997 | Literature occurrence | n.a.         |
| 29  | Amazonas   | Novo Airão       | Anavilhanas PARNA   | 11,22/6/2012 | Whittaker 2012 | WA 735004 photo  |                      |
| 30  | Amazonas   | Anavilhanas PARNA |                     | 2009  | S.Wilson, PCGR | Database photo | 1 adult          |
| 31  | Amazonas   | Manaus           | Reserva Florestal Adolpho Ducke - ARIE | 2005  | J. Valsko; W. Magnusson, PCGR | Database/pers. comm. visual/cal record | young       |
| 32  | Amazonas   | Novo Airão       | Anavilhanas PARNA   | 2007  | S.Wilson, PCGR | Database nest - Teixeirinha | nest - Teixeirinha |
| 33  | Amazonas   | Cururu Lake, Solimões River |                     | 2008  | PCGR          | Database nest - Bracelo       | nest - Bracelo |
| 34  | Amazonas   | Cururu Lake, Solimões River |                     | 2008  | PCGR          | Database nest - Erivan         | nest - Erivan   |
| 35  | Amazonas   | Cuieiras Reserve - ARIE |                     | 2006  | PCGR          | Database nest - Cuieiras       | nest - Cuieiras |
| 36  | Amazonas   | Tapaua           | Nascentes do Lago Jari PARNA | 2011  | Luiz Henrique Condrali pers. comm. | WA 414010 photo | adult/Palear   |
| 37  | Amazonas   | Cururu Lake, Solimões River |                     | 2013  | F. B. R. Gomes | WA 1025169 photo | subadult       |
## A review of the distribution of the Crested Eagle, *Morphnus guianensis* (Daudin, 1800) (Accipitridae: Harpiinae), including range extensions

*Felipe Bittioli R. Gomes and Tânia M. Sanaiai*

| No. | State | Municipality | Date | Sec. / Age / Plumage / Nest | Record Source | Specimen | Record Type | Locality | Collection / Museum / Source |
|-----|-------|--------------|------|-----------------------------|---------------|----------|-------------|----------|-----------------------------|
| 40  | Amazonas | Amazonas | 2013 | A. Jablonski pers. comm. | E. B. R. Gomes WA 1067156, 1067157 | photo | photo | Amanã | CIGA Army Zoo, unknown specimens RDS |
| 41  | Amazonas | Amazonas | 2004 | Avileses, Usurin, Forte and Japira | Pers. Archive | photo | visual | Baía | Reserva do Pantanal - Mamirauá RDS |
| 42  | Amazonas | Amazonas | 1995 | Barra do Cordão | Lit. and pers. comm. | literature | literature | Belém | Barra do Cordão | RDS |
| 43  | Amazonas | Amazonas | 1974 | Barro do Rio Madeira | Liter. | literature | literature | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 44  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 45  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 46  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 47  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 48  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 49  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 50  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 51  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 52  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 53  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 54  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 55  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 56  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 57  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 58  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 59  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 60  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |
| 61  | Amazonas | Amazonas | 1997 | Barro do Rio Madeira | Parker III & Goerck | literature | occurrence | Barro do Rio Madeira | local | Barro do Rio Madeira | RDS |

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| No. | State | Municipality | Date | Locality | Town | Sex / Age / Plumage/Nest | Record Source | No. Collect / Museum/Source | Record type | Sex | State | Municipality | Date | Locality | Town | Sex / Age / Plumage/Nest | Record Source | No. Collect / Museum/Source | Record type |
|-----|-------|--------------|------|----------|------|--------------------------|--------------|--------------------------|-------------|-----|-------|--------------|------|-----------|------|--------------------------|--------------|--------------------------|-------------|
