



Sao Paulo City Case Study - Re-introducing of Howler Monkey in the City

Goal and Description of Initiative

The remaining Atlantic rainforest in Sao Paulo and surroundings are under threat because of urbanization. Such fact has negatively impacted the howler monkey (*Alouatta clamitans*) habitat. This primate lives in the forest canopy and eats leaves, flowers, fruits and seeds. The howler monkey is an endemic species – only presented in the Atlantic rainforest of Brazilian southern and southeastern regions - and is almost endangered in the State of Sao Paulo. It is also considered a flagship species, term used for charismatic species which facilitate the dissemination of the conservation message to the general public.

An increased number of injured howler monkeys from the Metropolitan Region of Sao Paulo have been received, treated and sent back to nature by the Technical Division of Veterinary Medicine and Wild Fauna Management of the Municipal Secretariat for Environment of the Sao Paulo City¹. The main causes of the injuries are: electrocution, road accidents, dog attacks and other urban impacts. Biological material is collected for laboratory tests carried out to diagnose diseases because howler monkeys live in the urban environment very close to domestic animals and human population.

In order to prepare the howler monkeys to be released after recovery, the *Alouatta Clamitans* Reintroduction Experimental Programme (PER) was created in 1996. From 1996 to 2005, 21 howler monkeys were released in 6 different forested areas in the City of Sao Paulo. Nevertheless, at that time it was not easy to see and follow these monkeys to know if they were alive, eating and reproducing.

That's why we had to create a monitoring programme using radio tracking to follow these monkeys and be able to see if they were well adapted to their natural habitat and eating the natural diet. The feeding behaviour was observed by watching the monkeys eating plant material (direct observation) and also by analysing plant fragments found in the faeces (indirect observation). Both direct and indirect observations contributed to evaluate the feeding behaviour of this species.

In 2006 a project was approved to improve the howler monkeys reintroduction in the City of Sao Paulo with the goal of establishing a clinical protocol, improving management, conducting post-release monitoring, validating procedures and raising awareness of local communities. The project has been developed by the Technical Division of Veterinary Medicine and Wild Fauna Management along with the Municipal Herbarium.

From 2008 to 2009, 34 howler monkeys were released and monitored by radio tracking². They were divided in 5 groups, and in each group only the female received the radio collar. The male cannot receive the collar because of the size of the hyoid bone in the neck. 64% of the howler monkeys remained alive in the released area, 21% died, 7% went back to captivity and 7% disappeared.

In order to raise awareness of local communities, the project has developed informational and educational activities such as lectures, visits and teacher's courses. The charismatic image of the howler monkey was used as an educational instrument to facilitate the assimilation of knowledge about the local conservation actions.

The educational material used in these activities was composed mainly by a photo novel for kids called *Howler in the forest: nature is thankful* and a DVD film called *The howler monkey reintroduction project*. The target audience was composed by rural and indigenous communities (including children, teens and youngsters), landlords of the released areas, surrounding

inhabitants and teachers of municipal schools located in the neighborhoods of the howler monkey habitats.

The results of informational and educational activities were presented in the International Education for Conservation and Sustainability Meeting³ being awarded with the third best panel of the meeting. Since 2006, 330 people received information about the project, including 71 education professionals from 25 municipal schools located in the regions where the howler monkey lives.

The teacher's course⁴ was implemented in partnership with the Municipal Secretary of Education with the following objectives: subsidize guidelines to support environmental and educational activities in the city of Sao Paulo with a sustainability outlook; articulate knowledge about the environment and biodiversity of the municipality with Municipal Secretary of Education Curriculum Directions involving different areas of knowledge of Elementary School; plan didactic situations adjusted to the learning needs of students, taking as a reference the Curriculum Guidelines and Proposal of Learning Expectations and the materials produced by the Division of Wildlife. The course methodology was based in a general presentation of the project, a fieldwork and planning and developing workshop projects to reach students, school teams, families and community.

At the end of the course teachers were invited to answer an evaluation sheet with 5 questions about themes and contents⁵: (1) Corresponded to my needs for continuing education? (2) Contributed to the construction of new knowledge? (3) Has practical application in my professional action? (4) Favors implementation of Curriculum Directions? (5) Reorients the construction of my plan work? 85% of them strongly agreed with themes and contents developed in the course. Participants also answered open questions and indicated the most important themes and contents for their practice.

Participants committed themselves to apply the acquired knowledge and teaching materials received in the course, planning and executing the project to be developed in each school. The positive evaluation by teachers led to carrying with the course in 2012.

¹ Branco, A.M (coord.). Gestão da Fauna Silvestre. In: **Ações pela Biodiversidade da Cidade de São Paulo**. São Paulo: Prefeitura de São Paulo - Secretaria Municipal do Verde e do Meio Ambiente. Jun. 2011.

² São Paulo (Cidade) 2009. **Projeto "Manejo e Conservação do Bugio *Alouatta clamitans* (Primates, Atelidae) na Região Metropolitana de São Paulo: aprimorando o programa de reintrodução"**. Available in http://www.prefeitura.sp.gov.br/cidade/secretarias/meio_ambiente/publicacoes_svma/index.php?p=25681 Prefeitura da Cidade de São Paulo. (accessed on Abril 7th 2012).

³ Vicentim, M.M.P.; Summa, J.L.; Fries, B.G.; Summa, M.E.L.; Vasconcellos, M.K. & Geraldi, V.C.2011. **Sensibilização de comunidades para a conservação do bugio *Alouatta clamitans* – Primates, Atelidae**. In: Encontro Internacional de Educação para Conservação e Sustentabilidade. Resumos. São Paulo; Fundação Parque Zoológico de São Paulo.

⁴ São Paulo (Cidade) 2011. Curso optativo: Bugio na mata: a natureza agradece. Comunicado Nº 445. **Diário Oficial da Cidade de São Paulo**, 56(57): 31.

⁵ Alencar Junior, CG; Montenegro, HLM; Valadares, VC; Nogueira, EE; Vicentim, MMP; Vasconcelos, MK. 2011. **Curso bugio na mata: a natureza agradece - despertando valores ambientais**. In: I Congresso de Áreas Verdes. Resumos. São Paulo; Secretaria do Verde e do Meio Ambiente.