

A preliminary approach to the Snipes (*Gallinago*) of Ecuador, with remarks on their distribution in Ecuadorian IBAs and its conservation status

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The Snipe genus *Gallinago* is currently composed of 17 species distributed in Asia, Europe, Africa, and America (Banks *et al.* 2002, BirdLife 2006, Delany 2006, Remsen *et al.* 2006). Eight species of snipes inhabit America, including *Gallinago delicata*, *G. paraguaiiae*, *G. andina*, *G. nobilis*, *G. jamesoni*, and *G. imperialis* (Fjeldså & Krabbe 1990, Ridgely & Greenfield 2001, BirdLife International 2006, Delany 2006, Remsen *et al.* 2006). Little has been written on the American species of *Gallinago*, and except for the North American *G. delicata*, all taxa are poorly-known in terms of their distribution, ecology, population trends, and conservation status (BirdLife International 2006, Delany & Scott 2002, Delany 2006). In fact, the most poorly known populations of woodcocks and snipes occur in Asia and South America (Delany 2006). Even the taxonomy of American *Gallinago* is controversial, and species limits are mostly based on anecdotal data (Meyer de Schauensee 1970, Fjeldså & Krabbe 1990, Sibley & Monroe 1990, Ridgely & Greenfield 2001, Remsen *et al.* 2006). Delany & Scott (2002) and Delany (2006) presented information on the population estimates and trends for all Snipes in the world, but data was available only for three (*Gallinago delicata*, *G. paraguaiiae magellanica*, and *G. stricklandii*) out of eight American species. Current conservation assessments have classified two American snipes as threatened (*G. imperialis* and *G. stricklandii*), both under the Near-Threatened IUCN category (BirdLife International 2006, Delany 2006). Herein I present some considerations about the snipes of Ecuador, with emphasis on their distributional range, their relation to the Ecuadorian Important Birds Areas (IBAs), and their conservation status.

Material and Methods

Field records on various species of *Gallinago* were gathered from 1993 to 2006, while participating in surveys along Ecuador. Specimens were examined from the ornithological collection of the Museo Ecuatoriano de Ciencias Naturales, Quito, Ecuador (MECN). Literature records were compiled from published and trustworthy-unpublished sources, including the reports from the Neotropical Waterbird census coordinated in Ecuador by Aves&Conservación (BirdLife Ecuador), and from personal communications with different ornithologists (see acknowledgments). Nomenclature and sequence follow the proposal by the South American Classification Committee of the American Ornithologists' Union (Remsen *et al.* 2006). The geographic location and elevation of localities were determined using collector's field notes and revised in accordance with the 2000 physical map of the Republic of Ecuador (1:1'000 000) (IGM 2000), and NGA (2006). Classification of vegetation formations in Ecuador follows Sierra (1999). Information related to the Important Birds Areas (IBAs) of Ecuador follows Freile & Santander (2005).

Results and Discussion

Overview: Six species of snipes have been recorded in the Republic of Ecuador (Table 1, Figure 1). Three species have breeding populations in the country (Noble Snipe - *Gallinago nobilis*, Andean Snipe - *G. jamesoni*, and Imperial Snipe - *G. imperialis*); one species is a casual boreal winter visitant (Wilson's Snipe - *G. delicata*). The status of

two species is currently uncertain due to the paucity of records (South American Snipe - *G. paraguayiae*, and Puna Snipe - *G. andina*). Three species inhabit the western and eastern most Andean highlands while four species occur in a small range on the extreme southeastern Andean highlands. Two species have most of their records in the lowlands on each side of the Andes (Table 1). All six species neither occur in sympatry at any locality nor do they all overlap at any elevation. The maximum number of snipes species found at a single locality was four (Cordillera Las Lagunillas), but two species per locality were regularly recorded. All resident highland species have similar elevational distribution ranges (Table 1). Two species (*G. nobilis* and *G. jamesoni*) have the broadest geographical ranges, distributed across the Ecuadorian highlands on both sides of the Andes. Hilty & Brown (1986) pointed out a consideration for Colombian populations of *G. nobilis* / *G. jamesoni* that seems also valid for Ecuadorian ones “[Noble Snipe is] partially sympatric with Cordilleran Snipe (= Andean Snipe) but its center of abundance is apparently lower”. The Imperial Snipe *G. imperialis* occurs widely on the eastern slopes but in the western slopes it is apparently restricted to the northern part. *Gallinago nobilis* and *G. jamesoni* are species mostly found in grassland habitats, while *G. imperialis*