| 62  | Pará  | Marroquim   | 2001 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Marroquim      | 2001 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 63  | Pará  | Marroquim   | 1997 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Marroquim      | 1997 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 64  | Pará  | Barão de Cocais | 2000 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 2000 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 65  | Pará  | Barão de Cocais | 1993 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1993 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 66  | Pará  | Barão de Cocais | 1998 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1998 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 67  | Pará  | Barão de Cocais | 2003 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 2003 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 68  | Pará  | Barão de Cocais | 1992 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1992 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 69  | Pará  | Barão de Cocais | 1991 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1991 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 70  | Pará  | Barão de Cocais | 1990 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1990 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 71  | Pará  | Barão de Cocais | 1989 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1989 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 72  | Pará  | Barão de Cocais | 1988 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1988 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 73  | Pará  | Barão de Cocais | 1987 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1987 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 74  | Pará  | Barão de Cocais | 1986 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1986 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 75  | Pará  | Barão de Cocais | 1985 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1985 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 76  | Pará  | Barão de Cocais | 1984 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1984 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 77  | Pará  | Barão de Cocais | 1983 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1983 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 78  | Pará  | Barão de Cocais | 1982 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1982 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 79  | Pará  | Barão de Cocais | 1981 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1981 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 80  | Pará  | Barão de Cocais | 1980 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1980 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 81  | Pará  | Barão de Cocais | 1979 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1979 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |
| 82  | Pará  | Barão de Cocais | 1978 | Pará     | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        | n.a. | Pará  | Barão de Cocais | 1978 | Pará      | Belterra | adult/female/flying      | Literature   | Museu Paraense           | Nest        |

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| No. | Collection/Museum/Source | Date | Municipality | State | Locality | Sex/Owner | Plumage/Neck | Record Type | Record Source |
|-----|--------------------------|------|--------------|-------|----------|-----------|-------------|-------------|---------------|
| 54  | FMNH 101506              | 1937 | Belterra     | Pará  | Piquiatuba | female    | exudated gonads | literature | FMNH          |
| 55  | FMNH 103156              | 2003 | Belterra     | Pará  | Tapajós Flona | literature | occurrence | literature | Literature    |
| 56  | FMNH 103156              | 2003 | Belterra     | Pará  | Tapajós Ruipe Resex | literature | occurrence | literature | Literature    |
| 57  | FMNH 103156              | 2006 | Belterra     | Pará  | Tailandia | literature | occurrence | literature | Literature    |
| 58  | FMNH 103156              | 2012 | Belterra     | Pará  | Novo Progresso | literature | occurrence | literature | Literature    |
| 59  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 60  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 61  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 62  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 63  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 64  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 65  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 66  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 67  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 68  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 69  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 70  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 71  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 72  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 73  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 74  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 75  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 76  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 77  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 78  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 79  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 80  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 81  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 82  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 83  