

Project Update: May 2016

Three months on from being awarded the RSG, I can safely report that the first part of the study has been successfully completed. The study focused into looking at the physiological response of a rookery of Galápagos sea lions that lives in close proximity to humans and how they respond to an unnatural stress event. This allows the investigation to be non-invasive and relevant for an entire reproductive colony.

Initially funds were aimed at New Year's Eve as an isolated stressful event that could be physiologically measured. Unfortunately it was not possible to carry out the fieldwork at this time but again (and also unfortunately) there are two further firework events that occur during February. These are big social events orchestrated to celebrate the "Fiestas de San Cristóbal" on the 12th and "Fiestas de Galápagos" on the 18th. They include a live music band, dance shows, a town parade, beauty pageant and, of course fireworks.



Figure 1: Fireworks tower

Fieldwork was carried out during the whole of February 2016. It was necessary to obtain baseline measurements in order to observe the change in the response to the stress situation. Samples were collected from both an isolated rookery in Punta Pitt and Puerto Baquerizo Moreno, both on the island of San Cristóbal. Samples were processed in the Galápagos Science Centre laboratories and prepared to be sent to the University of Veterinary Medicine in Vienna, Austria. Here is where the second phase of this study will take place under the guidance of Dr Rupert Palme and his team.

Human settlements are found on four islands: San Cristóbal, Santa Cruz, Floreana and



Figure 2: Baby sea lion after born after the second fireworks event

Isabella. All of these have sea lion rookeries at some proximity to the towns and all of which receive different levels of tourist visitation (Puerto Baquerizo Moreno being the most exposed). Some time was spent on the islands of Floreana as well as Isabella. Here we expected to find sizeable rookeries that we wanted to include in the study as comparison between the different islands. The rookeries were however, either too small to gather sufficient samples or not found at all. This poses further questions in regard to the state of other rookeries that are not so closely monitored and warrant further analysis.

Previous research carried out by our team indicates that there is a tendency to the cortisol response to chronic stress in the rookery on Puerto Baquerizo Moreno. Other parameters and authors have found similar results and biological validation will allow us to further understand the potential effects. All these points will be presented at the National Congress of Wild Fauna and Mastozoology 2016 in Santa Elena, Ecuador and at the 1st Galápagos Conservation and Research Symposium GSC-PNG in June 2016.