

Occasional observations on the courtship behavior of Black-and-white Hawk-Eagle, *Spizaetus melanoleucus*, at Santa Catarina state, Southern Brazil

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The Black-and-white Hawk-Eagle, *Spizaetus melanoleucus* (Accipitriformes: Accipitridae), is a widespread bird of prey occurring from Mexico to Argentina (White *et al.* 1994). In Brazil, it occurs from the state of Roraima, north and south of Amazonas, Mato Grosso and southern Pará to Santa Catarina (Sick 1997). Although widely distributed, *S. melanoleucus* is rare at most of its range (White *et al.* 1994).

Its reproductive biology is yet poorly understood (Bierregaard 1995) and although nest features and a brief description of its courtship was made by Canuto (2008). Here, we present some occasional observations on courtship behavior of Black-and-white Hawk-Eagle, state of Santa Catarina, Southern Brazil.

In 7 August 2011 we observed a pair of Black-and-white Hawk-Eagle (Figure 1) in flight above a forest fragment near a state highway (SC-486), in the municipality of Brusque, Vale do Itajaí region. The pair was gliding at low altitude in concentric circles approximately 2 m above each other, while one of them was emitting short and sharp bisyllabic notes, for three times. The couple maintained this flight pattern in concentric circles, without changing their places, for about 5 min, and, after that, the individual above dived two times on the one below, without touching it. Both individuals then moved away quickly from the observers in circular flight side by side.

A similar pattern was observed in Parque Estadual do Rio Doce, Minas Gerais state, Brazil, by Canuto (2008), who briefly reports observations of a pair of *S. melanoleucus* soaring in a thermal at low altitude, where one individual emitted three to five clear, fast whistles, ending with a more emphatic and slightly bisyllabic note (as described by Howell & Webb 1995), followed by one of them rapidly diving once towards the other without making contact.

Howell & Webb (1995) described the flight display of Ornate Hawk-Eagle, *Spizaetus ornatus*, as “a climb with deep floppy wing beats followed by a stoop with closed wings, almost somersaulting at times”. About the same species, Slud (1964) described: “calling in a very excited manner, the bird falls with folded wings, then opens them up at the bottom of the dip, sometimes it completes a perfect loop”. French (1991) described the display of this same as: “the pair gliding in tight circles, the male approaching the female from above and behind, as the female rolls to her back and they engage in talon grabbing, occasionally touching”. White *et al.* (1994) described *Spizaetus tyrannus* courtship behavior as a display flight with contact and roll-overs. These descriptions suggest that courtship behavior traits is a conservative characteristic in the *Spizaetus* genus.

The courtship behavior of Mantled Hawk, *Pseudastur polionotus*, was described by Canuto (pers. com. 2011) as the couple together in thermal or horizontal glide, emitting acute calls, long and short whistles, followed by the couple diving in one another with a subsequent free fall in a spiral, both ventrally turned on each other but claw joints (talon-grapping) was not noticed. This behavior shows some convergence with those of *Spizaetus* species previously described.

Ouellet (1991) provided detailed description of the courtship behavior of Crane-Hawk, *Geranospiza caerulescens*, consisting on flight displays of the male around the perched female, followed by the male perching near her and several callings of both sexes, in response of each



Figure 1. Couple of *Spizaetus melanoleucus* in flight (Photo: Glauco Kohler).

other. This differs consistently of those behaviors previously described, showing that there is no apparent pattern on courtship behavior of large birds of prey. Since reproductive biology of most birds of prey species is poorly understood, it is difficult to assume that patterns obtained by direct comparisons may be indeed evidence of similarity in reproductive traits between the species. The natural rarity of large species and its low detectability in forest environments contributes to the poor knowledge of both their basic and reproductive biology.

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