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 84  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 85  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 86  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 87  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 88  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 89  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 90  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 91  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 92  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 93  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 94  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 95  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 96  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 97  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 98  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 99  | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 100 | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 101 | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 102 | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 103 | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| 104 | FMNH 103156              | 2012 | Belterra     | Pará  | Tapajós Aparu | literature | occurrence | literature | Literature    |
| No. | State      | Municipality                                      | Locality                      | Date       | Record Source                  | No. Collection / Museum / Source | Record type   | Sex / Age / Plumage / Nest |
|-----|------------|---------------------------------------------------|-------------------------------|------------|--------------------------------|----------------------------------|---------------|---------------------------|
| 105 | R. G. do Sul | Probably Extinct in the State                     | n.a.                          |            | Marques et al. 2002             | Literature                      | n.a.          |                           |
| 106 | Rondônia   | Guajará Mirim and Costa Marques                   | Serra Cutia                   | 2003       | Olmos et al. 2011               | Literature                      | visual        | 1 adult / Ppale           |
| 107 | Rondônia   | Guajará Mirim and Costa Marques                   | Serra Cutia                   | 2003       | Olmos et al. 2011               | Literature                      | visual        | 2 adult / Ppale           |
| 108 | Rondônia   | Ji-Paraná                                         | Cachoeira Nazaré, Ji-Paraná River | 1987-1988  | Stotz et al. 1997               | Literature                      | occurrence    | n.a.                      |
| 109 | Rondônia   | Chupinguáia                                       | Boa Esperança Village         | 25/08/2011 | S.O.S. Falconiformes Pers. comm. and photos | photo young |               |                           |
| 110 | Rondônia   | São Francisco do Guaporé and Alta Floresta D’Oeste | Guaporé REBIO                | mar/12     | Sandro Alves                    | Video pers. archive             | video         | adult / Pdark            |
| 111 | Rondônia   | Chupinguáia                                       | Boa Esperança Village         | 2010       | Kurazo Olada Aguiar WA 10942   | photo                           | 1 adult       |                           |
| 112 | Rondônia   | Chupinguáia                                       | Boa Esperança Village         | set/12     | S.O.S. Falconiformes Pers. comm. and photos | photo   | 1 adult / Ppale         |
| 113 | Rondônia   | Chupinguáia                                       | Boa Esperança Village - not on map | 2012       | Raphael Hipólito Pers. comm. and photos | photo pair / nest |              |                           |
| 114 | Rondônia   | Porto Velho                                       | Ramal Rio das Garças          | 12/09/2011 | E. Pereira WA 674776            | photo                           | 1 adult / Ppale |                           |
| 115 | Roraima    | Caracaraí                                        | Virúá PARNA                   | 2004       | Robson Czaban WA 88548          | photo                           | 1 adult / Ppale |                           |
| 116 | Roraima    | Caracaraí                                        | Jufari River, Caicubi Village | 2011       | L. F. Silveira Pers. comm. visual | adult |                           |                           |
| 117 | Roraima    | Boas Vista                                        | Maracá ESEC                   | 1985       | Moskovits et al. 1985 Literature | occurrence | n.a.          |                           |
| 118 | Santa Catarina | Siderópolis                                      | Jordão Baixo                  | 1977       | Albuquerque 1983 Literature      | visual adult                     |               |                           |
