My summer volunteer placement in Santiago Zoo, Chile

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From 1 August to 7 September 2010 I lived in Santiago - the capital of Chile - where I worked as a volunteer in the National Zoo. I was placed in the Department for Animal Behaviour, Welbeing and Conservation. During my work I learned that the three are very closely related: by monitoring the conduct of the animals in captivity, we can draw conclusions about their wellbeing. If we implement some changes in their environment, we can evaluate if they have a positive effect on their wellbeing by reducing their level of stress and the occurrence of anomalous and pathological behaviour. As their wellbeing improves, they are more prone to reproduction thus improving the success rate of conservation efforts ex-situ. Two specific aspects of our work were Environmental Enrichment and Training with Positive Feedback.

Environmental Enrichment consists of producing and introducing different kinds of appropriate toys and other forms of furnishing in the animals' enclosures. For example, for the chimpanzees, we knitted a hammock from used fireman hose. For the lemurs, we fitted a hanging bar and a wooden wheel with feathers to play with. For the bears, we filled old carton boxes with fresh hay to stimulate their olfactory sense while they work on opening them. For the seals, we fitted an old plastic ball with holes, put the fish inside of it which allowed the seals to play around while trying to get their food out. Additionally, we would go around the animal enclosures (while the enclosures were being cleaned by the animal keepers and animals themselves have restricted access) and hide food at odd places: behind branches, on top of logs, hanging from hanging bars, stuck on a nail in the wall etc. This way we reinforce a foraging behavior which is natural for many animals - it gives them something interesting and natural to do, thereby reducing the time they have available for anomalous behaviors (such as pacing, excessive sleeping etc.). After introducing a new device in an enclosure, we monitor it and record the animals reaction to and interaction with it on a standardized scale. Ultimately we designed therapies for specific animals and monitored their implementation and success.

Training with Positive Feedback consists of habituating the animal in captivity to an action which may make its interaction with the keepers and zoo staff easier and less stressful. For example, the elephants are taught (using positive reinforcement training technique) to show they ears to the keepers for a sufficient time to draw a blood sample. The polar bear is trained to stretch right in front of the keepers access window, so that he can perform a contact physical exam without exposing himself to unnecessary risk and without putting the animal through the stress of being sedated, moved to the infirmary and examined there. Another example is that the hippopotamus is trained to hold keep his mouth open for an extended period thus facilitating a regular dental exam.
Surveying and monitoring animal behavior was a key activity in my work. We applied different monitoring techniques depending on the animal species. The specific technique I applied on a daily basis was continuous behavioral monitoring of two individual marked flamingoes. This consisted of keeping a log of all their activities by minute within a one-hour period. This established a baseline for their behavior, which was a part of the reintroduction and conservation efforts.

The conservation program for Chilean flamingoes (Phoenicopterus chilensis) - a vulnerable endemic species - consists of the following steps: 6 birds born in captivity in Santiago zoo are fitted with GPS transmitters and unique-numbered leg tags. Their behavior in captivity is monitored closely to establish a baseline (which was my job). Consecutively they are to be moved to another enclosure outside of human-inhabited areas in the north of the country for a an acclimatization period of 3 weeks. There their behavior will be continuously monitored again to verify that they are adapting well to life in the wild. If they pass the initial 3 weeks, they will be released in the wild and their location and migratory movement will be continuously monitored for the next 3 years (the battery life of the GPS). At the same time, 3 individual flamingoes born in the wild will be captured, fitted with a similar GPS transmitter and rereleased – this will be the control group. Through the tracking of these 9 birds, the zoo's ex-situ flamingo conservation program will be evaluated. If it proves efficient and successful (i.e. if the 6 birds adapt well to their new wild habitat), the program will be continued and expanded.
Another conservation program that I learned about during my work in the zoo was of the endangered Humboldt penguins (*Spheniscus humboldtii*). 80% of their population world-wide lives on island Choros in the Humboldt national marine reserve – this is a well established colony, but it is only one. The zoo's team is working on another island - Alga Rovo, Chile Central zone. It is a newly established marine reserve with limited human access. The team visits it during the mating season and collects abandoned penguin eggs to be bread in an incubator. Sometimes the eggs are abandoned because the fetus in not viable – which partly explains the low success rate of this program. Other times, the parents may have been killed in sea by predators. Santiago zoo works closely with the European Association of Zoos and Aquaria due to the latter's thorough experience with penguin conservation ex-situ.

More routine tasks consisted of feeding the jaguars with horse meat, taking birds of prey (eagles) on regular flying practices and collecting worms from a compost to feed the inhabitants in the aviary.
My work in Santiago zoo was extremely beneficial for my study of Environmental science at QMUL for two reasons: I realized that I am really interested in endangered species conservation work, however only in-situ (the work in an urban zoo does not fit my idea of working for the benefit of the animal per se). Additionally, I immensly improved my Spanish, which gives me an additional professional skill when looking for a job in conservation projects overseas in Spanish-speaking countries. I am very content that I had the opportunity to do this volunteer placement.