

Mammalia, Carnivora, Mustelidae, *Lontra longicaudis* Olfers, 1818: Occurrence record in an estuary area in the state of São Paulo, Brazil

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ABSTRACT: A new record of *Lontra longicaudis* (Olfers, 1818) in the Massaguaçu River estuary (São Paulo, Brazil) is reported based on indirect (footprints and feces) and direct registers of otters presence. This record details the otter distribution in the Atlantic Rain Forest.

The Neotropical river otter (*Lontra longicaudis*) is a widely distributed semi-aquatic species, occurring from Mexico to the north of Argentina (Figure 1) (Emmons and Feer 1997; Cheida *et al.* 2006). This species occurs from the sea level to 3,000 m, and inhabits lakes, rivers and the sea shore (Emmons and Feer 1997), in association with a variety of vegetation types (Lariviere 1999; Kasper *et al.* 2004).

Despite its large distribution, there is a lack of behavioral, ecological and genetics information on this species. Among Eurasian, African and American otter species, *L. longicaudis* is one of the less studied (Pardini and Trajano 1999; Silva *et al.* 2005). It is also considered a 'data deficient' species in the IUCN Red List (IUCN 2009) as anthropogenic effects on *L. longicaudis* populations decline remains uncertain (Waldemarin and Alvares 2008). The main threats to the species persistence are both pollution and contamination of aquatic systems, deforestation of riparian vegetation and rivers drainage for agricultural and pasture land uses (Chehebar 1990; IUCN 2009).

In Brazil, studies are concentrated mainly in otter food habits of south and southeast populations. These studies were based on scats collection and analysis of freshwater or marine coastal *L. longicaudis* populations (Helder and De Andrade 1997; Pardini 1998; Colares and Waldemarin 2000; Quadros and Monteiro-Filho 2001; Kasper *et al.* 2004; Alarcon and Simões-Lopes 2004; Quintela *et al.* 2008).

We report here the *L. longicaudis* occurrence in the Massaguaçu River Estuary, at Caraguatatuba municipality, São Paulo state, Brazil (23°37'20" S, 54°21'25" W) (Figure 1). This estuary is separated from the ocean by a sandbar forming a blind estuary area (Miranda *et al.* 2002). The sandbar breaches several times *per* year at irregular intervals, and the timing and duration of the flooding cycles are unpredictable. Surrounding the estuary area, one margin is a human-occupied area, while the other margin is composed of distinct Atlantic Forest phytophysionomies.

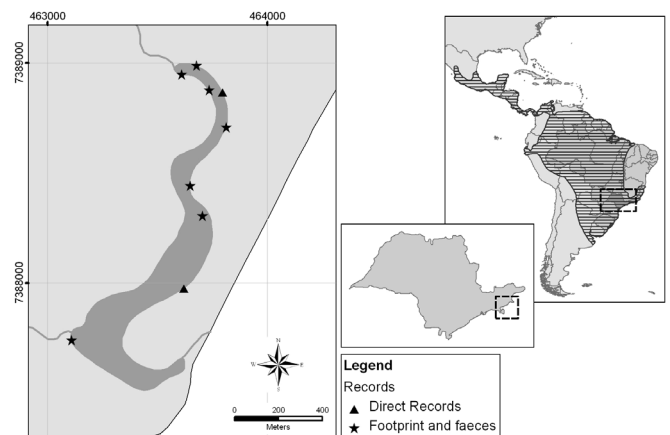


FIGURE 1. *Lontra longicaudis* registers in the Massaguaçu estuary area; regional localization of the estuary at Caraguatatuba municipality, state of São Paulo, Brazil; and the species distribution throughout the Americas (modified from IUCN, 2009).

Since January 2007, we have found footprints and scats of *L. longicaudis* on the Massaguaçu River margins (Figure 2). We noticed these marks occasionally while conducting floristic experiments in the region. Vestiges were especially evident when the sandbar breached, occasions where water level decreased and mostly of the estuary floor became exposed. Otters usually lay feces or select spraiting sites on rivers margins, rocks or holts (Pardini and Trajano 1999; Quadros and Monteiro-Filho 2002), aspects probably associated with the species social communication. In January 2010, we finally made an occasional direct record of an otter individual in the area (Figure 3).

In the São Paulo, previous records of *L. longicaudis* presence in the Atlantic Rain Forest were only made in the southern region of the state. Pardini and Trajano (1999) studied otter shelters in the Vale do Ribeira region; Nakano-Oliveira *et al.* (2004) monitored a male otter by radio-telemetry surrounding the Cananéia island; and Silva *et al.* (2005) verified otter occurrence and distribution in the Ilha do Cardoso, Cananéia and Ilha Comprida islands.



FIGURE 2. Otter footprints and feces registered in the Massaguaçu estuary, Caraguatatuba municipality, state of São Paulo.

Five-hundred years ago, the São Paulo state had approximately 83 % of its territory covered by Atlantic Rain Forest and Cerrado physiognomies, but today possesses only 13 % of its original cover (Biota/Fapesp 2008). The Massaguaçu estuary is located in one of the last large remnants of the Atlantic Rain Forest, the Serra do Mar region. As suggested by Quadros and Monteiro-Filho (2002), otter populations present in the Atlantic Forest plain closer to tourist centers are especially susceptible to human activities. Accordingly, the Massaguaçu estuary is not a protected area and the human occupation in its margins tend to increase over the years, what may constitute a threat to the otter population maintenance.



FIGURE 3. *Lontra longicaudis* specimens registered in the Massaguaçu estuary, Caraguatatuba municipality, state of São Paulo.

Conserving wildlife species in the Atlantic Rain Forest is a great challenge to conservation biologists and information on presence and distribution of endangered species are crucial to conservation efforts. Thus, considering the insufficient knowledge of the species, mapping the *L. longicaudis* occurrence and its major threats may contribute for planning conservation strategies toward the species persistence.

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