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## FIRST RECORD OF BREEDING OF THE ORNATE HAWK-EAGLE (*SPIZAETUS ORNATUS*) IN SOUTHERN BRAZIL

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**ABSTRACT.**— We provide the first record of breeding of the Ornate Hawk-Eagle (*Spizaetus ornatus*) for southern Brazil. In September 2005 a nest was found inside the reservoir of the Barra Grande Hydroelectric Power Station, northern Rio Grande do Sul. On the nest there was a nestling around two months old. Based in prey remains collected on the nest, birds were the main item in diet. This is an endangered species in the Atlantic Rain Forest biome in Brazil and the presence of the nest and nestling offer evidence of reproduction in Southern Brazil.

**KEY WORDS:** *Atlantic Rain Forest, conservation, nest, nestling, raptors, Rio Grande do Sul.*

**RESUMEN.** PRIMER REGISTRO DE CRÍA DEL ÁGUILA CRESTUDA REAL (*SPIZAETUS ORNATUS*) EN EL SUR DE BRASIL.— Se presenta el primer registro de cría del Águila Crestuda Real (*Spizaetus ornatus*) en el sur de Brasil. Se encontró un nido en septiembre de 2005 en el embalse de la usina hidroeléctrica Barra Grande, en el norte de Rio Grande do Sul. En el nido había un pichón de unos dos meses de edad. Sobre la base de los restos de presas encontrados en el nido, las aves eran los principales ítems en la dieta. Esta especie se encuentra en peligro de extinción en el Bosque Atlántico en Brasil y la presencia del nido y el pichón ofrece pruebas de la reproducción de la especie en el sur de Brasil.

**PALABRAS CLAVE:** *aves rapaces, Bosque Atlántico, conservación, nido, pichón, Rio Grande do Sul.*

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The Ornate Hawk-Eagle *Spizaetus ornatus* has a wide distribution area, from southern North America to Argentina (Fergusson-Less and Christie 2001). Southern populations (northern Argentina, southern and south-eastern Brazil) have been declined due to extensive deforestation (Thiollay 1994). Although not considered threatened neither in Brazil nor globally (Machado et al. 2003, IUCN 2010), it is considered Vulnerable in Paraguay and its populations have decreased in Argentina (Márques Reyes et al. 2000, del Castillo and Clay 2005). Besides, red lists of several states of Brazil have considered Ornate Hawk-Eagle as threatened (Machado et al. 1998, SMA 1998, Bergallo et al. 2000, Marques et al. 2002, Mikich and Bérnils 2004, Espírito Santo 2005). In Rio Grande do Sul, Brazil, Ornate Hawk-Eagle was assumed as probably extinct (Marques et al. 2002) until

recent records in the north of the state (Mendonça-Lima et al. 2006). Here we provide a record of breeding of the Ornate Hawk-Eagle in Northern Rio Grande do Sul, Brazil.

The breeding biology of the Ornate Hawk-Eagle is little understood, especially in South America, and reports of nests are scarce, most of them from the northern part of its distributional range (Lyon and Kuhnigk 1985, Klein et al. 1988, Montenegro et al. 1992, Naveda-Rodríguez 2004). In the southern portion of its range, only one nest was found in Misiones, Argentina (Navas and Bo 1991), and courtships flies were observed years later there (Seipke and Cabanne 2002). In southeastern and southern Brazil breeding was not confirmed (nor even documented), although some evidences make the occurrence of breeding a likely hypothesis in these regions (Belton 1994, Brandt 1998).

On 22 September 2005 an active nest of Ornate Hawk-Eagle was found in the Barra Grande Hydroelectric Power Station reservoir (Fig. 1). It was located in the margins of Taipinha stream, a tributary of Pelotas River, in Esmeralda, Rio Grande do Sul, Brazil (27°56'S,51°01'W). This region is inside the Atlantic Rain Forest biome, with domain of Seasonal Semi-deciduous Forest in the river's slopes and Araucaria Moist Forest and native grasslands in the upperparts (Marcuzzo et al. 1998).

The nest had a "high cup/fork" shape according to Simon and Pacheco (2005) classification, and was built in the lower part of the canopy of a *Myrocarpus frondosus* (Leguminosae/Fabaceae), probably 20–30 m height. The nest was 1.7 m in length, 1.4 m wide and the external depth was 1.2 m. It was made of dry branches (branches diameter: 0.5–2 cm), with green sticks and leaves on the top. The chamber no longer existed, but the nest still had an upper part slightly deepened in the core. Old feathers were found on the inner parts of the nest, and also old leaves, suggesting that it was an old nest reused later on, at least one breeding season. It is not uncommon for raptors to

reuse a nest. Many species have several nests in their territory and may alternate the use of them from one reproductive period to another with the upkeep of the superior structure (Thiollay 1994).

One nestling was found in the nest (Fig. 2). The nestling was around two months old, age based on the growth process described by Klein et al. (1988) and Naveda-Rodriguez (2004). Considering the existing data for the species (Klein et al. 1988, Montenegro et al. 1992, Naveda-Rodriguez 2004) and the fledging date observed, the laying had occurred probably from mid-June to early-July. The hatching date was estimated around mid-August. The existing data suggest a relative flexibility in relation to the beginning of the laying, occurring between November and July (Lyon and Kuhnigk 1985, Klein et al. 1988, Montenegro et al. 1992, Greeney et al. 2004, Naveda-Rodriguez 2004, this report).

Prey remains were also collected on the nest and totalled 15 vertebrate specimens, at least. Bones and feathers were identified by comparing the ornithological collection of Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, where they were deposited. Birds were the main item (two individuals of *Crypturellus obsoletus*, two *Penelope obscura*, one *Odontophorus capueira*, two *Leptotila rufaxilla*, one *Piaya cayana*, and six unidentified birds), whereas mammals contributed with only one individual of the



Figure 1. Nest and nestling of Ornate Hawk-Eagle (*Spizaetus ornatus*) found in the Barra Grande Hydroelectric Power Station reservoir in the margins of Taipinha stream, a tributary of Pelotas River, in Esmeralda, Rio Grande do Sul, Brazil.



Figure 2. Nestling of Ornate Hawk-Eagle (*Spizaetus ornatus*) in the nest, in Esmeralda, Rio Grande do Sul, Brazil.

rodent *Dasyprocta aguti*). The Ornate Hawk-Eagle preys mainly upon birds (Lyon and Kuhnigk 1985, Klein et al. 1988), although a balance between birds and mammals was observed in Guatemala (Montenegro et al. 1992).

The nesting record of the Ornate Hawk-Eagle denotes the conservation importance of the Pelotas River and Uruguay River basins to support a local nesting population. This record also calls attention to the damage that the construction of hydroelectric projects could do to local species. Such projects, that overflow large areas, in this case especially of pristine and secondary old growth forests, are one of the greatest threats to raptors and other birds (Braz et al. 2003, Fontana et al. 2003, Ribon et al. 2003).

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