is a species from forested habitats (in the timberline between montane forest and paramo). *Gallinago nobilis* is commonly found in wetland environments while *G. jamesoni* and *G. imperialis* are less tied to water and also inhabit areas far from it.

Gallinago imperialis is a rare species, whose populations are classified under the Near-Threatened IUCN category, both at global and national levels. *Gallinago nobilis* has suffered from drastic declines in several areas across its Ecuadorian distributional range, driven by habitat destruction and overhunting. The global population of *G. nobilis* is currently evaluated as Least Concern, but with considerations presented herein the Ecuadorian population is classified under the Near-Threatened IUCN category. *Gallinago jamesoni* is a fairly common species in Ecuador and its population, although it shows a declining trend, does not approach the thresholds for the population size criterion of the IUCN Red List. *Gallinago andina* and *G. paraguayiae* probably hold resident populations in Ecuador, but currently their population status is uncertain, thus both are better evaluated as Data Deficient at a national level until further information is acquired. *Gallinago delicata* is apparently present in Ecuador only in small numbers, as a vagrant species, and it is a Least Concern species both at global and national levels (Table 1).

Species	Status ¹	Distribution ²	Altitudinal range (m elevation)	Conservation status in Ecuador ³
<i>Gallinago delicata</i> Wilson's Snipe	CV	W lowlands	750 - 1300	LC
<i>Gallinago paraguayiae</i> South American Snipe	U	E lowlands	250 - 300	DD
<i>Gallinago andina</i> Puna Snipe	U	Extreme SE highlands	3300	DD
<i>Gallinago nobilis</i> Noble Snipe	RB	W & E highlands	2900 - 4100	NT
<i>Gallinago jamesoni</i> Andean Snipe	RB	W & E highlands	2800 - 4400	LC
<i>Gallinago imperialis</i> Imperial Snipe	RB	NW & E highlands	2700 - 3800	NT

Table 1: Snipe species (*Gallinago* spp.) that occur in the Republic of Ecuador, with population status, distribution, and altitudinal range. ¹ CV = casual boreal winter visitant; U = uncertain; RB = resident / breeding population. ² W = western; E = eastern; SE = southeastern. ³ LC = Least Concern; DD = Data Deficient; NT = Near Threatened.

Species Accounts

Gallinago delicata - Wilson's Snipe

This species occurs in Ecuador as a casual boreal winter visitant. *Gallinago delicata* was first reported in Ecuador by Orces (1944) based on a specimen (now apparently lost) from Mapoto, province of Tungurahua, collected in October 1939. There is only one additional confirmed record, at Mindo, province of Pichincha, between December 1997 and January 1998 (1997 Christmas Bird Count data – L. Miller pers. comm., Ridgely & Greenfield 2001). Besides, a new record has been reported: one individual of *Gallinago* was observed on the 2nd of November 1998 on a wet open pasture next to a shallow cattle-pond in Hacienda La Joya (00°05'N, 78°59'W, 750–800 m elevation), near San Vicente de Andoas, c. 7 km E (by road) from Pedro Vicente Maldonado, province of Pichincha. Based on the plumage, date, and west-location, this individual was identified as *G. delicata*, thus extending the species altitudinal migratorial range in Ecuador to c. 750 m elevation (previously reported between 1200 and 1300 m elevation, Ridgely & Greenfield 2001). This species was previously considered as a subspecies of the Common Snipe, *G. gallinago*, but it is herein treated as a separate species following Miller (1996), Banks *et al.* (2002), and Remsen *et al.* (2006), among others. This treatment is not followed by the BirdLife Taxonomic Working Group because the morphological differences are limited, and it favors non-recognition of a species-status pending further research (BirdLife International 2005).