| 119 | Santa Catarina | Grão Pará                                          | Aiúre                         | 2005       | Albuquerque et al. 2006 Literature | visual | 2 visual       |                           |
| 120 | Santa Catarina | Joinville                                         | Frei Miguel Museum           | 1926       | Favretto, 2008 Literature mounted specimen | adult / Ppale        |               |                           |
| 121 | Santa Catarina | Lontras                                          | 1965/70 PCGR Database         | UFSC 362   | mounted specimen adult / Ppale  |                   |               |                           |
| 122 | Santa Catarina | Siderópolis                                       | 1997 Rosário 1997 Literature  |            | occurence n.a.                  |                   |               |                           |
| 123 | São Paulo   | Jacupiranga, Barra do Turvo, Cananeia, Ipóraga, Eldorado and Cajatí | Jacupiranga State Park       | 25/05/1990 | Galetti et al. 1997 Literature  | visual 1 adult |               |                           |
| No. | State     | Municipality                        | Locality                           | Date       | Record Source | No. Collection / Museum / Source | Record type | Sex / Age / Plumage / Nest |
|-----|-----------|-------------------------------------|-------------------------------------|------------|---------------|---------------------------------|-------------|---------------------------|
| 124 | São Paulo | Jacupiranga, Barra do Turvo, Cananéia, Iporanga, Eldorada and Cajatí | Jacupiranga State Park             | 14/12/1992 | Galetti et al. 1997 | Literature                       | visual      | 1 adult                   |
| 125 | São Paulo | Teodoro Sampaio                      | Morro do Diabo State Park          | 14/12/1992 | Galetti et al. 1997 | Literature                       | visual      | 1 adult                   |
| 126 | São Paulo | Ribeirão Grande, Guapiara, Sete Barras, Eldorado and Iporanga | Intervales State Park              | 24/02/1995 | Galetti et al. 1997 | Literature                       | visual      | 1 adult                   |
| 127 | São Paulo | Apiá                                |                                     | 1900       | MZUSP          | MZUSP 2417                       | n.a.        |                           |
| 128 | São Paulo | Occurrence in the State - not on map |                                     | 1898       | Ihering 1898   | Literature                       | possible occurrence | n.a.       |
| 129 | São Paulo |                                     | Zooparque Itatiba at Itatiba, without procedence | n.a.        | PCGR           | PCGR                             | captive pair                     |            |
| 130 | São Paulo |                                     | Museu de Historia Natural de Taubaté - without procedence | n.a.        | MHNT           | n.a.                            | mounted specimen                | adult / Pale |
APPENDIX 2

Databases, museums and personal communications of Crested Eagle records from outside Brazil used the following nomenclatures. Museums and Collections accessed with ORNIS – Online database of Ornithological Collections: (AMNH) American Museum of Natural History; (ROM) Royal Ontario Museum; (MCZ) Museum of Comparative Zoology; (CM) Carnegie Museum of Natural History; (FMNH) Field Museum of Natural History; (ANSP) Academy of Natural Sciences of Philadelphia; (USNM) United States National Museum; (LSUMZ) Louisiana State University Museum of Natural Science; (MHNIB) Museum of Natural History Itaipu Binacional; (XC) Xeno-canto Online Sound Collection; (MAC) Macaulay Library Collection; and (CEPEPE) Center for Propagation of Endangered Panamanian Species. **Record Type: Occurrence**: general region of occurrence cited in literature, without specific record details, number of sights, number or data on individuals; **Plumage**: Ppale – pale-morph, Pdark – dark-morph plumage, Pextdark – extreme dark-morph.

| No. | Country | County | Locality | Year | Citation | Source/Collection number | Record | Sex/Age/Nest |
|-----|---------|--------|----------|------|----------|--------------------------|--------|-------------|
| 131 | Mexico  | Campeche | Calakmul Ruins | 1992 | Sutter & Diaz in Whitacre et al. 2012 | Literature | visual | adult soaring |
| 132 | Mexico  | Chiapas | Montes Azules Biosphere Reserve | 2004 | Grosselet & Gutierrez-Carbonel 2007 | Literature | photo | adult |
| 133 | Mexico  | Chiapas | Chiapas | n.a. | Whitacre et al. 2012 | Literature | occurrence | n.a. |
| 134 | Mexico  | Quintana Roo | Quintana Roo | n.a. | Whitacre et al. 2012 | Literature | occurrence | n.a. |
| 135 | Belize  | Orange Walk | Chan Chich Lodge | 1995 | Hall 1995 | Literature | occurrence | n.a. |
