Fundación Zoológica Colombiana
Reg. Cámara de Comercio de Villavicencio
Nº S052190 NIT: 0822007661-2

STRATEGIES FOR THE CONSERVATION OF THE GIANT OTTER IN THE META DEPARTMENT, COLOMBIA, SOUTH AMERICA

Background

The giant otter (*Pteronura brasiliensis*) is one of the most critical endangered wild species in Colombia according to the IUCN, CITES and Alexander Von Humboldt National Biological Research Institute, being classified as VU, Appendix I and CR, respectively.

Based on IUCN information there is a high reduction of free populations in the whole distribution range from the northern Argentina to the Guyana, being described two subspecies in the whole range, one supposedly extinct. In Colombia the species is found in the Orinoco Region and the Amazonian.

The general problem situation has been the overuse of the species, where approximately 40 thousand individuals were hunted in the past to make "pelo de guama" hats, product from the Llanos Orientales of Colombia and Venezuela.

The species is also repelled by local fishermen in their distribution range because of the competence for fishing and feeding; besides that is considered as part of the indigenous and settler's food.

Problem Situation of the Giant otters at the Meta Department, Colombia.

The Meta Department has changed on its forest covering between 1983 and 2003, especially in areas close to water streams and wetlands, main habitat for giant otters.

The satellite images from the Agustin Codazzi National Geographical Institute show the real damage caused to those habitats. The increased change on the soil use due to the agriculture and cattle besides other factors has been decreasing the ecosystems, but the real effects and their impact in populations' dynamics and water quality are unknown.

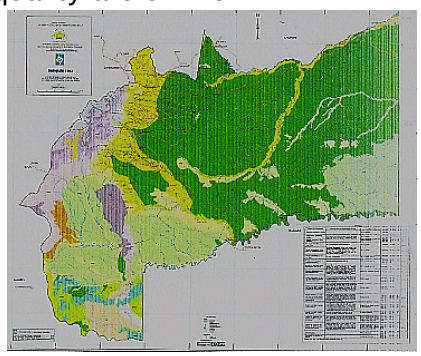

Image 1. Forest covering 1983. Meta Department. Image 2. Forest Covering 2003. Meta Department. Colombia

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The possible presence of organo phosphates and chlorate pollutants in the ecosystems is a preoccupation because even though their use is not allowed in the country, people used them secretly for the plague control during the sowing.

Water used at the petroleum perforations is poured to the rivers; the quality of the resource is not optimal because it has a high level of salts and metals which interrupt the cycle of microorganisms and other bigger fishes, main food for giant otters and community.

The breaking of the cycle is believed to be the reason why the density of fishes for human feeding is so low. The fishermen from Puerto López Region expressed a higher difficulty for fishing and a biggest effort done every day in order to get larger animals.

The effusion of organic material and other pollutants from cities and shore river's community damage the quality of the water founding domestic animal's parasites in native fishes as Characidae, main food of the giant otters and human community, being another factor that affects all the ecosystems of the area.

Captivity Conservation Program

PIPO
17 Days old

The program officially started at 2004 with an agreement between the Fundación Zoológica Colombiana (NGO) and the Corporación Autónoma para el Área especial de la Macarena "Cormacarena" (Environmental regional authority) on head of Dr. Joaquin Patarroyo B, Director.

Image3.Male Giant otter. FZC.

The conservation process started 9 months before the legal agreement with the hand raising and physical rehabilitation of a male giant otter called Pipo, who was confiscated by the environmental authority and surrended to the FZC for its care. The animal came from the Tomo River in the Vichada Department, Orinoco Region, Colombia.

Animal Care

The rehabilitation procedure started with medical, nutritional and biological protocols applied. The medical care was supported on laboratory proves, the animal presented dehydration and intestinal candidiasis and was treated immediately.

At nutritional level, its management was established under the basal rate metabolism requirements for the species (BRM) and growth rate, taking approximately 6 nursing bottles of 8 onzes every 3 hours.


Image 4 and 5. Giant otter hand raising protocol.

At Biological level, Pipo was weighted every day to determine his food conversion curve; the growth rate was registered through his individual physical measurements. The animal was also taught to swim, to take sun baths and to eat pieces of fish at the beginning, this procedure was daily. The hand raising was done by 6 persons working in turns.

After 6 months of rehabilitation the animal had optimal health conditions, so he was moved to a fish culture farm, where it has been developing successfully, eaten at the moment between 3 to 3.5 kg/day. of fish (Characidae) besides vitamins and minerals.


Image 6 and 7. Pipo growing up.

The gain of weight up to 15 Kg. made its management more difficult.

Even though he has been a docile animal because of his type of rising, he is able to react to displeasure situations. The maintaining process of the animal has been done by the animal keeper German Leyva, who had had extreme dedication and responsibility achieving a good knowledge of Pipo.

At the other hand, by November 2005, civil roads engineers at the Planas region (indigenous reserve) near to the Tillavá River at Meta Department rescued a 45 days old female giant otter from indigenous persons who had two cubs, one of them was dead and the other in a poor less condition.

