Besides affecting the abundance of vertebrates in Neotropical forests (Novarro et al., 2000; Síren et al., 2004), hunting activities may affect demography (Terborgh, 1992), movement (Campos et al., 2005), mating systems (Verdade, 1996), territoriality (Magnusson, 1986), reproductive success (Gosling and Baker, 1987), and intraspecific competition (Verdade, 1996). Despite the socioeconomic importance of hunting (see Ayres and Ayres, 1979; Redford and Robinson, 1991) and its impacts on the wildlife, there is only little information available about hunting pressure on conservation units in Brazil. Consequently, obtaining more information about hunting and its impacts is important for both avoiding this practice and acting in the interest of species conservation.

Many species of reptiles have been affected by hunting in Brazil (e.g., Alves et al., 2012; Souza and Alves, 2014), and several studies have investigated hunting impacts on crocodilian populations in Brazil (e.g., Verdade, 1996; Da Silveira et al., 1998; Campos et al., 2005). However, there is little information about the broad-snouted caiman, *Caiman latirostris* (Daudin, 1801). This species has a wide distribution throughout the most densely populated regions of Brazil (Coutinho et al., 2013). Anthropogenic activities (e.g., hunting) in several regions possibly affect connectivity and gene flow in their populations (Coutinho et al., 2013). In this context, the present study aimed to describe the occurrence of illegal hunting on *C. latirostris* in the Rio Doce State Park, Minas Gerais state, Brazil, and implications for its conservation.

The Rio Doce State Park (RDSP) is a conservation unit located between the municipalities of Marliéria, Dionísio and Timóteo (19.48333 - 19.80000S and 42.46667 - 42.63333W), in east-central Minas Gerais state, Brazil. The RDSP covers an area of approximately 36.000 hectares, which form one of the largest continuous remaining tracts of Atlantic Rainforest in the country (Gontijo and Britto, 1997). The study area presents the largest lake complex in Latin America, formed by more than 40 natural lagoons. Data were collected in March 2016, during a project with the objective to survey the distribution of *C. latirostris* populations in the southeastern region of RDSP.

Animals were captured with the aid of a steel cable and immobilized with adhesive tapes (Borteiro et al., 2009). Individuals had their biometric measurements (snout-vent length – SVL and total length - TL) taken with the aid of a tape measure. Sex was determined according to Brazaitis (1968). Caimans were marked by notching in tail scutes, following a previously established numerical combination (Bolton, 1994), and then released at the capture site.

Of a total of 15 sighted animals, five individuals were captured in the Patos Lagoon (19.80083S and 42.53028W) during field work in RDSP. The captured individuals had an injury across almost the entire mentonian region of the lower jaw (Figure 1).
a rotten odour emanated from the region. The SVL of these individuals varied from 65 cm to 90 cm (Table 1). The injuries found in these animals were possibly caused by tissue rupture due to hooks used in hunting activities. Effects of hunting have been reported for other caiman species. Campos et al. (2005) showed that the movement patterns of individuals of *C. yacare* may be affected by hunting incidence. Furthermore, the diet of *C. latirostris* is composed mainly of small and medium prey (Diefenbach, 1979; Borteiro et al., 2009) and this type of injury may cause a direct impact on caimans feeding, preventing them from ingesting prey.

The RDSP contains several ponds in its territory. However, ponds that are closer to the park limits are likely more affected by anthropogenic activities (ex. Patos Lagoon) by allowing an easier access for the hunters to go into the park. A Brazilian law (Federal law No. 5.197/67) banned wildlife hunting in 1967, including of caimans. Nevertheless, illegal hunting continues until the present day, and problems with hunting on *C. latirostris* have been reported in other sites (Verdade, 2001; Filogônio et al., 2010). Additionally, as there are no big aggregates of crocodilian populations in Southeast Brazil, the effects of hunting may be more severe in this region.

Although *C. latirostris* present a wide distribution (Coutinho et al., 2013), some of its populations remain unknown, and those may be being affected by illegal hunting, as we present here, for the RDSP. In addition, the RDSP is located at the central portion of

![Figure 1](image.png)

*Figure 1.* Adult male specimen of *Caiman latirostris* (SVL = 86 cm) captured in Lagoa dos Patos, showing injury in the lower jaw. (A) ventral view. (B) dorsal view.

**Table 1.** *Caiman latirostris* specimens captured with mentonian injury, at Patos lagoon, in the Rio Doce State Park. Obs: Sex classes were based on Marques et al., (2016).

<table>
<thead>
<tr>
<th>Individual Mark</th>
<th>Sex</th>
<th>Size Class (Marques et al., 2016)</th>
<th>Snout-vent length (cm)</th>
<th>Total length (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>De2/S5</td>
<td>Male</td>
<td>Adult</td>
<td>86</td>
<td>161</td>
</tr>
<tr>
<td>S6 e 7</td>
<td>Male</td>
<td>Juvenile</td>
<td>65</td>
<td>120</td>
</tr>
<tr>
<td>De2/S2</td>
<td>Male</td>
<td>Adult</td>
<td>90</td>
<td>160</td>
</tr>
<tr>
<td>De2/S3</td>
<td>Male</td>
<td>Adult</td>
<td>74</td>
<td>130</td>
</tr>
<tr>
<td>De2/S4</td>
<td>Male</td>
<td>Adult</td>
<td>80</td>
<td>143</td>
</tr>
</tbody>
</table>
C. latirostris distribution, and maintain therefore, great importance providing connectivity among northern and southern populations. Thus, a better knowledge on the real distribution and occurrence areas of C. latirostris is needed, as well as more information about hunting. However, studies about hunting in Brazil face another problem. There is no mechanism of confidentiality or professional secrecy for the researcher, which makes the process of data collect even more difficult (Verdade and Seixas, 2013).

**Acknowledgements.** We would like to thank the Crocodile Specialist Group (CSG/IUCN) for the Student Research Academic Scheme - SRAS. We are grateful to the manager and the officials from the Rio Doce State Park for all logistical support during the study. AY had a scholarship provided by the National Council for Scientific and Technology Development (CNPq) for its Productivity Scholarship – PQ. The animals were captured under the IBAMA license number 49118-3 and under the IEF license number 040/2015.

**References**