| 136 | Belize  | Toledo | Toledo | 1995 | Howell et al. 2000 | Literature | occurrence | n.a. |
| 137 | Belize  | Cayo | Cayo | 1995 | Howell et al. 2001 | Literature | occurrence | n.a. |
| 138 | Belize  | Orange Walk | Orange | 1995 | Howell et al. 2002 | Literature | occurrence | n.a. |
| 139 | Belize  | | Southeastern Region | 2006 | Jones & Komar 2006 | Literature | occurrence | n.a. |
| 140 | Guatemala | Petén | Flores | 1981 | Ellis & Whaley 1981 | Literature | occurrence | n.a. |
| 141 | Guatemala | Petén | Tikal National Park | 1994 | Whitacre et al. 2012 | Literature | nest | n.a. |
| 142 | Guatemala | Petén | Tikal National Park | 1995 | Whitacre et al. 2012 | Literature | nest | n.a. |
| 143 | Guatemala | Petén | Tikal National Park | 2006 | Grijalva & Eissermann 2006 | Literature | young | n.a. |
| 144 | Guatemala | | Atlantic Region | 2006 | Eissermann & Avendaño 2007 | Literature | | n.a. |
| 145 | Guatemala | Petén | Flores | 1978 | ORNIS | AMNH812849 | skin | n.a. |
| 146 | Guatemala | Petén | Flores | 1966 | ORNIS | ROM115862 | complete skeleton + partial skin | n.a. |
| 147 | Honduras | La Ceiba | La Ceiba | 1903 | Bangs 1903 | Literature | collected | young |
| 148 | Honduras | San Pedro Sula | San Pedro Sula | 1968 | Monroe 1968 | Literature | occurrence | n.a. |
| No. | Country     | County      | Locality                                      | Year | Citation                          | Source/Collection number | Record       | Sex/Age/Plumage/Nest           |
|-----|-------------|-------------|-----------------------------------------------|------|-----------------------------------|--------------------------|--------------|------------------------------|
| 149 | Honduras    |             | Quebrada Kahkatingni - near Panuc River       | 1999 | Russell Thorstrom in GRIN 2013   | Literature               | young        | n.a.                         |
| 150 | Honduras    |             | Occurrence in Honduras                        | 2002 | Bonta & Anderson 2002            | Literature               | occurrence   | n.a.                         |
| 151 | Honduras    | La Ceiba    | La Ceiba                                      | 1902 | ORNIS                             | MCZ110535                | skin         | n.a.                         |
| 152 | Nicaragua   | Jinotega    | Hormigero Community, Cerro Sasiya, at Bosawas Biosphere Reserve | 2001 | GRIN 2013                         | Literature               | occurrence   | n.a.                         |
| 153 | Nicaragua   | San Juan del Nicaragua | Bartola Reserve                  | 1994 | Múnera-Roldán et al. 2007 | Literature               | adult        | n.a.                         |
| 154 | Nicaragua   | San Juan del Nicaragua | Bartola Reserve                | 1999 | Múnera-Roldán et al. 2007 | Literature               | adult        | n.a.                         |
| 155 | Nicaragua   | Prinzapolka, Zelaya | Alamikangban Community | 2005 | Kjeldsen 2005 | Literature               | adult        | n.a.                         |
| 156 | Costa Rica  | Heredia     | La Selva Biological Station, Sarapiquí region | 1989 | Stiles & Skutch 1989             | Literature               | occurrence   | n.a.                         |
| 157 | Costa Rica  | Sirena      | Sirena Biological Station, Corcovado National Park, Osa Peninsula | 1989 | Stiles & Skutch 1989             | Literature               | occurrence   | n.a.                         |
| 158 | Costa Rica  | Limon       | Cuabré - Sixaol River                        | 1910 | Carrier 1910 | Literature               | occurrence   | n.a.                         |
| 159 | Costa Rica  | Puntarenas  | Cerro Cañas Gordas                           | 1964 | Slud 1964                         | Literature               | occurrence   | n.a.                         |
| 160 | Costa Rica  | San Jose Limon | La Finca Selva - Braulio Carrillo National Park | 2004 | Jones 2004 | Literature               | occurrence   | n.a.                         |
| 161 | Costa Rica  | San Jose Limon | Rara Avis Jungle Lodge -Braulio Carrillo National Park | 2004 | Jones 2004 | Literature               | occurrence   | n.a.                         |
| 162 | Costa Rica  | Limon       | Tortuguero                                   | 2006 | Jones & Komar 2006               | Literature               | occurrence   | n.a.                         |
| 163 | Costa Rica  | Limon       | Tortuguero                                   | 2005 | G. Oclind                      | Pers. comm.             | photo        | pair                         |
| 164 | Costa Rica  | Limon       | Tortuguero National Park                    | 2013 | Carlos Calvo Obando photo/ Fundación Rápalces de Costa Rica, P Camacho Varela pers. comm. | PCGR Database | photo | adult/ Ppale                  |
