

## South American Sea Lions (*Otaria flavescens*) at the São Paulo Zoo: a review of pioneer husbandry in Brazil

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### Abstract

This research's objective is to share information and data about South American Sea Lion (*Otaria flavescens*) husbandry under human care at the São Paulo Zoo and to establish a discussion about the current status of marine mammal species exhibited in Brazil. Information about marine mammal husbandry in Brazilian zoos is quite rare although the fact is that Brazil is a continent that has many aquatic mammal species. There are not many published studies about welfare in captivity for some of the animals that frequently occur in zoos around the world, such as the Otariidae family, sea lions and fur seals. This family has seven genus and fourteen species, of which three are often reported in Brazil: *Otaria flavescens*, *Arctocephalus tropicalis*, and *Arctocephalus australis*, and even though there aren't set colonies on the Brazilian coast, groups of South American sea lions can be found in Rio Grande do Sul all the way to the Bahia state during any time of the year, but mostly during the coldest months (PINEDO et al., 1992 apud REIS, 2006).

With more than a hundred years of zoo experience in Brazil, the first breeding success of the *Otaria flavescens* occurred in 2001, at the São Paulo Zoo, and this ground-breaking event contributed significantly in future decisions regarding husbandry, welfare, behaviour, and conservation efforts for the Otariidae.

**Keywords:** Otaria; South American Sea Lion; Brazilian zoos; Husbandry; Marine mammal.

### Introduction

The first zoo founded in Brazil's was from the 1860 empire, when José Antonio Alves Souto, the first private banker from Brazil (NETO; MARTINI, 2012), built a "beautiful mansion" on his propriety in Rio de Janeiro, the capital of the empire, on which decided to establish a zoo, where he gathered "many and a variety of the most interesting species on the planet", including an elephant (MAGALHÃES, 2011); in 1864 the zoo was closed due to bankruptcy. The next account came in 1884, still during in the time of the empire, when a respected business man, João Baptista de Viana Drummond, the Baron of Drummond, mentioned his intentions to establish a zoo which would bring "modernization and civilization to the industrial City of Rio and thus offer physical, moral and intellectual advantages to the population" (MAGALHÃES, 2011). However, no references could be found regarding any zoo accounts with marine mammals during this century.

In the 20<sup>th</sup> century, the first zoo account that included marine mammals was reported in July 1967, at São Vicente, São Paulo, where the first and only Oceanarium in Latin America was established at the time by the French businessperson Roland Mac Degret (LICHTI, 1982). There were dolphins (*Tursiops truncatus*), seals (non-specific) and sea lions (*Zalophus californianus*) in this Oceanarium (LABCMA/IOUSP). It remained open until 1993. The fate of those animals was quite controversial, reports regarding the pinnipeds states that they were sold to perform shows in the state of Goia in 1990 (BIANCARELLI, 1992); and with the ban on using animals in shows for profit, amid extensive coverage from the international press, after being trained to hunt, the last dolphin was released in 1993 to the same spot where he was captured in Santa Catarina. It was reported that he was seen with several injuries after being spotted close to where he had been held captive and was seen for the last time in 1995 (WILLIANS, 2014).

The others two places in Brazil which reported to have marine mammals was in the city of São Paulo, the Orca Show at the *Playcenter*, which used to house orcas, sea lions and dolphins (species not specified), and closed in 1990, and the *Exotiquarium* at the Morumbi Shopping Center which housed two Amazonian river dolphins (*Inia geoffrensis*) (LABCMA/IOUSP) and closed in 1988.

São Paulo Zoo considered the largest zoo of Latin America, was founded in 1958, and is located in the Atlantic Forest with 4km of pathways in an 824.529m<sup>2</sup> area. In December of 1997 the first marine mammals arrived, three South American sea lions (*Otaria flavescens*). The group was included one male and two females estimated at about three years old, with the male weighing in about 100kg and the females at 40kg. The names chosen for the animals came from the Quichuan language: the male was “Pakar”, and the females, “Puiu” and “Pukara”. After quarantine, they were transferred to their exhibits that included pools, one of them with a 24.000lts of salt water, another with 18.000lts of fresh water, and another one for their young. The exhibit has ramps to provide easy access for the animals and four filters. The total exhibit size is about 800m<sup>2</sup>.