The animal was exchange for food and transferred to Villavicencio City. The individual was given to the FZC taking into account the successful hand raising experience of Pipo, and right away she started physical rehabilitation based on the same protocol used for the male.

Camila
45 days old

Image 8. Female Giant otter. FZC.

The hand raising procedure used for Pipo was nutritionally improved obtaining an optimal growth in less time compared to Pipo. The female has been showing adequate endocrine and reproductive behavior according to its Biological development state.

When the female was weighting 15 kg was translated to the fish culture farm to procure the coupling of Pipo and her.

The first step after the animal got into the farm was to be isolated for quarantine.

The preventive isolation of the female was done for a month; during this time there were established auditory contact and visual contact between the couple in order to make them familiar.

The physical contact process was based on behavioral observations and occurred after confirming their health level.

Image 9. Pipo and Camila.

Even though there were agonistic responses expected at physical contact as competence for food and space in the box nest, their social habits nature for groups generate positive changes in their mental health because of their new condition.

The first place where the couple was located was too small and not appropriated for their management, so, the agreement between FZC and Cormacarena assigned financial support for a new bigger habitat, it was designed by FZC personal.

Image 11. Excavation of the pond.

Image 12. Enclosure of the habitat.

Image 13. Anesthesia of Giant otter.

The construction of the new habitat design started with the excavation process and enclosure, looking forward to improve the animals' conditions and maximize the given financial support.

When the habitat was ready, all done, the animals were translated to their new home.

The observation and establishment of the safety of the habitat was taken into account for their move.

The activities and logistic for the process were established besides the anesthesia and specific protocol for the procedure, assigning specific functions to the personal in order to decrease risks for the animals and people.

The animals were translated under anesthesia, being evaluated medically and checking out their general health level through laboratory and other type of proves.

The procedure occurred as the plans.

The animals were translated and waked up individually in their new habitat, the animal keeper was continuously monitoring even at night.

The evaluation of the animals determined their optimal health level.

Their new life style generated distress in the animals expressing a quiet behavior because of the new conditions, bigger space and pond.

The animals have been developing their natural activities as sub aquatic swimming, periscope movements, exchange of objects games, and courting behavior.

Image 14. Enjoying their new habitat.

Image 15. Camila resting.

The behavioral patterns include different types of vocalizations, which are related to precise face and body expression.

Their trophic habit has helped to analyze their diets at their natural habitat, establishing that probably they are not strict fish eaters. Besides fish, they had hunted birds and crayfish, and compensate their vitamins deficiency from natural native fruits.

The comfort of the animals at captivity is produce through necessary elements in order to develop their natural behavior.

The inclusion of fishes and the induction of their capture is a healthy element for the animals used as environmental enrichment.

The rehabilitation process has produced important results, the establishment of the type of food preferences obtaining there is a preference for crayfish.

Image 16. Eating native fruit.

Image 17. Being nice to other people.

The program had been visited by foreign citizens that comprehend the nature and know the necessity of the protection of critical endangered species as this one.

At this moment, ***Pipo y Camila*** are sub adults, measure 1.76m and 1.60m of total length and weight 30 and 24 Kg, respectively, showing the 2.6 tons of eaten fish until the moment.

Program's Projections

The expectations at mid term is to obtain cubs in order to reinforce captive populations and probably and at long term the free life populations, this couldn't be done if there is not knowledge of the real damage in ecosystems and free life populations.

Factors as the genetic bottle neck effects in captive populations, some not satisfactory experiences in reintroduction events and the inadequate use of the ecosystems generate wrong compensation of all the natural cycles.

These are the reasons why an urgent action has to be established and taken in order to allow simultaneous studies in reproduction, health, free populations ecology and ecosystems dynamics, besides education strategies leaded to the community.

Even though the captivity program is developing already, the necessity to reinforce populations at captivity level is just one concern out of many other important ones, as the investigation and conservation of free populations and ecosystems, which need to be executed as soon as possible. There won't be successful conservation at captivity if there is no knowledge of the state of free life aspects. This is why there are expectations to get financial support for a two years field job program.

Actually, some of the objectives of the program are to establish the hormonal physiological mechanisms through appropriated technologies determining the cycles in each stage of the individuals' biological development. To determine the couple's genetic composition in order to be compare to other individuals from different geographical origin, especially from Amazonia. To know the immunological response level and the degree of exposition to pathogens of domestic animals and accumulative toxics. The investigation programs will be develop at each one of the base lines of the program, Veterinary Medicine, Nutrition, Biology and populations ecology and Education leaded to local communities.

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The FZC has the purpose to increase the physical space, beach and soil besides the water surface to 400m^2 from the current habitat; and also guarantee the food supply, which is one of the concerns because of its high cost and daily quantity needed by the animals.

The FZC is not a zoo, **it is a** Non profit organization that looks for the conservation of endangered species and ecosystems of the Orinoquia Region in Colombia supporting and working with the environmental regional authorities of the Llanos Orientales Region.

There are too many ways to contribute and support this program. If you want to do it, please contact us by email fzcolombiallanos@yahoo.com.

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