2017 SMALL GRANT IN AID OF RESEARCH – ANNUAL SUMMARY REPORT

**BIODIVERSITY AND HABITAT USE OF MARINE MAMMALS
IN THE CENTRAL COAST OF OAXACA, MEXICO**

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SUMMARY REPORT
A total of 38 marine mammal species are reported for the central coast of Oaxaca based on historical records, stranding and potential distributions. Our goal was to provide additional information on the diversity of marine mammals in this region, particularly in relation to their distribution and the main environmental factors that regulate their habitat use.

We conducted 18 visual surveys along line-transects 40 km long at an average speed of 7 knots in Puerto Ángel, Oaxaca. These transects were conducted at one mile from the coast from September to January 2018. Observations were performed from a 7-meter long fishing boat between 7:00 a.m. and 12:00 p.m. At least three people participated to spot marine mammals with naked eyes: one observed to the left, one to the right and another facing forward to cover a visual scanning angle of 180º. Marine mammals were identified to species level and the geographic position (GPS) was recorded for every observed species. Sea surface temperatures (SST) were recorded *in situ* with a CTD; the depth at each sighting site (BAT) was estimated by considering the GPS and finding the information of depth from the web page http://www.fishtrack.com/fishing-charts/ manzanillo-and-acapulco_103572. The distance to the coast (CD) was calculated in ArcMap® using the Euclidean distance. Distance to the closest river for each sighting was calculated in ArcMap®. We performed a DFA analysis and a Canonical Correspondence Analysis (CCA) to determine the main environmental factors controlling marine mammal distribution in the area.

Results
A total of eight different cetacean species were detected in 72 sightings. *Stenella attenuata* was the most frequently observed species, followed by *Megaptera novaeangliae*. *Mesoplodon sp.* was observed only once. Four species were detected in both seasons (rainy and dry seasons), while the other four species were observed only during the dry season. For the DFA Analysis, *Mesoplodon sp.* was not included in the analysis. There were no statistical differences between the environmental variables for each species, and between the species in relation with the environmental factors. The results of CCA indicated that the main factor (axis 1) is integrated by longitude and distance to the rivers, axis 2 involved the sea surface temperature, latitude and distance to the coast. No segregation was observed between the species in the ordination axis. *Megaptera novaeangliae, S. attenuata* and *S. longirostris* were more related with axis 1, while *B. edeni* and *S. bredanensis* with the axis 2. *Steno bredanensis, S. longirostris* and *S. attenuata* were detected in average in warm

waters. *Megaptera novaeangliae* and *S. bredanensis* were observed in shallow waters and nearshore.

The above-mentioned results are a major component of my Ph.D. thesis. I need to continue the survey efforts in the central coast of Oaxaca to corroborate current observations on seasonality and spatial distribution of marine mammals in this region. The support of the Society of Marine Mammalogy has been fundamental for the development of the present research project. Final results will be published at the end of 2019, firstly as a dissertation to get my Ph.D. degree and secondly as a scientific paper also along that year.