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Return to the wild and reintegration of a giant river otter (*Pteronura brasiliensis*) cub to its family group in Amaná Sustainable Development Reserve, Brazilian Amazon

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The removal of giant river otter *Pteronura brasiliensis* cubs from the wild was commonplace in the past centuries throughout the distribution of the species (Duplaix, 1980; Carter and Rosas, 1997). This practice contributed to the species' present threatened conservation status (Duplaix *et al.*, 2008). Among the objectives of the captures were animal trade for zoo exhibits or private captivity (Autuori and Deustsch, 1977; Duplaix-Hall, 1972; Duplaix, 1980; Carter and Rosas, 1997) and maintenance as pets (Gómez *et al.*, 1999; Isola, 2000; Gómez-Serrano, 2003).

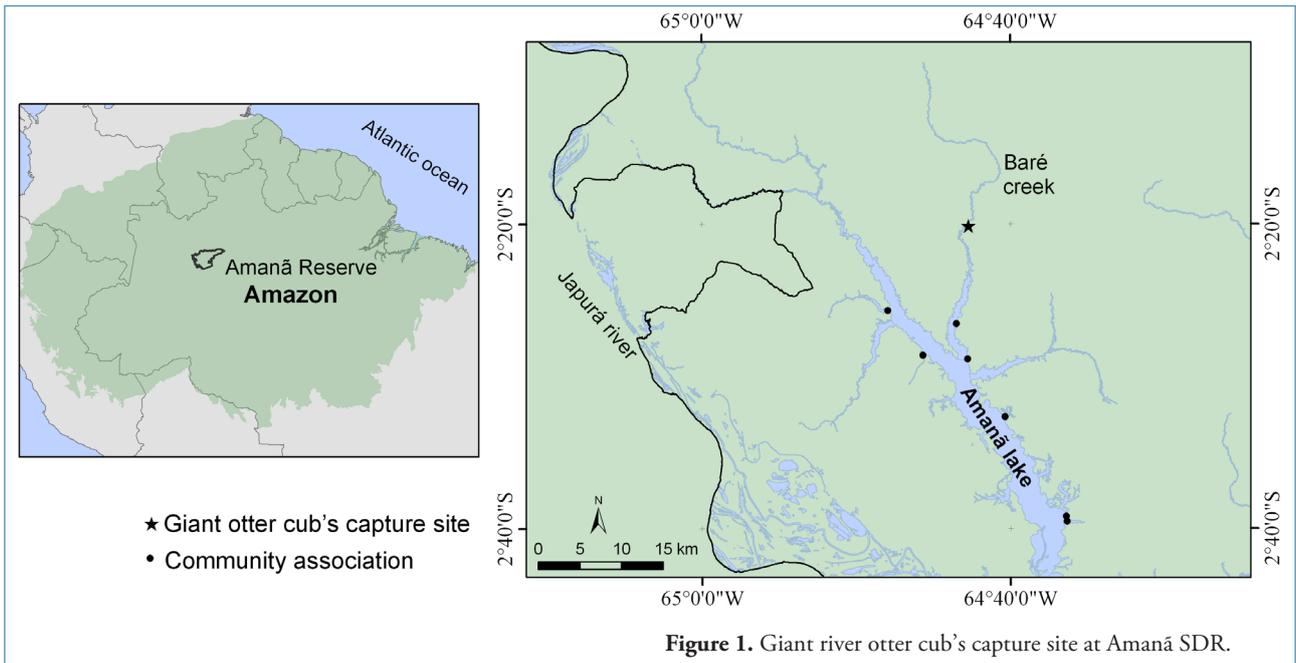
This practice was also common among inhabitants of the Amaná Sustainable Development Reserve (Amaná SDR) (2°31'58"S, 64°38'24"W), located in the central Brazilian Amazon. Allegedly, the removal of animals from the wild, associated with hunting for the skin trade, contributed to the population decline of *P. brasiliensis* in the tributary streams around the Amaná Lake. After a 20-year absence in this area, in 2004 we started monitoring the reoccupation of local watercourses by giant river otter individuals, as well as their interaction with the human population. Since then, motivated by increasing number of sightings, some local inhabitants demonstrated interest in capturing and maintaining giant river otters as pets.

The maintenance of a wild animal in captivity is expensive and requires the adequate knowledge to tend to the needs of each species (Reed-Smith *et al.*, 2009). In addition, adult giant river otters attain considerable body size and strength (Gómez *et al.*, 1999; Gómez-Serrano, 2003), which eventually causes the owners to regret having them at home. Grown-up individuals are usually abandoned, donated or rescued by concerned institutions.