Present records of *Gallinago delicata* locate the species in at least two Ecuadorian IBAs, the Río Caoni IBA (EC040), and the Mindo y Estribaciones Occidentales del Volcán Pichincha IBA (EC043). Since the species is apparently only a vagrant in Ecuador, those IBAs would not hold representative numbers of *G. delicata*. However, the extensive deforestation in western Ecuador, and the subsequent creation of grass fields and pastures that get partially damp during the rainy season (at the same time as the migration of *G. delicata*) could be increasing the availability of habitats for the migrant *G. delicata* in western Ecuador (the species was reported as regular in western Colombia, Hilty & Brown 1986).

Gallinago paraguayiae - South American Snipe

This species is known from records in northern Amazonian Ecuador, including Limoncocha, Zancudococha, and Cuyabeno (Ridgely & Greenfield 2001). It is currently unknown whether the species is a wanderer with no resident populations in the country or whether it breeds in Ecuador. Three additional observations corresponding to *G. paraguayiae*, based on the plumage, date, and east-location, have been reported: one individual observed amidst the shore vegetation on the Laguna Grande, Cuyabeno Reserve, province of Sucumbíos, on 23 March 1999; one individual foraging on a flooded grass field next to the Pompeya-Iro road (00°40'S, 76°24'W, c. 250 m elevation), province of Orellana, on July 1999; and two individuals observed on a flooded grass field next to the Comuna Nueva Juventud (c. 00°05'S, 76°12'W, 290 m elevation), province of Sucumbíos, on 16 July 2000. Present records of *G. paraguayiae* locate the species in at least two Ecuadorian IBAs: the Reserva de Producción Faunística Cuyabeno IBA (EC091), and the Gran Yasuní IBA (EC093). If the species is eventually found to have a breeding population in Ecuador, the Cuyabeno IBA (EC091) would be important for its conservation in Ecuador due to its large wetlands system.

Gallinago andina - Puna Snipe

This species remains known in the country from a single sighting at the Cordillera Las Lagunillas, province of Zamora-Chinchipec, on 27 October 1992 (M. B. Robbins in Ridgely & Greenfield, 2001). The status of *G. andina* in Ecuador is currently uncertain. The species is otherwise known from extreme northern Peru (reported from Cruz Blanca, Huancabamba Depression region, Parker *et al.* 1985) south of northern Chile and northern Argentina (Fjeldså & Krabbe 1990). Several other species, whose distributional range is from Peru to the south, are known in Ecuador only from the Cordillera Las Lagunillas, e.g., the Andean Hillstar, *Oreotrochilus estella* (Trochilidae), and the Andean Flicker, *Colaptes rupicola* (Picidae) (Ridgely & Greenfield 2001). The Cordillera Las Lagunillas is part of the Bosque Protector

Colambo-Yacuri IBA (EC086), an area that would be important for the conservation of