| 165 | Costa Rica  | Limon       | Caño Harold - Tortuguero National Park       | 2014 | Ron Osborne photo/ Fundación Rápalces de Costa Rica, P Camacho Varela pers. comm. | PCGR Database | photo | adult/ Ppale                  |
| 166 | Costa Rica  | Alajuela    | Crucitas - Curris de San Carlos             | 2011 | Rodolfo Vargas Leiton photo/ Fundación Rápalces de Costa Rica, P Camacho Varela pers. comm. | PCGR Database | photo | adult/ Pdark                  |
| 167 | Costa Rica  | Limon       | Cuabré                                      | 1904 | ORNIS                             | CMP23989                 | skin         | n.a.                         |
| 168 | Panama      |             | Caribbean slopes, Southeast and East Panamá | 1965 | Wetmore 1965 | Literature               | occurrence   | n.a.                         |
| No. | Citation | Year | Locality       | Country       | Source/Collection number | Record          | Sex/Age/Plumage/Nest                                                                 |
|-----|----------|------|----------------|--------------|--------------------------|-----------------|-------------------------------------------------------------------------------------|
| 169 | Ridgely & Goyane 1989 | 1989 | Azuero Peninsula | Panama       | Literature                | Literature      | occurrence                                                                          |
| 170 | Los Santos/Marino 1989 | 1989 | Cerro Haya National Park | Panama       | Literature                | Literature      | occurrence                                                                          |
| 171 | Pasamá Province | 1989 | Chiriquí Province | Panama       | Literature                | Literature      | occurrence                                                                          |
| 172 | Chiriquí | 1989 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
| 173 | Panama Canal Zone | 1989 | Boquete | Panama       | Literature                | Literature      | occurrence                                                                          |
| 174 | San Lorenzo National Park | 2007 | Quinter Community | Panama       | Literature                | Literature      | occurrence                                                                          |
| 175 | Chiquita River region, Central Panama | 2006 | Vargas et al. 2006 | Panama       | Literature                | Literature      | occurrence                                                                          |
| 176 | Pana Colón | 2007 | San Blas - Port Obdidi | Panama       | Literature                | Literature      | occurrence                                                                          |
| 177 | Panama | 2007 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
| 178 | Dirién | 2007 | “Tuleo” - Ochilida | Panama       | Literature                | Literature      | occurrence                                                                          |
| 179 | Pana Colón | 2007 | San Blas - Port Obdidi | Panama       | Literature                | Literature      | occurrence                                                                          |
| 180 | Dirién | 2007 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
| 181 | Dirién | 2007 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
| 182 | Gamboa | 2007 | “Tuleo” - Ochilida | Panama       | Literature                | Literature      | occurrence                                                                          |
| 183 | Pana Colón | 2007 | San Blas - Port Obdidi | Panama       | Literature                | Literature      | occurrence                                                                          |
| 184 | Dirién | 2007 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
| 185 | Pana Colón | 2007 | San Blas - Port Obdidi | Panama       | Literature                | Literature      | occurrence                                                                          |
| 186 | Pana Colón | 2007 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
| 187 | Pana Colón | 2007 | San Blas - Port Obdidi | Panama       | Literature                | Literature      | occurrence                                                                          |
| 188 | Pana Colón | 2007 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
| 189 | Pana Colón | 2007 | San Blas - Port Obdidi | Panama       | Literature                | Literature      | occurrence                                                                          |
| 190 | Pana Colón | 2007 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
| 191 | Pana Colón | 2007 | San Blas - Port Obdidi | Panama       | Literature                | Literature      | occurrence                                                                          |
| 192 | Pana Colón | 2007 | Barro Colorado Island | Panama       | Literature                | Literature      | occurrence                                                                          |