An event of this nature occurred in the Amaná SDR (Figure 1), where local inhabitants captured a giant river otter cub to be maintained as pet (Figure 2). The capture displeased elderly dwellers, cautious about maintaining giant river otters in close proximity to people. Those captors eventually reconsidered the situation and agreed to hand the cub over to researchers associated with the Mamirauá Institute's Aquatic Mammal Research Group, responsible for the giant river otter population monitoring program in Amaná.

Detailed information on the cub's capture site and family structure were volunteered by the captors, and cross-checked with data previously obtained on the giant river otter population in the area. These records allowed us to identify a possible family group from which the cub may have been separated. It was assumed that this condition, associated to the relatively short period the cub remained in captivity, would favor the reintegration of the cub to the family group. Of the 24 hours the animal remained under captors' care, only 2-3 hours were spent at the community association. Fortunately, the cub was kept isolated from domestic carnivores and other native species in captivity. The fact that this cub was not exposed to potentially contagious diseases was also a crucial fact for considering its reintegration. Therefore, we decided to attempt the return of the cub to the wild.

After exchanging information, those responsible for the capture agreed in participating in the release process, so the cub was transferred to one of the Mamirauá Institute's field bases. The animal remained under supervision, with minimal human contact, for less than 48 hours until adequate logistical conditions for release were in place.



The cub was identified as a male, and biometric data are shown in Table 1. Based on body length, weight, and developmental signs (capable of ingesting solid food, swimming and walking), the age of the cub was estimated at between 3 to 4 months (based on Sykes-Gatz, 2005; Vargas and Michel, 2006). Close inspection did not show any physical harm or apparent illness of the animal. Food was offered according to need and acceptance by the cub, consisting alternatively of milk for human infants and fish

(*Hoplias malabaricus*, *Cichla monoculus*), which comprise the diet of giant river otters (Duplaix, 1980; Rosas *et al.*, 1999). Milk developed for humans (Nestle Nido® instant whole milk powder) was administered due to inaccessibility to an appropriate carnivore formula. This kind of milk has been successfully used for giant river otter cubs in previous situations (Sykes-Gatz, 2005; G. Marsicano, pers. comm.).

Two days after the capture, efforts were geared towards checking the extent of the watercourse corresponding to



Table 1. Biometric data of a giant river otter cub captured in the Amaná SDR.

Variable	Value
Weight	4000g
Total length (nose to tail)	114cm
Tail length	33cm
Body width (axillary level)	34cm
Body width (thoracic level)	40cm
Length of front paw (left)	17cm
Length of hind paw (left)	13cm

the home range of the cub's possible family group. In this stretch signs of use by giant river otters were observed, such as active dens, latrines with recently deposited feces, and fish remains with characteristics of having been consumed by the species. Substrate from one of the dens was rubbed against the cub's pelt in an attempt to mask the human scent, therefore minimizing the chance of rejection by the other members of the family group.

The giant river otter group (5 adults and 2 cubs) was sighted while resting in one of the banks of the Baré creek. Upon noticing the presence of the boat, the individuals moved towards the water vocalizing, which triggered a simultaneous vocal response by the cub. The cub was released in the water and, while most of the family members remained in the surroundings, two adult individuals approached the cub. The group remained in the vicinity for a few minutes before moving away from the boat (and the cub). Only one adult otter remained behind while the cub vocalized loudly and intensely. Finally, the adult otter approached and quickly took the cub along to the fleeing group. Given the importance of this event, the group was not pursued and monitoring was interrupted, as the human presence and the noise of the boat engine could compromise the reintegration. Monitoring was resumed after one hour and continued for the next three days. During this period, it was possible to observe the cub interacting with other otters in feeding, moving and grooming activities. In the next months, monitoring followed the routine protocol, and the acceptance of the cub by the group and its readaptation to the environment were confirmed.

The return of a wild animal to the natural environment, and especially a very young member of a gregarious and territorial species, such as giant river otter, is no easy task. A successful event of mid-term rehabilitation was reported in Colombian Orinoquia, where two cubs that underwent rehabilitation for seven months (Gómez *et al.*, 1999) were resighted five years later, as part of two different groups

(Gómez-Serrano, 2003). McTurk and Spelman (2005) describe a rehabilitation program for giant river otter cubs, which returned 34 animals to the wild in 18 years, in the Rupununi river area, in Guyana. We believe the success in returning the cub to the wild and its acceptance by the family group were due to the previous knowledge of the home range of the group, the identification of its members, and mainly to the relatively short period that the cub remained ex-situ.

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