G. andina in Ecuador if it holds a breeding population.

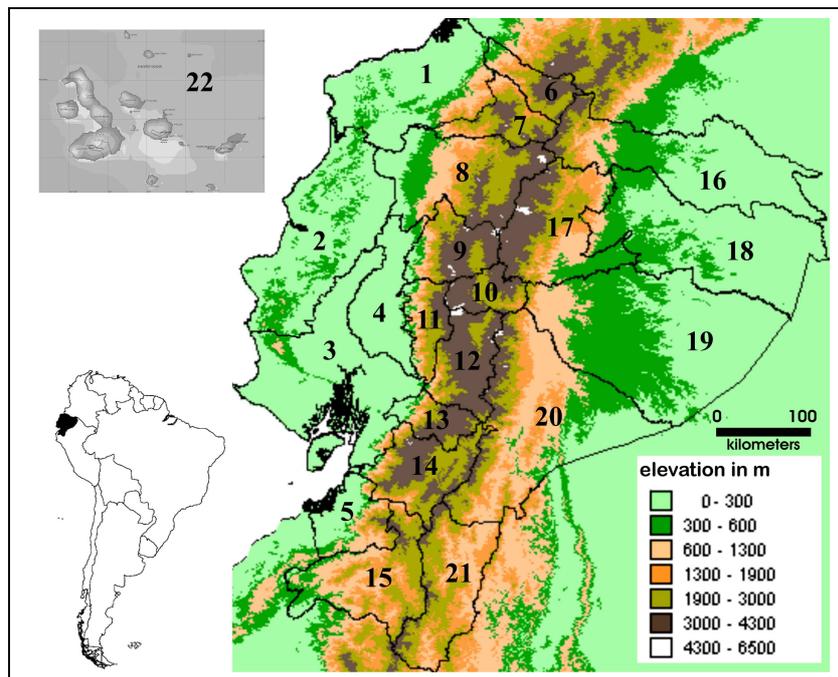


Figure 1: Map of the Republic of Ecuador showing its general location in America (South America lower-left insert, Ecuador in black); and its political division (in Provinces): 1 = Esmeraldas, 2 = Manabí, 3 = Guayas, 4 = Los Ríos, 5 = El Oro, 6 = Carchi, 7 = Imbabura, 8 = Pichincha, 9 = Cotopaxi, 10 = Tungurahua, 11 = Bolívar, 12 = Chimborazo, 13 = Cañar, 14 = Azuay, 15 = Loja, 16 = Sucumbíos, 17 = Napo, 18 = Sucumbíos, 19 = Pastaza, 20 = Morona-Santiago, 21 = Zamora-Chinchipe, and 22 = Galapagos (insular province, upper right insert in grayscale as no Snipes occurs there).

Gallinago nobilis - Noble Snipe

Locally uncommon to rare in wetlands and adjacent grass fields across the Andean highlands of Ecuador between 2900 and 4100 m elevation. The species is distributed in the provinces of Carchi (e.g., Páramo de El Angel, río Bobo drainage, Santa Marta valley), Imbabura (e.g., Mojanda lagoons, Yahuarcocha lagoon), Pichincha (e.g., Yanacocha, Paschoa, El Chaupi, Volcán Pichincha), Napo (e.g., Páramo de Guamaní – Papallacta, Antisana), Cotopaxi (e.g., Cotopaxi volcano especially in the Limpiopungu lagoon, Los Antejos lagoon), Chimborazo (e.g., Atillo lagoons), Tungurahua (e.g., Pisayambo lagoon), Cañar (lake in paramo near Cañar), Azuay (e.g., Bestión, Páramo de El Cajas), Loja (e.g., Acanamá, Cordillera de Cordoncillo), and Zamora-Chinchipe (e.g., Cajanuma) (Chapman 1926, Robbins *et al.* 1994, Cresswell *et al.* 1999, Ridgely & Greenfield 2001, Santander & Muñoz 2005, N. Krabbe pers. comm. 2006, Aves&Conservación – 2005/2006 Neotropical Waterbird census data, MECN catalog data, D. F. Cisneros-Heredia pers. obs.). *Gallinago nobilis* occupies the following vegetation

formations in Ecuador: lacustrine grasslands, high-montane evergreen forests, herbaceous paramos, *Espeletia* paramos, and shrubby paramos. The species has been declining over the last years. In the last 30 – 40 years, between 20 – 65% of the habitats of *G. nobilis* have been desiccated, transformed into agricultural lands, or suburban areas (Sierra *et al.* 1999). The species is commonly hunted across its range, both by local indigenous people and by sport hunters, and in some areas over-hunting and habitat degradations are decimating local populations. The population of *G. nobilis* in the surroundings of La Mica lagoon, in the Antisana volcano slopes, has declined markedly over the last 13 years. During a five-day sampling in July 1993, a mean of 3.0 individuals / hour-person were found around the lagoon and as far as 500 m on the adjacent grasslands. During the same period, at least 12 snipes were killed by sport hunters in the area. In August 1997 a lower mean value was recorded (1.9 individuals / hour-person). In the late 90's, a dam was built to create a reservoir in the lagoon, increasing the lagoon size from 1.8 to 3.6 km², flooding c. 180 hectares of the surrounding wetlands and grasslands (Muñoz & Olmedo 2001).