A review of the distribution of the Crested Eagle, *Morphnus guianensis* (Daudin, 1800) (Accipitridae: Harpiinae), including range extensions

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| No. | Country | Locality | Year | Sex/Age | Collection number | Record | Source/Catalog | Plume/Neck | Citation |
|-----|---------|----------|------|---------|-------------------|--------|----------------|------------|----------|
| 193 | Colombia | Chocó Valley | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 194 | Colombia | Valle del Cauca | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 195 | Colombia | Cordoza | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 196 | Colombia | Córdoba | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 197 | Colombia | La Guajira | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 198 | Colombia | Magdalena | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 199 | Colombia | Meta | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 200 | Colombia | Caquetá | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 201 | Colombia | Amazonas | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 202 | Colombia | Caquetá | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 203 | Colombia | Chocó | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 204 | Colombia | Chocó | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 205 | Colombia | Chocó | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 206 | Colombia | Chocó | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 207 | Colombia | Chocó | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 208 | Colombia | Córdoba | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 209 | Colombia | Chocó | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 210 | Colombia | Chocó | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 211 | Colombia | Chocó | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 212 | Colombia | Antioquia | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 213 | Colombia | Antioquia | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 214 | Ecuador | Carchi | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |
| 215 | Ecuador | Carchi | 1986 | n.a. | Literature | occurrence | Museum, no data | Literature | Márquez & Belli 1986 |

*Note: The table continues with additional records.*
| No. | Country | County | Locality | Year | Citation | Source/Collection number | Record | Sex/Age/Plumage/Nest |
|-----|---------|--------|----------|------|----------|--------------------------|--------|---------------------|
| 216 | Ecuador | Sucumbios | Cuyabeno Wildlife Reserve | 2007 | Libor Vaincmbacher | Photo IBC | snake predation | Ppale |
| 217 | Ecuador | Sucumbios | Cuyabeno Wildlife Reserve | 2014 | R. Muniz-Lopes - PCAHE | pers. comm | visual | adult/chick/ nest |
| 218 | Ecuador | Napo | Napo Wildlife Center | 2008 | T. Cloudman | list of species | adult | Pdark |
| 219 | Ecuador | Not reported | Quito Zoo at Guayllabamba | 2011 | Montalvo & Montalvo 2011 | Literature | captive | adult female/ Ppale |
| 220 | Bolivia | Beni | Beni | 1994 | M. Pearman 1994 in GRIN 2013 | Literature | occurrence | n.a. |
| 221 | Bolivia | Beni | Noel Kempff National Park | 1998 | Bates et al. 1998 | Literature | occurrence | n.a. |
| 222 | Bolivia | La Paz | La Paz | 2003 | Hennessey et al. 2003 | Literature | occurrence | n.a. |
| 223 | Bolivia | Santa Cruz | Santa Cruz | 2003 | Hennessey et al. 2003 | Literature | occurrence | n.a. |
| 224 | Bolivia | Mérida | Carchar Biological Station | 2005 | Vidot et al. 2010 | Literature | occurrence | n.a. |
| 225 | Peru | | | | Clements & Shany 2001 | Literature | occurrence | n.a. |
| 226 | Peru | Amazonas Department | Donated to Oklahoma City Zoo | 1978 | Kiff et al. 1989 | Literature | female collected | female/nest |
| 227 | Peru | Madre de Dios | Reserva Tambopata - Candamo | 1994 | Parker III et al. 1994 | Literature | occurrence | n.a. |
| 228 | Peru | Madre de Dios | Reserva Tambopata - Candamo | 2007 | Raine 2007 | Literature | | nest |
| 229 | Peru | Madre de Dios | Amazon Manu Lodge | 1977 | R. Fabbri, pers. arch. | Photo personal archive | | adults/chick/ nest |
| 230 | Peru | Madre de Dios | Amazon Manu Lodge | 2006 | R. Fabbri, pers. arch. | Photo personal archive | | adults/chick/ nest |
| 231 | Peru | Cuzco | Quebrada Blanco Biological Station | 2001 | Vazquez & Heymann 2001 | Literature | predation on monkeys | n.a. |
| 232 | Peru | Uacayali | Pacaya municipally | 2012 | A. Morales | Photo personal archive | | young |
| 233 | Peru | Not reported | Centro de Reproduccion Huacu at Lima | 2013 | J. A. Otero | pers. comm. | captive | 6 individuals |
| 234 | Peru | Iquitos | Peru Lodge, Tahuayo River | 2013 | Peru Lodge | list of species | occurrence | n.a. |
| 235 | Peru | Amazonas | Departamento do Amazonas | n.a. | ORNIS | LSUMZ84285 | skin | n.a. |