## **Material and methods**

Research is based on existing data from the press, publications, papers, books, scientific documents, and internet. There were difficulties getting data due to the lack of records and correct identification in the Brazilian zoos.

## **The South American Sea Lions**

Comprised by sea lions and fur seals, the *Otariidae* family has seven genus and fourteen species, of which three of them are most reported in Brazil: *Otaria flavescens*, *Arctocephalus tropicalis*, and *Arctocephalus australis*, and even though the Brazilian coast does not house set colonies of these animals, groups of South American sea lions can be found from Rio Grande do Sul to the state of Bahia, during any time of the year, mostly during the coldest months (PINEDO et al., 1992 apud REIS, 2006).

South American sea lions are stocky, heavy-bodied, have very visible sexual dimorphic characteristics (CAPPOZZO, 2002 apud CÁRDENAS-ALAYZA et al, 2016), and adult males reach 2.1-2.6m in length and may weigh 300-350 kg; females can reach 1.5-2m and weigh 170kg (GRANDI et al., 2012a; ROSAS et al., 1993; CAPPOZZO AND PERRIN, 2009; RIET-SAPRIZA et al., 2013 apud CÁRDENAS-ALAYZA et al, 2016), the *Otaria flavescens* species is the only specie of the genus, *Otaria*, and is considered to be part of the Brazilian fauna, according to “*Mamíferos do Brasil*” (*Mammals of Brazil*, REIS, 2006), their numbers elevated in most of their range and the prospects are positive for one of the most important local populations in Peru. Sea lions continue to recover from the El Niño event of 1997/98 although the population can decline dramatically again with the next ENSO. The population is of about 425,000 animals and does not match any IUCN criteria as an endangered species and is classified as of Least Concern (CÁRDENAS-ALAYZA et al, 2016). When the three animals arrived in Brazil, South American sea lions were considered competitors with local fisheries (JEFFERSON; LEATHERWOOD; WEBBER, 1993), which was the case of “Pakar”, “Puiu” and “Pukara”, who arrived from Uruguay and become a challenge for the zookeepers.

## **Working with South American Sea Lion at the São Paulo Zoo**

To handle and maintain high standards in the care and welfare of these animals was a challenge considering that the Brazilian zookeeper’s knowledge working with this specie was insufficient. To resolve this problem and support the staff, a trainer with a background in the care, training, and technical issues named Sr. Julio Reynoso from Argentina was hired to train the staff of one trainer, a biology assistant and two zookeepers.

## **The training**

The training program started with the “clicker” method (MILLER, 2001) to manage their welfare and training that would permit the vet to check health conditions such as open mouth and the treatment of certain areas (like eyes care). The program was successful, with the four individuals allowing vet access for health evaluations, mouth inspections, local treatments (such as eye exams), collecting samples, biometrics, and weights.

### **The birth**

In February of 2001 the second South American sea lion was born in Brazil, a male weighing 13kg, which was named “Tchiri”, because of an attempt after a previous abortion. In 2005 another male was born, named “Inti”, all sons of “Pakar”.

### **Results**

Although there has been over 100 years of zoo experience in Brazil, the study shows that São Paulo Zoo is the first zoo to breed this species in Brazil, despite other countries working and studying animals from this family for many years. The reasons can be listed and debated. Nowadays, there are only two *Otaria flavescens* on exhibit in Brazil, “Puiu”, who still lives at the São Paulo Zoo, and “Inti”, who has been at the Aquário de Santos since 2011.

### **Discussion**

The small number of animals present in Brazilian zoos does not enable us to obtain more data and studies about husbandry in Brazil.

### **Conclusion**

Even though South American sea lions are not on the endangered species list, these three individuals represent pioneer work in Brazil, not only because they were the first of their species to live under human care in Brazil, but because the successful breeding and training management of this group has made the São Paulo Zoo the only zoo able to maintain and reproduce this pinniped in Brazil.

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