Between October 1999 and December 2000, only 4 snipes, probably *G. nobilis*, were observed in the lagoon area (Muñoz & Olmedo 2001). In October 2006, almost 6 years after the construction of the dam, several areas of wet grasslands have been recovered especially towards the northeastern side of the lagoon, yet only one individual of *G. nobilis* was observed after a 6 hour-survey, and one dead individual, killed by gunfire, was found on the side of the lagoon. In the paramos of El Angel (province of Carchi) and Guamaní (provinces of Pichincha and Napo), and in the Mojanda lagoons (province of Imbabura), similar patterns of population decline have been observed, probably driven by over-hunting and burning of large areas (especially in El Angel and Mojanda). There is a fairly stable large population of *G. nobilis* in the Limpiopungu lagoon, Cotopaxi volcano; where hunting, burning, and other significant habitat alterations are forbidden because it is part of the Cotopaxi National Park (Ridgely & Greenfield 2001, pers. obs.). In the Yanacocha area, a private protected area, the population of *G. nobilis* is small and local but apparently stable; during surveys in December between 1996 and 2002 (1 day-surveys, usually during the Christmas Bird Counts), between 1 and 5 individuals were observed. Ridgely & Greenfield (2001) reported that the species was apparently declining but did not consider it as a threatened species. The Red Data Book of the Birds of Ecuador (Granizo *et al.* 2002) did not include *G. nobilis* as a threatened species in the country. However, the declining trend of *G. nobilis*, at least in Ecuador, seems to be greater than previously estimated, and although it does not seem to qualify under a threatened category, *Gallinago nobilis* may deserve a Near-Threatened status.

Since *Gallinago nobilis* is considered as a biome-restricted species (to the Northern Andes), several Important Bird Areas where it occurs are classified under the IBA criteria A3. Also, some IBAs seem to maintain important populations of the species, and also qualify under the IBA criteria A4i. For criteria A4i, the critical biogeographic level of *G. nobilis* was established in 250 individuals by Boyla & Estrada (2005) based on a population estimate of 10.000 to 25.000 individuals. Yet, the critical biogeographic level of *G. jamesoni* (as *G. stricklandii jamesoni*) was established in 100 individuals, with a population estimate of

less than 10.000 individuals. *Gallinago nobilis* inhabits an area from southwestern Venezuela to southern Ecuador, while the distributional range of *G. jamesoni* is from western Venezuela to western Bolivia (Ridgely & Greenfield 2001). Those population estimates thus seem to be over and under-estimated, respectively, and a critical biogeographic level of 100 individuals for *G. nobilis* (population estimate c. 10.000 individuals, declining trend) seems more adequate under current circumstances. The following IBAs are classified under the criteria A3 and A4i (underlined) for *G. nobilis*: El Angel-Cerro Golondrinas (IBA EC036), Reserva Ecológica Cotacachi-Cayapas (EC037), Intag-Toisán (EC038), Mindo y Etribaciones Occidentales del Volcán Pichincha (EC043), Reserva Ecológica Los Illinizas y Alrededores (EC045), Estación Biológica Guandera-Cerro Mongus (EC046), Reserva Ecológica Cayambe-Coca (EC049), Reserva Ecológica Antisana (EC052), Refugio de Vida Silvestre Pasochoa (EC053), Parque Nacional Cotopaxi (EC055), Parque Nacional Llanganates (EC056), Parque Nacional Sangay (EC061), Yanuncay-Yanasacha (EC064), Acanamá-Guashapamba-Aguirre (EC068), Parque Nacional Podocarpus (EC085), and Bosque Protector Colambo-Yacuri (EC086).