| 236 | Peru | Loreto | Departamento de Loreto | n.a. | ORNIS | LSUMZ114339 | complete in alcohol | n.a. |
| 237 | Peru | Loreto | Departamento de Loreto | n.a. | ORNIS | LSUMZ114589 | complete in alcohol | n.a. |
A review of the distribution of the Crested Eagle, *Morphnus guianensis* (Daudin, 1800) (Accipitridae: Harpini), including range extensions

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| No. | Country | Source/Collection number | Record | Sex/Age/Plumage/ nest | Year | Locality | Citation |
|-----|---------|--------------------------|--------|-----------------------|------|----------|----------|
| 238 | Peru    | LSUMZ.1/8952              | feathers | occurrence          | 2003 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 239 | Venezuela | ART1                   | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 240 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 241 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 242 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 243 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 244 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 245 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 246 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 247 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 248 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 249 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 250 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 251 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 252 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 253 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 254 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 255 | Venezuela | ART1                  | feathers | occurrence          | 2005 | Loreto Dep. de Loreto n.a. ORNIS |            |
| 256 | Guyana  | ART1                  | feathers | occurrence          | 2005 | Guyana Dep. of Loreto n.a. ORNIS |            |
| 257 | Guyana  | ART1                  | feathers | occurrence          | 2005 | Guyana Dep. of Loreto n.a. ORNIS |            |
| 258 | Guyana  | ART1                  | feathers | occurrence          | 2005 | Guyana Dep. of Loreto n.a. ORNIS |            |
| 259 | Guyana  | ART1                  | feathers | occurrence          | 2005 | Guyana Dep. of Loreto n.a. ORNIS |            |
| 260 | Suriname | ART1                  | feathers | occurrence          | 2005 | Guyana Dep. of Loreto n.a. ORNIS |            |
| 261 | Suriname | ART1                  | feathers | occurrence          | 2005 | Guyana Dep. of Loreto n.a. ORNIS |            |

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| No. | Country   | County    | Locality                                    | Year | Citation                                      | Source/Collection number | Record                  | Sex/Age/Plumage/Nest |
|-----|-----------|-----------|---------------------------------------------|------|----------------------------------------------|--------------------------|-------------------------|-----------------------|
| 262 | Argentina |           | Resident in the country, General occurrence | n.a. | Mazar-Barnett & Pearman 2001                 | Literature               |                         | n.a.                  |
| 263 | Argentina | Missiones | El Piñalito Provincial Park                 | 2001 | Pearman 2001                                 | Literature               |                         | adult                |
| 264 | Argentina | Santa Ana | Santa Ana                                   | 1913 | Bertoni 1913                                 | Literature               | occurrence              | n.a.                  |
| 265 | Argentina | Missiones | Iguazú National Park                       | 1980 | Rumboll & Straneck (In Olrog, 1985)          | Literature               | pair in display         | n.a.                  |
| 266 | Paraguay  |           | Alto Paraná region                         | 2004 | Del Castillo & Clay 2004                     | Literature               | occurrence              | n.a.                  |
| 267 | Paraguay  | Itapúa    | San Rafael Nacional Park                   | 1997 | Madroño 1997                                 | Literature               | pair displaying         | n.a.                  |
| 268 | Paraguay  | Itapúa    | San Rafael Nacional Park                   | 1997 | Madroño 1997                                 | Literature               |                         | adult                |
| 269 | Paraguay  | Itapúa    | San Rafael Nacional Park - collected and donated to Zoo died 2002 | | Del Castillo & Clay 2004 | MHNIB872 | adult captured, housed in Museum | adult |
| 270 | Paraguay  | Itapúa    | Colônia Aurora, Region of San Rafael Nacional Park | 2003 | N. Lopes in Del Castillo & Clay 2004 | Literature |                         | adult flying         |