Project Update: August 2016

On July 17th 2015 I was awarded a booster grant in support of the tagging and biopsy project. A few days later (July 22nd) I was informed that we were not going to be able to complete satellite tagging during the 2015 season since we had been informed that due to a transition between models, the manufacturers of the tags (Wildlife Computers®) would take up to 16 weeks to make the tags which was too late for us.

For the 2016 season we coordinated with the manufacturer to get a total of eight transmitters with a cost of US$18,400 (Approximately £14,000). Six additional transmitters were provided by Dr Héctor Guzmán (affiliated with the Smithsonian Tropical Research Institute). Some of the funds used to purchase the tags came from the Rufford Grant (£9,000 were budgeted for this purpose on our original application), as well as from other sources which include the Colciencias Fellowship for Colombians pursuing a doctoral degree overseas and the Columbus Zoo Fund for Conservation).

From 9th - 9th August 2016, Dr Héctor Guzmán visited the Gulf of Tribugá to conduct tagging and biopsy of MCE groups (Mother, calf and escort). Unfortunately, we were not successful. Some of the factors that prevented the success of the tagging efforts are included below:

1. It is not clear if we are already experiencing the effects of "La Niña" in Colombia, but we have suffered from some very severe weather this field season. On approximately 3 days when Dr Guzmán was here in the field, we had to suspend boat trips because of rough seas, high wind speed and/or heavy rain (which considerably reduces visibility).

2. We only encountered two groups that matched the target (mother, calf and escort) which is unusual to say the least. Just the day before the arrival of Dr Guzmán we saw two in a matter of a couple of hours. The first group coincided with two electrical storms meeting very close to us. We had to leave as the boat we use is uncovered. After about 2 hours on the coast waiting for the storm to move we tried to find the group again, following the direction they had during the encounter, but we were not successful.

The second group we found was being followed by a whale watching boat at the time we saw it. We kindly requested the tourists and the driver to find another group (since tagging and biopsy require a very close approach that can be seen as a bad example for whale watching boats). They did for about 20 minutes, which was not enough time to complete tagging and biopsy because it was an older calf which dove for about 4 minutes which made the chasing very difficult. When the whale watching boat returned, we left to look for another group.

Perhaps the fact that made me think this location could be very interesting for a study of the association between mother and escort (the bathymetric profile) made it hard for us to approach the MCE groups in an effective manner. Since you can find deep waters (more than 50 m) very close to the coastline whales (even the young calf) can dive for longer. They would re-surface 200 m or so from the last location where we saw them which made it very difficult for our boat driver.

3. Finally, we have experienced difficulties with the biopsy darts. Five of them have broken after deployment which has made it impossible for us to retrieve a sample. This in part was acknowledged by the company that makes them (PAXARMS®). In this way, we had to depend more on opportunistic samples, collected after the execution of surface-active behaviours, which is not ideal because the chances of getting samples from all participants is slim at best. Now, I have been in contact with my committee member at the University of Southern Mississippi, the Permanent Commission for the South Pacific and Los Andes University to come up with a plan B. The plan B consists of analysing all the information I have collected from this population between 2013 and 2016 and produce a diagnose of the patterns of behaviour, habitat use and population structure. This has a great potential since there are NO publications about humpback whales in this section of the Colombian Pacific. The possible sections of this plan B include:

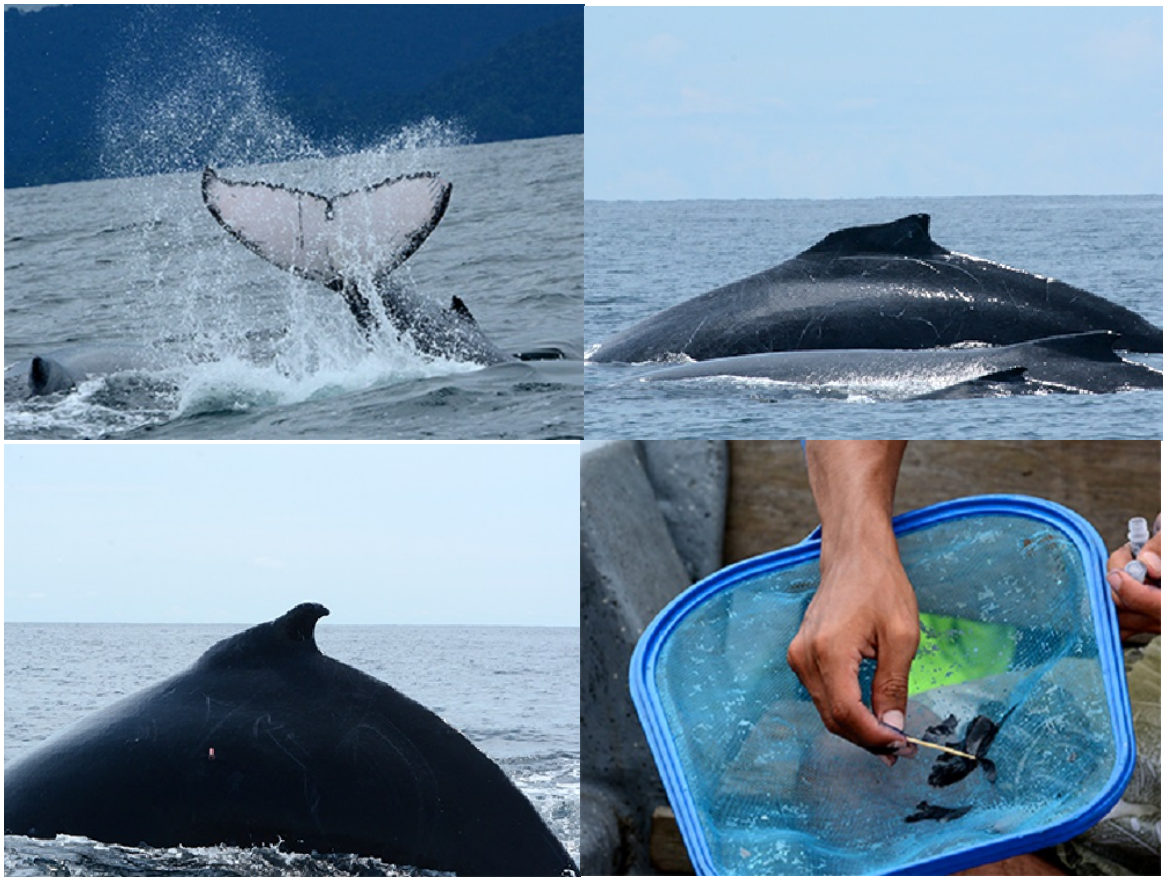
A. Behavioural Data: Sightings have an accompanying ethogram which will allow me to compare the frequencies of behavioural states and events between different group compositions. An interesting side-note can include the comparison of behavioural frequencies between MC (mother-calf pairs) and MCE (mother, calf and escort) groups.

B. Photo-identification material: We take photos of the ventral side of the whales´ flukes. Currently the catalogue holds 350 flukes. This year I have 190 more but I will not know for sure how many are "new" until I am done with fieldwork and I can compare the 2016 flukes with the catalogue. Nonetheless this is valuable information that can allow me to estimate how many whales visit this area and to know if it is more likely that some of them are resident or if the Gulf is more of a transit area.

C. GIS component: All of our sightings are geographically referenced which will allow me to describe the patterns of habitat use of humpback whales in the area and possibly to explore if habitat use differs among different types of groups (e.g. between mother-calf pairs and mating/competitive groups).

D. Genetic data: We have collected tissue samples opportunistically and through remote biopsy since last 2015. For those samples who have an associated photo-ID match we could indicate sex and possibly a comparison with other estimates of genetic diversity made with samples from other breeding/feeding locations.

With this incredibly long introduction I wanted to inform the foundation of all the challenges we have faced during this field season. Although I am disappointed for not being able to conduct my original idea, the fact that I can rely on data from previous year is encouraging and might actually speed up the process of data analysis. I will be available to resolve any questions or procedures that you consider necessary.



Left to right: Fluke slap of a humpback whale calf in which a very recent predation attempt (by killer whales) is visible; Mother, calf and escort surfacing in close association; Remote biopsy of the escort of a mother-calf pair of humpback whale & Opportunistic tissue collection of a humpback whale cow after the execution of a surface-active behaviour.