Gallinago jamesoni - Andean Snipe

The most frequently recorded and probably the most abundant snipe in Ecuador. It is distributed across the Andean highlands in different habitats, including paramo (wet or dry), bogs, pastures, and shrubby and woodland areas between 2800 and 4400 m elevation (Ridgely & Greenfield 2001, pers. obs.). The species is distributed in the provinces of Carchi (e.g., Paramo de El Angel, Cerro Mongus), Imbabura (e.g., Mojanda lagoons), Pichincha (e.g., Pasochoa, Yanacocha, Volcán Pichincha, San Marcos lagoon), Napo (e.g., paramo de Guamaní – Papallacta, Antisana), Cotopaxi (e.g., Cotopaxi volcano slopes, Los Anteojos lagoon), Chimborazo (e.g., Chimborazo volcano slopes), Tungurahua (e.g., Cordillera de los Llanganates), Cañar (e.g., Mazar), Azuay (e.g., Illincocha, Mazar, Guagualoma, Bestion), Loja (e.g., Acanamá, Cordillera Las Lagunillas), Zamora-Chinchi (e.g., Cajanuma), and

Morona-Santiago (paramos de Matanga) (Chapman 1926, Robbins *et al.* 1994, Cresswell *et al.* 1999, Ridgely & Greenfield 2001, Santander & Muñoz 2005, N. Krabbe pers. comm. 2006, G. Buitrón-Jurado pers. comm. 2006, Aves&Conservación – 2005/2006 Neotropical Waterbird census data, MECN catalog data, D. F. Cisneros-Heredia pers. obs.). The lower elevation reported by Ridgely & Greenfield (2001) for *G. jamesoni* was 3100 m; however, there are two specimens of *G. jamesoni* deposited at the MECN collected at the city of Quito on 17 September 1996 (MECN 7002, female) and 12 March 1999 (MECN 7452), at 2800 m elevation, thus increasing the lower elevational range of the species.

Gallinago jamesoni is widely sympatric across its range with *G. nobilis*. The records from the Cordillera Las Lagunillas (N. Krabbe unpubl. record) suggest its possible sympatry with *G. andina*. *Gallinago jamesoni* occupies the following vegetation formations in Ecuador: herbaceous paramos, *Espeletia* paramos, shrubby paramos, lacustrine grasslands, and high-montane evergreen forests. *Gallinago jamesoni* is markedly less tied to wetland environments than *G. nobilis*, thus having a larger occupancy area. There are no estimates for the population of *G. jamesoni* in Ecuador, and while it suffers (like *G. nobilis*) from over-hunting and habitat destruction, its wide distribution, abundance at some localities, and adaptability to secondary habitats suggest that its population is not threatened. The species is fairly common and recorded periodically at the paramos of the Antisana and Cotopaxi volcanoes, and at Yanacocha, a private protected area, the population is small and local but apparently stable; during surveys in December between 1996 and 2004 (1 day-surveys during the Christmas Bird Counts), between 2 and 6 individuals were observed. Freile & Santander (2005) and Boyla & Estrada (2005) treated *jamesoni* as a subspecies of *G. stricklandii*, and as such considered it as a Near-Threatened species; but currently BirdLife International (2006) recognizes them as separate species, and *G. jamesoni* as non-threatened. The Red Data Book of the Birds of Ecuador (Granizo *et al.* 2002) did not include *G. jamesoni* as a threatened species in the country.

Gallinago jamesoni is found in all IBAs across the Ecuadorian highlands, and some apparently

qualify for criteri A4i. The critical biogeographic level of *G. jamesoni* (as *G. stricklandii jamesoni*) was established in 100 individuals, with a population estimate of less than 10.000 individuals by Boyla & Estrada (2005). Yet, based on considerations presented in the *G. nobilis* account, a critical biogeographic level of 250 individuals for *G. jamesoni* (population estimate 10.000 – 25.000 individuals, declining trend) seems more adequate. *Gallinago jamesoni* occurs in the following Ecuadorian IBAs (those classified under criteria A4i are underlined): Bosque Protector Molleturo Mullopungo (EC032), El Ángel-Cerro Golondrinas (EC036), Reserva Ecológica Cotacachi-Cayapas (EC037), Intag-Toisán (EC038), Mindo y Estribaciones Occidentales del Volcán Pichincha (EC043), Reserva Ecológica Los Illinizas y Alrededores (EC045), Estación Biológica Guandera-Cerro Mongus (EC046), Reserva Ecológica Cayambe-Coca (EC049), Reserva Ecológica Antisana (EC052), Refugio de Vida Silvestre Pasochoa (EC053), Volcán Atacazo (EC054), Parque Nacional Cotopaxi (EC055), Parque Nacional Llanganates (EC056), Corredor Ecológico Llanganates-Sangay (EC057), Parque Nacional Sangay (EC061), Bosque Protector Dudas-Mazar (EC062), Cajas-Mazán (EC063), Yanuncay-Yanasacha (EC064), Acanamá-Guashapamba-Aguirre (EC068), Parque Nacional Podocarpus (EC085), Bosque Protector Colambo-Yacuri (EC086), Reserva Comunal Bosque de Angashcola (E087).

Gallinago imperialis - Imperial Snipe

Locally rare to fairly uncommon species that occurs along and below the timberline in highlands of Ecuador, between 2700 and 3800 m elevation. *Gallinago imperialis* was originally described by Sclater & Salvin (1869) from a specimen collected in the vicinity of Bogota, Colombia. The species remained known from a single additional specimen, until it was rediscovered in 1967 at the Cordillera de Huancabamba, central Peru (Terborgh & Weske 1972). In 1990, the species was recorded for the first time in Ecuador, at Yanayacu, in the northwestern slopes of the Pichincha volcano (Krabbe 1992), and later the species was found to be continuously distributed along the entire eastern Andean slopes of Ecuador, and along the northwestern slopes south to the Illinizas volcanoes (Krabbe

et al. 1997, Krabbe 1998). There are records of *Gallinago imperialis* in the provinces of Carchi (e.g., Cerro Mongus), Imbabura (e.g., Intag), Pichincha (e.g., Yanacocha, Corazón volcano, Pichincha volcano), Napo (e.g., below Oyacachi), Tungurahua (e.g., Cordillera de Los Llanganates), Loja (e.g., Acanamá), Zamora-Chinchiipe (e.g., Cajanuma, Cerro Toledo, Cordillera Las Lagunillas, Tapichalaca), and Morona-Santiago (paramos de Matanga) (Krabbe 1992, Poulsen 1993, Krabbe *et al.* 1997, Ridgely & Greenfield 2001, N. Krabbe pers. comm. 2006, D. F. Cisneros-Heredia pers. obs.). *Gallinago imperialis* occupies the following vegetation formations in Ecuador: cloud montane forests and high montane evergreen forests; occurring inside the forests but also on the borders and adjacent bogs. The habitat of the species in the western slopes of the Andes has drastically declined over the last years. In the last 30 – 40 years, between 33 – 53% of the habitats of *G. imperialis* have been transformed into agricultural lands, suffering from burning and grazing (Sierra *et al.* 1999). At Corazón volcano, habitat destruction has reduced the population significantly, and it is probably extirpated. At Yanacocha, a private protected area, the species is regularly recorded, and probably holds a healthy size

population; during surveys in December between 1996 and 2004 (1 day-surveys during the Christmas Bird Counts), between 2 and 10 individuals were observed. *Gallinago imperialis* is considered as a Near-threatened species (BirdLife International 2006). Although Granizo *et al.* (2002) did not list the species under any IUCN category (even NT), the species should certainly be classified as Near-Threatened in Ecuador, as suggested by Ridgely & Greenfield (2001).

There are records of *G. imperialis* at the following IBAs (criteria A1, IBAs where *G. imperialis* was not listed by Freile & Santander [2005] are underlined): Reserva Ecológica Cotacachi-Cayapas (EC037), Intag-Toisán (EC038), Mindo y Estribaciones Occidentales del Volcán Pichincha (EC043), Reserva Ecológica Los Illinizas y Alrededores (EC045), Estación Biológica Guandera-Cerro Mongus (EC046), Reserva Ecológica Cayambe-Coca (EC049), Reserva Ecológica Antisana (EC052), Parque Nacional Llanganates (EC056), Parque Nacional Sangay (EC061), Acanamá-Guashapamba-Aguirre (EC068), Parque Nacional Podocarpus (EC085), Bosque Protector Colambo-Yacuri (EC086), and Reserva Tapichalaca (EC088).

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